DCN:11697

OFFICE OF ECONOMIC ADJUSTMENT

FEEDBACK FROM THE FIELD: COMMUNITY EXPERIENCE WITH BRAC

May 2005

TABLE OF CONTENTS

1. **EXECUTIVE SUMMARY** 1
2. **INTRODUCTION** 2
3. **FEEDBACK FOR OEA** 5
4. **FEEDBACK FOR BRAC COMMUNITIES** 9
5. **FEEDBACK FOR MILITARY DEPARTMENTS AND OTHER FEDERAL AGENCIES** 13
6. **OTHER BRAC PROCESS FEEDBACK** 18
7. **APPENDIX—FOCUS GROUP PARTICIPANTS** 20

This document was prepared on behalf of the Office of Economic Adjustment (OEA) by a contractor team led by BearingPoint, Inc., McLean, VA, under a contract administered by the General Services Administration.

OEA and the BearingPoint Team thank all Focus Group Participants, which included representatives from Local Redevelopment Authorities, former and current elected officials, and private sector developers for the input that made this report possible.

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1. EXECUTIVE SUMMARY

The Office of Economic Adjustment (OEA), a field activity within the Department of Defense (DoD), assists communities to plan and carry out adjustment activities in response to the job losses and other economic impacts related to DoD actions, including those associated with the Defense Base Realignment and Closure (BRAC) process.

During 2004, in anticipation of the BRAC actions scheduled for 2005, OEA hired a contractor team headed by BearingPoint, Inc. to:

- Obtain comprehensive feedback on how the community adjustment process actually worked for the beneficiaries of the program, including the overall program of assistance.
- Collect BRAC best practices and lessons learned from key redevelopment practitioners – Local Redevelopment Authorities (LRAs), former and current elected officials, and private sector developers.

This report documents the feedback that was received by OEA during four focus groups held in Washington, D.C., St. Louis, Missouri, and Sacramento, California.

Focus group participants provided nearly 800 separate comments on the BRAC process. The participants were encouraged to be candid about the BRAC process and they were, as the following comment demonstrates:

> *BRAC is the most diabolically complex and stressful activity for a community. There needs to be a strong collaborative role for OEA with the communities and other Non-Governmental Organizations. OEA needs to be empowered as much as possible to do their work. OEA should provide databases, case studies, refereeing, training, facilitation, joint appraisals and make collaborative efforts work. Training is on going and may need to be accomplished in small doses. The LRA's buy-in to the process is important. OEA should help communities get the BRAC response structure right from the beginning.*

Feedback provided by the focus group participants has been organized into the following categories:

- Feedback for BRAC Communities
- Feedback for OEA
- Feedback for Military Departments and Other Federal Agencies
- Other BRAC Process Feedback

Feedback has been further organized according to the major themes introduced by the participants during the sessions. These themes are identified at the beginning of each major feedback section. In most cases, the comments speak for themselves and are not further qualified. Finally, a universal comment made at all sessions was the desire on the part of the participants to have their feedback acknowledged, as is demonstrated by the following comment:

> *The information gathered at these focus groups must be shared with DoD and other agencies involved in the BRAC process.*

2. INTRODUCTION

The previous four rounds of Base Realignment and Closure (BRAC) in 1988, 1991, 1993, and 1995, resulted in 97 major closures and many minor realignments and closures. In each instance where property was made available for civilian redevelopment and a significant portion of the local labor market was impacted, the affected jurisdictions assumed the responsibility of organizing the local community to represent the impact area with one voice, formulated an overall adjustment strategy that commonly included a redevelopment plan for the surplus Federal property, and routinely partnered with the private sector to reuse property in a manner consistent with the local consensus for redevelopment.

The Office of Economic Adjustment (OEA), a field activity within the Department of Defense (DoD), assists communities to plan and carry out adjustment activities in response to the job losses and other economic impacts related to DoD actions. In this capacity, OEA provided over $210 Million in planning and redevelopment assistance to more than 100 communities and coordinated over $1.1 Billion in other Federal Agency support to assist worker and community recovery efforts.

With this extensive portfolio, OEA hired a team headed by BearingPoint, Inc. to facilitate a focus group effort during the summer and fall of 2004. OEA's two objectives were:

- Obtain comprehensive feedback on how the community adjustment process actually worked for the beneficiaries of the program, including the overall program of assistance.
- Collect BRAC best practices and lessons learned from key redevelopment practitioners – Local Redevelopment Authorities (LRAs), former and current elected officials, and private sector developers.

This report reflects the results of the four focus groups held in: Washington, D.C. (one group on July 1, 2004, Session 1, and one on December 9, 2004, Session 4); St. Louis, Missouri (held on September 23, 2004, Session 2); and Sacramento, California (held on October 21-22, 2004, Session 3).

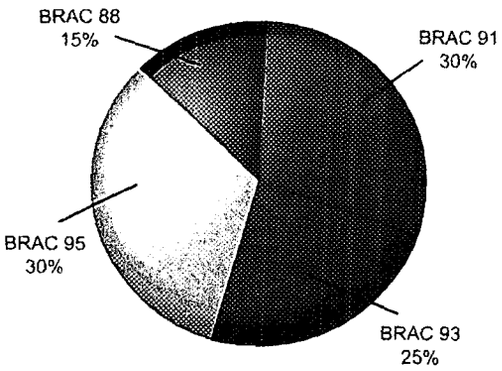
58 total participants, representing 53 communities, participated in the four focus group sessions. Of the 58 participants, 40 were current or former Local Redevelopment Authority (LRA) directors, five were elected officials, five were City Managers, six were property developers and two were associated with State Governments. Participants for all but the Sacramento session were drawn from locations across the United States to ensure geographic diversity of participation. A "California only" session was held in Sacramento with key redevelopment practitioners from that state. In all sessions, however, participants were selected that represented installations affected by BRAC 1988, 1991, 1993, and 1995 actions and Army, Navy/Marine Corps, and Air Force installation communities.

The pie charts on the following page depict the distribution of focus group participants by BRAC round, former installation type (i.e., the Military Department predominately responsible for the closure or realignment action and BRAC implementation process execution), by focus group session and by the principal occupation of the focus group participants.

Office of Economic Adjustment
Feedback From the Field
Community Experience With BRAC
May 2005

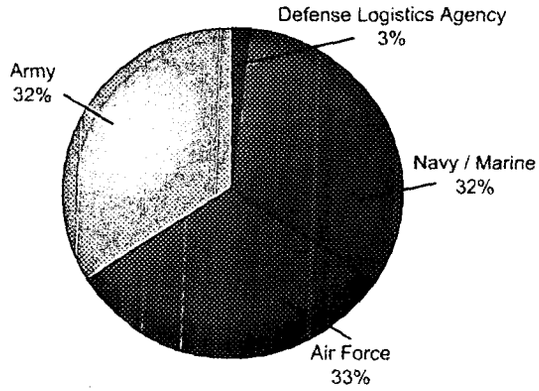
Introduction

Participants per BRAC Round



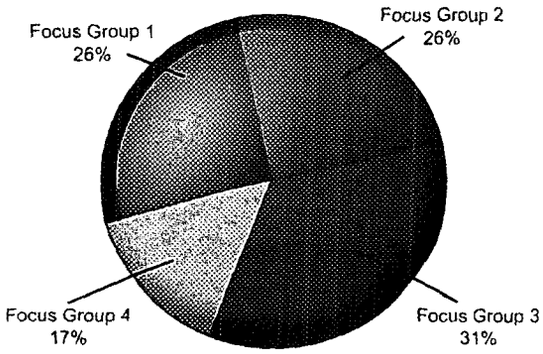
Two Participants had BRAC 91 / 95 experience

Participants by Former Installation

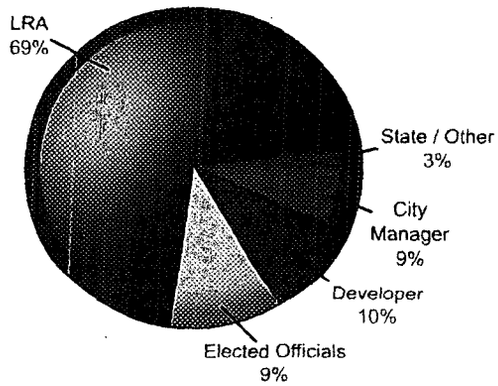


Two Participants had experience with two former installations

Participants per Focus Group



Participants by Position Type



58 Total Participants

Each all-day session began with welcoming remarks from an OEA official. Following this introduction, the support contractor team conducted the remainder of the session, without participation from any of the OEA staff or other observers. The sessions included facilitators, scribes and observers. Participants were advised that their comments would not be attributed to them and were encouraged to be candid, open, and specific. They were. Nearly 800 participant comments were recorded. In keeping with this commitment, this report does not attribute comments to specific individuals.

Each session adhered to the discussion guide included as Table 1, below. The guide was structured around the following three major phases or segments of the BRAC process:

- Phase 1 – BRAC closure recommendation through the organization of the LRA
- Phase 2 – Closure approval through property disposal
- Phase 3 – Acquisition and redevelopment of transferred property

Consistent with OEA's two objectives for the four sessions, attendees were encouraged to focus on OEA's role in each phase of the BRAC process. Attendees were also encouraged to contribute feedback and other observations beyond OEA's role. To that end, this report has been organized by feedback type—feedback for BRAC communities, for OEA, for Military Departments and other Federal Agencies and other general BRAC process feedback. Feedback is prefaced by an introductory statement or paragraph. In those cases where no introductory text has been added it is hoped the comments speak for themselves. Specific participant comments included in this report are italicized. Every attempt has been made to capture the context and meaning of what the participants offered.

Table 1. Focus Group Discussion Guide

Phase 1. CLOSURE RECOMMENDATION THROUGH ORGANIZATION OF THE LRA	Phase 2. CLOSURE APPROVAL THROUGH PROPERTY DISPOSAL	Phase 3. ACQUISITION OF AND REDEVELOPMENT OF TRANSFERRED PROPERTY
• Transitioning anxiety to constructive action • Dual tracking • Local leadership • Multiple jurisdictions • Advanced planning • Retained enclaves	• Speaking with one voice • Representation and zoning authority • Locating the LRA on-base • Strengths, Weaknesses, Opportunities and Threats (SWOT) • Personal property review • Federal real property screening • Homeless outreach and submission • Environmental Baseline Survey information • National Environmental Policy Act (NEPA) scoping • BRAC Cleanup Team and Restoration Advisory Board • Infrastructure studies • Operational / business plans • Addressing state / Federal requirements • Screening by military vs. community • Multiple Federal sources of support – OEA / Base Transition Coordinator / Military Department / Federal Sponsoring Agencies • The Base Reuse Plan / Local Redevelopment Plan • Private vs. public implementation models • Interim leases	• Addressing state / Federal requirements • Connecting with potential Federal redevelopment resources • Early transfers / Environmental Services Cooperative Agreements (ESCAs) • Public and negotiated sales • Conveyances – Public Benefit • Economic Development Conveyances • Caretaker cooperative agreements • Where does "as-is, where-is" work well or not work? • Legal services/support • Public-Public / Public-Private Partnerships • Master developer • Environmental cleanup • Financing for demolition, site improvements and redevelopment • Phase-out of OEA organizational support

3. FEEDBACK FOR OEA

The focus group process generated much feedback regarding OEA and its roles. One major theme heard throughout all sessions was that the assistance provided by OEA to prior round BRAC communities was essential and that the role of the OEA Project Manager was widely viewed as being that of an "honest broker." Focus group participants strongly believed OEA assistance was fundamentally critical to a community's ability to accept a BRAC decision, to organize and plan, and to carry out transitional and implementation activities.

Focus group participants identified a variety of ways by which OEA had provided assistance to BRAC communities. Some noted that the financial assistance provided by OEA was the most important for their situation while others lauded OEA's technical and programmatic assistance. In all cases, some combination of this assistance was noted as key to their community's successful BRAC redevelopment. Participants offered specific feedback for OEA to consider prior to the BRAC 2005 round.

However, not all feedback received about OEA was complimentary. A number of focus group participants offered valuable constructive criticism, some of which is included in this section. This feedback to OEA can be grouped according to four primary themes, which are:

- Maintain and strengthen OEA's role
- Conduct early outreach
- Provide timely and relevant information
- Explore ways to make OEA's grant program more flexible

The comments in the following subsections are organized according to these themes.

MAINTAIN AND STRENGTHEN OEA'S ROLE

A community impacted by base closure has a very narrow window for decision-making. OEA needs to help the community in this process and fill in information that they may not have. The information has to be timely and localized with information about the tools that a community will need in order to make their decisions. Pre-BRAC decision information could include—joint land use and encroachment. The tools that OEA should get to the community are what they should be doing in planning for the inevitable. Environmental Baseline Surveys could be done now. OEA needs to get out to the communities early and often.

OEA must educate communities in the process and realistic possibilities. OEA should assist financially for a good start up, reinforce that planning and development will take time and it will change. OEA needs to stick with communities. Guide 'em, back 'em, get 'em real!

OEA should play a greater role in providing mediation and dispute resolution among other Federal Agencies and the communities.

The community never completely understood all the things that OEA could do for it. OEA needs to develop a family tree that will show clearly where they fit in.

OEA is an important tool for the community and developer. [Our] community became at war with the Military Service. OEA became the peacemaker when the community became political.

OEA can and should play the role of the honest broker.

Even when communities have good relationships with the military, hard facility data is still needed. OEA could help to share how the facility staff and leadership engage with and relate to the community. OEA should be the broker to help obtain the right kind of information, particularly in a realignment action.

There is a real difference between project managers at OEA. Some can play the role of honest broker and others are not as good at it. A lot of it is about people and relationships. Some commanders are also good in this area; others are not. Good people can make a bad process work, and bad people can screw up the best process.

Not every OEA representative was good. OEA needs to have a consistent training system for all of its reps and also good and consistent oversight.

There is often a conflict between the OEA Project Manager and Military Service Program Manager. There needs to be greater communication and cooperation between OEA and Military Services. All must have the same goals and objectives.

CONDUCT EARLY OUTREACH

Participants indicated that OEA should initiate contact with potentially affected communities as soon as the Secretary of Defense issues the BRAC 2005 recommendations in May. Even though the recommendations would not be final at that point, participants felt that communities would gain valuable insight from a visit by OEA to allow them to understand what might happen to them, and what resources they will have at their disposal if the recommendation becomes law. While specifics concerning the most effective type of early interaction varied from on-line help to in-person interaction, there was consensus from the participants that it would be of great value to BRAC 2005 communities for OEA to make contact with appropriate local and state leaders as early as possible. Comments by participants included:

Once a community is on the BRAC list, OEA needs to conduct a 1-2 day seminar and tell community officials what happens during the process – being realistic about expectations.

It is important that OEA provide information and education to the community at the earliest possible time. Don't tell the communities what to do, but provide information about the process.

OEA needs to control false expectations. OEA needs to let the communities know that redevelopment takes years. Educate the community about the process and not about how great things will be.

OEA needs to educate all communities placed on the BRAC list prior to its final approval.

OEA should be the place for "one stop shopping" about BRAC.

Unless a community has been involved in BRAC before, no one knows what OEA is. Early education of states and communities is the key. OEA should provide, "Here's what to expect if you are on BRAC list."

PROVIDE TIMELY AND RELEVANT INFORMATION

Participants indicated that one challenge faced in the earlier rounds of BRAC was that of having to learn much of what they needed to do and create solutions and documents from scratch. The participants believed there were few examples of the various kinds of documents they would need to generate or become familiar with. Examples cited included redevelopment plans, property conveyance documents, model leases, deeds, and redevelopment authority organizational structure templates. All were noted as items that would have been useful to review or adapt to their situation. Many felt such documents were outside the range of documents that communities routinely prepare.

Discussion of the methods by which OEA could provide this information tended to focus on three particular areas: smaller, or more regional in-person conferences; web-based tools that would allow communities to access information, share lessons learned and exchange ideas; and live mentoring by former redevelopment practitioners. Many participants noted that they found the OEA conferences from the 1993 and 1995 rounds of BRAC to be useful, but considered them too large (in terms of numbers of attendees) and simultaneously too limiting with respect to who was authorized to represent their community at the conference.

Regardless of the method of delivery, participants overwhelmingly noted that having an OEA Project Manager make earlier contact with community decision makers would be key to maximizing success for communities facing a 2005 BRAC action.

As a result of the dramatic changes in technology that have occurred since the earlier rounds of BRAC, focus group participants believed that web-based access to educational materials, including various templates and examples of documents used in prior rounds of BRAC would be of great value to communities facing BRAC 2005.

Participants in all sessions noted that communities facing the 2005 BRAC process have one advantage over those who were involved in earlier rounds in that there are many experienced people across the country who have been through the process and know what communities face. It was felt that these individuals could serve as a key source of information to LRAs and others new to the process. OEA participation in public interest group conferences was noted as one way for communities to gain access to this source of intellectual capital.

OEA should not allow the new communities to re-create the wheel. OEA should become a clearinghouse for information, documents, and contracts. How to play in the BRAC arena is important information that OEA can provide for the communities of any size and communities facing change.

Only one person from my community was allowed to come to the OEA-sponsored closure conference. Only one book of OEA information was available per community. Regional meetings might have allowed more people to attend.

OEA should take the new communities through "BRAC boot camp" (an intense workshop) that includes interfacing with previous BRAC communities and documents emphasizing best practices. OEA should facilitate this dialogue with the 2005 BRAC communities to share successes and identify the problems and challenges of closure and redevelopment.

OEA needs to develop a database on base closure and base closure communities on the Internet.

OEA should support a mentoring process; DoD and OEA can never give communities the kind of insight and support that other communities can provide. Communities can tell other communities things that OEA and the Military Services cannot say. A mentor should be available early in the process, as well as throughout it.

Communities do not need case studies of general "good" successful bases, but rather examples of bases that have redeveloped that had "looked like their base." This resource was not provided by OEA. Also examples of how to get organized and what options are available are needed.

EXPLORE WAYS TO MAKE OEA'S GRANT PROGRAM MORE FLEXIBLE

Feedback regarding the OEA grant process clearly indicated the value it brings to a BRAC-affected community. Grants, along with the technical assistance provided by OEA, were consistently noted as two of the most important items that allowed communities to be successful. However, a large number of focus group participants, especially those who had participated in the OEA grants process, expressed strong feelings about the apparent lack of flexibility of the rules governing how OEA grant funds can be expended during the community planning process. Some felt the current rules regarding grant flexibility should be reviewed in light of lessons learned and experience gained from prior rounds. In general, representative focus group comments on this topic are along the lines of those included below:

OEA should consider funding under a block grant program. Dollars would be available for a variety of projects and not limited to OEA constraints.

Getting developers in early requires a different kind of funding. Traditional resource planning takes on a different look if it is done in concert with a developer. OEA may want to consider more customized use of funds in terms of reuse planning and implementation in order to get implementation entities involved early.

Having a "one process fits all" is not necessarily smart. Some communities do not need money if they can fast track the development. Other communities need significant money beyond just preparing the plan. Multi-year funding and a tiered approach might be a good idea. Some communities need dollars while others need project management.

The absence of written guidance from OEA on its grants and what could and could not be funded made the process more complicated than necessary. Some community needs were not eligible for funding—for example, environmental analysis and marketing.

Smaller communities have to struggle with finding the match for the OEA grants.

OEA assistance for staff and planning is great and leads to capital development. Lacking in the grant process are funds for "paying the bills" that must be paid in order to make progress towards redevelopment. Some things will be a loss leader in the beginning, but are needed for success in the long-term. Getting from the closure state to full operations needs money to pay the operating bills whether it comes from OEA, the Federal Aviation Administration or the Economic Development Administration.

4. FEEDBACK FOR BRAC COMMUNITIES

Focus group participants had many suggestions for BRAC 2005 communities and future Local Redevelopment Authorities (LRAs) and their predecessor organizations that will become OEA customers during the 2005 BRAC round. There was a high degree of consensus that the experiences of former OEA customers and OEA personnel themselves from the previous rounds of BRAC would provide 2005 BRAC round communities and LRAs with a much larger knowledge base than had existed in prior rounds. Feedback has been arranged according to the following major themes, representing recommendations and specific advice to BRAC 2005 communities that were introduced by the focus group participants:

- Speak with one voice
- Early involvement with OEA is critical
- Develop and maintain a strong relationship between the military base and the community
- Brace yourself and pace yourself
- Educate yourself about the BRAC process
- Understand the BRAC regulatory process

SPEAK WITH ONE VOICE

The phrase "speak with one voice" was used on a number of occasions during all four of the focus group sessions. While there were many interpretations of this phrase, it was typically used to describe consistency in communicating the messages from a stakeholder group. In the case of a BRAC community, including the LRA, participants referred to speaking with one voice as occurring when the community was in agreement on their goals and needs and communicating those effectively to all recipients of the message. Achieving this condition during the BRAC process was noted as sometimes difficult due to the interplay among various and diverse local groups having widely differing goals. However, it was made clear by the participants that the lack of a consistent message from the community to the Military Departments and regulatory agencies could seriously delay the success of the redevelopment of the closed base.

> *The BRAC process can be very adversarial. A cohesive vision is helpful for the community. The political element within the community carried the process through, not the Military Departments. The community needs to build a common vision and planning process that will carry the day.*
>
> *Clarity and unity are constant challenges from the community side as well as from the military.*
>
> *Speaking with one voice begins with the "save the base" committee that builds public trust and credibility. Communities can fight like cats and dogs among themselves, but must speak with one voice outside the community.*
>
> *Each community responds differently to BRAC but there is still a need for the community to speak with a single voice. Many communities have tried to resolve the issues without a consensus and failed.*
>
> *OEA could facilitate getting the local communities together to understand the importance of consensus and speaking with a single voice. Warring factions within the community are bad.*

EARLY INVOLVEMENT WITH OEA IS CRITICAL

Focus group participants representing communities believed that some of their BRAC 2005 counterparts might be reluctant to engage with OEA early on. The following comments are illustrative of this sentiment:

> *The first meeting between the community and OEA is critical. Meeting with OEA could reduce community anxiety.*
>
> *OEA involvement with the community began early on. This was extremely helpful. OEA provided the community with good information and saved the community dollars and heartache. The [BRAC] process was more complicated than we previously thought.*
>
> *A significant issue that still prevails in the community is that the individuals involved in saving the base have not given up and their redevelopment efforts have always been half-hearted. OEA has to be the truth teller and the reality check for the community. OEA has to find a way to do this and talk about the "good, bad and ugly."*
>
> *OEA is a valuable interpreter for communities of the DoD language and culture, and vice versa; DoD lives in a different world than local communities. Some small issues for the military are huge for the local LRA. The ability for OEA to translate for the military and local communities becomes crucial for understanding.*
>
> *OEA financial assistance was helpful from the very beginning. It helped the community and the LRA to get off the ground. The resources were needed immediately and they were there.*

DEVELOP AND MAINTAIN A STRONG RELATIONSHIP BETWEEN THE MILITARY BASE AND THE COMMUNITY

Developing and maintaining strong relationships with the local military base and its leadership throughout the BRAC process was cited as another key to success. In cases where communities had existing close relationships with the base leaders, or developed them early in the process, participants noted that it was much easier to move the BRAC process forward. In the opinion of most focus group participants, the community should start developing its relationship with base leaders as early as possible to maximize knowledge of the installation's assets and liabilities.

> *Understanding what the military means to the community is a good first lesson for the communities. There needs to be connectivity between the military and the community. The community needs to know what is going on at the base; institutional history does not stay with the military but with the community. It is important to know who's there, what's there, what they do and how do they do it as well as to understand the economic impact of all of these activities to the community.*
>
> *The community needs to establish a warm and close personal relationship with the commander of the base and keep establishing this relationship as the commanders change. The community needs to know what property and missions are on the base and how the base functions.*
>
> *Ideally, this relationship needs to be in place before BRAC implementation. Close relationships have to be at all levels – staff and leadership; staff relationships are important at the beginning.*

The relationship needs to be supported by solid information about the base that the community can rely on. BRAC is like losing a close member of the family. There is a strong interconnectivity of actions between the base and community. This means BRAC elicits a grieving process just like when a family member is lost. The grieving process for the closure of the base needs to be allowed for personnel on both the base and in the community.

Closure represents bad news but an extraordinary opportunity if the community pulls together. So much good can happen if you work together and so much bad if you don't.

RECOGNIZING THE CHALLENGES AND SET EXPECTATIONS ACCORDINGLY

As indicated in the Introduction of this report, a number of focus group participants were current or former Local Redevelopment Authority directors. It was noted that communities need to engage a BRAC action with their eyes open and set realistic expectations related to the complexity of the process.

The BRAC process was overwhelming and confusing to the community at the outset. Community had had little engagement with the military. OEA was helpful in interpreting the issues and forming a liaison between the military and the community.

Base closure is traumatic to the community—for both businesses and the people. This trauma begins at the time the base is placed on the closure list and continues during and after the process. Base closure changes the community forever. OEA helps to make it a positive change.

The Executive Director of any Local Redevelopment Authority has to be able to survive in chaos.

BRAC forges relationships that create conflict; the environment of conflict carries its way through the community forever and creates conflicting interests.

The process is long term. This is [about both] economic and community development.

EDUCATE YOURSELF ABOUT THE BRAC PROCESS

Many focus group participants wanted to ensure that BRAC 2005 communities were aware of the need to educate themselves on the complexities of the BRAC process. In addition, the BRAC regulatory process and how regulators approach the many complex issues associated with BRAC implementation were noted as an important factor that communities need to learn and understand quickly.

Early planning money from OEA was very important. The community spent early money on teaching the community about the BRAC process.

Sit down at the beginning with the State, the EPA and the Military Service to partner on environmental cleanup. Regulators, the LRA and the Military Service must work together from the very beginning.

States need to look at how to respond [to the BRAC process] and get local communities the information they need to respond.

Understanding the regulatory process and how regulators approach the issues is something that the communities need to learn quickly. Every State has an array of regulatory agencies. How you deal with them and successfully work with them is the issue. Navigating the regulatory framework is an important part of BRAC implementation. Regulatory agencies include environmental, historic preservation and fish and wildlife.

The LRA and the community need to first understand the different regulatory agencies and how they play in the world and then secondly there is the matter of getting the job done and getting approval. OEA can play a role in the first instance, but not necessarily in the second. Is there an advocate within the regulatory agencies for communities dealing with BRAC implementation? Education comes first and then execution; OEA cannot do both.

Even with OEA and its grants, BRAC was an evolving situation. Rather than knowing what was allowable, the community wanted to know what was the last deal you [the Military Departments] made. The State of California put base closure communities together every two months to compare notes.

5. FEEDBACK FOR MILITARY DEPARTMENTS AND OTHER FEDERAL AGENCIES

Although the principal goal of the Focus Groups was to obtain feedback related to OEA activities, Focus Group participants also relayed various experiences they'd had with the Military Departments and other Federal Agencies during prior rounds of the BRAC process. Consistent themes about the relationship among communities, Military Departments and other Federal Agencies emerged during the sessions. This information is captured in the following themes, grouped by feedback for Military Departments and feedback for other Federal Agencies:

- Feedback for Military Departments
  - Conduct early outreach to BRAC 2005 communities
  - Implement the BRAC process consistently
  - Provide accurate and timely installation information and data
  - Keep communication channels open
  - Recognize that community involvement in BRAC real estate disposal adds value
  - Revisit the role of the Base Transition Coordinator (BTC)
- Feedback for Other Federal Agencies
  - Improve interagency cooperation

FEEDBACK FOR MILITARY DEPARTMENTS

CONDUCT EARLY OUTREACH TO BRAC 2005 COMMUNITIES

The topics of early outreach by the Military Departments and sharing data with communities generated significant feedback among the focus group participants. Early outreach to communities by OEA is mentioned previously in this report, but early outreach to communities by the Military Departments was noted as a significant opportunity for the military to improve the overall communication and coordination of the BRAC implementation process. Participants felt that DoD and the Military Departments need to be a part of the BRAC reuse process from the very beginning and must cooperate with the community to ensure success. All of this must be done with the understanding that BRAC implementation is best viewed as a collaborative process. Discussions during the focus group sessions indicated that the level of interaction between local base commanders and the local community following the BRAC decision varied widely among the participants.

IMPLEMENT THE BRAC PROCESS CONSISTENTLY

Perceived inconsistencies in the Military Departments' implementation of BRAC caused confusion and frustration and a sense of unfair / unequal treatment among communities. Focus group participants who had experiences with multiple Military Departments noted that policies and procedures could vary significantly between and among them. Establishing more process and policy consistency among the Military Departments was cited as a key recommendation that would have a positive effect on the perceived fairness of the BRAC process as a whole. The past practice of communities networking with one another for the purpose of comparing BRAC experiences should be expected to continue with BRAC 2005 communities.

PROVIDE ACCURATE AND TIMELY INSTALLATION INFORMATION AND DATA

In keeping with the overall theme of having access to more information more rapidly, focus group participants noted that community decisions and the effectiveness of BRAC execution are heavily influenced by the timely availability and quality of installation information and environmental characterization data. Participants encourage the Military Departments to be proactive in providing data, to be responsive to community requests for specific information, and to pay attention to the accuracy and completeness of data provided. Most participants agree that data regarding the base should be made available to the community much earlier in the process than in previous rounds. Because of the quality and maturity of installation data that should be available in this round, participants hope that the Military Departments will share this data as soon as possible after the BRAC decision is final.

KEEP COMMUNICATION CHANNELS OPEN

Most participants believe that no amount of communication among BRAC implementers can ever be too much. The need to have close coordination among all stakeholders was deemed to be an essential Lesson Learned that applies to all phases of the BRAC process. Communication and coordination at both the local and higher Military Department levels was cited as both a challenge and an opportunity. Participants felt that all parties must be proactive and should embrace an approach that establishes good working relationships. It was clear from the sessions that the ability of the communities to engage both Military Department and Office of the Secretary of Defense personnel, when needed, is considered a key to success in every aspect of the BRAC process.

RECOGNIZE THAT COMMUNITY INVOLVEMENT IN BRAC REAL ESTATE DISPOSAL ADDS VALUE

Focus group participants wanted the Military Departments to understand the value that communities and LRAs can add to the BRAC property disposal process. Participants noted that pursuing property disposal goals shared by both the community and the Military Departments could help both parties better achieve their goals. Some representative comments include:

> *The quicker the community can move on, the better. A facilitated session with the community and the Military Service stating the goals and needs on both sides would be a good start.*
>
> *The goal of BRAC ties into how property will be conveyed. What is considered victory [in BRAC] by DoD and its communities?*

Feedback regarding the BRAC property disposal process can be categorized as follows:

- Flexibility of the "Tool Box"
- Public bid sales
- Property valuation
- Early transfer
- Retained Federal enclaves

Flexibility of the "Tool Box"

Focus group participants had many comments regarding the past and current DoD use of a "tool box" approach to property conveyance. Participants, based on their extensive individual experience, were certain that the entire range of conveyance methods were needed to successfully convey real and personal property in prior BRAC rounds and should be used again in the BRAC 2005 implementation process.

Public Bid Sales

While acknowledging that public bid sales can play an important role in BRAC property disposal, focus group participants voiced some skepticism about the use of this conveyance method. Most believed that an over-reliance on the use of public bid sales during BRAC 2005 would result in a less than optimal process. Participants observed that marginal residual properties could become much more difficult disposal challenges. Also, because land use controls required by communities will affect a prospective bidder's interest, participants urged the Military Departments to work closely with communities at locations where public bid sales are contemplated. Participants generally agreed that this approach would ensure that both the maximum financial return to the Military Department and conformance with the community's goals would be achieved.

Property Valuation

Focus group participants observed that there have been fundamental differences in the way the Military Departments and communities have assessed the value of BRAC installation property. Participants believe that in extreme cases—generally related to high environmental remediation costs or obsolete infrastructure—BRAC property can be of low or even negative value. Focus group participants observed that the use of different valuation assumptions commonly yielded dramatically different estimates of value. Because of this, participants strongly recommended that, at minimum, appraisal assumptions to be used by each party be shared. Participants suggested that ideally, the joint development and agreement on the basic appraisal assumptions to be used in valuing the property would significantly improve the process. The following comments are representative of the feedback provided by the participants:

> *The Military Service does not want to lose value in the land transaction, but does not understand the amount of money that the developer needs to put into the land to create development value.*
>
> *The government did not understand the infrastructure in preparing their appraisal for sale. The cost of bringing the utilities and other infrastructure into compliance with local ordinances far exceeded the value of the base.*

Early Transfer

Some participants noted there is mixed acceptance, at the state and community levels, of the early transfer of real property, and questioned whether the early transfer process provides an actual advantage to the community. Other participants held a completely opposite position, noting that early transfer generates more immediate opportunities for long-term, large-scale reuse. The majority of participants agreed that early transfers have worked best where market conditions are favorable and environmental regulators are supportive of the early transfer process. The following comment summarizes this sentiment:

> *Early transfers are a good idea. They work best if you have a good market and the environmental regulators on your side.*

Participants advised that if the Military Department is considering an early transfer of real property, both the community and the state need to be involved in this discussion at the earliest possible point during the implementation process.

Retained Federal Enclaves

Focus group participants acknowledged the Military Departments' and other Federal Agencies prerogative to retain certain BRAC properties. However, they urge the Military Departments to consider the post 9-11 security ramifications on remaining properties, and suggested that a single, consolidated and securable enclave is better than a "Swiss-cheese" effect of multiple, scattered Federal enclaves. Also, at locations where communities are expected to provide public services for retained Federal enclaves, participants hope the Military Departments will recognize that the remaining property must provide sufficient economic leverage for the community to make the process work financially.

> *In the instance of a large piece of property, if the Federal government keeps three quarters of the property, but the community has to upgrade all of the property and the infrastructure, the community does not have enough economic leverage to make the process work financially. This inhibits reuse of the community's part of the property.*

REVISIT THE ROLE OF THE BASE TRANSITION COORDINATOR

Focus group participants, particularly those involved in the 1993 and 1995 BRAC rounds, provided feedback on the role of the Base Transition Coordinator (BTC). Some participants felt that the BTC function was a critical component of the coordination that occurred between the local community and the Military Department, while others believed that a uniformed military BTC was too closely tied to the Military's chain-of-command to fulfill the ombudsman role for which the position was designed. Many participants believe that the positive contributions made by BTCs have not been fully realized. A number of participants suggested that civilian BTCs would provide better continuity than retiring or rotating military BTCs.

> *Our BTC was helpful in dealing with personal property. The BTC needs to start at day one of closure and stay with the process until the end. Because the [uniformed] military BTCs continuously move on or retire, the best option is for a civilian BTC.*

FEEDBACK FOR OTHER FEDERAL AGENCIES

IMPROVE INTERAGENCY COOPERATION

Participants discussed the complexities of interacting with other Federal Agencies during the BRAC process including:

- The property disposal process
- The resolution of regulatory issues related to reuse
- The process of obtaining assistance with redevelopment

The lack of efficient interaction among the various Federal Agencies was viewed as an impediment to successful redevelopment. Although participants generally agreed that agencies other than DoD had specific duties and responsibilities in the BRAC process and that some level of conflict was inherent, many provided feedback that better interagency cooperation would improve the BRAC implementation process. The following recommendation was made:

All regulatory agencies, state and Federal, need to have a BRAC point of contact.

Participants noted that regulatory agencies that showed up late in the process, did not make timely decisions, or repeatedly requested "new" information from the Military Department or the community, were particularly frustrating to work with. Generally, all focus group participants believed that interagency cooperation could be significantly improved during the BRAC 2005 implementation process and that the axiom of "there is no such thing as too much communication" can be applied to other Federal Agencies as well.

6. OTHER BRAC PROCESS FEEDBACK

Focus group participants also provided feedback on other parts of the BRAC implementation process. This section includes three topics that were the most frequently mentioned by focus group participants as impacting successful base reuse and property redevelopment. The comments and feedback included in this section are grouped into the following categories:

- BRAC environmental process
- Personal property
- Infrastructure transition

BRAC Environmental Process

Participants commented that the environmental cleanup and other environment-related aspects of the BRAC implementation process constitute a significant challenge to the overall implementation process, and warrant a separate and dedicated discussion outside the scope of this document. The following comments are representative of those offered by participants:

> *Environmental issues are the real problem. The community can't have control of buildings or other property without the environmental process speeding up.*
>
> *There needs to be a comprehensive national look at the BRAC environmental cleanup program. This focus group does not have enough time to enumerate all of the environmental problems.*

Focus group participants expressed the hope that there would be better interaction and collaboration among Military Department, community, and Federal and state environmental regulators during the BRAC 2005 implementation process. Current and former LRA representatives offered that their BRAC 2005 counterparts would be ready to actively dialogue with Military Department environmental program managers and state and Federal environmental regulators to affect solutions related to environmental issues impacting base reuse.

Personal Property

Focus group feedback about personal property issues associated with the BRAC implementation process revealed that there is considerable room for improvement from both community and military sides of this issue. The following comments are representative of the feedback provided:

> *Everyone shows his or her worst in dealing with personal property. The community wants everything [all personal property] even if they don't know how to use it.*
>
> *There is a lack of consistency in the Military Service's implementation of BRAC personal property transfer.*

Focus group participants favored a more proactive process toward personal property disposal and hope that such a process will be used during BRAC 2005. Most agree that improved communication and coordination (e.g., early

and often) between the local Military Department and the community relative to the military's desired disposition of personal property will result in an improved process. Most believe that equitable solutions can be achieved if both parties work together in personal property disposition issues.

Infrastructure Transition

Experience with Caretaker Cooperative Agreements varied widely among focus group participants. Some had little experience with these agreements, generally as a result of certain Military Departments not using them. Others did not have experience because of the BRAC round in which they participated. Others had significant comments regarding the complexity and difficulty related to the negotiation and execution of these agreements.

Focus group participants who had been involved with Caretaker Cooperative Agreements, generally felt that such agreements provided communities with an invaluable opportunity to learn how to manage and operate the installation and to manage and prioritize facility maintenance.

7. APPENDIX—FOCUS GROUP PARTICIPANTS

George Meyer *Pease AFB*	Lynn Boese *Ft. Harrison*	Steve Albright *March AFB*	Jim Silva *El Toro*
David Holmes *Plattsburgh AFB*	James Carlow *Red River Army Depot*	Michael Cohen *Treasure Island, Hunter's Point*	Christine Shingleton *Tustin*
Glen Cooke *Seneca AD*	Matt Carlson *Glenview NAS*	Braden Phillips *Long Beach*	Bill Tuohy *Oakland/Alameda*
John Van Horn *Letterkenny AD*	Jim Covington *DDD Memphis*	Alex Estrada *Norton AFB*	Mark Barnhart *Stratford AEP*
Owen Bludau *Vint Hill Farms*	Charles Finley *Pueblo Chemical Depot*	Tom Figg *Port Hueneme*	Michael Cruz *Naval Air Station Agana*
Larry Grossman *Cameron Station*	Dan Goddard *Grissom AFB*	Larry Florin *Treasure Island*	Gail Goldberg *NTC San Diego*
Thomas "Buddy" Styers *Myrtle Beach AFB*	Joe Gurley *Eaker AFB*	Aliza Gallo *Oakland*	Diana Gonzalez *Homestead AFB*
Thomas Kohler *NTC Orlando*	George Harvel *DDD Memphis*	Michael Houlemard *Fort Ord*	Jon Grafton England AFB
Steve DiMeo *Griffiss AFB*	Duane Lavery *Red River Army Depot*	Tim Johnson *Sacramento AD*	Jon Roberts *George AFB*
Marilyn Cohen *Davisville CBC*	Dave Limardi *Ft. Sheridan*	Daniel Jung *El Toro*	Tom Rumora *KI Sawyer AFB*
Marcie Kesner *Fort Totten*	Jessie Lopez *Kelly AFB*	Larry Kelly *McClelland AFB*	Sandy Sanders *Fort Chaffee*
Bob Simpson *Cecil Field NAS*	Tom Markham *Lowry AFB*	Rob Leonard *Mather AFB*	Bob Sweeney *Fort Ritchie*
James Clarke *South Weymouth NAS*	Katy Podagrosi *Chanute AFB*	David Nystrom *Mather AFB*	Art Thompson *Loring AFB*
William Burke *Fort Devens*	Jack Sprott *Charleston NS*	Kathy Riser *San Diego*	
Dick Shields *Mesa Development*	Paul Tauer *Lowry AFB, Fitzsimons AMC*	Regina Schaap *Sierra AD*	

The Other Side of BRAC — Growth

David MacKinnon, Associate Director, OEA
http://www.oea.gov

- OEA Experience
- Assistance Criteria
- Growth Management Context
- Example

DCN:11697

OEA Experience

- Introduction of Major Weapons Systems
  - *Trident Submarine Bases: Washington & Georgia*
  - *B-2 Bomber Bed Down: Missouri*
  - *Peacekeeper Missile: Wyoming*
  - *National Missile Defense: Alaska*
- Base Expansions
  - *Navy Homeporting: Atlantic, Gulf, Pacific*
  - *Infantry Divisions: New York, Georgia, Alaska*
  - *BRAC realignments: New Mexico, Missouri*

DCN:11697

Assistance Criteria

- Proposed or actual base establishment or expansion
- >2,000 net, direct, military, civilian & contractor personnel <u>or</u> personnel levels that exceed 10% of employment w/n 15 miles of the base
- State & local governments eligible
- Technical & financial assistance

Growth Management Context

- Growth management planning = solution
- Assess likely effects
  - *net personnel influx (realignments/joint basing)*
  - *timing (military construction, relocation)*
  - *local capacity to absorb influx (public facilities & services, housing, commercial development)*
- Cooperative partnership between base & affected communities

Example – Ft. Leonard Wood, MO

- 1995 BRAC realignment of Army Chemical & Military Police Schools from Ft. McClellan, Alabama
- Relocation period 1998-99
- Influx of 2,077 personnel & families
  - *Pulaski County population 41,300*
  - *small urban centers of 2,000-3,000 population each*
- Suitable off-post housing greatest need
  - *1,800 rental/sale units needed*
- Lack of local planning capacity, zoning & controls
- Growth management planning critical

DCN:11697

Ft. Leonard Wood -- continued

- Local Organization
- Planning
- Implementation

DCN:11697

Growth Management Plan (GMP)

- FLW-Regional Commerce & Growth Association (RCGA) formed to oversee
- RCGA/local governments adopt GMP 1997
  - *guide for residential/commercial development*
  - *provide quality, affordable off-post housing*
  - *jobs for spouses & dependants*
- ULI panel reviews & endorses GMP
  - *recommended RCGA pursue implementation through local investment & home building industry*

DCN:11697

Results

- RCGA endorsed 8 major projects -- 1,036 housing units
  - *comply with National Building Code*
  - *served by public utility systems*
  - *urban amenities (paved streets, sidewalks, parks)*
- Support from State & Federal Agencies (loans, tax credits)
  - *Missouri Housing Development Corporation*
  - *Fannie Mae*
  - *HUD*
- New commercial development in region
- University/Army technology park
- Job opportunities for spouses & dependants

DCN:11697

Defense Economic Adjustment Program

PURPOSE: The program was established in 1961 to support DoD objectives by helping communities resolve problems caused by significant Defense program changes:

When bases close or major defense contracts end suddenly, communities usually can not easily adjust to the loss of jobs and revenues.

When military bases are created or existing ones expand significantly, communities often have difficulty providing additional public facilities and services for the population increases.

PURPOSE: The Office of Economic Adjustment (OEA) operates the program. Technical and financial assistance has been provided since 1970 through the President's Economic Adjustment Committee (EAC), an organization composed of 23 Federal Departments and Agencies. The OEA is the staff for the EAC.

To maintain or restore community stability, the program helps:

- Communities help themselves organize appropriate local and intergovernmental structures to plan, coordinate and implement adjustment strategies
- Replace lost jobs through new economic development activities
- Join available Federal, state, and local government resources with those of the private sector to achieve adjustment goals
- Convert surplus base facilities to civilian job-producing uses such as airports, schools, and industrial parks
- Facilitate diversification of Defense contractor businesses to new markets and/or products
- Place and retrain affected workers

To address the encroachment of development around bases, the program provides for:

- Joint land use planning to assure compatible development occurrs near the base

RESULTS: The program has helped over 500 communities in 35 years.

- On average, more than 1.5 new civilian jobs are created for each civilian job lost at closed bases
- Major new or expanded bases operate effectively with neighboring communities
- Compatible land uses are established to balance community growth with military mission requirements
- Resistance to Defense change is reduced
- Communities have devised and implemented strategies to support businesses and workers affected by Defense procurement cutbacks

ADDITIONAL INFORMATION:

Director
Office of Economic Adjustment
400 Army Navy Drive, Suite 200
Arlington, VA 22202-2884
Telephone: 703-604-6020
Fax: 703-604-5843

ECONOMIC DISLOCATION AND WORKER ADJUSTMENT ASSISTANCE ACT
(EDWAA)
Employment & Training Administration
U.S. Department of Labor

DESCRIPTION OF PROGRAM USES
The purpose of the Economic Dislocation and Worker Adjustment Assistance Act is to provide retraining and readjustment assistance to dislocated workers unlikely to return to their previous industries or occupations. Services include rapid response, occupational skills training, basic and remedial response, occupational skills training, basic and remedial education, job search and placement, supportive services such as child care and transportation allowances, relocation assistance, and needs related payments for dislocated workers who have exhausted their unemployment insurance.

DESCRIPTION OF FINANCIAL ASSISTANCE
Formula funds distributed to states and discretionary grants from Governor's Reserve or National Reserve Accounts are available to provide services.

BENEFICIARY ELIGIBILITY
Eligible program participants are workers who have been laid off or have notification of termination and who are unlikely to return to the same or similar jobs from which they were terminated. This includes workers who lose their jobs because of plant closings or mass layoffs; long-term unemployed persons with limited local opportunities for jobless due to general economic conditions or natural disasters.

AUTHORIZATION
The Job Training Partnership Act of 1982, as amended, Title III, Public Law 97-300. Catalog of Federal Domestic Assistance Program No. 17.246.

ADDITIONAL INFORMATION
Contact the local government agency in your area that administers the JTPA program or your nearest State employment services office, or write to the Employment and Training Administration, Office of Work-Based Learning, Department of Labor, 200 Constitution Avenue NW, Washington, DC 20210. Telephone (202) 219-5577.

DCN:11697

Community Preparedness for Site Development

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INTRODUCTION

When most people think of economic development, they think of attracting an industry to their community. They think that somehow, a company chooses a community and finds a place to build an establishment. But like most things in life, the site-selection process is not that simple. A great amount of time must be spent in *preparing* for development and meeting the requirements of prospective businesses. The following story provides a useful illustration:

A Scenario

Imagine you're going to the annual Founder's Day dance. It's the biggest event each year in the community. All the right people will be at the event; people who can affect your career, people who can help you get access to the prestigious organizations and businesses of the community. Of course you will want to make your very best impression. So you go shopping and buy a new suit and a tie and a new shirt. When you get home and try on these new items you discover your shoes aren't what you had hoped. They really look dingy next to all this new stuff. So you head out to the local shoe store to buy a pair of shoes. The sales clerk greets you kindly and offers assistance. You tell the clerk you're looking for a burgundy loafer with tassels, size 11, priced in the neighborhood of $105.00. The sales clerk returns with a pair of shoes, slips one on your foot and tells you how great it looks. The problem is, it's a size 10 1/2, brown with no tassels, but at least it is a loafer. "It's the wrong size," you say to the sales clerk. "We can fix that" is the reply, "we got a stretching machine in the back." You offer a counter argument to the sales clerk: "but I asked for burgundy and this shoe is brown." "No problem" the sales clerk replies, "we got burgundy dye. We'll fix it up for you, and I just noticed these shoes are on sale for $80.00." After that last remark you politely put your own shoe back on and walk out of the store.

The world is full of informed consumers. People know what they want before they go out to make a purchase. It is now the role of the business establishment to have what the buyer wants. Gone are the days when people had little choice and had to buy what the retailer wanted to sell. Even utility businesses are opening up to choices for the consumer. The change started with telephone providers and has spread to natural gas and electric providers. No one has to select a particular item anymore. Today if you wish to successfully market a product you need to understand the buyer's wants and desires.

This reality is of particular importance to an industrial or retail firm selecting a site. Firms complete a great deal of market analysis before searching for a suitable location. In addition, firms compile detailed information regarding the cost of product. They know whether electricity cost is more important then freight cost or labor price. Prepared with a list of "must haves" based on this information, the firm's site consultant or representative begins the quest for the firm's ideal location. You can be assured that, like the shopper looking for a pair of shoes, individuals seeking a site f their firms are not about to change the selection criter because they had a great dinner at your local restaurant. Th is why developing a site is so competitive and requires great deal of preparation by community leaders. It didr work for our shoe clerk to offer to dye the shoes the rig color, and it won't work for a community when it offers change the terrain of its local industrial site. Instead, community needs to spend time long before that first visit l a firm's site-selection team seeking answers to the deta regarding the site the community wishes to promote. Tl more a community considers site-selection criteria before selects or develops a particular site for promotion, the low the likelihood becomes that local leaders will need to expla why they spent so many public dollars on a site that drawing no interest.

Unfortunately, there seems to be an urge among communi leaders to find a piece of land in or near town, find a realt to list the property, place a sign on the land proclaimi "Industrial Site" and run an ad in a site-promotion magazi announcing the availability of land for development. Mayl good fortune will smile on these leaders and a Fortune 5(firm will chose to locate on the site. More often, though, tl community goes through years of frustration trying to bui interest in the site. At more than one service organizati meeting these same leaders must explain why no one locating a business in the community. Finally the happy d arrives when, in desperation, the community finds a firm locate on the site. Once again, though, misfortune follo these community leaders because the firm locating on tl site produces waste products that discourage any other fir from locating in the area.

A happier story can be told by community leaders who to the time and energy and expended the funds necessary prepare a piece of property as a site that meets the needs future tenants.

This module's goal is to help communities prepare sites business development. We will focus primarily on indust and wholesale commercial sites. Our goal is not to through a step-by-step physical development process focuses on how to physically construct an industrial site separate module provides some of this information. It is intention instead to focus on the tremendous effort requ to lead up to physical site development, that is, the s leading up to ground breaking. It is during this time pe that many communities make expensive mistakes. development is an expensive and time-consuming ende Proper planning is critical. Bessire (1981) provid wonderful gem of wisdom: "Remember that in doing planning, education is what you get from reading the print and experience is what you get from not reading it.

Our focus is from a community perspective. Specificall discuss:

1. What is a site?
2. Is there a need for site development?

3. Some of the trends and data affecting site development.
4. Business/Industrial parks and sites.
5. What are some goals and objectives of site development, especially from the business's perspective? What are the actual steps to site development, focusing on the steps leading up to the actual construction?

---

1. WHAT IS A SITE?

Most communities in the United States can claim to have sites available for business development. Under closer inspection, these sites are usually either undeveloped open spaces (often agricultural lands) at the edge of the community or former industrial lands within the community. Both of these share a common problem: Businesses cannot occupy them without substantial infrastructure improvements.

Sites that are undeveloped are often referred to as greenfield sites. They are open spaces that are currently (or were recently) utilized for agricultural purposes. Many do not have the infrastructure needed for business development. Infrastructure refers to physical improvements such as water, sewer, storm water, communication, and other utilities. These improvements are needed by most businesses, and they are usually among the criteria a potential business will consider in evaluating potential locations. Most sites will not be considered if they lack appropriate infrastructure (see *Greenfields* in Section 4).

Sites that have been previously used for industry or other activities are called brownfield sites. Most are in central city areas and are often surrounded by mixed land uses such as residential, commercial, or public (schools and hospitals, for example). Usually brownfield sites were occupied by industrial complexes. Since older industries used multistory facilities, these sites are often on small parcels of land. Modern factories are laid out horizontally (using one story) to facilitate assembly lines and flow of products. Older sites carry the risk of environmental contamination, especially since they were most likely operated during a period of less stringent environmental regulations. Environmental contamination can be costly to clean up. Finally, older sites may still contain the buildings or other structures from the previous land use. These will either need to be demolished or refurbished (this often includes such actions as bringing the structure up to current fire, building and disability codes as well as other standards). These factors add to the cost of using brownfield sites (see *Brownfields* in Section 4).

To minimize their costs and risks, businesses will usually locate on sites that require minimum investments in infrastructure and other improvements. This usually eliminates the unprepared sites. Hence, communities that want to have successful business sites must have developed a plan for creating a prepared site. Site development is utilized to create marketable, prepared business sites.

1.1 Requirements for a Prepared Site

It is important to realize that for a site to be effective, it must satisfy the needs of a particular business. The site is constructed to improve the quality of life of a community, but it still must be a viable site to attract business. As we stressed above, a site must be prepared with proper amenities before a business will consider locating there.

Even given that business-specific needs do exist, certa basic site requirements must be in place in order for company to even begin to consider a specific site or par Most often these basics are *assumed* to be in place by a si seeker. The community that is aware of and has alrea prepared to meet these requirements will place itself at tl threshold of competitive industry attraction. These thresho requirements include the following:

Transportation and Accessibility: Industry and business are looking for proximity and availability of transportation networks for a variety of reasons, including to carry product to market, receive raw materials and inputs for production, transport employees to and from work, and to allow customers to reach the business's location conveniently. Businesses are, most often, looking for a site with interstate highway access. The type of industry and product produced may dictate additionally required modes of transportation. Heavy industry and those transporting bulk products may seek locations with rail and water access, because of its competitive cost, as well as highways. Call centers often choose locations with public transportation to accommodate employees' needs. Industries producing smaller, higher value-added products such as electronics may desire easy access to air cargo services for transporting goods to markets. Corporate headquarters seek to be close to passenger air carriers for ease of executive and management travel.

Available Labor Force: Although required skill levels and cost of labor may vary from industry to industry, the vast majority of firms seek a location with an adequate labor force from which to draw. The identification of the labor market area is most often determined by commuting patterns. Commuting patterns are determined by the length of time it takes an employee to get to work. An average of 30 minutes one way for production workers, 20 minutes one way for clerical workers, and 43 minutes one way for technical and professional workers is a normal standard. Manufacturers generally prefer to see a job applicant to job ratio of 6 to 1 so that they have flexibility in the choice of whom to hire. Another common concern will be whether or not the labor market wage rates are at a level to enhance the industry's competitive position in the world marketplace (Mullis 1998). In addition to wage rates and availability of labor, businesses will consider other crucial labor-force characteristics such as productivity levels, existing industry turnover rates and absenteeism, types and numbers of skilled workers in the area, management recruitment and retention potential, work stoppage or labor strife

history, and usage of work-team concepts among existing local employers.

Utilities: Adequate water, sewer, power and telecommunication services must be available of the quantity and quality necessary to serve business and industry. Characteristics of these systems that are important to potential employers are reliability, excess capacity that will allow for growth, and the existence of redundant, backup systems. This is especially true for manufacturers, who may make certain quality demands of specific utilities above and beyond what would usually be available. For instance, computer chip producers require certain water-quality standards in order to meet process requirements, and call-center operations require state-of-the-art telecommunications networks in order to handle their volume of customer calls efficiently.

Appropriate Land Use and Zoning: Potential employers want to be assured that the site is zoned appropriately for the type of end use projected. For instance, they will want industrial zoning for manufacturing and warehousing, commercial for office space, and retail for outlet malls. Proper zoning should already be in place, not promised to be enacted once the company commits to locate on the site. Many a project has been delayed due to the length of the normal zoning implementation process. And if citizen opposition to the zoning process ensues, the project can be delayed to the point where the industry or business decides not to go forward with the investment.

Employers also want to be assured that the surrounding area is compatible with their own planned land use. A manufacturing firm will not want to be surrounded by or even adjacent to residential property. Gaining access to the site, especially by tractor-trailers in the case of manufacturing and large-scale retail, should not require going through residential areas. It is important for employers to know when going into a community that their neighbors will not impact negatively on their business operations, and that the surrounding property owners will find their land use to be acceptable.

Ownership: The lead economic development organization should have clear site control with a stated price per acre based on the fair market value of industrial, commercial or retail property in the area. This site control can be in the form of a legal option to purchase between the organization and the property owner, or as outright ownership by the organization. Specific conditions regarding the purchase should be noted, including who pays for closing costs, surveys and legal fees, and how crop loss will be covered.

Topography and Soil Conditions: Companies are looking for fairly level sites with good drainage to eliminate standing water. Some companies look for gently sloping sites for aesthetic purposes. Wetlands are generally to be avoided, although some business parks actually use wetlands and recreational amenities as selling points for the location if these items are designed as environmental assets to the site. The types of soils and load-bearing capacity should be analyzed through soil boring. With manufacturing, the equipment used actually requires a greater load-bearing capacity than the building itself. This information should be made available to companies looking at the site.

Incentives: Companies will want to know up front if incentives are available through the community, state, or both. In many circumstances a zone must be delineated and established by the local community in order to allow tax relief within certain geographic boundaries. Establishing these programs can take time, so they should be in place before a potential employer ever contacts the local community.

In general, incentives such as grants, loans and tax inducements will not make a bad location or site into a good one. Mullis (1998) tells his clients to let them do the analysis of the site first, and then plug in the inducements. In this way they have a clear picture of how competitive the site is on its own, and then inducements can be added to enhance the deal.

Additional Studies: A Phase I Environmental Assessment should be conducted by a qualified professional in order to identify any environmental conditions that warrant further study. This assessment will look at the historical and current usage of the site as well as other factors.

A wetland identification should also be conducted to avoid the violation of wetland standards. Floodplain maps must be obtained to ensure that the portion of the site that will be built upon is not on a floodplain.

DCN:11697

A Phase I Archeological Survey may be undertaken to determine whether the site contains any areas or structures of historical or archeological significance. Identification of such assets may require further investigation. Some public funding sources may require the completion of an archeological survey.

These studies should be completed and reports made available to companies interested in the site. Identifying these site characteristics before making contact with a company will save time in the compliance process and avoid unanticipated delays and increased construction costs.

2. IS SITE DEVELOPMENT AN APPROPRIATE ECONOMIC DEVELOPMENT STRATEGY?

While this module focuses on site development, it is important to realize that not all communities will find site development to be a feasible economic development strategy. The authors recommend that each community invest resources into developing some type of an economic development plan that considers the strengths and weaknesses of the community and the residents' wishes, and that systematically develops feasible strategies. Site development can be a costly investment with no guarantees for a successful outcome. Section 5 discusses a systematic planning program that communities can use for site development. Following these steps can save time, money and controversy for a community.

It is important to realize that prospective businesses are searching for a profitable location, not just a profitable site. They consider factors other than the physical site. These include labor, education levels and proximity to suppliers/buyers. The community that best matches the business's criteria AND has a prepared site has a distinct advantage over other communities. As we stress throughout this module, the site-development process should be viewed as meeting the prospective business's needs as well as the community's needs.

Economic-development planning should include a wide consensus and involve all aspects of the community. Many communities engage in strategic planning. In the United States, many use an Overall Economic Development Program (OEDP) – a planning process developed by the Economic Development Administration to help identify potential grant projects. Whatever planning process a community chooses, it should be thorough. By working through a planning process, a community may discover several possible economic development strategies. If site development is not one of these, the community may have saved time and grief by not pursing a strategy that is inconsistent with its needs, strengths and weaknesses. If site development is chosen as a strategy, the planning process should lead to more consensus for that decision.

A critical element of planning for any industrial site is determining the capacity levels and types of industrial parks in the community's market area. There has been little research completed to determine the capacity level of all industrial sites. One estimate from the 1980s cited Eisinger (1988, 179) notes that in the United States, : percent of the land in industrial parks does not have a tena Hence, communities should survey surroundi communities to determine the capacity level of each par the size of the park, its location, and other pertinent factors.

The community can then begin to determine if there is : overcapacity of industrial space. If there is an overcapacit the community should determine why. Are the parks/sit prepared sites with appropriate infrastructure? Are the sit accessible? How long have they been vacant? Just becau there may be excess capacity in the sites does not mean th there is no need for more sites. For example, a communi may find a nearby town with several small acreage lot site another town with several sites and no infrastructure servi the sites, and yet another nearby town with a park design for research and white collar firms. Even if all of the locations have excess capacity, there still may be a need f prepared, large sites targeted for manufacturing industrie After obtaining answers to these questions, the communi can then deduce the appropriateness of site development.

Area universities, extension services and consultants oft have resources to aid in community planning. In addition, community's regional planning agency has probably do land use and comprehensive planning that indicat geographic areas of the community for industrial and oth types of development.

3. TRENDS AFFECTING SITE DEVELOPMENT

This section will cover some basic trends in the gener economy, with discussion of some specific industries. purpose is to increase the awareness of readers and to le them to investigate potential trends on their own. It important to be aware of trends in the economy as community considers site development. While the tren themselves should not dictate decisions, they should considered in the decision-making process. Awareness current and potential future needs in a particular indust may influence some local economic development strategie For example, one recent trend is a move by industries towa searching for existing functional buildings versus bare site A community could use this trend to upgrade an existi building, develop a spec (speculation) building, or choose develop a site without an existing building.

The choice is the community's, but having the necessa data can help a community make an educated decision.

3.1 General Trends in the Economy

There is much talk about the United States and the wor moving to an information economy, or a New Econom These terms usually refer to a move away from industri blue-collar jobs to service and technology oriented whit color jobs. The effect of these trends varies from region region throughout the world. The following table, fro Atkinson and Court (1998), who work on the Progressi Policy Institute's Technology, Innovation, and Ne Economy Project, provides some generic trends affecti business in general today, especially in the developed wor Additional information may also be found in R.D. Norto module "The Geography of the New Economy."

DCN:11697

Issue	Old Economy	New Economy
Economy-Wide Characteristics		
Markets	Stable	Dynamic
Scope of competition	National	Global
Organizational form	Hierarchical, bureaucratic	Networked
Industry		
Organization of production	Mass production	Flexible production
Key drivers of economic growth	Capital/labor	Innovation/knowledge
Key technology driver	Mechanization	Digitization
Source of competitive advantage	Lowering cost through economies of scale	Innovation, quality, time-to-market, and cost
Importance of research/innovation	Low-moderate	High
Relations with other firms	Go it alone	Alliances and collaboration
Workforce		
Policy goal	Full employment	Higher real wages and incomes
Skills	Job-specific skills	Broad skills and cross-training
Requisite education	A skill or degree	Lifelong learning
Labor-management relations	Adversarial	Collaborative
Nature of employment	Stable	Marked by risk and opportunity
Government		
Business-government relations	Impose requirements	Encourage growth opportunities
Regulations	Command and control	Market tools, flexibility
Source: Atkinson and Court (1998, 7)		

These changes reflect some of the realities of business today. Synopses of some major trends are highlighted below.

Impact of Technology: New and improved technologies help to restructure and reorganize the way businesses operate. Computers, faxes, and other information technologies have provided new alternatives for business. For example, telecommunications technologies (both wired and broadcast) have changed the rules of business location. Telemarketing centers can be located away from major metropolitan areas and high rent and labor costs. Likewise, computer automation changes labor requirements. While technicians are needed to design and fix complex machinery, computer automation allows relatively unskilled workers to perform machining tasks that previously required skilled labor. Both of these trends help to make business less dependent on specific geographic locations. Technology also affects how communities position themselves to retain and attract businesses.

Speed: Much of life has seemed to speed up lately, and business practices are no exception. Product development schedules, delivery systems, and most decisions have tended to speed up. Site-location decisions are also made faster than they used to be. Businesses have shortened not only the search but also the project construction schedule. Communities that have no control over land and that have not planned out the development of land will be at a distinct competitive disadvantage.

In addition, businesses will need the proper infrastructure to move products quickly and reliably.

Changes in Industry Structure: While many critics have moaned about the loss of manufacturing jobs, a closer look reveals that while manufacturing employment is down, output of goods has increased. Manufacturing industries are doing more with less. Manufacturing is still an important target for industrial attraction, but it is important to realize that in *general* manufacturing has become:

- more capital intensive
- less labor intensive
- less unionized
- less dependent upon locating near natural resources

Service-related jobs have increased in numbers during the last 20 years. While many of these jobs are referred to as "burger flipping" jobs, many are not. Some of these jobs are high tech, but many are simply

DCN:11697

knowledge intensive or nonmanufacturing jobs. Some communities take advantage of this increase by offering research parks, cooperate office parks, or lower-paying service jobs like telemarketing.

Environmental Impacts: Communities and businesses will likely face increased environmental regulation in the future, especially in the areas of output (i.e., emissions, solid waste).

Inducements/Incentives: Most companies continue to ask for incentives. These may come in the forms of tax breaks, outright grants, deferred payments, training grants or assistance, or free land. Companies are interested in reducing both costs of a new facility and future operating costs. At the same time, many people in the United States are questioning the need for using incentives, or at least questioning what their scope should be. Communities should think through their policy on incentives before offering them to industry, and they should develop a process to conduct a cost-benefit analysis (many communities utilize spreadsheet packages for this).

Role of Government: Most of the world has moved closer to a market economy over the last several years. At the same time, most communities have entered into private-public partnerships in working with businesses. Government involvement is still needed for most projects, especially site development. Local government usually provides the necessary infrastructure, provides permits and can assist in securing permits and assistance from higher levels of government.

Labor: Different types of businesses require different types of labor. Communities need to consider labor types and availability as they plan their sites. Other workforce needs should also be considered. For example, what training needs do current and future workers have? In one community in Ohio, the local vocational school (which primarily serves high-school students) opened its doors to provide welding instruction to a new area business at 11:00 each evening.

Trends in labor indicate that in the developed countries, there will be fewer opportunities for unskilled labor and more opportunities for workers with some skills. As routinized industries continue to move to less developed countries, communities may be able to utilize unskilled workers.

It is important to remember that not all jobs created in high-technology fields require advanced degrees. Many can be performed by workers with some training (i.e. an associate, two-year degree in the United States or intense vocational training at the high-school level) or even with no advanced training.

This is only a brief summary of some trends affecting si development. Readers are encouraged to collect informati on their own and deduce their own trends. Addition sources are provided in the *Other Resources* section at tl end of this module.

3.2 What a Business/Industry Seeks in a Site

There are two primary challenges facing communi decision-makers in site development. The first is f decision-makers to understand the criteria that site-seekii companies consider necessary for a site to be acceptable decision-makers can address these needs when developii their site or park. The second is to be aware what motivates company in its search for a new location so that tl community can work with it in partnership to achieve bo company and community goals. This understanding complicated by the certainty that there is no universal list site requirements guaranteed to meet the needs of industries. Each industry and each company will have certa priorities that cause one site to be more acceptable th another. For instance, warehousing and distributi companies place a premium on close proximity to intersta highways while back-office operations value state-of-the- telecommunications networks. In the world of business si development, one size does not fit all.

What Motivates a Site-Seeking Employer: Reduction of Ris Companies seeking new sites are most often motivated l the need to minimize costs of operation and/or the need access adequate labor markets. Once a community makes tl determination that industry/business attraction is a strate worth pursuing, and once it establishes goals regarding tl types of companies that would benefit the community, must clearly understand how to best develop a relationsh with site-seeking companies. The role of a community a its economic development professional becomes, simply p to reduce the risks encountered by a company when decides to locate (or expand) in a given location. Compani are looking for communities that are willing to partner wi them to reduce their risk of doing business. These risks c be organized into four areas: profit, workforce, infrastructu and timing:

Profit Risk: The substantial capital investment in structures and equipment that will be made by a company when it locates or expands must reach a break-even point and then begin to show a reasonable return within a certain period of time in order to justify the investment to the company's financial institutions and its shareholders or owners. It generally takes from 6 to 10 years for a company to begin to show a return on its investment (ROI) and begin to show a positive income stream. Even an already

DCN 11687

profit company that expands operations reduces or eliminates its existing profit until the investment is recouped. Anything a community can do to reduce the overall investment exposure of the company or reduce the cost of operations, especially in the first few years, will shorten the time to ROI, reducing the company's profit risk. Some strategies might include offering incentives such as tax inducements tied to job creation or investments in real and personal property and low- or no-interest loans for capital investments. Tax inducements and loans would help reduce the company's cost of operations.

Workforce Risk: A company must be assured that it will be able to access sufficient labor with the skills and qualities needed by its particular business. It also must be confident that it will be able to attract and retain technically skilled employees and management, positions that are often subject to a national or even international search. Communities can address these risks through long-term strategies of workforce preparation, skill development and lifelong learning opportunities through local educational institutions and schools, paying particular attention to the types of skills and competencies needed by the companies that they hope to attract or expand. Targeted programs, such as those designed to meet a particular company's training needs, should be available through local schools and colleges. Spousal employment opportunities and community quality of life will figure prominently in skilled and management employee attraction and retention, so the community should be prepared to address these issues.

Infrastructure Risk: Companies are dependent upon local services and infrastructure when they locate or expand in a community. They will need to know not only that the existing infrastructure is reliable and adequate to meet their projected needs in the present, but also that sufficient excess capacity exists for their future growth without causing stress on the community. Public services such as fire, police, and waste management must also be adequate and reliable. The community can reduce these risks by demonstrating that there is willingness to tax themselves to support needed infrastructure improvements, public services and public education. The willingness of telephone providers to continually reinvest in advanced technology is increasingly important to companies.

Timing Risk: Companies expect to be under roof and producing products 90 to 120 days after commitment to locate. This fast time frame is important for a number of reasons: First, the cost of short-term construction financing and other start-up costs are incurred without any counterbalancing income stream until the company is able to produce and sell its product or service. Therefore, it is important to be in production as quickly as possible. Second, companies want to take advantage of market opportunities and timing as quickly as possible, giving their competition as little time as possible to react. Third, oftentimes a primary customer will dictate when it expects product delivery. The community can help the company meet this timetable by having a site that is ready for construction, with all environmental questions addressed and utilities in place (or planned and committed within the time frame needed by the company).

Verification of the importance of reducing risks a therefore costs of doing business, and information on ho this impacts location decision-making, is offered by a surv of company CEOs conducted in 1994 by the Bureau Business Research at American International College Springfield, Massachusetts. Survey results indicated clear that the top factors influencing the location decisions companies were related first and foremost to ration considerations of the relative cost of doing business in particular community, and secondarily to more emotion considerations involving quality of life issues. Althou quality of life, most often defined as quality local schoo attractive housing, and recreational/cultural amenities, becoming of increasing importance to site-seeki companies, the economic basics still prevail when t decision where to locate is made. According to this surve of the 127 firms in 31 states who responded, the followi were the top factors in order of importance for choosing particular site and community:

- Availability and skill level of labor force
- Pro-business government
- Corporate income tax rates
- Good roads and transportation
- Real estate prices and property taxes
- Educational system
- Proximity to customers
- Personal income tax
- Colleges and universities
- Proximity to suppliers
- Healthy "downtown"
- Proximity to competition

The survey included 24 different business categori indicating that the consideration of basic costs in locati decisions is important to a wide range of industries. A go illustration of the importance placed on financi considerations is offered through the story of MasterCard relocation in the mid-1990's from New York City to near Westchester County. In 1993 MasterCard announced that

DCN:41697

would [illegible] a larger building to accommodate growth but stay in New York City after being offered a substantial financial package. One year later it announced that it would move to Westchester County after all, taking 550 jobs to the suburbs. "It was a financial decision," the company spokesperson explained. "We will save about $250 million in rents and other fees over the next 20 years by moving to the suburbs. It's a buyer's market for us in the suburbs" (*Business Facilities*, September 1994).

4. BUSINESS/INDUSTRIAL PARKS AND SITES

4.1 What are Industrial Parks and Sites?

Both business/industrial parks and sites are a component of the same local economic development strategy, that is, the attraction of new business and industry into the community. Without these assets in a *community's* economic development portfolio, success in luring new industry or business to an area is not likely. A community cannot "sell from an empty wagon"--it must have something of value to market to potential customers. The community must also be aware of what constitutes a marketable, readily developed site or park from the company's perspective within the needed time frame and strive to provide this if it wants to be competitive in attracting business/industry to its sites.

Business/industrial parks and sites are tracts of land specifically set aside for the potential location of more than one business or manufacturing firm. Business and industrial parks and sites provide an opportunity for a community to control and sell, on its own terms, a sizable tract of land to business and industry. They enable communities to prevent the use of industrial land in ways that are in conflict or are inconsistent with local community values and goals. Parks and sites also provide the opportunity for planned development in an organized and sequential manner.

Some parks and sites are for general business and industry use, while others may be targeted to a certain type of activity. To be successful, targeted parks or sites must have certain attributes or amenities that are necessary or desirable for the specific type of business activity to be targeted. Industry/business parks and sites should help a community reach its economic development goals. Examples of potential community goals include:

- Creating more jobs and increasing local population
- Providing better jobs for people already in the community
- Replacing lost jobs
- Replacing lost sources of income
- Producing a greater variety of jobs and economic activity
- Building and diversifying the local economic base

Source: Industrial Parks: A Step by Step Guide (U.S. Department of Commerce 1989)

Parks and sites should have, at a minimum, preliminary engineering plans for the location of utilities and infrastructure, a site plan showing the size and configuration of individual parcels within the property (which can be modified to suit an individual company's needs), preliminary environmental and historical assessments, and stated general conditions related to the sale or lease and use of the property.

This last item, the statement of general conditions, is knov as a covenant. Covenants specify what a tenant can a cannot do in the park or on the site, including possibly t exclusion of certain types of businesses and not permitti certain types of structures to be constructed on the si These covenants are attached to the deed and place leg restrictions on the property in perpetuity.

For communities without zoning, covenants can be used an imperfect substitute, although they will not remo conflicts between the geographical park area and t surrounding area. For example, a park or site with covenar but no zoning and surrounded by residential homes may st have complaints from the surrounding residents. With zoning, companies may be reluctant to locate in the park on the site for fear of conflicts with residential neighbo over noise, dust or other perceived nuisances.

The primary difference between a park and a site is siz Parks are usually of greater acreage and can accommodate number of businesses. Sites may be appropriate for only o user. A general rule of thumb of parks is that in order to economically feasible a park should have at least 25 acres size. The up-front costs of preliminary engineering a environmental assessments and, in some cases, t construction of utilities and other infrastructure are mo justifiable if allocated over a larger site with potential for greater number of end users. A private or public developer a park will want to carefully analyze the development with a cost-benefit framework to determine whether the return its investment is sufficient.

Both parks and sites can be privately or publicly owned controlled. Collaborative agreements among private a public entities, in which each takes the lead on a particul aspect of the development and marketing of the propert have become more commonplace over the past few decad Some parks have ongoing management and develop involvement, while others are independent once all of t properties have been sold.

Parks and sites can include a wide range of amenities such access to a park-owned rail spur, on-site employee trainin centers, nearby airports, or even recreational opportunitie Or, they may simply entail contiguous sites whe companies locate. In the latter case, although they a expected to follow whatever restrictions have been placed occupants of the park or site, they are on their own once t property changes hands.

The type and extent of amenities are often determined by t kind of customer that is being recruited to the park or si For instance, back-office operations and call centers w typically require an excellent telecommunicatio infrastructure while parks or sites devoted to hea manufacturing may require access to a rail line. Parks sites designed to attract corporate headquarters may inclu golf courses or health clubs, on-site services such automatic teller machines and dry-cleaner drops, a adjacent executive housing. In the intensely competiti world of business/industry attraction, amenities can serve position the park or site to specific targets once basic nee for infrastructure, available labor resources, transportati networks and location have been met.

DCN: 11697

The current trend in site selection is for businesses to look for communities having parks or sites with more stringent performance standards, which are the guidelines to which the residents of the site are expected to adhere. Higher standards help protect an individual business's financial investment in buildings and site improvements by requiring that their neighbors in a park or on a site meet and maintain the same expected standards.

Levels of performance standards can range from "none" to "advanced." The final positioning of a park or site will still be determined by community goals, market determinations, and future trends for the area, and establishing standards will help to provide controls consistent with the anticipated quality of development. Communities in desirable locations and with parks or sites that are positioned to attract high-tech or corporate tenants can use higher performance standards to attract those tenants that will provide substantial benefits to the community. These benefits include higher assessed property values, lower depreciation, and employers paying higher wage rates. The following provides examples of levels of performance standards:

> **No Performance Standards:** Heavy industrial and contractor uses with no covenants or standards. Such parks often lack paved roads or one or more basic utilities. Unscreened outdoor storage is allowed; no on-site landscaping or paving standards exist.
>
> **Basic Performance Standards**: Park accepts heavy and medium industry. Roads are paved; basic utilities are available. Truck and rail access is provided. Most buildings are metal.
>
> **Moderate Performance Standards**: Medium to light industry allowed, no heavy industry. Mixed-use park with setback requirements, buffers or limited landscaping requirements, and sign controls. Outdoor storage must be screened. Parking lots and driveways are paved. All parking is off-street, and truck-loading space is provided. Rail service may be available. Metal buildings are permitted, but facades have architectural criteria. Permanent park entrance signs and ongoing management of the park are provided for.
>
> **Advanced Performance Standards:** Strictest performance standards apply, with an emphasis on aesthetics. Zoning permits offices with light versions of manufacturing, warehousing, or distribution operations. Architectural standards are high. Landscaping is required for the entire site, and outdoor storage is not permitted. Utilities are underground and density is low; the grounds are parklike. Many newer parks are being developed as "business parks" rather than "industrial parks." A "business" or "corporate" park designation generally implies an environment sometimes called a "corporate campus" (Mooney 1997).

One of the major issues with sites and parks, especially tho in more sparsely populated rural areas where fully serv vacant land is often not available, is the propert marketability. In other words, from the business/industry perspective, how acceptable and ready for development is particular site? Sometimes a community, in its desire attract business or industry, identifies a local property that available for sale as an industrial site and begins to promo it to potential customers. In the intensely competitive are of industry/business attraction, the mere existence of a pie of land does not gain a community entree into the game locating new investment. The community must first be awa of what industry's needs and motivators are. In general, mentioned above, manufacturers need to be in producti within 90 to 120 days from the time that they commit locate in a community. This is important for a number reasons. It may be that the company's major custom requires product shipment by a certain date. Also, the cost interim financing during construction is typically mo expensive than permanent financing, which begins once t project is completed. Finally, companies are financial stressed until they are finally in operation and cash flo becomes positive.

4.2 Greenfield and Brownfield Sites

Two additional terms used to identify general types of sit are useful to define. These two terms are "greenfields" a "brownfields."

Greenfields: Greenfield sites are vacant, undeveloped trac of land that are available for business or industrial use. Th are referred to as "greenfields" because often their form usage (or in some cases current usage) is agricultu production. Greenfield sites are most often located in t urban fringe of the path of development or in rural are where undeveloped land is more likely to be present.

Greenfield sites present a number of developme advantages to locating business and industry provided th meet basic needs such as access to utilities and clo proximity to adequate transportation resources. Since th have never been used for business, industry or uses oth than agriculture, there is little danger of prior contaminati leading to potential environmental problems and expensi cleanup costs. The sites are vacant and, other than necessa site preparation and grading, are ready for constructio reducing the time needed until the company can be operation. Greenfield sites provide flexibility, allowing business either to be the sole tenant should it desire or share the site with other users.

The disadvantages of greenfield development include:

- The promotion of urban sprawl and "uncontrolle land development
- A possible lack of available infrastructure, requiri the raising of public funds to support si improvements and utility extensions
- The potential compromising of environmental sensitive areas such as wetlands or floodplains

DCN: 11697

Some site selection consultants have predicted that the development of advanced telecommunications networks in many rural or "exurb" areas may actually accelerate the use of greenfield sites because they enable business to be conducted even in relatively remote locations. Add to this the considerably lower cost of operations often found in rural communities, and greenfields can become an even more desirable place to do business from a company's perspective.

Brownfields: The term "brownfields" was coined as an antonym for "greenfields." Brownfield sites are "...unused, obsolete, and often abandoned industrial properties with known or suspected environmental contamination" (Bielen 1998). Many economic development professionals and environmentalists promote the development of brownfields as a logical, and environmentally/socially desirable alternative to greenfield development.

While they are most often an urban phenomenon, brownfields can be found in small towns where perhaps a major local manufacturer shut down years earlier. They are not few and far between. William V. Trefethen, Director of Environmental Transaction Services for Coopers & Lybrand in Los Angeles, states that "it is estimated one in eight non-residential properties in the U.S. is contaminated" (*Business Facilities*, June 1996).

There is an unmistakable logic to using brownfields for business/industry development. They help to counter urban sprawl by providing an alternative to development on the city and small-town fringe, they promote development in areas already serviced by utilities and well-developed transportation networks, and they eliminate the need to raise additional tax revenues to provide infrastructure. Since brownfields are oftentimes located in distressed inner cities or disadvantaged areas of small towns, they provide jobs for local residents and new capital investment in neighborhoods that have experienced physical deterioration over the years.

Finally, brownfield development improves inner-city properties that are at best vacant and dilapidated and at worst environmentally at risk.

On the surface it would appear that brownfield site development provides the answer to a number of environmental, social, economic and land-use concerns. However, a number of uncertainties in the development of previously used sites can render them risky and unpredictable. Included are questions concerning potential liability for contamination, costs of remediation (cleanup), the remediation process to be followed, and the extent to which cleanup is required.

If the site and buildings are contaminated, nearby ground or surface water may be affected. An environmental assessment will need to be conducted to determine the required cleanup and related costs. Remediation can involve a variety of state and federal agencies, adding to the complexity of the development and uncertainty of the outcome. Sometimes the cost of remediation exceeds the value of the property and development of the property becomes financially infeasible. The extent of the contamination and resulting expense of cleanup might not be known until the environmental assessment is completed. These assessments can be expensive, and there is no guarantee that they will identi the full extent of the expense required.

Compounding the expense of brownfield development is tl difficulty often encountered in obtaining financial assistan for site cleanup and development. According to Charl Bartsch, Senior Policy Analyst for Economic Developme at the Northeast-Midwest Institute in Washington, D.("critical funding gaps are...the primary deterrent to site ai facility re-use. The financing situation is especially gloon for start-up firms or small companies" (*Business Facilitie* June 1996). Since current law holds current and previo owners and even lending institutions liable for si contamination, banks are reluctant to become involved wi brownfield sites and developers are unwilling to purcha them.

Public and governmental agency involvement is necessary spur the development of brownfields. As of 1996, over tv dozen states had set up voluntary cleanup programs. Fifte of these were enacted in 1993 or later, so the effort of stat to address brownfields is growing. In the United States, the programs are available for any contaminated sites except f landfills, Environmental Protection Agency (EP Superfund sites, and other properties subject to oth corrective action under other federal environment programs. State oversight varies by type of site, privat sector involvement, or level of required cleanup. Cleanı standards vary according to intended use and are applied a case-by-case basis. Assurances provided to proper owners include a covenant not to sue, release of liabilit certificates upon completion and commitment to no furth action once the site complies. Five states provide financi assistance in the form of grants or loans, two states provi tax credits, and two states target existing incentive progran to brownfields.

The State of Ohio has a Voluntary Action Program that w operationalized in 1997. Under this program, a proper owner who agrees to participate is released from liabili from the Ohio EPA. However, the property owner still mu meet the requirements of the Federal EPA, and while tl release of liability guarantees that the owner will not be su in civil court, it does not prevent criminal action.

Ohio provides financial relief in the form of a 10-ye abatement of increases in property taxes due to increas property values. Minnesota's Contaminated Site Cleanı Fund gives grants for brownfield priority uses. Illinois offe a 25% corporate tax credit applied against site cleanup cos Connecticut is establishing an insurance fund to a brownfield site reuse. Some cities are testing pil brownfield programs in which they take control abandoned, tax delinquent properties and develop them for predetermined purpose.

One interesting trend with brownfields is that they are oft being transformed from their original manufacturing use commercial, retail or even residential use. This has tak place because inner city sites often do not offer adequa access to interstate highways for tractor-trailer traffic, ai because it may be necessary to assemble a number contiguous sites to provide the size needed to accommoda a manufacturing facility.

DCN: 11697

In terms of brownfield site development, the future is optimistic. Increased government involvement in financing and relaxed regulatory requirements, coupled with the growing willingness of developers to consider the potential value of these properties, is leading toward their productive reuse.

4.3 Types of Parks and Sites

Business/industry parks and sites can be divided into three major categories: commercial, industrial and retail. Commercial sites accommodate such uses as back-office operations, corporate headquarters, and research and development facilities; industrial sites accommodate manufacturing and warehousing and distribution; and retail sites include outlet malls. Each of these end users has its own priorities and standards for site characteristics and amenities above the "must have" basics identified above.

Commercial Parks and Sites

Since 1960 the number of American workers employed in the service sector has grown quickly, while the number of workers engaged in manufacturing has remained constant at about 20 million. A traditionally negative bias has existed toward service-sector jobs, primarily because they are perceived as low pay, low skill, and not bringing much benefit into the community. The 1990s has witnessed a reevaluation of service-sector employment in the recognition that it includes such high-paying and growing business sectors as the medical and insurance fields, providing good jobs plus a countercyclical balance to manufacturing sector swings. Now many communities have based their economic development goals on attracting these types of industries, and are developing sites and parks to meet the required criteria for these companies.

The following is a sampling of types of commercial ventures that have become especially sought after by communities over the past decade. Some of these represent opportunities that were unheard of even ten years ago, but due to changes and advances in the field of telecommunications, customer service, and due to the push to cut costs and manage business in a "leaner and meaner" style, these advances have become a way of life for corporate offices.

Call Centers and Back Office Operations: The term "call center" is generic for "operations which use the telephone to support marketing, sales and service functions, from reservation or order taking to providing in-depth technical assistance" (Tangeman 1995, 27). Call centers have become a $650 billion industry in the United States, employing over 4 million workers to meet consumer's demands for immediate information and product ordering resulting in over 60 million calls per day to toll-free numbers (King 1996). Call centers are becoming an ever-growing industry also in Europe, where the top markets are Ireland, Denmark, Belgium and Holland. Ireland and Holland, in particular, have actively positioned themselves to attract call centers by implementing changes in their tax structures, investing in technology, reducing tariffs, and promoting a young, qualified workforce adept at customer service. In Europe, Ireland is the country of choice, with many world-class companies such as Gateway 2000, Dell Computers, Best Western International, and ITT Sheraton setting up operations for customer inquiries, technical support, product sales and order processing (Tangeman 1995).

Companies wishing to establish call centers look for the same site requirements whether that site is in Europe or North America. They look for a region with an available labor pool with the needed demographics, low-cost leaseable space, a reliable telecommunications network, and a favorable tax climate. Other criteria such as community receptivity and incentives for economic development are also included in site evaluation. Areas with a likelihood of severe weather conditions are avoided because of the danger of communications disruption and employee absenteeism. These weather conditions affect not only the far northern climates but also southern ones that are prone to freezing rain (freezing rain causes damage to suspended telecommunication lines and disrupts vital service).

Labor demographics weigh heavily in the decision-making process because of the number of employees a call center needs and the characteristics it desires. Since call centers are usually large employers, operate twenty-four hours per day and experience high employee turnover rates due to the nature of the work, larger companies look for communities that have a sizable, transient labor force such as that found through universities, a large retirement community, unemployed homemakers, or the military. Smaller companies often look for more rural communities where the turnover rates and wage competition are low. Both large and small companies prefer locations with few or no other telemarketing operations so that there will not be upward pressure on wages and competition for available labor. Amenities designed to meet employees' needs, such as secure parking lots, nearby restaurants, and public transportation, will also help sell a site.

Back offices are facilities that provide supportive services for a company's main administrative and management functions. They are usually in a more remote (and lower cost) location and connected to the corporate headquarters through a state-of-the-art telecommunications network. Back offices are used frequently by insurance and financial services companies to support customer service and product promotion

DCN:11697

needs. Citibank, for example, established a credit-card back office in Las Vegas in 1993, beginning a boom in facilities of this type in that city. Las Vegas had the right mix of labor demographics, telecommunications infrastructure, affordable housing, and absence of state and corporate taxes, and it was located in the Pacific Time Zone. What finally paved the way for the Citibank development was legislation pushed by the governor of Nevada to change the usury rate. Citibank started with a 500-employee facility, and it grew to a 24-hour operation employing 1,900 people by 1997.

Very similar site and community requirements exist for back-office operations and call centers. Both call centers and back offices rely heavily on telephone and telecommunications networks in order to conduct business. Communities that decide to target these operations in their attraction efforts must first be sure that they have the state-of-the-art network capable of meeting these company's needs, including fiber optics, all-digital switching, and system reliability and redundancy. The major concern for back offices and call centers is that the telecommunications network is reliable, and that there are sufficient back-up systems in place for the network to avoid disruption of service. Both call centers and back-office operations are increasingly moving toward renting and modifying existing space as opposed to buying or constructing their facilities. Sites that seek to attract call centers and back offices need to be able to have available buildings that will meet those companies' needs.

Call-center and back-office attractions have been used by some rural areas as a strategy to counteract the loss of manufacturing and natural resource-based jobs such as those in coal mining and agriculture. The far western tip of Virginia provides an example of such an area. There, the coal industry had provided high-paying jobs for generations of residents. But after the steady decline of the mines that began in the 1980s, economic development leaders began to turn to other strategies to improve the employment base. The Virginia Coalfield Economic Authority, encompassing seven counties in the region, helped spur investment in a superior telecommunications infrastructure that rivals those found in metropolitan areas. Combined with the pool of available labor and customized training programs, this region has been successful in attracting a number of teleservice firms.

The State of Iowa's concerted efforts to attract call centers and back-office operations is a direct result of two trends facing the state's important agricultural industry. The first trend is the increasing mechanization of farm production, resulting in fewer jobs in agriculture. The second trend is the need for off-farm income opportunities so that farm families can survive economically. Iowa's program has been a success; over 20,000 state residents have been employed in call-center and back-office operations since Iowa began its attraction efforts in 1990. Many of these employment opportunities involve part-time work, ideal for those farm families seeking supplemental income. One example is APAC, a large telemarketing company that employs over 4,000 Iowans in 30 offices throughout the state. These offices provide services to clients in the insurance and package-delivery industries and use a "hub and spokes" arrangement for statewide operations, characterized by central offices in sizeable cities, with supportive satellite operations spoking out in smaller towns. This type of arrangement provides both direct and indirect benefits to the smaller towns. The direct benefit is in the form of new jobs. The indirect benefit occurs because APAC's spoke operations are typically located in vacant downtown retail space where APAC's telecommunications needs can be met. The presense of spoke operations helps to revitalize the central building district in the towns in which they locate. Iowa is unique in that there are 150 independent telephone companies in the state. These companies typically reinvest their profits into advanced telecommunications technology. The combination of a solid educational system and an educated labor force, and state of the art telecommunications infrastructure, has enabled Iowa to position itself to take advantage of the growth in these types of industries. Iowa was also proactive in establishing a tax structure attractive to the telecommunications industry. Data-storage computers are not subject to sales, use or property taxes; intrastate telephone calls are not taxed; and revenues from customers outside of Iowa are not subject to the state's corporate income tax (Bastian 1997).

Corporate Headquarters: Few corporate relocations take place in any given year. Larger cities can benefit when relocations take place by making themselves aware of a company's reasons and criteria for relocation. The decision where to locate is one of the most strategic a company will make, impacting directly on its ability to be successful in the global marketplace. The most common reason given by companies for relocating their corporate offices,

DCN:11697

According to Gene DePrez, a partner with the site location firm Fluor Daniel, is to establish a facility from which they can operate internationally. "Today, companies considering a move usually do so to establish a more global presence," he says. "But in doing so they must think through the issue of identifying where those markets are that work for them." Cities such as New York, Chicago, Atlanta, San Francisco, Washington D.C. and Los Angeles have traditionally been sought as corporate headquarters locations because they offer high visibility and global presence. But these favored cities no longer have a lock on corporate headquarters; companies are finding that advances in telecommunications provide the ability to conduct business just as effectively from "second tier" cities. The smaller cities may provide a more strategic location for a company's operations as well as offering lower costs of doing business.

Important site/park criteria include access to a quality, talented workforce, proximity to airports offering excellent domestic and international connections, cost of doing business, operating environment, and quality of life. Many corporations today conduct an international search for top management and professional positions. In attracting and retaining this talent, quality of life issues such as affordable housing, excellent schools and access to higher education, cultural and recreational amenities and shopping all play an important part.

Real estate is generally a corporation's second largest cost (after labor), according to Arthur J. Mirante II, president and CEO of Cushman & Wakefield, Inc. Cities with lower real-estate purchase costs and office-space rental costs fare better in the corporate relocation arena. Real-estate costs in the United States are generally a bargain compared with those of international cities.

Access to airports with excellent domestic and international connections is necessary to save time and cost to transport employees from one company location or customer to another. Operating-environment considerations include the receptivity of municipal and other local governmental entities, a pro-business attitude, access to ancillary services such as banking, law firms and advertising, nearby research and development facilities (especially true for high-tech/biotech businesses) and, in the case of a corporate park, nearby or on-site amenities such as recreational centers and/or golf courses, day care, ATMs, nearby executive housing and restaurants. Ease of access to the park for employees and advanced data and communications technologies including high-speed data transmission systems such as ISDN (Integrated Services Digital Network, which is four times faster than analog modems), videoconferencing, and network integration are assumed.

High-Tech and Science Parks: High-tech and science parks are specialized parks that cater to businesses and enterprises involved in research and discovery. Many of these activities are traditionally centered near research universities and typically require large capital investments. Research parks are closely related to high-tech and science parks. According to Zimmerman (1995, 74):

> Science parks ... physically bring together research organizations and entrepreneurial companies. They provide rental laboratory space, overhead functions such as secretarial support and conference rooms, information access such as technical journals and an Internet domain, all in an attractive campus setting. Thus small companies can save money by sharing these R&D functions.

Research parks began in California in the mid-1900s. They have spread throughout the United States and the world, now numbering over 400 worldwide with some 150 in the United States (Giunta 1998, 5). Many of these parks have taken decades to fully develop.

Research, high-tech, and science parks are highly specialized sites that are not feasible in many communities. Each community will have to assess its attributes to determine whether these types of sites are an appropriate option.

Industrial Parks and Sites

In general, industrial sites and parks are those targeted meet the needs of manufacturers, ranging from basic to lig industry or high tech, warehousing and distribution, a research and development. Beyond the "must have outlined in the introduction to this module, the si requirements of manufacturers will vary according to su factors as type of product, production process, worker skil needed, product delivery methods, and location of maj customers and suppliers.

Warehousing and Distribution: Companies seeking to locate their

DCN:11697

distribution facilities begin by identifying the region that makes the most sense in terms of where their customers and suppliers are located. Once a region has been identified, other site factors will come into play, in particular available labor, tax structure favorable to shippers, and overall favorable business costs.

The importance of proximity to suppliers is particularly true for just-in-time manufacturing environments, where companies maintain minimal inventory and require suppliers to deliver frequently and quickly. In the auto industry when a manufacturer locates in a community, suppliers are not far behind. Witness the example of Honda Motor Company in Marysville, Ohio, with many suppliers locating on suitable sites in small towns within a two-to-three hour truck haul from the main plant.

The type of industry and how it chooses to move its product determine the type of transportation network that a company will need. The relative cost and speed of delivery of the different alternatives will be weighed against delivery-time needs and value of the product. The vast majority of manufacturers, no matter what they produce, will want access to the interstate system for tractor-trailer hauling of products. Beyond that, manufacturers who use bulky raw materials, such as refractory producers who use bulk minerals, or those who use containerized shipping for eventual export, may require rail service on site. Barge transportation is the least expensive form of transportation, and it is needed by some producers of bulky, low-value products such as coal and ores. Companies producing time-sensitive products that need to reach the market quickly or that produce smaller, highly value-added products, will seek excellent highway access and proximity to airports for air cargo transport services.

Retail Sites

Many communities are interested in commercial sites. These can be sites for individual users, like mass merchandisers (i.e. Wal-Mart) or strips of several shops with one or more anchor tenant. Some rural communities with highway access and nearby population centers are prime locations for retail outlet centers. If communities have the right location and amenities, they should consider the potential benefit of commercial development.

5. DEVELOPMENT OF GOALS FOR PARKS/SITES

It is imperative for a community to develop clear goals and objectives for industry/business parks and sites before it begins planning and implementation. To fail to come to agreement on expectations and desired outcomes of its investment is one of the most serious mistakes a communi can make because it is likely to jeopardize the long-ran; success of the park or site venture.

As discussed before, parks and sites are frequently cornerstone of a community's economic developme program. Therefore the goals for park/site development a economic development are often one and the same. general, these goals are to increase wealth in the communi through the attraction of new employers and to expand t number of existing employers. Beyond these basics, ea community brings its own particular desired future a existing capabilities and assets into play when determini parameters within which to accomplish their goals. A varie of different strategies can be used that will be consistent wi the values, priorities, and goals of a given community.

Each type of business or industry cluster brings with certain identifiable benefits and certain known requiremen Some industries will help a community reach its goals whi others, although perhaps "glitzy" or prestigious, may not. community should determine, up front, whether or not business is compatible and how much the community willing to invest to design a site to attract certain kinds businesses.

Some community's goals may revolve around expandi and/or restructuring the local tax base, leading to a busine attraction strategy. Such was the case in Fairfax Coun Virginia, where the community determined that it wanted expand the local tax base, increase property values, a gradually shift the burden of taxes from residential commercial and industrial properties. In 1979 the proporti of nonresidential tax base was 12%. The Fairfax Coun Economic Development Authority adopted the goal increasing that proportion to 21% by 1985 through high-te business attraction and appropriate site-development effor The program was highly successful; it led "Between 19 and 1985 [to] ... a shift from 12 to 25% nonresidential t base, a 10 percent reduction in the overall real-estate tax ra an expansion in public services, fiscal stability, and an AA bond rating" (Kotler, Haider, and Rein 1993, 234).

Other communities, perhaps those with high unemployme rates and low-skilled workers, may adopt a strategy developing sites suitable for manufacturers that they know be labor intensive but not in need of a highly skill workforce, such as food-processing firms. The industry si requirements that the community would have to me probably include large quantities of water for production, available wage-competitive workforce, and access to t interstate highway system.

Still others may see benefit in offering sites that will attra outlet centers, with the goal of building a substantial sale tax revenue stream for their county and providing substantial number of retail jobs. Such was the case in t small Ohio town of Jeffersonville, which attracted two maj outlet malls within a year. The Village's strategic location Interstate 71 halfway between, and an hours drive to, t major population centers of Columbus and Cincinnati set t stage. The community then enhanced the attraction offering flat, large sites with all utilities and visibility fro the highway.

DCN 1697

Finally, some communities may seek a specific category of business to attract, such as those who are environmentally sensitive, high-tech, and supportive of travel and tourism efforts. There are as many different alternatives as there are communities and their goals.

It is important for each community to develop its own economic development strategies based on an honest analysis of its situation. If site development is deemed necessary, a community should begin the process of site development.

5.1 Developing a Site

The following process and criteria provide general guidelines to assist community officials and leaders in evaluating the ability of their communities to meet basic foundations required for the creation of an industrial site. This three-phase process begins with investing the time and energy of leaders and officials before expending financial resources necessary to complete the site development. Phase I requires the completion of a feasibility assessment. The second phase introduces consultants into the process through the completion of an engineering study. The final phase involves the development of a market strategy.

5.2 Community Feasibility Assessment

Knowing the Community

Previously we discussed the various types of sites that are available. Each type of site listed has not only physical requirements uniquely its own but also operational demands unique to each category. For example, the location factors for a retail outlet center are different from those for an industrial manufacturing firm. An outlet center will seek sites near major population centers within a region to increase the number of potential shoppers willing to travel to the center. To ease the travel for the desired shoppers and to increase visibility of the center for traffic passing by, outlet retail centers will seek locations adjacent to interstate highways. Industrial firms are also interested in interstate highway use but do not need to be adjacent to the interstate.

Usually they will be content within a ten-mile radius of the interstate. In addition, industrial firms do not need to be near major population centers to attract customers. Their need is to be near the quality of life amenities demanded by the particular workforce necessary for the firm to produce a quality product. A rural community two hundred miles from a major population center with access only through winding narrow two-lane roads would not compete very well for an outlet retail center. Of course, the day may come when that same rural community is able to compete for an outlet retail center, but it may be many years before a four-lane highway is constructed near the community and even more before it is near a major population center. By the time all that happens the owner of the development site will have lost interest and given up on the idea. It is not in the best interest of a community to try and re-create the economic personality of a neighboring community, no matter how economically secure that community may be. Instead, it is much wiser for a community to access its own economic uniqueness and to capitalize on the corresponding potential.

To discover its economic uniqueness a community needs begin by getting to know itself. Individual members of community assume they know the community, but the awareness is usually tempered by their daily experiences a the awareness of limited community data necessary relat to their particular activity. What is needed, however, is composite picture, which can only be obtained through t involvement of numerous residents, agencies, businesse organizations and political jurisdictions. Each communi has a great deal of current data and public opinion t community needs to acknowledge to begin the process site development. Each community will also need to se additional information through new inquiries such as surve and focus-group sessions. The list contained in Exhibit (see Other Sources at the end of this module) is suggested a minimum database for assessing a community's econom personality.

The gathering, dissemination, review, and discussion of t information will help a community get to know itself a establish its unique economic personality. The difficult p is to accept what the information says. A community m not like what the information says about our community, b neutral site-selection representatives will use this san information to determine the appropriateness of community for their projects. If local leaders wish increase the potential for successfully developing a site, th too must listen to the information gathered and create a si which meets the needs of the particular firm ideally suited succeed within the community. Both the ability understand the potential of the community and findi access to information will be enhanced by including vario partners in the review process.

Putting Together a Task Force: Who Should be Involved?

For many communities a quick and simple solution determining who should be involved in assessing, planni and creating a development site is turning to the people w are going to cover the costs. Often communities retain professional development organization to bring community officials a plan for site development. Wh communities do this, community officials see their role ensuring that the plan meets the various requirements of si development created by the community. These san officials have shifted the burden of financial risk away fro the residents of the community to a knowledgeab professional organization. This is indeed a reasonab method to use for site development, but it may be prematu at this stage of the process.

Sometimes, like our example indicates, individua interested in creating a development site (Site Initiators) m be the same persons who are going to finance the effort. other circumstances these individuals may be communi leaders who feel there is a need for the creation development sites. Regardless of who the initiators are, development strategy must involve the various organizatio needed to make a long-term project successful because t community's decision will affect not only the community general, but also each independent organization's futu After all, what is being developed is a project that will part of the community for decades. Surely the community not seeking companies that will exist on the site for a fe years and leave. Likewise a business is not seeking a si

DCN 11697

within a community where it will only operate for a year or two. It is not unrealistic to imagine that firms locating on a site will operate there for fifty or more years. And even if there is turnover of firms on the site, the location will continue to be part of the community's personality long beyond any individual firm's absence.

Therefore, a task force should be created to manage the process of completing the feasibility study, moving through engineering the site and developing a marketing strategy. Numerous other actors need to participate in each stage of the process on a short-term basis dependent upon their particular expertise. The task force's role is to manage the process by gathering information, bringing the information obtained to the organizations each member of the task force represents, communicating to the task force as a whole reactions obtained, making the final decisions necessary to move the project forward, and finally, physically completing site development.

Individual members of the task force should represent organizations whose acceptance of the site-development effort is crucial to the successful operation of the site. Of course the particular makeup of any community's task force will be unique. As a start, however, the following organizations should be represented:

- An elected official from the affected political jurisdictions where the proposed site will be located
- The local economic development office
- Representatives from area utility companies actively promoting sites
- The local engineer (may be county, municipality or contracted firm)
- Planning organizations with jurisdiction over the project
- Local business organization such as chamber of commerce
- Local employment agency (may be public or private)
- Representatives from affected neighborhood groups

There will also be technical expertise required at various stages of the process. For example, while a particular utility organization that does not promote site development would not be a member of the task force, it will be involved for short periods in the process. A case in point may be a municipal water department that will be needed to generate ideas and review decisions regarding water usage.

A helpful approach that the task force could employ to complete the feasibility study is to encourage a collaborative technique. Basically, a collaborative technique is based on the belief that the persons or organizations who have authority to make the final decision, are affected by the final decision, or can block the implementation of a final decision should be included in the planning stage of a development project. Including people and organizations at the beginning of the process will help them recognize more quickly that they are involved in the design of the project. This early recognition should lead to an easier acceptance of the process. A collaborative technique involves gathering information, listening for reactions, seeking alternatives and performing evaluations so the task force can make a fin decision.

Put into operation, the collaborative technique requires tl task force to check with appropriate individuals ai organizations before moving forward. This plan-and-chec for-reactions method begins when the initial task for designs the process for developing an industrial site. Aft the task force discusses some ideas, individual task-for members take these ideas to the organizations and grou they represent and other groups or individuals who acceptance of the project is needed. Each task force memb gathers reactions and brings this information to the ne gathering of the entire task force so the process designed c: be adjusted to meet the requirements for participation ai acceptance by key individuals and groups. The task for may need to go out again and gather more reactions befo finalizing the design process for the site project. Likewis the task force uses the same method when it works thou the educational, analysis, idea generation, evaluation of ide and decision-making phases of the site-development projec

The task force may also at times contact individuals ai organizations for thoughts even before the task force desig a particular phase of the collaborative process. It is al appropriate to bring particular individuals into task-for meetings to actively participate with task-force members the creation of each phase of the process.
Critics of a collaborative technique may raise the issue th going to so many individuals and groups throughout tl development of a site will lengthen the time it takes to get construction. Fortunately, the opposite is true. Tl collaborative technique actually leads to earli implementation of a project than linear-planning processes.

Linear-planning processes focus on the solution to a proble rather than agreement on the problem itself. Using the line process, task forces move quickly through the planni phases of a project. A collaborative technique takes mo time in the planning phase because of the inclusion of a appropriate people and groups. However, a collaborati technique makes up time because a demanding process is n needed to sell the ideas to those whose approval is requir for adoption of the plan. Take, for example, a developme corporation that purchases a piece of land as an industri site recognizing that there is the need to obtain a zoni change. This corporation has spoken with the loc development and zoning offices, plus a few municip council members, and it feels fairly secure that the chan will be granted. But the zoning change process requir opportunity for neighboring property owners to react in public hearing process to the zoning change.

Since no one has bothered to discuss the project with the neighbors, everyone is surprised when a few of the neighbors bitterly disagree with the need for the zoni change because they have discovered that the communi does not have enough excess water capacity to meet tl project's needs. They may even disagree bitterly enough take a decision made by the zoning board and council to courtroom setting, thereby lengthening the adoption of th project. This difficulty could have been avoided if someo had included the water department and adjacent landowne in the planning phase of this project. Including all affect

DCN:1697

parties in the design of this site development from the beginning would have increased the potential for ownership of the project.

Even if the development corporation solves the water issue, it still has lengthened the time required to reach the implementation phase of this project. People must agree on the problem before they can agree on the solution. Collaborative techniques encourage such agreement because issues are problem-focused instead of solution-focused.

Setting Goals and Objectives: The Task Force at Work

"What this community needs is more industry so people have money to spend with the downtown merchants," says the owner of the local hardware store. "People are tired of driving to Center City to get new appliances," says the town mayor. "What we need is a shopping center so we can attract an appliance dealer." "I am concerned by the youth of this community," adds a minister. "Someone needs to open a recreation center for the youth of this community."

" I agree," says the Parent Teacher Association (PTA) President, "and it wouldn't hurt if we also had a theater that ran recent movies instead of those old ones we get in this town." "My father and I have been in this community providing jobs for nearly forty years now and we need better freight centers for shipping our product if we are going to be able to continue to operate in this town" says a local industrialist. "My son and daughter grew up in this town but had to leave because there are not enough jobs for college-educated youth; we need a commerce center so we can attract insurance and banking firms," volunteers a senior citizen. This may be the scenario at a the first task-force meeting on site development.

Each of these people is probably correct about the community needs. An industrial park, a commerce center, retail center and the supporting entertainment activities of a recreation center and theater would enhance the comfort of living in their town. But where does a community start? Which of these activities comes first, or do they all happen at the same time? Each goal seems to foster and depend on the other. Where does a community begin, particularly a community with limited resources that cannot afford to place these resources in an unsuccessful project? Solving such dilemmas is the reason for gathering information about a community and establishing a representative task force and inclusionary planning process.

As the community works towards setting goals and objects it must begin by analyzing the information gathered about the community and comparing this information to the requirements for each of the types of sites listed previously in this document. By matching the community's economic personality to the type of site requirements listed, the question of where to begin will be resolved. The community wants to make sure it can meet the minimum requirements of a particular type of business before embarking on costly site-development investments. Very few communities in this world will be able to meet the needs of a particular type of site without further investment of valuable resources. It is most likely true that any community can establish an attractive industrial park. But will a community that must build a new water treatment plant, expand roads to interstate standards, add new educational programs in local schoo and provide millions in training incentives to a compa ever recapture its investment? Or would this san community be better served by investing in the extension a service road to a site attractive for retail development th can provide jobs for recent high-school graduates and p additional sales-tax revenues to the county general fund?

Then perhaps the county could dedicate those increas general fund dollars to improvements to the local wat treatment plant and highway expansion. Both of the actions lead to future attractiveness of the community as industrial site. Communities may well need to ma incremental changes that lead to long-range goals a objects. Increasing the potential for success of a si development project, regardless of the type of developme will lead to long-range acceptance of development effo because residents and leaders can see success coming fro their efforts.

One final effort must be completed by the task force befo setting the objective of which type of park to develop: must discuss and set goals. The words "goal" and "objectiv get confusing because people usually use the t interchangeably. A goal is simply the end to which an eff is directed. In our example, a goal would be to provide jo for high-school graduates. Another goal would be to increa property-tax revenues. A third goal may be to create jo that provide full-time employment with health benefits. Once a task force has all its goals established, it can set objective. The objective is what it will do to achieve goal(s). If it uses the three goals listed above, the task for may determine that an industrial park targeted towa warehousing operations is the objective.

Let's continue this discussion by walking through the ste of the community feasibility assessment as outlined thus f The process begins with a few individuals wanting to crea some type of development site for economic enhancement the community. These individuals establish a developme task force. This task force begins determining what type site to develop by gathering information about the histo and existing community condition. Once compiled a distributed, this information is discussed to obtain economic personality profile of the community a surrounding region.

From the economic personality profile the community c understand its present economic contribution to the area. L us imagine a community with the following characteristi based on its economic personality profile:

- Seventy-five percent of high-school graduates do n go on to any post-secondary education
- The local secondary technical training institution h received national recognition for the quality plastic molding machine operators it graduat Eighty percent of these graduates leave t community to find employment within their areas expertise
- The area wage/benefit cost within the manufacturi sector is 90 percent of the state average
- The community is served by freight haulers, whi are operating at 82 percent of capacity

DCN: 11697

- Housing cost in the community is 26 percent below the average statewide cost of a home
- The community has four-lane access within 10 miles of the national interstate system
- Both the water and wastewater systems can increase their daily operations by 42 percent
- Electric service to the community has been interrupted in recent months, but the electric provider is willing to upgrade the system by improving substations if a large user is contracted for services
- The local property-tax base is 15 percent manufacturing, 40 percent retail, 20 percent agricultural and 25 percent residential

Based on this information a community, through the development task force, sets the following GOALS:

- Provide employment opportunities for the graduates of plastic molding training
- Support the efforts of the local technical traini institution by establishing working partnerships wi area employers
- Provide property-tax relief to the retail a agricultural sectors
- Increase wage level within the community

Now the decision remains to set an objective using t various site-development types: commercial, retail a industrial. Based on the goals established by the communit it makes sense to set the development of an industri manufacturing site as the objective. Since the community h been involved throughout the entire process, these goals a the objective necessary to reach the goals should be mu easier to sell to the decision-makers of the community. side benefit of the decision makers' acceptance of the goa will be the long-term understanding of what the communi is trying to accomplish by this industrial site project. Th understanding will most likely mean a continu commitment by the community to the industrial site proje which will certainly impress firms that may want to loca on the si

FEASIBILITY STUDY STEPS	
Action	Purpose
Initiators	Present opportunity
Create task force	Manage feasibility study process
Discover community economic personality	1. Gather and disseminate data 2. Analyze and compare to business needs
Set goals	Define community benefits of project
Set objective	Selection of particular site or park
Site availability	Select appropriate sites for engineering study phase

Site Availability

A final step in the community feasibility assessment process is to determine whether there are potential sites available for development. In our example above, while everyone in the community may support the development of an industrial site, their commitment level may change if the site is placed in their neighborhood. Likewise, the selection of a location that conflicts with other goals and objectives held by supporters might also lessen their commitment to the effort. For example, if a large tract of productive farmland is chosen, particularly if it destroys the pastoral beauty of the community, it may cause some individuals who support the project to be forced to choose between competing goals. In the case of using prime farmland for industrial usage, the individual may be forced to choose between his or her support for maintaining the agricultural sector of the local economy and support for increased job opportunities for technical-school graduates. Additionally, the industrial site may create additional off-farm jobs and allow some farm families to continue farming.

At this point the development task force is not finalizing a particular location for a site. A lot more technical information must be gathered before a final location is determined. Instead, the job of the task force is to narrow down the potential locations to the most realistic options. Potential site locations will be nominated for a host of reasons. Maybe the mayor's brother-in-law is havi financial difficulty and needs to sell land. Perhaps a leader the business community speculated on a piece of proper thinking that someday an interstate highway was going come past the location. Or maybe the organization th decades ago developed the last industrial site has a few acr remaining to sell. Of course there will also be numero folks who just know they can get 10 times the value of th property. What is a community to do with so many interest and influential sellers?

The answer lies in addressing the needs of the buyer, whi is, of course, the firm that is ultimately going to locate on t chosen location. But since the community doesn't know t particular firm, it needs instead to use some guidelines th have a high potential of matching those set by firms seeki a location. The following is a list of guidelines for locati selection that a community may want to use to evaluate t potential of proposed locations:

Zoning: Is the proposed location properly zoned for its intended use? If not, what is the potential for re-zoning the property to fit the designated use? Even if the property is correctly zoned or could be, does the proposed use fit with the existing uses of neighboring property? For example, even if

DCN:11697

a location is zoned heavy industry, is it appropriately zoned when all the surrounding parcels are used for retail purposes?

Topography and Soil Conditions: Does it appear that the future tenants will not need to do much excavation or site work to make the location suitable? Is the site in a floodplain? Is there some slope to allow for surface drainage of water? What is the soil makeup of the location? Are there sufficient soils to allow for compaction, or will the developer need to haul and replace topsoil?

Size and Shape: A rectangular site is preferred based on the particular use since this allows options for laying out building dimensions, parking lots and delivery methods. In addition, the trend has been toward larger firms purchasing larger acreage than the project needs because doing so allows for future expansions as well as creating a well-landscaped site.

Highway Access and Traffic Patterns: Is the location close to major transportation routes? Can the firm route its trucks away from residential usage, thereby reducing noise levels for residents? Are there any difficult turns or points of traffic congestion that make it difficult to operate tractor-trailers.

Utilities: Are utilities such as water, wastewater, electricity and natural gas available near or at the location? Are the mains serving this location adequate for providing service to the site? What is the per unit users' cost if competing suppliers are within the community? How is storm drainage to be handled?

Ownership: Who owns the location? Is the owner willing to sell, and if so can an option be obtained in order to set the price per acre? Is the price within a fair market value for the particular proposed usage? If the location is being used for agricultural purposes, who pays damages to crops?

Environmental Concerns: What was the previous use of the location? Was it used for a purpose that had the potential for environmental contamination (known as a brownfield)? If so this could lead to costly cleanup costs or even denial of financing by financial institutions. Is the location known as a historically significant site? Are there any visible signs of wetlands? Is the site in a floodplain?

These seven factors are very preliminary in nature. Ea factor can be reviewed without the assistance of a consulta and will lessen the time spent by a consultant during the ne phase of site selection. Remember, the goal in the feasibili study is simply to determine which of the proposed locatio have the greatest potential for future development and what cost. To determine the final location, the communi will need to select a consultant to perform technical analys appropriate to the particular site usage.

5.3 Site Engineering Study

By this point the development task force (working in conce with the community leaders and residents) has decided tl appropriate type(s) of site for the community and narrow the potential locations to a few attractive alternatives. Tl resources necessary to move the project ahead have been tl time and effort of interested individuals, groups ai community officials. Of course there also have be financial expenditures for materials, information distributio travel and meetings. Hopefully, most if not all of these cos have been covered by in-kind contributions from tho organizations and political bodies involved in the effort. B now comes the time to expend some funds for consulti assistance. Engineering assistance is needed to determine tl best site and to prepare information that a potential firm w need to decide the appropriateness of the site for its project.

Professional engineers bring the ability to view the proje from an objective universal image. They should ha experience working in other communities in the region ai can help the local community understand the bas requirements regarding utility and layout issues to competitive in the search for tenants. Consultants also bri the ability of a specialist to present alternatives that w meet the overall objectives of the project. These alternativ may not have been thought out by those who daily opera local facilities. For example, the local water departme staff, while it may do a fine job caring for the efficient safe and delivery of services to the community, usually does n have the opportunity to gain detailed understanding alternatives. Therefore, the contracting for the services of engineering consultant will actually lead to the savings cost for the project since there are few if any sit development efforts that do not have deficiencies that ne to be addressed.

A community in southwest Ohio can serve as an example this principle. For years the community had promoted a si owned by a local land speculator. Finally, in the mid-198(the site attracted the attention of an industrial prospect. was located on a national highway, close to utility lines ai near the existing industrial park at the eastern edge of tl town. In addition, it was rectangular, with level topograpl of sizeable acreage.

The community had not invested any funds in completi engineering studies but was fortunate enough to have manufacturing firm interested in locating in the communit Local officials were excited that after years of waiting th at last were working with an industrial firm that had includ its community on the list of the final three communitie Before selecting the final location, the firm want additional technical information, specifically soil-te borings on all the final sites, to be delivered within ten day

DCN:11697

The community found $3,500 and a soil sample company that could give a report within the allotted schedule. The results narrowed down the options of sites that would fit the needs of the manufacturing firm. Unlike land used for growing crops, a manufacturer has heavy equipment that requires a solid foundation, such as clay.

Though topsoil is great for increased harvests, it is something that needs to be removed to get to the clay base for a manufacturer. In addition, water on a site is great for the root systems of crops but does not lead to a stable foundation for machinery. The results of the soil test borings found that the community's site had an extremely high water table, so high that if those who farmed the land over the years had not invested in a tiling system, water would have been standing on the site. All the time and effort invested to promote this site for industrial use was wasted. To this date the location is being used for agricultural purposes. Luckily for this community there was an alternative location at the opposite end of town. This location had just been discovered and had the same characteristics as the other location, except that it was located out of the corporate limits. In addition, the soil borings revealed no water and easy access to clay surfaces.

Happily, the township and city joined together to make this alternative site work for the firm. Today the firm has made its third expansion and is one of the larger employers in the community. The point of this example is not to have an alternative site just in case your primary site doesn't work. Instead, the idea is to be prepared in the first place by doing the technical work necessary to select the community's best location. A community's level of preparation will make a large statement about its understanding of business (see marketing section of this document for further discussion regarding this point).

Contents of an Engineering Study

This phase of the process relates a particular location to its environmental and land-use characteristics. The development task force and community are trying to discover information that will lead to the selection of the best location from all the potential sites. Even though the community may know the answers to some of the items listed below, it is wise to have the consultant review the information. Through the review of existing information, the consultant's regional expertise can be beneficial to the task force. Zoning regulations provide a case in point. The community may already know the location of zoned light manufacturing. However, a consultant will review the standards of what the zoning classification means within that particular community. From this detailed review the consultant may offer some additional standards or suggest the removal of some standards which could be more in keeping with regional standards.

The following is a list of items the community will want to consider including in an engineering study.

Zoning: A quick review of zoning maps and regulations to make sure that the location is properly zoned for intended use. Consultants should also review adjacent property zoning classifications to identify any potential conflict with existing or future usage.

Road Considerations: The consultant should review access to major highways and secondary streets, internal and external circulation patterns, improvements needed to the road directly serving the site. The consultant should suggest appropriate entrance layout to the site (Waterhouse 1996, 114).

Land Uses: Is the proposed use the best alternative for this location? What special features need to be addressed? How does the classification and intended use of this site affect future community development? How can natural features be optimized? If the site is to be used as a park layout intended for more than one user, then a plan should be developed and mapped for the site (Waterhouse 1996, 114).

Topography: A review of vegetation at the site should be included. Drainage patterns, storm water management, and soil-boring tests should be completed.

Environmental Issues: The site should be studied for wetland characteristics, hydrogeology reports, floodplain review, any potential archeological significance, and finally, potential contamination. The contamination review is usually accomplished by a Phase I Environmental Audit. This audit is primarily a review of historical use of the site and evaluates the existing condition of the site. If any evidence of potential contamination is discovered, a Phase II Audit is necessary.

Utilities: Utility standards are determined by the intended use of the site (industrial, retail or commercial), the size of the site, and the proximity to utility supplies. Information should be gathered for water, wastewater, and electric and natural gas service. A review should be prepared including the available capacity and size of the main, plus the rate for each service. If service must be upgraded, a plan should be developed including cost of improvements and estimated time of construction. A review should also be included regarding the appropriate routing of each utility service.

The final report from the engineering consultant shou include planning drawings and a supporting narrati describing the following:

- The key features of the development
- The transportation and utility network
- Any appropriate subdivision of the site
- A recommended phasing of needed improvements

DCN:11697

- Detailed copies of reports on items such as soil borings, environmental audit, archeological reviews, wetland review

The completion of the consultant review should provide information to help the development task force and community determine the best location or locations for meeting their objective of creating a development site. By completing the review, the development office will also have detailed reports and information that potential tenants of the site will need to make their location decisions. At this point of the site-development process the community should have invested financial resources only into the cost of consultant fees, engineering studies, and report creation. No investments should be made in actual improvements to the site until a market study is completed.

5.4 Marketing Approach

Congratulations to those of you who have gotten this far in the site-development process. Most communities leave the process long before they reach this point because they begin the process thinking all they need is a piece of land and a willing seller. If other communities drop out because of the required hard work, it can be fortunate for your community. Many a site-location expert has indicated that economic development is all about communities removing themselves from the selection list. They say most communities don't even know that the prospect is looking at them until the last instant. Such was the case in a community that located two major outlet centers a few years ago.

Local leaders found out that the community was being considered when the neighboring major city newspaper announced the project. It still took three years before the outlet centers were built. And if it hadn't been for the marketing plan of the community, the project never would have gotten off the ground.

You may have thought marketing was about promotion. How can a community take credit for a marketing effort when it was the prospect that found it? Isn't marketing about finding prospects through advertising and direct contact? Could be, but those things take place at the end of the process. Dr. Roger Blackwell, a marketing professor at The Ohio State University College of Business, defines *marketing* as:

> *The process by which an organization changes itself to be what people will fund.*

There are two key pieces of this definition that can be applied to the practice of community economic development. The most important piece is "what people will fund." This is the age of instant information packaged in all kinds of ways. Those seeking information will usually find more than they could have imagined when they began their search. This means that consumers are extremely aware of their needs. A retail business, an industrial firm or a commercial enterprise does not need a community telling it what it takes to succeed. What these enterprises need is a community that understands their needs and can do something to meet them.

This leads to the second piece of Blackwell's definition: "change." A community must be able to change its site to fit the needs of the firm. If a community wants to successfully fill a development site with a firm, it first must determi what the firm needs and how the site can be arranged to that need. So how does a community begin to understand firm's needs? By understanding the community itself.

The best time for a community to understand itself is befo it spends money on site improvements. The entire sit development process is intended to assist a community understanding itself before it invests in site development promotion. The community survey contained in tl feasibility study, combined with the inclusion of communi participation, begins the process of understanding. From th effort the development task force and community leade should better understand their workforce, utility capacitie educational system, community infrastructure, government services and health system. The process of setti community goals to determine the appropriate type of site develop will help a community identify areas in whi residents and leaders will support change to me development goals. The final section of information gather by the engineering study leads to the selection of a site th has the greatest potential to meet the desired prospec needs. Now the community needs to put all this informati together and fine-tune its target market.

Let's continue the example we began in the *goals a objectives* portion of section 5.2. In that section, the fiction community we were discussing targeted an industrial si because it had a high percentage of youth graduating into tl workforce and a highly skilled plastics molding operat training program. Now let's suppose that the communi learns from the engineering study that the site lacks u ground water storage capacity to meet the fire suppressi standards and water flow needs of the plastic industry. Tl first step the community needs to take to market itself is plan how to correct the water-storage problem. If tl community can afford a storage tank, investing in one wou be a great marketing method. This would send the messa to developers and location consultants that this community serious about serving the needs of the plastic industr According to Blackwell's marketing definition, tl community would be demonstrating it is serious abo changing to be what its customer needs.

Poor marketing in this example would be for this communi to set restrictive covenants at its industrial site to attra high-tech industry, which needs a large supply of colle graduates in the sciences. The survey of the communi indicated that there were few college graduates in tl community and few high-school graduates going on secondary education. Someday those numbers may chang but a good marketing practice is to work toward such change incrementally by attracting a plastic manufactur that will raise the wage level of the community l employing recent technical-school graduates.

The first step, then, to a sound marketing approach is match the capacities of the community to a particul suitable target market which places high value on these ve capacities. The next step is to begin to address the remaini capacity deficiencies to demonstrate willingness and abili to meet companies' needs.

DCN:11697

To continue moving through the development of a marketing approach, the community needs to recognize the reasons it is interested in its targeted market. Many communities will say they want to create jobs for their residents, increase the tax base to continue quality education and public services and bring a higher quality of life to their residents. If these are accurate statements about why a firm is wanted in a community, than any firm can meet these desires. These are very general goals present in every community. A community that can be more specific will demonstrate to a potential firm that local leadership understands the community and is willing to enter a partnership to enhance the community's vitality. Our example community can make its job-creation statement specific by saying it wants jobs for technical-school graduates and support for the technical training institution.

This would make a powerful statement to an industry that depends on technical training in an era when every school district is emphasizing preparing kids for college. Instead of saying it wants to increase its tax base, this community could say it wants to provide tax relief for the retail and agricultural sectors of the local economy. By doing so, the community would show its commitment to a balanced, supportive community vitality. And instead of vaguely defining quality of life advancement, our example community could say it wants to improve the living wage scale for residents. A community with this depth of understanding of the importance of building lasting public/private partnerships is ready to present itself to prospects.

Now the community can begin the promotional portion of marketing. A final question the community must address is, "who is responsible for promoting this community?" If the community thinks that the answer is the chamber of commerce executive or the economic development office, it has only identified the tip of the iceberg. What is really needed is a marketing team. This group is lead by the individual or office assigned economic development responsibility within the community. However, prospects are trying to discover the community's business personality and commitment to long-term support of a pro-business attitude. Any community will jump to serve the needs of a new business, but will this same enthusiasm be there for support after several years? Everyone knows that the development office is staffed by individuals paid to promote the virtues of the community. What the prospects want to learn is what other businesses and administrators of support programs have to say about the virtues and commitment level of the community.

Before we discuss the makeup of a team, we need to stress the importance of the lead person. The lead person is the contact for information about the community. Nearly all firms want to be confidential about their location process. A key element to building a marketing team is having one person to whom a company can present the technical information necessary for the contact to know during the initial stages of the site-selection process. The firms want someone who will respect confidentiality, even when talking to elected officials, and who can respond quickly to the firms' requests for information. It helps if that individual can respond openly and honestly about the community.

In reality, the lead person no longer serves the communi first once a prospect makes contact. Instead, the le: person's responsibility is to represent the prospect as it tri to obtain the information and commitment needed successfully operate locally. Simply put, the community lead person is trying to meet the customer's needs. At tl appropriate time the community's lead person will need tl support of direct contact between the prospect and tho organizations that provide services and information to tl firm. Key members of the marketing team are:

Community Services Representatives: These are the persons who deliver the utility services so valuable to a business. These individuals need to address technical questions about particular utility services important to the prospect.

Building Standard Representative: This individual needs to address the technical issue surrounding the obtaining of permits and the standards required to meet local and state building standards.

Training and Educational Specialists: These individuals need to be prepared to answer questions regarding educational achievements, future educational programming and training incentives available to the firm.

Labor Specialist: This individual will be asked questions about availability of labor, assistance in finding and screening qualified persons, and labor-training programs.

Elected Officials: These individuals will be necessary to demonstrate the interest within the community in bringing the firm into the community. They will also be asked to facilitate any necessary governmental action that will need to be initiated, such as local incentive programs. They may also be asked questions about the local tax structure.

Financing Expert: This position may require a person from the public sector to discuss any financing programs available to the firm. In addition, a private-sector financial expert may be requested to give a summary of the local economy.

Community Life Expert: Every firm is concerned about the opportunities for social and cultural exchange for the families of employees moving into the area, as well as the contentment of families of future local employees. Included in this role may be questions regarding health services.

DCN:11697

Engineering Expert: The firm will have a number of questions about transportation networks, on- and off-site construction issues, drainage systems and other appropriate development standards. This may be the city/county engineer or a private engineer (for example, the engineer that completed the engineering study).

A development task force that has included the marketing team from the beginning of the feasibility study will have team members who understand the level of the community's commitment to development. Throughout the entire selection process firms will be evaluating the community's ability to foster a lasting partnership. Firms and their representatives need quick, accurate answers to their questions. In addition, they need assurance of commitment regarding all the information and promises the community has made through the lead marketing-team person. Firms may also want to visit some of the facilities where services are provided. The team needs to be in place as part of the community marketing effort, and the team should be involved when the prospective firm wants a direct meeting. It is the role of the team leader to determine when such contact is appropriate.

There is a final group involved in the marketing team. The group is made up of people who usually are not formal members of the team but are often the first contact the prospective firm has with the team. These people are the owners and managers of existing firms within the community. Be assured, prospective firms will contact local businesses to assess the care officials give to lasting partnerships, the availability and productivity of the area workforce, the governmental support and quality of services, and all the other factors related to a pro-business attitude. The importance of a sound retention and expansion program for existing firms is a necessary component of a sound marketing approach. If, for example, the water needs of existing firms are not being satisfied by the community, how can a new firm expect to be treated any differently?
The three big steps toward developing a marketing plan are:

- Have a specific understanding of goals the community expects from developing the site
- Build a marketing team that understands each member's role
- Have an ongoing effort to satisfy the needs of existing firms

Promotion
At last the community is prepared to begin what every organization assumes is the role of marketing: Promotion; in this case, of the development site. Most communities will rush to place advertisements in development magazines and attend trade shows. A few communities may even try contacting firms directly by mailing materials or making personal visits. All of these methods are appropriate, but they require a substantial promotional budget, and often a development staff. A more effective first step may be to foster relationships with organizations and individuals that promote development sites as a full-time business. Applying Blackwell's definition of marketing, we argue that the role of the local development effort is to help business location firms succeed in finding a site for their clients. Organizations involved in business location do not own sites but instead t to locate the ideal place for their clients. These organizatio are trying to build or maintain a reputation as providi quality locations. A community that can help the organizations succeed has a strong promotional partn Included in this list of potential promotional partners are:

State or Regional Development Departments: Many states or regions have development departments whose role is to provide potential sites to firms, primarily out of state but also in-state. These offices are competing with neighboring regions to attract firms to their geographical areas. A community that has a strong development effort can help a state or regional office meet its goals.

Utility Development Offices: Providers of natural gas and electricity want to attract or maintain firms in their service area so they can increase the demand for their product. Firms will contact these offices for assistance in locating potential sites.

Location Consultants: There are a number of individuals and firms that specialize in the entire location process for firms. Usually these individuals maintain a portfolio of clients who contact them for their expansion needs. Hiring these individuals saves people resources and provides expertise for the site-seeking firm. Retail businesses often contract with such consultants, who find a location for the business and then discontinue involvement in the site-selection process.

Private Developers: Developers are organizations or individuals who not only provide site-selection assistance to a firm but also build facilities for the firm. Often these facilities are originally leased to the firm, leading to a capital-investment savings.

Rather than undertaking major promotional campaigns their own, communities may want to partner in promotion efforts with the organizations listed above. Such partnershi may lead to major financial savings for the loc development effort, and they may provide communities wi resources that are extremely knowledgeable about contacti and being contacted by firms.

Final potential sources for promoting a development site a local professionals, hospitals, and businesses. Attorneys a accountants often provide services to firms on a region basis. These professionals obviously have the trust a confidence of decision-makers within the corporation th are providing services. Keeping these professiona appraised of the development effort could lead to prospective inquiry. Also, hospitals and doctors get involv in bringing new health-care facilities and professionals to t

DCN:11697

community. Keeping these individuals aware of development efforts could also lead to opportunities. Finally, other business owners who are content with the community may also share information with suppliers and customers about development potential. We can now add the final component to a marketing approach for site development: *Promotion of sites can best be accomplished in partnership with development professionals and through local businesses and professionals.*

Marketing is about serving the needs of the prospective fir by knowing community goals, establishing a volunte support team and partnering with skilled promotion experts. Helping others reach their goals through communi changes to address the prospect's needs will foster ai encourage the continuation of strong partnerships for si marketing.

MARKETING REQUIRES	
Focus	Approach
Targeted market	1. Match community capacities 2. Address community deficiencies
Goal setting	Clearly articulated to residents
Leadership	Establishment of marketing team
Pro-business attitude	Care of existing businesses
Promotion	Building partnerships

5.5 Financing the Site

Things are rolling now. A site has been chosen, a marketing approach developed, and the community understands and supports the development effort. But how is the development of the site going to be paid for? While it would be wonderful if there was a magical source to step in and finance this risk, the fact is that no such source exists. Actually a community should be thankful that this magical source does not exist. It is often said that a community's ability to tax itself is a key factor in developing a healthy community. So it is good that most communities will need to become creative in their efforts to finance site development. A few general suggestions follow.

Costs

The following is a list of cost categories a community will want to consider during the site development process:

Site Acquisition: Included in this category are actual purchase price, legal fees, appraisals, realtor fees, crop-damage cost, survey fees and title insurance. Often the community can defer these costs by entering into a first refusal or option agreement with the current property owner. A theme throughout this section has been that communities should seek to develop partnerships that share the risk and reward. The owner of a site benefits by having someone who has developed a strong marketing approach representing the site.

Planning and Design Fees: The major costs under this heading are the consulting engineering fees. Also included, however, are the potential attorney fees and the engineering study testing fees. These costs are difficult to defer, so they require funding at the time of performance.

Infrastructure Costs: Companies will usually assume on-site infrastructure costs, but public right-of-way costs are usually incurred by the appropriate political jurisdiction.

Financing Costs: Interest and service costs for funds borrowed make up the primary costs in this category.

Revenue Sources

Potential sources identified by Waterhouse (1996, 115) f funding the site development include:

Initial Land Sales: If the community can agree with the current property owner these revenues will go to the seller.

Loans: Local banks may be willing to provide loan funds, often at a reduced interest rate, for purchase of land and consultant fees if the collateral of the land is sufficient to cover the risk. If this method is used, the interest and consultant fees should be included in the land selling price. Some state agencies will also provide low-interest deferred loans to communities for site development.

Governmental Capital Investment: Local governments can use bond sales to finance the public portion of infrastructure improvements. Many political jurisdictions also have the ability to use tax increment financing (TIF) as a tool to recover infrastructure improvements. Basically, TIF projects allow governments to use future property-tax revenues generated by the new firm to pay off bonds and bond costs committed to infrastructure development.

Grants: Federal and state programs may be a source for financing public infrastructure site development. Most programs require a matching contribution by the local community.

Utility Companies: Some utility companies will provide planning funds to communities developing sites within their service areas. Based on the size of the services provided to a firm locating on a site, utility companies may also finance improvements to the community's infrastructure.

The challenge to a community in funding site development is to combine local contributions with governmental grants and local tax-structure commitment to finance development costs. Creative communities can share the risk and defer development costs by entering into partnerships.

CONCLUSION

Preparedness is the key to successful site development. Proper planning and involvement by the community and key stakeholders are needed to ensure a smooth process. All efforts should be based on a comprehensive community plan for economic development.

Communities need to think in terms of what they offer to potential customers, businesses who would have a reason to locate in the community. What they offer will be dictated by an assessment of the community and the potential site(s). A good assessment requires a complete understanding of current trends and business needs. The communities who prepare the most to meet business needs will be the most successful at site development.

OTHER RESOURCES

To help strengthen this module, the authors would like to include some additional resources. Some useful Web sites are included below. The exhibits referenced in the text are also included, as are links to three related fact sheets from Ohio State University Extension.

Ohio State University Extension Factsheets

OSU Extension offers several economic and community-development fact sheets, a complete listing of which is on the OSU Extension Web site. Some relevant ones are listed below. While the fact sheets focus on Ohio, they contain information that can be used by most communities.

- Characteristics of an industrial site
- Developing rural industrial parks
- Brownfields and their redevelopment
- Shell building development

General Economic Development

- American Economic Development Council
  National professional organization for economic development practitioners. Has several publication: and other resources.
- Southern Economic Development Council
  Regional economic development group that also offers publications.
- National Business Incubation Association
  Organization for business incubators.
- The Council for Urban Economic Development
  Another American organization for practitioners of economic development. This one focuses on urban areas.
- Center for Community Economic Development
  Economic development policy group that focuses o asset building. Offers publications and services.

General Demographic/Economic Information

- U.S. Statistical Abstracts
  General statistical information.
- U.S. Census Bureau
  Good starting point to find any socio-demographic data in the United States.

EXHIBIT A

COMMUNITY DATA

The following information should be gathered for both loc and regional profiles. Each profile should be construct separate from the others so a comparison can be ma between the two. This comparison is extremely importa because each community is or has the potential to be regional center for particular categories in the profiles. F example, a community may have 1000 residents with colle degrees, but that community combined with neighbori communities may only have 3000 college graduates. Whe possible, statewide averages should be included to serve as measurement reference. For example, a community unemployment rate may be 4%. But what does that numb suggest about the community? If the statewide average 7%, the community may conclude that it has a mo competitive labor market then the state as a whole.

ITEM	SOURCE
DEMOGRAPHICS:	
Population statistics including:	
Gender, minority population, age distribution, births, and population growth/decline	U.S. Census
Residents' commuting patterns to place of work	U.S. Census
Death rates by cause of death	State department of health

DCN:11697

LABOR FORCE:	
Unemployment rates in both percentage and number of persons	State employment office
Employment rates in both percentage and number of persons	State employment office
Wage rates by economic sector	State employment office
Wage rates by job classification, both management & labor	State employment office & local survey
Number of workers by economic sector	State employment office
Persons seeking employment by skill	State & private employment agencies
Organized labor affiliates, number of members, & recent work stoppages	Local employers & National Labor Relations Board
Temporary Labor Agency information	Chamber of commerce
Job-training programs	Educational institutions & state development offices
INFRASTRUCTURE:	
Water system excess capacity & rates	Local provider
Wastewater system excess capacity & rates	Local provider
Natural gas supply & rates	Local provider
Electric capacity and rates	Local provider
Telecommunication capacities & rates (digital switching, fiber optics & route diversity)	Local provider
Miles, capacity, rate restrictions & location of four-lane highways	Local & state engineering office
Miles, capacity, rate restrictions & location of two-lane highways	Local & state engineering office
Capacity, runway length, tie-down space of local airport	Local engineering office
Rail carrier, category of rail rating, number of switches per day	Rail provider
EDUCATION:	
Number of students by grade	Local school
Proficiency testing results	Local school
Students to teacher ratios	Local school
Per-pupil expenditures	Local school
Availability of sophisticated learning equipment	Local school
Number of graduates entering workforce, college, military	Local school
College testing scores	Local school
Listing of any workforce preparedness programs	Local school
Presence of business/education committees	Local school
List of private & parochial schools	Chamber of commerce
Colleges and university access & programs	Chamber of commerce
Vocational & technical-school programs	Local schools
Condition of facilities for all types of schools listed above	Local school
BUSINESS BASE:	
Number of firms by economic sector	State employment office & local chamber of commerce
Names of firms, number of employees and product produced	Chamber & Local development office
Business starts and deaths	
Tax rate per economic sector	County, municipal, and state tax offices
Business trends, local	Chamber of commerce
List of available site in neighboring communities	Local development offices

DCN:11697

LOCAL GOVERNMENT:	
Services provided including fire & police protection	Local government offices
Services provided per tax dollar, including breakdown of funding by economic sector	Local government offices
Type of local government	Local government offices
Zoning and growth patterns	Local government offices
Proposed and current capital improvements	Local government offices
HOUSING:	
Age of housing	U.S. Census & realtors, regional planning commission
Types of housing (i.e. single family, multi-family)	U.S. Census & realtors, regional planning commission
Price & availability of housing	Realtors
Proposed new developments	Local government building departments
Type and number of building permits issued	Local government building departments
COMMUNITY SERVICES:	
Recreational facilities	Local government offices
Child-care Centers	Chamber of commerce
Service Groups	Chamber of commerce
Religious Institutions	Ministerial Association
Cultural Opportunities	Chamber of commerce
Lodging facilities including price & occupancy rate	Chamber of commerce & convention/visitors bureau
HEALTH:	
Names of hospitals and available beds (including emergency services)	Chamber of commerce & hospitals
List of doctors, dentists, optometrists by specialty	Hospital administrators
Wellness programs serving community	Local doctors, health department
Presence of HMOs, PPOs	Local doctors

Exhibit B
Local Performance Indicators
From Mullis (1998)
The following indicators are used by J. Michael Mullis in evaluating communities for potential business locations. Mull operates a site-location firm specializing in finding sites for businesses around the world.

Labor Force Availability
Job applicant to available job: Preferred ratio is 6:1

Labor Market Area
Based on commuting patterns, as follows:

- Production workforce: 30 minutes/day
- Clerical workforce: 20 minutes/day
- Professional/technical workforce: 43 minutes/day

Benefits
U.S. employer's benefits costs

	% of Payroll	Annual Avg. Cost Per Employee
All industries	39.2	$13,126
All manufacturing	38.8	$ 14,317
All nonmanufacturing	39.4	$12,761

DCN:11697

Labor Relations History

In the last five years, unions won about 47% of all National Labor Relation Board elections in the United States

Labor Dependability

Monthly turnover rates of less than .5 % are excellent.

Monthly casual absenteeism rates of 2% or less are excellent.

Quality and Productivity Levels

Production and/or service efficiencies at 100% levels are desirable.

Transportation

Airports: minimum 5,000 feet runway to accommodate corporate je

Global Positioning System (GPS) is desirable.

Utilities

Gas: About 42% of the energy used by U.S. industry is supplied by natural gas.

Water: Quality of water is important. The ideal pH is 7, preferred hardness is 75–100 ppm, iron content maximum of .3pp temperature 50 – 70 degrees F preferred.

Telecommunications

Average expenditure for communications per employee is $2,200 – $3,500.

Governmental Services

Police protection: 2 – 3.5 officers per 1,000 residents is standard.

Fire protection: 1.64 personnel per 1,000 residents is standard.

Health Care Considerations

Hospitals: 4 beds per 1,000 population.

Average hospital stay is 7.6 days at a cost of over $3,800.

Physicians: 5 per 1,000 residents is average.

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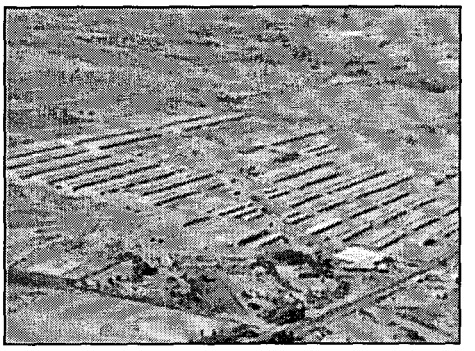
From Site Selection magazine, November 2002
MILITARY BASE REDEVELOPMENT

A Fighting Chance

Former U.S. military bases are now home to thriving industry.

by JOHN W. McCURRY



Business Depot Ogden is attracting a variety of firms to lease space in existing buildings. These include a newspaper and a nutritional supplement manufacturer.

With a new round of U.S. military base closures on the not-too-distant horizon of 2005, more communities will be dealing with the accompanying job losses and subsequent base redevelopment. But that's not necessarily bad news. Dozens of previously closed bases have been reinvented as centers of industry and research.

Since the first round of BRAC (base realignment and closure) in 1988, the Pentagon has closed 94 bases in the U.S., according to the National Association of Installation Developers (NAID). California leads the way with 24 closures.

Previous base closings have saved the military an estimated US$16.7 billion and are expected to generate more than $6 billion a year in future savings, according to a recent report by the General Accounting Office (GAO). These savings from closings in 1988, 1992, 1993 and 1995 include cost of environmental cleanups.

At NAID's recent annual meeting in Charleston, S.C., military representatives offered views on possible closure scenarios and developers of previously closed facilities profiled their success stories.

Phil Grone, principal assistant deputy undersecretary of defense for installations and the environment, told conference attendees that a 12-percent cut in bases could save $6 billion per year. Grone says while a 1998 study indicates 20-25 percent of U.S. military bases might be considered surplus, an analysis will be completed in 2004 before the Pentagon decides the number of bases to be closed.

Jeffrey S. Donohoe, vice president with RKG Associates, a Durham, N.H., firm which assists military base developers with planning, marketing and other functions, says bases vary widely in potential for redevelopment.

"Anybody who needs a waterfront facility will give consideration to a Navy shipyard," Donohoe says. "Air Force facilities tend to me more rural, which makes it more difficult to redevelop. The flipside is that Air Force bases which are in urban locations have proved to be readily developable."

Army Medical Facility Revived as Bioscience Park

In Aurora, Colo., a $4.3-billion "life sciences city" is emerging from the former Fitzsimons Army Medical Center that was closed in 1999. The 578-acre (234-hectare) site is being

Environmental Issues Paramount at Bases

Clean up of contaminants is nearly

developed by the Fitzsimons Redevelopment Authority, the University of Colorado and the City of Aurora.

DCN: 71697

Chief among the redevelopment projects is the new 227-acre (92-hectare) campus of the University of Colorado Health Sciences Center and University of Colorado Hospital, along with the affiliated 160-acre (65-hectare) Colorado Bioscience Park Aurora. Bioscience Park Center, which opened in 2000, is the first research park building to open and is home to 17 startup and early-stage bioscience companies. A second building opened this year and additional facilities are planned for 2004.

Employment at Fitzsimons is expected to reach 4,000 by mid 2004 and eventually top 30,000. Planners also envision a light rail connection to downtown Denver within 10 years.

always an issue in military base redevelopment. Erler & Kalinowski Inc., (EKI) a California-based group of consulting engineers and scientists, is working with several agencies involved in redeveloping bases in the western U.S. Michelle King, EKI vice president, says contamination on these erstwhile bases can cover the gamut: petroleum from storage facilities or underground pipelines, metals, solvents from maintenance operations. Cleanup is generally a long-term project and more challenging than a private sector project because of all the groups involved, she says.

"Generally our niche is to work to implement cleanup for the reuse authority or the developer coming in to the facility," King says.

Base Uses Vary Widely

New uses of former military installations vary as widely as their former missions once did.

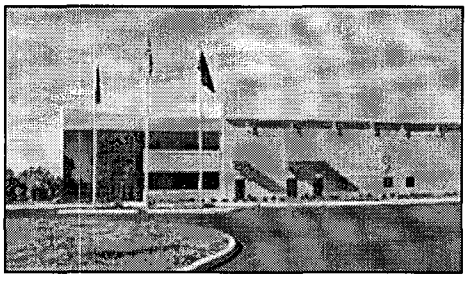
Pease International Tradeport in Portsmouth, N.H., is one of the more successful military base redevelopment stories. Located adjacent to I-95, the former Pease Air Force Base closed in 1988. Today Pease occupants manufacture products ranging from biotechnology to beer. Pease, which has created more than 5,000 jobs, also has a fully functional airport.

Lonza Biologics, which located at a 76,000-sq.-ft. (7,060-sq.-m.) facility at Pease in the mid-1990s, is getting much larger with a 247,000-sq.-ft. (23,000-sq.-m.) expansion. The pharmaceutical company specializes in production of therapeutic proteins derived from mammalian cell culture using deep tank fermentation systems.

Other uses for fermentation also exist on the base. Redhook Brewery, the Washington-based brewer of European-style beers, opened an East Coast brewery at Pease in the late 1990s.

Philadelphia saw Navy base closings during each of the four BRAC rounds. This includes the huge Navy Yard in South Philadelphia, which once employed 50,000. The Philadelphia Industrial Development Corp. is redeveloping a 1,200-acre (486-hectare) tract. New development includes one of the most modern shipbuilding facilities in the world, Kvaerner Philadelphia Shipyard. Kvaerner has poured some $260 million into facilities and equipment there.

At Devens, Mass., home of the former Fort Devens, which closed in 1996 after serving as the U.S. Army's New England headquarters for 79 years, more than 76 companies have moved in, creating more than 3,600 jobs. One of the recently completed industrial projects is American Superconductor Corp.'s high-temperature superconductor wire plant.



LSI Lightron is the latest manufacturer to locate on land formerly occupied by

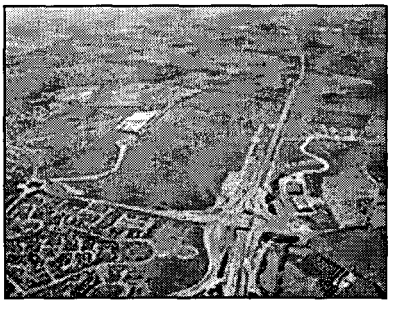
"After reviewing several excellent sites around the U.S., we decided to build at Devens," said Greg Yurek, CEO of American Superconductor, when the project was first announced two years ago. "The combination of skilled labor availability, low cost of operations, accessibility to our Westborough technology development facility, a strong incentives package from the state, and flexibility for expansion all contributed to our decision." The 355,000-sq-ft. (33,000-sq.-m.) facility began production this year.

Business Depot Ogden in Ogden, Utah, formerly Defense

Depot Ogden, was named Facility of the Year at the NAID conference. Formally closed in 1997, the depot now is home to nearly 60 companies, which have created about 1,000 jobs. It also houses the headquarters of Nutraceutical Corp., one of the leading manufacturers of nutritional supplements.

New York International Plaza in New Windsor, N.Y., is part of development on the old Stewart Air Force Base from which Stewart International Airport was created. Among the firms recently locating there is LSI Lightron, a division of LSI Industries. The 229,0000-sq.-ft. (21,275-sq.-m.) plant will produce commercial lighting products.

U.K. Base With U.S. Ties Gets New Look



The Omega project will create one of Europe's largest business parks at the old RAF Burtonwood base in Warrington, England, closed in 1993.

Not all military base redevelopment is happening in the U.S. RAF Burtonwood was the maintenance and supply base for the U.S. Air Force in Europe during World War II. The base holds considerable cultural significance due to more than 6,000 U.S. soldiers stationed there taking English brides during the war.

Located in Warrington, England, the base continued to serve the interests of the U.S. military and NATO until it closed for good in 1993. Now, the site is being redeveloped as one of Europe's largest business parks.

English Partnerships, an agency whose responsibilities include overseeing development of surplus government property, is developing the site along with Miller Developments and The Royal Bank of Scotland. English Partnerships is nearing completion of a major intersection of the M62 highway which splits the 558-acre (226-hectare) site. The northern section of the tract is designated for industrial and distribution projects with target sectors including pharmaceuticals, telecom, IT, automotives and biotechnology. Known as Omega, the site has a projected 25-year build out.

Elliott Lewis-Ward, development manager at English Partnerships, says numerous U.S. companies are already established in the region. The site may provide some 6.9 million sq. ft (650,000 sq. m.) of industrial and office space, he says. SITE

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SITE Selection ONLINE
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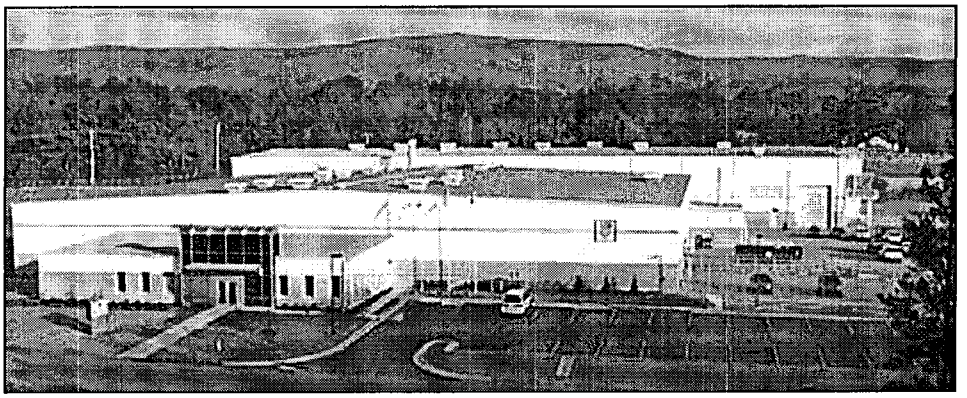
From Site Selection magazine, November 2003

MILITARY BASE REDEVELOPMENT

From Swords to Ploughshares

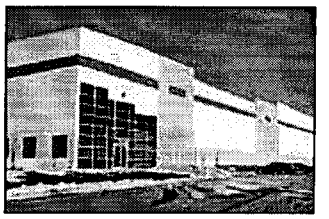


Hunjan International chose a building at the former Fort McClellan for its facility to serve Alabama's auto industry. Hunjan Alabama manufactures plastic parts for several major automakers.

Once engines of defense, erstwhile bases now battle for industry.

by JOHN W. McCURRY

When **Potlatch Corp.**, a Spokane, Wash.-based manufacturer of wood and paper products, began looking for a site for a new distribution center to serve its expanded consumer tissue operations, it chose a location with an explosive history.



Potlatch Corp.'s new distribution center at CenterPoint Intermodal Center on the former Joliet (Ill.) Arsenal property will soon be joined by the company's tissue converting plant next door.

Prime location attracted Potlatch to the CenterPoint Intermodal Center in Elwood, Ill., formerly part of the Joliet Arsenal, the U.S. Army's largest supplier of TNT during World War II and the Korean and Vietnam conflicts. The arsenal's military history ended when the Army declared it surplus property in 1993.

Sean Maher, CenterPoint Properties' senior vice president of investments, rattles off a laundry list of the former arsenal property's qualities that are dear to site seekers, including access to two Class 1 railroads, proximity to major expressways and Chicago-land's large labor base.

The bulk of the 23,000-acre (9,300-hectare) site – 19,000 acres (7,700 hectares) – is allocated to the U.S. Forestry Service and U.S. Dept. of Agriculture to be returned to its original state, a tall grass prairie. But in 2002, CenterPoint Properties took over 2,000 acres (810 hectares) of the former arsenal site, and Burlington Northern Santa Fe Railroad opened an intermodal center on 621 of

those acres (252 hectares).

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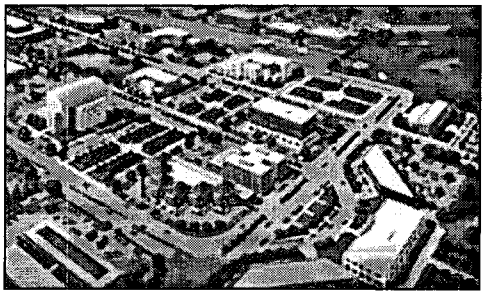
Potlatch opened its 408,000-sq.-ft. (37,900-sq.-m.) distribution center at CenterPoint in January 2003, and recently broke ground on an adjacent converting plant to make tissue products for private label brands of large store chains. The move expands the company from its Western state stronghold, where it claims more than 90 percent of the market.

"The plan is to bring one of our converting lines from our Lewiston, Idaho, operation to CenterPoint as part of our strategy to expand our private label business in the Midwest and East," says Mike Sullivan, Potlatch spokes-man. "We did a great deal of shopping around in the Midwest. The intermodal capacity at CenterPoint is an attractive option."



Reese Technology Center in Lubbock, Texas, concentrates on attracting small technology firms like tenant Certigen, a gene sequencing company. Long-range plans call for the development of more than 1 million sq. ft. (92,900 sq. m.) and 2,500 acres (1,012 hectares). Among RTC's amenities are an OC192 fiberoptic network and a new foreign trade zone.

Potlatch currently moves products to CenterPoint via truck, but will soon utilize the rail option at CenterPoint. In early 2004, Potlatch will ship large "parent" rolls of its basic tissue product from Lewiston to be converted into small products.

Defense to Target More Bases for Closure

Hundreds of former U.S. military installations are being redeveloped for industrial, commercial and residential uses. Of these, 97 fall under the BRAC (Base Realignment & Closure) program, which shuttered bases in four rounds during the late 1980s and the 1990s. Many were simply surplussed by their respective military branches, as was the case with the Joliet Arsenal. The largest number fall under the category of FUDS (Formerly Used Defense Sites).

Another BRAC round, the biggest yet, is on tap for 2005, when the U.S. Dept. of Defense will designate 23 to 25 percent of U.S. military bases for closure – more than the previous four BRAC rounds put together.

Redevelopment of bases closed during the first four BRAC rounds has created more than 86,000 jobs, according to the DOD's Office of Economic Adjustment.

Harry Kelso, a Richmond, Va., consultant, specializes in military base closure and redevelopment issues. He says some sites lend themselves to industrial development, while others are more adaptable to commercial and other uses. Often, he says, the reuse depends on how the installation was originally used.

"Most military reservations were taken by the U.S. government during the 20th century and communities have built up around them, generating a lot of economic development," Kelso says, pointing out favorable permitting and incentive packages. "When acquiring closed military property, you also get significant price discounts as well as legal protection from environmental liability, because the U.S. government is responsible for the cleanup of these properties."

Successful redevelopment of a former military installation requires a huge investment, plus the right mix of real estate and military expertise, Kelso says. Familiarity with the "language" of the military, which is foreign to most in the private sector, is key.

"Nonetheless, military properties are very valuable, and the Dept. of Defense has a bundle of them," Kelso says. "While heavy industry wants an industrial site, I have also noticed a pattern by corporations that want both an industrial component and a non-industrial component in their campuses."

Charleston Base Draws Honor

The former Charleston (S.C.) Naval Complex is one of many BRAC success stories, recently earning the Facility of the Year Award from the National Association of Installation Developers (NAID).

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Since the base closed in 1996, the Charleston Naval Complex Redevelopment Authority (CNCRA) has overseen the creation of more than 5,400 jobs at the former Naval shipyard. The 1,600-acre (650-hectare) mixed-use facility is home to industrial tenants, federal, state and local government agencies and a magnet high school.

The largest employer is the **Charleston Marine Manufacturing Co.**, a consortium of private shipbuilders, which employs more than 1,000.

"We had a plan and have been able to follow it well," says Jim Bryan, CNCRA chairman. "We've been careful in our recruiting to not compete with existing companies in the area. Obviously, anything in the maritime industry is a good fit."

One Last Look Lands Site for Auto Supplier

Fort McClellan, a former U.S. Army training base in Anniston, Ala., may one day be the latest hub of Alabama's growing automotive industry. The facility – which opened in 1917 to train soldiers headed to World War I and later trained nearly 500,000 men for World War II – was part of the 1995 round of BRAC and closed in 1999. Today, much of the former fort is being transferred to private use by the Joint Powers Authority (JPA), made up of representatives of local and state governments.

Hunjan Alabama Ltd. is McClellan's first industrial tenant. A division of Hunjan International in Markham, Ontario, Hunjan opened early this year to supply several of Alabama's automakers.

Bal Hunjan, founder of the company, was near the end of his search for a manufacturing site to serve Alabama's growing auto industry when he was asked by the JPA to look at McClellan.

"We had looked at at least 20 locations and were almost ready to start building in Gadsden when we heard about McClellan," Hunjan says. "So, we decided to take a look at it. We were looking at some land when we saw this building for sale."

Hunjan says he offered to buy the building shortly after opening the door. The building required modifications, but he says the shape, size and price all worked out perfectly.

"I came to Alabama at least 10 times and focused on two or three sites each time," Hunjan recalls. "This was the last site. It was perfect and so beautiful. Driving to the site is almost like driving in a national park. Our employees love it and our customers love it."

Hunjan calls Hunjan Alabama a "Tier One-and-a-half" company, supplying parts to OEMs through Tier 1 companies. Plans call for a 40,000-sq.-ft. (3,700-sq.-m.) expansion of the 100,000-sq.-ft. (9,290-sq.-m.) building. Employment is at 65 and may eventually grow to 200.

See the SITES

National Association of Installation Developers
www.naid.org

Harry Kelso, Consultant
www.baseclosures.com

Department of Defense, Office of Econ. Adjustment
www.acq.osd.mil/ie

Bases Await Leaders With Vision

Consultant Harry Kelso believes former military installations offer many advantages, but are often overlooked by industry. Former bases can be great economic engines, he says. But understanding how to site a facility requires savvy leadership with long-range vision.

"If companies take a long-term view of their corporate needs, they can essentially cherry-pick properties if they want to," he says. "Regarding the 2005 BRAC round, they can make some serious assessments in case a base were to close." SITE

THE SITE SELECTION Online Insider

Week of March 4, 2002

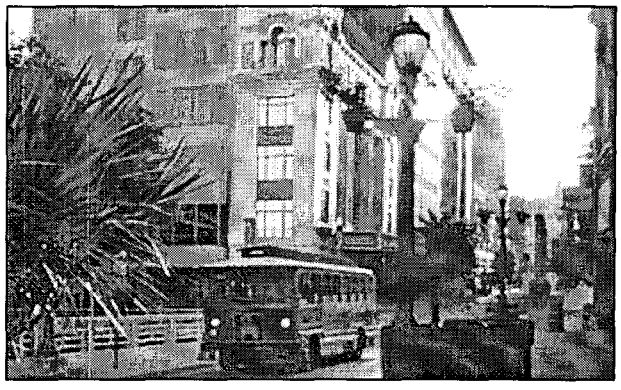
Snapshot from the Field

LOOKING FOR A PREVIOUS STORY? CHECK THE ARCHIVE.

Grubb & Ellis Tapped for Property Management in Innovative Brooks AFB Redevelopment

By **JACK LYNE**, *Site Selection* Executive Editor of Interactive Publishing

SAN ANTONIO - Grubb & Ellis (www.grubb-ellis.com) has been tapped to handle property management services for a ground- breaking military base redevelopment in **San Antonio**. The Northbrook, Ill.-based firm will be providing services in the conversion of a large swath of the 1,300-acre (520-hectare) Brooks Air Force Base into the Brooks Technology and Business Park.



The one-of-a-kind arrangement at Brooks AFB keeps 3,300 jobs in place, continuing to generate an estimated annual income of more than $560 million in San Antonio (pictured above).

Selected for the assignment by the Brooks Development Authority, Grubb & Ellis joins a groundbreaking project. Military base redevelopments, of course, have become commonplace. With the Cold War's thaw, the U.S. Defense Dept. has closed 97 major military installations since 1991.

"The goals of the Brooks city-base project are to improve military mission effectiveness and reduce costs while providing new jobs, revenues and amenities to the community," said Grubb & Ellis President and CEO Barry Barovick (pictured above).

The Brooks redevelopment, however, is a different story. While the Air Force has handed over the keys to the city, the base remains very much open. Facilities housing some 3,300 workers are continuing apace, only now as tenants - and ones that pay no rent.

That unprecedented arrangement is part of Brooks AFB's becoming what the Defense Dept. is calling the first "city base," authorized as part of the 2000 Defense Appropriations Bill. The first-of-a-kind scenario positions both the new and former owners to realize substantial benefits. For the Air Force, there's the prospect of multimillions of dollars in savings. For San Antonio, there's the immediate reality of retaining thousands of existing jobs, plus the potential for creating thousands of new high-end private-sector positions.

"The goals of the Brooks city-base project are to improve military mission effectiveness and reduce costs while providing new jobs, revenues and amenities to the community. And we're confident that, working together, all this can be achieved," said Grubb & Ellis President and CEO Barry Barovick.

Air Force Facilities Have 20-Year Agreement for Rent-Free Occupancy

Grubb & Ellis, which won the Brooks contract in competition among five finalist firms, will

provide a range of services. Among those services are management and leasing; property management, marketing, transaction and redevelopment; and strategic advice and execution, according to Grubb & Ellis officials.

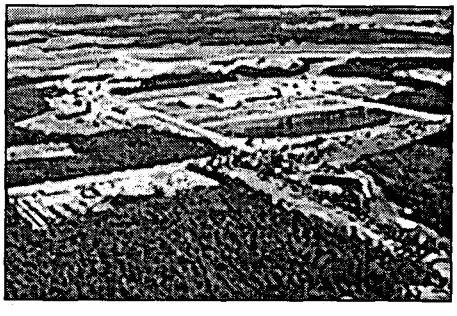
DCN: 11697

"This significant win for Grubb & Ellis reflects our leadership role in a growing number of public-private partnerships from coast to coast," said Barovick. The company's previous military conversion work includes handling the transfer of the Naval Weapons Industrial Reserve Plant in Calverton, N.Y. The military plant in southern New York was developed into Calverton Enterprise Park.

The Brooks AFB project, however, turns some new turf in public-private endeavors.

The Brooks Air Force facilities that are continuing business as usual, for example, operate under 20-year rent-free agreements. And those operations have four additional 20-year option periods. The military installations, however, aren't obligated to stay. The Air Force agreed to lease the portions of the base that it deems necessary to fulfill its military mission. In addition, the arrangement with the city provides Brooks' Air Force operations with some free services, including road maintenance and fire and police protection. But the rent-free Air Force operations pay for some other services, including building maintenance and utilities.

In-Place Cluster Could Draw High-Tech Influx



Grubb & Ellis's previous military conversion work included handling the transfer of the Naval Weapons Industrial Reserve Plant in Calverton, N.Y. The military plant in southern New York was developed into Calverton Enterprise Park (pictured above).

It remains to be seen which companies will comprise the new tenants that Grubb & Ellis will be serving at the former Brooks AFB.

The tenants already in place, however, are likely to draw a high-end crowd. As the Air Force's center for health and environmental research, Brooks continues to house a host of prestigious operations. The property's 2.2 million sq. ft. (198,000 sq. m.) of facilities, for example, include the Air Force's School of Aerospace Medicine, the Human Effectiveness Directorate of the Air Force Research Laboratory, the Air Force Center of Environment Excellence and the Challenger Learning Center.

That cluster of high-skill operations is a key in the city's strategy. San Antonio officials expect the redeveloped acreage to attract a substantial inflow of high-quality R&D operations, eager to locate near the assembled mass of brainpower and state-of-the-art equipment.

Other uses of the Brooks acreage could further vary Grubb & Ellis's tenant mix. Long-range development plans, for example, have included components for retail use, a hotel and a golf course.

Air Force Will Share Redevelopment Revenues

The city-base strategy originated when San Antonio leaders proposed the idea to federal officials in 1995. At the time, the Defense Base Closure and Realignment Commission (DBCRC) had included Brooks AFB on its initial list of bases scheduled for closure. (The DBCRC later spared Brooks.)

The idea spawned in '95 could yield rich rewards for the city if the envisioned inflow of new businesses materializes. That inflow would also profit the Air Force, which will receive a share of future revenues generated by the property's commercial development.

The arrangement does add some new costs for the city. Providing services for the Air Force operations will cost San Antonio an estimated $1 million a year. However, since those services are already provided to surrounding neighborhoods, the addition won't strain resources, city officials said.

And San Antonio enjoys a larger immediate payoff: Brooks' 3,300 jobs remain in place,

continuing to generate an estimated annual income of more than $560 million.

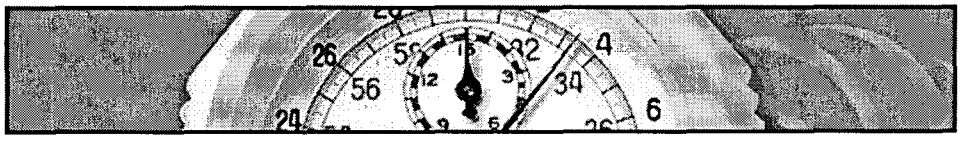
DCN: 11697

The Air Force, on the other hand, reaps immediate reductions in operational costs. Owing in part to underutilization and excess property, Brooks AFB's costs were significantly higher than at similar Air Force bases. But with the new agreement, the Air Force expects to save up to $10 million annually through 2005. After that, it expects even higher annual payoffs, as revenues from the Brooks property's development begin rolling in.

Grubb & Ellis's assignment, however, may not remain a one-of-a-kind arrangement. More military base closings are on the horizon. Defense Secretary Donald Rumsfeld, for example, told the House Armed Services Committee, "Most people you talk to who are knowledgeable about it believe we are carrying something like 20 to 25 percent more base structure than we need for our force structure."

And the Brooks redevelopment could be a model for phasing out other bases, some prominent Air Force officials have suggested.

Looking for a previous "Snapshot" story? Check the Archive.



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SITE Selection ONLINE
From Site Selection magazine, November 2004

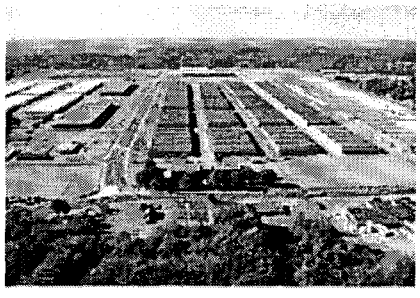
MILITARY BASE REDEVELOPMENT

Former U.S. Army Depot Cottons to Distribution

The Memphis Depot Business Park draws honors for redevelopment.

by JOHN W. McCURRY

Several commodities quickly come to mind when thinking of Memphis. Barbecue and the blues, to be sure. But the city is also known for its distribution prowess and it still reigns as a nexus for cotton trade. Memphis-based merchants typically sell about 30 percent of the U.S. annual cotton production, according to the National Cotton Council. A former military installation in the city has been quietly taking advantage of these two major strengths of the region for the past few years.



Location and a good supply of large buildings have made the Memphis De Business Park ideally suited for distribution operations.

The Memphis Depot Business Park has taken shape in the years following the 1997 closure of the U.S. Army's Memphis General Depot, a facility activated in January 1942. The Depot's first mission was to supply the U.S. Army with food, clothing and equipment. It continued to supply logistical support to troops through Desert Storm in the early 1990s. Now, refitted as a business park, the 642-acre (260-hectare) complex houses operations by two of the three largest U.S. cotton merchants and assorted light manufacturers.

"It's a really unique situation and it's great space," says William Zarfoss, administrative vice president for Allenberg Cotton, a division of **Louis Dreyfus Co.** Allenberg merchandises U.S. cotton worldwide, buying the natural fiber from producers and ginners. Allenberg then stores, grades and ships it to U.S. textile mills based on their needs. Allenberg owr leases 5 million sq. ft. (464,500 sq. m.) of warehouse space across the U.S., and occupies 420,000 sq. ft. (39,000 sq. m.) a Depot.

"They're old, but extremely well built," Zarfoss says of the former Army buildings. "Our requirements aren't fancy. W needed great, big empty boxes and that's what they have, usually about 50,000 square feet [4,645 sq. m.]."

Zarfoss says Allenberg chose the site because it was looking to expand its storage capacity and the facility has good r service. Allenberg's operation serves as a consolidation point as cotton is trucked in from all over the Mississippi River D

Also distributing cotton from the Depot is Cargill Cotton, a division of **Cargill, Inc.** Cargill is the Depot's largest tena leasing seven buildings with a total of 769,000 sq. ft. (71,400 sq. m.).

"We found out our buildings are set up nicely for cotton," says Jim Covington, president of the Depot Redevelopment

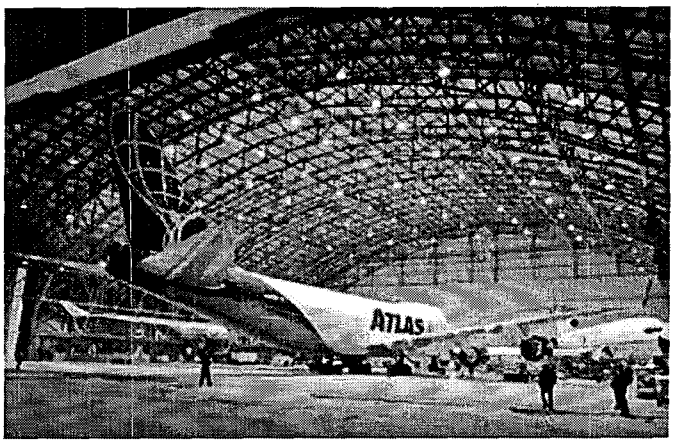
Corp. (DRC). "The sizes are right and each bay has about 20,000 square feet [1,860 sq. m.]. Fire codes and other regulati limit the amount of cotton that can be stored in one building. Our buildings gave us an opportunity to recruit cotton companies."

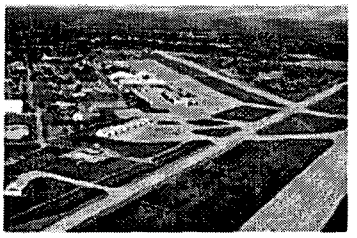
DCN:11697

Covington says that during the fall, there is a non-stop progression of trucks hauling in raw cotton and its odor perme the business park.

NAID, an Association of Defense Communities (previously known as the National Association of Installation Develo honored the Memphis Depot Business Park last summer with its 2004 Facility of the Year Award. In presenting the awar Irene Kornelly, chairman of the NAID/ADC Awards Committee stated, "The DRC's success in transforming this former installation into a vibrant commerce center is a leading model for the reuse of a large inner city site."

The DRC invested more than $18 million in the Depot's redevelopment, including $6.2 million from the U.S. Econom Development Administration and $10 million in borrowed funds from city and county governments. The business park h leased about 60 percent of its 4 million sq. ft. (371,600 sq. m.) of space and the 29 companies located there employ about 1,200. About 60 percent is warehouse and distribution and the remainder is mostly light manufacturing operations.





Empire Aero provides maintenance and repair services to aircraft in its facility at Griffiss Technology Park in Rome, N.Y.

The business park is definitely in a prime location for distribution. The Memphis International Airport, the FedE world hub and a UPS regional hub are all within two miles Also nearby are Interstates 240 and 55.

Over the last seven years, the DRC has modernized uti roadways, parking, lighting and landscaping to bring the p up to modern standards, Covington says. This included ren of 26 miles (42 km.) of surplus railway within the comple

"We had to improve internal roadways, which were bu 1942 standards," Covington says. "We had to convert to a trucking facility to provide room to park and maneuver 53 [16-m.] trucks."

While redevelopment to date has involved existing structures, Covington says the DRC is in the process of subdividing 100 acres (40 hectares) for new construction.

NAID/ADC gave its Developer of the Year Award to Griffiss Local Development Corporation (GLDC) in Rom N.Y., for its efforts in transforming the former Griffiss Air Force Base into the Griffiss Business & Technology Park, focal point of economic activity in the Rome area.

Since the base was closed in 1995, more than $165 mil has been invested in infrastructure improvements. The facility is now a blend of aviation and information technology-rela firms, according to Steven J. DiMeo, president of Mohawk Valley EDGE, which provides staff to the GLDC.

The largest recent addition to the park is Empire Aero Center, where **Israel Aircraft Industries** recently opened its N American aviation maintenance headquarters, relocated from Miami International Airport. Empire occupies nearly 400,0 sq. ft. (37,160 sq. m.) in an expanded and refurbished hangar facility that previously serviced B-52 bombers. Empire prov heavy maintenance, structural repairs and refurbishment to a variety of aircraft. The operation employs about 200 with pl to ramp up to 500 by 2007.

Another addition to the park is the Air Force Research Laboratory, which cut the ribbon in April 2004 on the new $25 million headquarters for its Information Directorate.

BRAC 2005
Brings New Opportunities

There will soon be even more military property available for redevelopment. Base Realignment & Closure (BRAC) ir 1980s and 1990s closed 97 U.S. installations. Many other military facilities have been shuttered through the years outside BRAC process.

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The U.S. Dept. of Defense is currently gathering information on the nation's military installations in preparation for tl largest BRAC round yet, which will dispose of 21 percent to 25 percent of the military's infrastructure.

The DOD says decisions to keep bases open will be based on military value and other factors, including the ability to support joint operations of several branches of the armed services.

Harry Kelso, a Virginia-based consultant specializing in redevelopment of military property, says most states have ma little effort towards thinking of ways to reuse the properties that may be closed. Instead, most have tried to make the case keeping bases open.

"State and local governments are spending an extraordinary amount of time and funds in an attempt to BRAC-proof facilities and candidly, that's impossible to do," Kelso says. He cites Virginia Gov. Mark Warner as one of the few public officials who have talked about a "Plan B" for when and if bases close.

"States need to be taking the proactive posture of addressing what would happen to the economy and local communiti the event bases close," Kelso says. "Corporations and site selection officials should be gaining the expertise today to prep themselves for the opportunities presented by base closures." Kelso adds that these opportunities are already available at t dozens of U.S. bases currently being redeveloped. SITE

TOP OF PAGE

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THE SITE SELECTION Online Insider

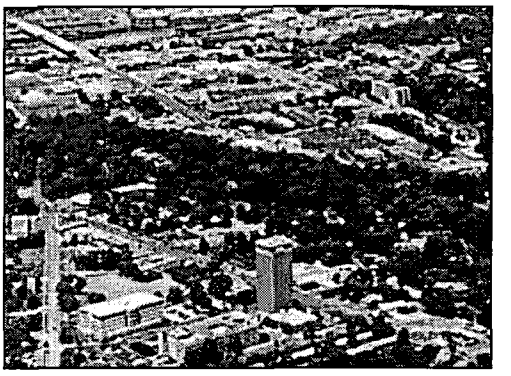
Week of September 15, 2003
Project Watch

LOOKING FOR A PREVIOUS STORY? CHECK THE ARCHIVE.

From Germany to Georgia:

Heckler & Koch Gun Plant May Trigger 500-600 Jobs

by **JACK LYNE**, *Site Selection* Executive Editor of Interactive Publishing



Heckler & Koch's first U.S. plant is headed for Columbus, Ga., home to the headquarters (pictured in foreground) of AFLAC, whose TV ads have created the most famous webfoot not named Donald.

COLUMBUS, GA. — Barreling into America in high-caliber fashion, German gun-maker **Heckler & Koch** is building a 200-worker plant in **Columbus, Ga.,** that may eventually employ 500 to 600.

The project marks a major milestone for Heckler & Koch, representing its first production facility in the United States.

The company already has a long-standing American presence; heretofore, though, it had no U.S. manufacturing. The company first set up an operation in the Washington, D.C., metro in 1975 to strengthen access to the U.S. military, police and civilian markets. Sterling, Va., until now has been home to all of Heckler & Koch's U.S. operations.

The gun-maker's maiden U.S. production voyage will take shape on a 25-acre (10-hectare) site in Muscogee Technology Park. The 1,391-acre (556-hectare) park sits some 89 miles (142 kilometers) south of Atlanta.

"Recent significant contract awards, as well as our assessment that the company is well positioned in competing for additional business, have convinced us to accelerate our plans to establish a manufacturing facility in America," said Vice President of U.S. Operations Peter Simon, a retired U.S. Army lieutenant colonel.

Heckler & Koch recently won the contract to supply the U.S. Transportation Security Administration's federal flight deck officers with its USP 40 compact pistol. The Columbus plant's output will include the USP 40 and the MP5 submachine gun, used by police SWAT teams and U.S. special military forces. (The company's customers also include the German and Spanish armed forces.)

Heckler & Koch is initially building a 50,000-sq.-ft. (4,500-sq.-m.) plant that can accommodate 200 workers. But employment could triple in a greatly expanded facility if anticipated demand pans out, Simon said.

"We will initially create about 200 American jobs in Columbus," he explained, "and we forecast additional growth as some of our U.S.-based design and development projects mature into production."

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The proximity of Fort Benning (pictured), the nation's largest infantry training center and home of the Army Infantry School, was likely a major factor in Heckler & Koch's decision.

Project Signals Shift from Company's Historic 'Euro-Centric Center of Gravity'

Additional U.S. growth is a central tenet in the Columbus project's strategic rationale for Heckler & Koch, founded in 1948 in its headquarters city of Oberndorf, Germany.

"This decision reflects our strategic commitment to the U.S. market and also our acceptance and support for 'Buy American' provisions," Simon explained.

"Buy American" requirements have been a contentious point in the current congressional debate over the U.S. Defense Dept.'s fiscal 2004 appropriations bill. The House has passed a version of the Defense Authorization Act that would limit U.S. weapons acquisition to domestically made products. It remains to be seen whether that limit will survive House-Senate conference committee negotiations on the bill. (Opponents of the provision have pointed out that the U.S. defense industry sells six times more to Europe than it buys from the continent.)

For Heckler & Koch, though, the Columbus plant signals a transition running even deeper than its first U.S. production venture. The project, Simon explained, signals the company's shift away from what he called "our Euro-centric center of gravity." The new Georgia operation, in fact, is the gun-maker's first production facility to be located outside of Germany.

The U.S. will apparently make up a large portion of Heckler & Koch's broadened center of gravity. The Georgia plant, Simon said, represents the beginning of a U.S. buildup over the next five years that could create as many American jobs as the company's 700 current positions in Germany.

Heckler & Koch's U.S. commitment in Columbus may also extend beyond manufacturing. Simon said that the company is considering co-locating some of its higher-end U.S. functions at the Georgia site, including part of the Design and Engineering Office now based in Virginia.

Decision Drivers: Customer Proximity, Business Climate and 'Economically Viable Agreement'

Georgia won Heckler & Koch's first U.S. plant from competitors that included Florida, South Carolina, Texas and Virginia, company officials said. The German company will be the Peach State's second gun manufacturer. Austria-based Glock has its U.S. and Canadian headquarters and a manufacturing plant in Smyrna, an Atlanta suburb.

Heckler & Koch picked Georgia, Simon explained, because of "the combination of proximity to our primary customer base in the military and law enforcement, the business climate and the economic viability of the agreement that we reached."

The exact value of the gun-maker's Georgia agreement hasn't yet been determined. State officials said that the company will receive $300,000 in incentives from the Georgia Dept. of Industry, Trade and Tourism.

The company, they added, will also be eligible for other state and local incentives and property tax breaks. One of them will be Georgia's Quick Start program, which will train Heckler & Koch's workers at Columbus Technical College, said Simon. In addition, local officials added that they anticipate a company request for a bond issue from the Columbus Development Authority to fund building the plant.

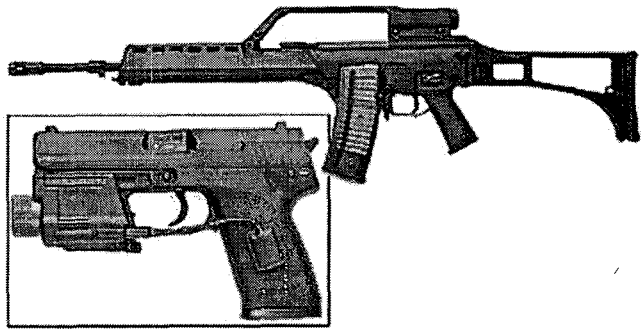
Fort Benning Proximity Likely a Factor

But what was likely a major decision factor - the proximity of the Army's Fort Benning - got scant mention in Heckler & Koch's

official rationale for its Peach State pick. Columbus sits only 10 miles (16 kilometers) north of Fort Benning.

DCN:11697

The fort, though, was almost certainly a substantial site selection factor. Heckler & Koch last year began R&D work on the XM8 lightweight assault rifle. The Army is considering the XM8 as a replacement for its M4A1 carbine and M16A2 rifle.



The present and the possible future: The Columbus plant's output will include the USP 40 Compact Pistol (bottom left) for the U.S. Transportation Security Administration's federal flight deck officers. And the Georgia plant hopes to make the XM8 lightweight assault rifle, which is based on the company's G36 assault rifle (top).

Heckler & Koch is now manufacturing 220 XM8s in Germany. The XM8 is based on the company's G36 assault rifle, revered for its resistance to jamming in dusty and sandy conditions.

Army testing of the XM8s is scheduled for this fall, and Fort Benning is one of the test sites. Significantly, the fort is the nation's largest infantry training center and is the home of the Army Infantry School. Fort Benning also has a wide range of units that could serve as XM8 test groups, including the 3rd Infantry Division and the Rangers.

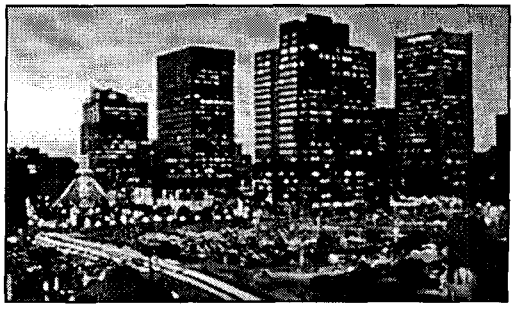
Heckler & Koch's initial XM8 output will be followed by a second production run of some 2,000 rifles. Defense industry analysts expect the contract for the full production run to be awarded in 2006.

The German company, however, isn't a lock for the full-run XM8 deal. Competitors including Colt and General Dynamics are also reportedly working on their own versions of a new lightweight assault rifle. Connecticut-based Colt has been making the M16 since 1964.

Heckler & Koch plans to break ground in Columbus by November, with production going online by the end of next year.

Angelica Textile Services' Phoenix Plant Could Employ 300

by **JACK LYNE**, *Site Selection* Executive Editor of Interactive Publishing



Coming to Phoenix (pictured) will enable Angelica to better serve its existing customer base in the area. The company had been serving those customers through one of its Southern California operations.

PHOENIX — By the time **Angelica Textile Services** gets to **Phoenix,** it'll be cleanin' - as much as 13 million pounds (5.85 million kilograms) of linen a year, in fact.

With apologies to songwriter extraordinaire Jimmy Webb, that's how much annual cleaning capacity Angelica Textile Services plans to install in its new facility in Arizona's capital city.

The Atlanta-metro-based subsidiary of Angelica Corporation has broken ground on a 74,000-sq.-ft. (6,660-sq.-m.) linen processing facility in Phoenix; and it's building the operation to be expandable by another 30,000 sq. ft. (2,700 sq. m.).

The extra space may well be needed. Angelica Textile Services plans to open its Phoenix facility with 100 employees in sales, customer service and linen management. But the operation may eventually employ as many as 300 workers, company officials say.

Founded in 1878, Angelica first made its name as a provider of service-industry uniforms, introducing the first uniforms made of synthetic fabrics (pictured above in a 1934 magazine ad). Today, though, three-fourths of the company's sales come from laundry plants like the one opening in Phoenix.

And employment could hit the upper end of job-generation projections, given Angelica Textile Services' strong existing local customer base - the project's driving *raison d'etre*. The company specializes in laundry services for health-care facilities, including hospitals and surgical centers, nursing homes and long-term care operations. A number of Phoenix-area institutions are already major clients, including Scottsdale Healthcare and St. Joseph's Hospital and Medical Center.

Company's Area Customers Previously Served by Southern California Operation

Angelica Textile Services has been supplying such Phoenix-area clients from one of its out-of-state operations.

"We've been serving our Arizona customers from a Southern California location," Division Manager Ron Sneddon, "so this new facility in Phoenix will allow us to continue providing linen management solutions for our customers in a more efficient manner. We're also looking forward to presenting our capabilities to other hospitals in the area."

Angelica, Sneddon added, was sufficiently intent on getting closer to its Arizona customer base that it considered acquiring local commercial launderers before deciding to build from scratch in Phoenix.

Angelica Textile Services further bulked up its West Coast presence a year ago by trading commercial laundry facilities with a rival firm. The company traded its operations in Philadelphia to Houston-based Tartan Textile Services in exchange for Tartan's operations in Vallejo, Calif.

Plant Will Emphasize Resource Efficiencies

In addition to its existing customer base, Angelica picked Phoenix for its ground transportation infrastructure and its available labor pool, Sneddon said. The company will transfer a few employees from California, but most hires will come from the Phoenix area, he explained.

The Phoenix facility will be the first in the area for Angelica Textile Services. But another arm of Chesterfield, Mo.-based Angelica Corporation, Life Uniform, has four retail outlets in the metro area.

Angelica Textile Services, though, accounts for the lion's share of the parent firm's business. Some three-fourths of Angelica Corporation's 2002 annual sales of $363.4 million came from its 25 laundry plants.

The 26th plant will generate more than $315,000 annually in direct and indirect revenues for Phoenix, Maricopa County and the state, the Greater Phoenix Economic Council estimated.

Angelica Textile Services existing Phoenix-area clients include Scottsdale Healthcare. (Pictured: the Shea Women's Center at Scottsdale Healthcare.)

Angelica Textile Services' plant is already generating direct revenues for some local real estate service providers. Joe Diemer Associates Architecture and Planning designed the facility, while LGE Design Build is serving as general contractor.

The facility will be a state-of-the-art structure, said Sneddon, using 50 percent less water and 20 percent less energy that most commercial laundry operations. And unlike most laundry facilities, the Phoenix plant, he added, will include air-conditioning throughout the premises.

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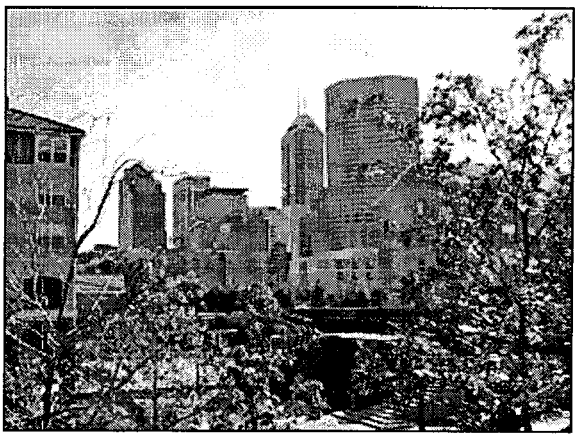
Editor's note: For more on location activity in Arizona and the Southwest U.S., see the Southwest Regional Review in the upcoming November issue of *Site Selection*.

BioStorage Technologies Picks Indy for 100-Employee HQ, Storage Site

by **JACK LYNE**, *Site Selection* Executive Editor of Interactive Publishing



BioStorage Technologies chosen site in Indianapolis (pictured) puts it at the heart of Indiana's robust life sciences sector.

INDIANAPOLIS — BioStorage Technologies Inc., has chosen **Indianapolis** for a new 100-employee operation that could prove to be a pioneering facility of sorts for the life sciences sector. The new Indianapolis operations will the first focused solely on pharmaceutical specimen storage, according to Oscar Moralez, president and founder of the newly formed company.

That Indianapolis operation will include some very cold space to serve the hot life sciences sector. BioStorage Technologies' officials say that the facility will store "hundreds of thousands" of life sciences specimens, some of them in freezers that are cooled to minus 232 degrees Fahrenheit (minus 150 degrees Celsius). In addition to storing biological specimens, the facility will also serve as the company's headquarters and will house its sales and logistics staff.

"The market BioStorage Technologies will serve is large and growing rapidly," Moralez said in announcing the city's Indiana project.

Moralez illustrated that burgeoning market by citing a 1999 federal advisory panel report. The report estimated that more than 282 million biological specimens were then stored in U.S. laboratories, military facilities, forensic DNA banks, tissue repositories, health-care facilities and other sites. And the U.S. total of stored specimens, he added, is increasing by 20 million a year.

That's where BioStorage Technologies comes in as an outsourced solution, Moralez noted. "By managing the time-consuming and detail-dependent processes of specimen storage, BioStorage Technologies will free life sciences organizations to focus on their core functions and achieve their scientific goals," he said.

Factors: Central Location, FedEx Hub, Strong Life Sciences Cluster

The company picked Indianapolis to serve that fast-growing sector because of the city's central U.S. location and the presence of a major Federal Express air hub for overnight

DCN:11697

All three of BioStorage Technologies principals - (l to r) Oscar Moralez, John Mills and Scott Sheaffer - were previously high-ranking executives with New Jersey-based Covance, which bases its Central Laboratory Services Division based in Indianapolis.

delivery, explained CEO F. John Mills.

"We will be an integral part of the infrastructure that will serve the life sciences." said Mills, who called biological samples "worth their weight in gold." BioStorage Technologies' Indianapolis facility, he asserted, "will provide the world's best and safest management, logistics and storage services of biological specimens and data."

BioStorage Technologies will be providing those services from a ripe area for life sciences. A 2002 Battelle Memorial Institute report ranked Indiana's life sciences sector as the state's largest employer, providing 318,000 jobs, more than 13.3 percent of private-sector employment.

Much of that sector is epicentered in Indiana's central region, particularly in the area stretching from Bloomington to Indianapolis to West Lafayette. Central Indiana's life sciences cluster includes some 900 companies with 82,000 employees, including Anthem, Clarian Health Partners, Dow AgroSciences, Eli Lilly, Guidant and Roche Diagnostics.

"BioStorage Technologies is another piece of the life sciences infrastructure that is so critical to attracting and encouraging the kind of life sciences businesses that we want to see in Indianapolis," said Jeb Conrad, executive director of Marion County Economic Development, part of The Indy Partnership.

One life sciences company that residents *already* see, in fact, accounts for much of BioStorage Technologies' key initial knowledge about Indianapolis' strengths. A contract company that develops and tests drugs, Princeton, N.J.-based Covance Inc. has its Central Laboratory Services Division based in Indianapolis. And all three of BioStorage Technologies' principals - Mills, Moralez and Vice President of Technical Operations Scott Sheaffer - were high-ranking executives with Covance before deciding to venture out to launch the new startup.

Sites Sits Adjacent to Indianapolis International

The company picked an Indianapolis site that will fully take advantage of the city's heartland position to facilitate fast specimen transit. BioStorage Technologies will open its operation in Park Fletcher Business Park, located in the southwest suburbs just across from Indianapolis International Airport. The park also provides rapid access to I-465, I-70 and I-65.

The company is leasing its facility from Duke Realty, which developed and operates the 700-acre (280-hectare) Park Fletcher. Terms of the lease weren't disclosed. BioStorage Technologies, said Mills, will invest $3.5 million in the building over the next two years.

The company expects to hire approximately 100 employees during its first 24 months of operations. Personnel working in the Indianapolis operation will include management, laboratory and computer technicians, salespeople, and others, Mills explained.

City, State Providing $300,000-Plus in Incentives

Company jobs will pay an average salary of $37,600, 20 percent above Indiana's mean average.

"The life sciences continue to be a driver of our regional economy, attracting good-paying jobs and investment to our community," Mayor Bart Peterson (D) said in welcoming BioStorage Technologies.

State and local economic development arms are providing the promising

startup with more than $300,000 in incentives. The largest chunk of that total is coming from the city's six-year property tax abatement, which has an estimated value of $230,000. The Indiana Department of Commerce is also providing $78,500 in worker training grants.

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"Life science is one of the core industries that Indiana is focusing on through the 'Energize Indiana' economic development package of programs," Lt. Gov. Joe Kernan (D) said in announcing the BioStorage Technologies project. (Kernan was soon after named Indiana's governor after the death of Gov. Frank O'Bannon.)

BioStorage has raised $1 million thus far from investors. At least one firm has signed a letter of intent for specimen storage in Indianapolis, Mills said.

Looking for a previous "Project Watch"? Check the Archive.

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THE SITE SELECTION Online Insider

Week of September 9, 2002

Snapshot from the Field

LOOKING FOR A PREVIOUS STORY? CHECK THE ARCHIVE.

$1B Redevelopment of Boston-Area Base Nears Kickoff

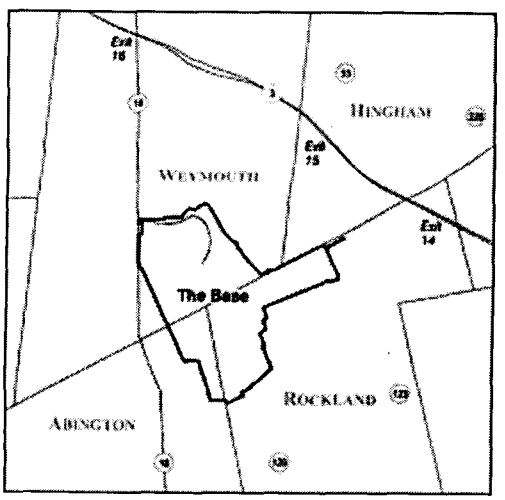
Photo: South Shore Tri-Town Development Corp. Opened all the way back in 1942 (pictured), the Weymouth naval station closed down in 1997 as a result of the 1995 Base Realignment and Closure Act.

by **JACK LYNE**, *Site Selection* Executive Editor of Interactive Publishing

WEYMOUTH, Mass. – A US$1-billion, 3.5-million-sq.-ft. (325,150-sq.-m.) development just outside downtown **Boston** is edging closer to the starting gate:

Long awaited and long debated, **the redevelopment of the former South Weymouth Naval Air Station** recently took a giant step forward with first-phase approval from Massachusetts Secretary of Environmental Affairs Robert Durand. Durand's approval - which certified that the first-phase redevelopment plan "adequately and properly complies with the Massachusetts Environmental Policy Act" - was a prerequisite for private-sector participation in the 1,442-acre (583.6-hectare) property that comprises the onetime Naval operation.

The Navy in 1997 closed the huge base, which straddles the cites of **Abington, Rockland and Weymouth.** Massachusetts Senate President Thomas Birmingham (D) has called the site 16 miles (25.7 kilometers) southeast of Boston "a tremendous site . . . almost begging for development."



Map: South Shore Tri-Town Development Corp. Covering 1,442 acres (583.6 hectares), the former South Weymouth Naval Air Station includes parts of three Massachusetts cities: Abington, Rockland and Weymouth.

With the state's environmental approval, those development pleas will begin getting answers. Massachusetts' OK begins a 10-year process that will involve a total investment of some $1 billion and will create an estimated 7,500 permanent jobs.

Specifically, the state Dept. of Environmental Protection's seal of approval clears the way for the Navy to begin turning over the first parcels of the base, free and clear, to the South Shore Tri-Town Development Corp. (www.ssttdc.com). South Shore Tri-Town Development is a quasi-public authority that the state legislature created in 1998 to oversee the redevelopment.

The first property turnovers will likely occur in late summer or early fall, with development beginning next year. Land near the base's entrance will make up the initial handover, opening up prime development opportunities. That property includes few Navy facilities and has a clean environmental bill of health. Rising on that tract, according to South Shore Tri-Town officials, will be up to 300,000 sq. ft. (27,870 sq. m.) of office and R&D space, plus as many as 300 units of senior housing.

"This can be built on our northwest quadrant, relatively quickly, as there is little or no remediation or

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wetland impact," explained Kenneth Goff, executive director of South Shore Tri-Town.

Mega-Mall Meets Opposition

Quickly, however, is not a word readily associated with many military base redevelopments. While closed bases present rich corporate-location and economic-development possibilities, hammering out a redevelopment strategy is seldom a tidy process.

And so it's been for the Weymouth base, which first opened in 1942.

Early on, in fact, it looked like a mega-mall would rise as the redevelopment's first architectural artifact. South Shore Tri-Town Development in the summer of 2000 signed a contract with Arlington, Va.-based Mills Corp. (www.millscorp.com) to develop a huge mall and business complex that would've included 1.1 million sq. ft. (102,190 sq. m.) of retail - roughly four times larger than the current Phase I development.

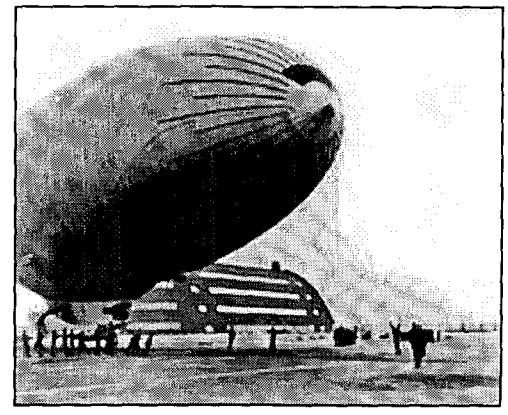

Photo: South Shore Tri-Town Development Corp.
The six blimps that flew out of the South Weymouth station in 1944 (pictured) were the first fleet to cross the Atlantic. The airships later flew anti-submarine patrols over the Straits of Gibraltar.

The mall development contract included option-out clauses for both sides through Dec. 15, 2000. The options were needed, it turned out, as the mega-mall met with a less-than-warm welcome.

Environmental agencies, for example, weighed in emphatically. (Abington, Rockland and Weymouth voters in 1998 approved the reuse plan and zoning bylaws, but all projects must be approved by federal and state environmental agencies.) The federal Environmental Protection Agency voiced grave concerns over the mega-mall's impact on the South Shore area's traffic, air quality and water supply. And the EPA urged state environmental authorities to require a comprehensive review of the plan.

Abington, Rockland and Weymouth officials similarly expressed strong reservations about the redevelopment's direction. One of those officials' common complaints: the dominance of retail, not business, in the first planned projects. Better to create more corporate jobs for local residents, many of whom were commuting out of town for work, they said.

Enter 'Staged Development'

With resistance mounting, South Shore Tri-Town Development in December of 2000 exercised its option, pulling the plug on the Mills Corp. mega-mall agreement.

"The board decided that additional time was needed to develop a comprehensive business plan and marketing strategy and to identify funding sources for on- and off-site infrastructure," Goff said. "The board," he added, "came to realize that several factors would take a lot longer than originally planned" including "the complex environmental permitting process" and "staging construction contracts consistent with regional planning processes."

South Shore Tri-Town Development at that point shifted to the "staged development plan" that's now primed to enter its first phase.

The second phase in the "slower, more gradual plan," said Goff, will be "the Route 18 development stage," with the highway outside the base entrance upgraded and expanded from two to four lanes. Scheduled for completion by 2006, the "Stage II" development would add an additional 700,000 sq. ft.

(65,030 sq. m.) of office and R&D space and a 190-acre (76.9-hectare) golf course.

DCN:11697

"Stage III," the final redevelopment build-out, would kick in after the completion of improvements to Route 3, including a connector road to the base, according to Goff. During the build-out, another 2.5 million sq. ft. (232,250 sq. m.) of office and R&D would be completed between 2010 and 2012.

Official: 'Numerous Developers' Waiting in Wings, But Reuse Plan is 'Gospel'

"Numerous developers" have stepped up to participate in the billion-dollar base redevelopment, Goff said. But the reuse plan that voters approved in 1998 will rule as "gospel" in the reuse, he explained.

That plan calls for 948 acres (383.7 hectares) to be set aside for open space, parks, golf courses and recreation; 174 acres (70.4 hectares) for office and R&D operations; 240 acres (97.1 hectares) for retail; 35 acres (14.2 hectares) for senior housing; and eight acres (3.2 hectares) for human services. Another 45 acres (18.2 hectares) will be used for Coast Guard housing. The base plan can only be altered by a two-thirds vote of the residents of the three towns that are part of the property.

But other base-site business locations will be opening up soon, even as the redevelopment plan moves through its three stages.

South Shore Tri-Town Development currently subleases 75,000 sq. ft. (6,967.5 sq. m.) to companies inside nine Navy-owned buildings on the base property. The redevelopment agency expects to lease additional Navy-owned facilities on the acreage "in the near future" once the buildings are brought up to code, Goff said.

Editor's Note: For more on military base redevelopment, watch for the feature in the upcoming November 2002 issue of *Site Selection*.

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South Georgia City Bounces Back Twice from Base Closings

by Robert E. Woodham

A new $36 million industry, eventually to employ more than 1,000, would be good news for any city, but for Bainbridge, Ga., it is the perfect climax of a miraculous success story. Cities now facing military base closings may take heart from the example set not once — but twice — by Bainbridge, a community which waded through the morass of two base closings within 15 years.

A model economic fall and recovery story, the narrative of Bainbridge's success is a paradox that was repeated twice against almost insurmountable odds. The story began in World War II when the Army Air Corps established Bainbridge Army Air Field as a pilot training base.

The city prospered as never before. Prior to World War II the little community depended almost entirely upon diversified agriculture for its livelihood. Only a few small plants provided industrial jobs.

Then came war's end and with it, an end to the need for the base. The region's agriculture, however, could no longer absorb large numbers of people. Farm mechanization was taking over, and a massive migration from rural areas set in. People by the scores fled the area, seeking employment opportunities.

Bainbridge's economic downfall was less than dramatic only because similar crises were evident through the nation in that period. New industrial plants were sparse in number compared to the communities competing for new industry to fill the widening gap of unemployed farm laborers.

With outbreak of the Korean War, the Air Force reopened the base as a pilot training installation. The new facility was larger and more elaborate than before. Hundreds of people from the surrounding area took jobs outside agriculture for the first time in their lives. Several new industrial plants also moved in, and, for the first time in its history, the city no longer was entirely dependent upon farming.

Fresh income from the base changed the face of the community. Residential construction boomed along with retail trade and new public facilities.

Then in 1960, the Air Force announced it would cease contract pilot training and close all such installations. This included Bainbridge Air Base — for the second time. Over 650 civilians were out of work, and the economy of Bainbridge shattered. Thousands of workers were directly affected by the closings in southwest Georgia of not only Bainbridge Air Base but also bases at nearby Marianna, Fla., and Moultrie, Ga. For Bainbridge, it was the loss of the city's largest employer and payroll.

Civic shock was tremendous. In a community of only 12,000 people, a $2.5 million payroll and 650 jobs is obviously a major economic force. Again, the city's limited industry and mechanized agriculture could simply not accommodate such a sudden and drastic increase in the jobless ranks.

Some commuted daily to jobs as faraway as Atlanta, more than 230 miles, rather than leave their homes. But eventually, hundreds were forced to move elsewhere for jobs.

Recovery came slowly. Beginning in late 1964, a desperate drive was launched to attract industry — a "must", the community felt, if it was to stop growing unemployment and population loss. The drive centered around small groups in the Chamber of Commerce and two new organizations especially organized to get new industrial payrolls, the Committee of 100 for Industry and Growth, Inc., the latter a combination of local governments, banks and civic groups.

The closed base had reverted to county ownership along with numerous dormitories, classrooms, extensive recreation facilities, storm and sewer system with a new sewage-treatment plant, flight line buildings and hangars — all constituting a well-developed community within itself. The base was conservatively valued at $15 million to $20 million.

A limited push just after the base closing to establish a state college in the school area of the former base fizzled due to the fact the community and a new state administration were at odds politically.

Industrial development efforts were soon concentrated on the former base, now dubbed Decatur County Air Industrial Park, and on Bainbridge State Docks. The docks are in the heart of an inland port area opened in 1958.

Starting with an aluminum window manufacturer, an influx of new industries into the industrial park in 1965 soon brought the park's total employment to well over 750. The deserted hangars and other flight line buildings began to hum with fresh activity of workers and machinery.

Thompson Industries, a major producer of automotive equipment, set up Bainbridge Wire Division where auto wiring for Ford and Chrysler is manufactured. The company's employment reached 350 by the beginning of 1966 and since has grown to 438. Success of Thompson's Bainbridge plant induced the company to establish another operation there, United Plastics. Production of a wide variety of plastic products for automotive, television and other fields now provides employment for 250.

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DeRose Industries set up a mobile-home plant where 133 are employed. Williamson-Dickie's pants factory has 195 workers. Georgia Palm Beach Window Corp. employs 60.

Civic leaders saw a chance for still more new jobs when state health officials decided in 1966 to decentralize mental health facilities. The school and housing areas of the former base were donated to the state after a long period of coaxing by the community. Accommodations turned over to the state included 14 modern dormitories, an administration building occupied by the Air Force only a few months, several classroom buildings, a dining hall, a chapel and other facilities in a beautiful campus-like setting among tall pines.

Bainbridge State Hospital now employs 191. Several hundred patients receive care at the medical institution.

The city's inland port also prospered. Kaiser Chemical Corp. established a vast agricultural chemical complex adjacent to the state docks and another agricultural chemical complex was set up by Georgia Gulf Surfur Corp. Chevron Corp. opened a large asphalt terminal with its own docking facilities. Several companies have storage facilities surrounding the port area. Morton Chemical Co. constructed its own docks and storage area.

During this expansion period, radio station owner John A. "Toby" Dowdy worked diligently as head of the Chamber of Commerce to land new job prospects. In spite of failing health, Dowdy made numerous trips for industrial contacts and carried on a program of activities that breathed fresh life into the city.

The city had held a celebration in 1956 to inaugurate construction on its state docks and again in 1958 for their dedication. Under auspices of Dowdy, the event was re-established in 1965 and expanded into the National Inland Port Festival. The festival had a two-fold purpose: spotlighting the city's industrial possibilities and attracting tourists. The festival soon drew participation from cities more than 300 miles away.

A whole new attitude developed among townspeople. Annual clean-up drives were begun. County-wide school consolidation brought construction of a modern high school. Efforts were revived to establish recreation facilities.

A brief period of business decline set in during the late 1960s. A fresh chance was seen in late 1970 when Bainbridge was approved as the site of one of several proposed new state colleges. There was a major hitch, however. Each community was required to put up over $2 million for construction of initial facilities and donate at least 150 acres of land. Complete sewer facilities and other developments were also required.

At a time when people were demanding tax relief, these requirements posed a difficult problem. At the same time, a community drive to legalize sale of liquor also developed. The move offered a source for financing the proposed college.

Proponents of economic growth and revitalization of the community rallied to push approval of the college appropriations through a referendum. A rebirth of civic spirit came with the college drive.

"The college effort propelled the city into a new attitude," noted one businessman. "Many people were anxious to see the area grow so their children could stay and work here," he stressed.

This fresh outlook started a chain reaction of new development. A county-wide nursing center has been constructed adjoining the county hospital. A comprehensive vocational school, a private school, new churches and residential areas have also been added. The city will soon start construction on a multi- million dollar sewage-treatment plant and major sewer extensions.

As a fitting climax to its economic recovery, Bainbridge is now witnessing construction of its largest industry. When completed and in full operation, the Patchogue-Plymouth plant will employ well over 1,000. The company is building a 520,000- sq.-ft. structure on 67 acres purchased at the Decatur County Air Industrial Park.

As if this were not boon enough for the city, the company has already begun land clearance for still another building of equal size adjoining the plant now under construction. The installation will produce carpet products. Total employment at the industrial park on the former military base is now approximately 1,300 — far more civilian jobs than were ever available when it operated as an Air Force base. With addition of Patchogue-Plymouth, that figure will rise to about four times the Air Force employment.

Things looked pretty grim in Bainbridge in 1961. Today, community development has reached boom proportions. Many civic leaders believe it is not in spite of the base closing, but because of it. Little wonder the community turned down a Dept. of Defense proposal to reopen a military operation during the late 1960s.

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Georgia Mows Down Competition, Lands 800-Employee Briggs & Stratton Plant

by Linda Liston and Tim Venable

Georgia — always a formidable Sunbelt contender in the hunt for new corporate facilities — fairly mowed down the competition in landing its latest economic development prize.

And the prize? Well, the Peach State's newest corporate citizen is pretty well known for mowing things down, too.

Milwaukee-based **Briggs & Stratton Corp.** plans to build a US$75 million manufacturing plant in **Statesboro, Ga.**, that will employ some 800 workers. Statesboro (pop. 21,000) is located about 50 miles (80 km.) northwest of the coastal city of Savannah, Ga. (see accompanying map).

The 365,000-sq.-ft. (33,900-sq.-m.) facility will produce an estimated 1.2 million 12- to 15-horsepower engines annually for lawn and garden tractors. Production is scheduled to begin in July 1995.

The company chose Statesboro from among more than 60 sites in seven states. Greg Socks, vice president and general manager of the company's Large Engine Division, says Statesboro won the plant for a number of reasons.

"From a business standpoint, we looked first at the work force. We run a pretty complex operation, with die casting aluminum and machining aluminum parts. We needed a skilled work force, and we needed to be able to train the work force."

Statesboro also had Ogeechee Technical Institute, "one of the finest training facilities we found in our search," Socks says.

"Other top factors were transportation, infrastructure, quality of life and the university (Georgia Southern University). All of that impressed us. But the most important thing was the quality of the local leadership. We were impressed with the pride they had in their community."

Peggy Chapman, executive director of the Bulloch County Development Authority, says Briggs & Stratton also wanted a stronger presence in the Southeast, which is now one of its main markets.

The new facility will be built in the Gateway Regional Industrial Park on a 50-acre (20-hectare) site donated by the county. The other major tenant in the new park is Wal-Mart, which recently located a $42 million, 1.5 million-sq.-ft. (139,350-sq.-m.) bulk distribution center there.

Briggs & Stratton reportedly also plans to expand existing production facilities in Murray, Ky., and Poplar Bluff, Mo.

Other Recent Locations

Electronics giant **Motorola** has announced plans to spend $387 million to expand production at its **East Kilbride, Scotland,** silicon wafer plant. The move will create about 250 new jobs.

Steve Bennet, director of Locate in Scotland, says the country has some of the most cost-effective high-tech skills in western Europe. "We may not be the cheapest in the world, but we have a strong track record, and we have the skills required."

Motorola currently employs some 2,300 in East Kilbride, with another 2,000 employed in nearby Easter Inch and Livingston.

Highly competitive operating costs and an effective public/private sector partnership have brought 800 new jobs to **New Mexico.**

Intuit, a leading developer of personal financial computer software, is building a 74,000-sq.-ft. (6,875-sq.-m.) technical support facility in **Rio Rancho**, about seven miles (11 km.) north of **Albuquerque.** Quicken, TurboTax and MacInTax are among the company's leading products.

"From the very beginning we were impressed by the favorable business climate in Rio Rancho," Intuit Vice President William L. Strauss said in announcing the decision. "We wanted to find an area with a healthy employment base and a bright economic outlook that would also be a great place to live. Rio Rancho simply met our needs better than any other city in the country."

Philips Electronics NV plans to invest $280 million in its computer-chip factory in **Nijmegen, Netherlands.** The expansion, scheduled for completion in late 1996, will create about 300 new jobs.

The Nijmegen plant is Philips' largest semiconductor production facility. Company officials say expansion plans also are in the works for its other semiconductor plants.

Some 800 new jobs are coming to **San Antonio, Texas,** thanks to **Citicorp's** planned $26 million expansion of its operations there. The financial giant's San Antonio facility services the company's consumer branch banking customers across the United States.

"When Citicorp first broke ground here three years ago, our goal was to establish our U.S. Service Center and eventually

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incorporate additional operations to this location," says President and Chief Operating Officer John McEachern. "The quality and availability of San Antonio's work force and the pro-business orientation of city, county and business leaders have helped accelerate our expansion plans."

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Texas-based **Continuum Co.**, a leading international provider of computer software solutions and related services to the insurance industry, has announced plans to create a software development center in **Dublin, Ireland.** The facility eventually will employ some 300 software specialists to serve the company's European customers.

United Parcel Service has chosen **Columbia, S.C.**, for a $30 million, 200,000-sq.-ft. (18,580-sq.-m.) regional shipping hub that will create as many as 600 jobs.

Columbia beat out sites in Atlanta, Charlotte, N.C., and Greenville, S.C., to win the new facility. The company also has regional air hubs in Dallas, Los Angeles and Philadelphia and a national hub in Louisville, Ky.

State officials say the hub is expected to double the amount of commercial activity at the Columbia airport.

Ford Motor Co. is building a $40 million technology center in **Yokohama, Japan,** that will develop parts and components for Japanese auto manufacturers. The facility eventually will employ about 80 scientists, engineers and other workers.

"Ford parts sales to Japanese automakers currently run at more than $300 million annually, primarily to transplant operations in the United Sates, and we plan to double that figure in the next several years," says Frank Macher, vice president and general manager of Ford's components division.

Ford also has expansion plans for its U.S. facilities. The company recently announced a $185 million expansion of its truck axles plant in **Sterling Heights, Mich.** The move will create about 240 jobs during the next three years.

Plant manager Richard Tepper says improved efficiencies enabled the company to move a substantial amount of work back to the plant that in the past has gone to outside suppliers in the United States or Mexico.

Tecumseh Products Co. has revealed plans to build a $50 million manufacturing plant in **Tecumseh, Mich.**, that will create 300 to 400 new jobs. The facility will produce the company's first scroll compressors for home air conditioners.

The manufacturer will receive a $3.4 million incentives package including tax breaks, job training funds and money to build a wastewater-treatment plant.

Direct-mail merchandiser **Fingerhut** is building a new $55 million, 1 million-sq.-ft. (92,900-sq.-m.) distribution center in **Spanish Fork, Utah,** some 50 miles (80 km.) south of Salt Lake City. The facility will employ 500.

Site selection and financial incentives negotiations for the new operation were handled by Minneapolis-based The Kenwaydin Group. The Spanish Fork location is the third major distribution facility the organization has sited for Fingerhut in the past three years.

Pending Locations

Nucor Corp. is considering sites in **South Carolina** and **Virginia** for a $500 million steel mill that would create about 600 jobs. The plant will manufacture flat-rolled sheet steel, which is used in autos, appliances and other products.

General Motors Corp. is evaluating the feasibility of building a $141 million auto assembly plant in **Aleppo, Syria.** The plant, which would create about 5,000 jobs, would be the first auto factory in the country.

Ford Motor Co. and **Mazda Motor Co.** plan to conduct a feasibility study for a possible new pickup truck plant in **Thailand.** If built, the factory would start production in 1998.

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Osaka Opens Its Offshore Airport

After two decades and the moving of literally mountains, Japan's Kansai airport opened recently.

The airport sits on a man-made island in Osaka's harbor, with an auto-train bridge and two-mile-long (3.2 km) highway linking it to the mainland and Japan's second largest economic region.

Kansai will handle outbound international traffic as well as connections to two dozen Japanese cities, while Osaka's old airport, Itami, will handle domestic flights. Tokyo's Narita airport will remain the termination point for most inbound international flights and the hub for connecting flights in Asia.

Kansai is billed as Japan's first 24-hour airport as well as the world's first offshore airport. Hong Kong is also shaving mountains and using the fill to create a site for its new airport at Chek Lap Kok.

For Sale: Argentina

Argentina has announced a sweeping privatization program that includes the sale of major state-owned infrastructure and government services.

Among the items to go on the auction blocks are three nuclear power plants, the national mint, the postal service, Argentina's main airports and the Bahia Blanca petrochemical group.

The sell-off, to be accomplished within the next 18 months, is part of an aggressive plan to trim inflation and revive a stagnating economy.

Soviet Military Base Sees Creative New Use

Military bases and pacifism seem unlikely partners, but near Brandenburg, Germany, a former Soviet base is becoming home to a group of Mennonites.

With nonviolent views and a refusal to bear arms, the Mennonites had been driven out of several European countries before settling in a remote part of the central Asian republic of Kazakhstan. With the reuniting of Europe some of the sect expressed hope that they could return to the West.

A small group of the Mennonites is converting barracks at the base into housing. The group is expected to become the nucleus of a new community housing a population of more than 1,000. German officials say Mennonite settlers could possibly play a major role in the rebuilding of post-Cold War Brandenburg.

Warner Bros. Starts German Theme Park

Warner Bros. has launched construction of a $200 million theme park and studio in Bottrop, in Germany's state of North Rhine-Westphalia. The area, in the heavily industrialized Ruhr region, is a major European media center.

Among reasons the company cited for its choice of Bottrop were a large population base of 23 million within 90 miles (145 km) of the park, excellent accessibility to the site and government support.

Warner Bros. is apparently not phased by the current financial and attendance troubles at EuroDisney outside Paris.

"As for Europe's ability to support another park," said Nick Winslow, executive vice president of the company's Recreation Enterprises Division, "all our research indicates the European market remains underdeveloped. We strongly believe that well-conceived and executed projects such as our will enjoy excellent market and financial success."

Opening of the theme park is set for April 1998.

Amsterdam Bags Morton Plant

Chicago-based Morton International has selected a site in Amsterdam for production of auto airbags inflators and components. Production will begin in 1995. Employment may reach 300 by 1998.

Morton's site search consumed several years and encompassed a choice of several hundred sites in Europe, ending with the purchase of a 330,000-sq. ft. (30,658 sq. m) facility in Amsterdam from IBM.

In addition to the available building, Morton cited good transportation, skilled labor and competitive salaries, competitive operating costs and incentives as the reasons behind its choice of Amsterdam.

The plant is located near several Morton customers, including General Motors, Volkswagen and Mercedes-Benz. During the 1996 model year Morton expects the Amsterdam plant to supply more than one million inflators to auto manufacturers serving the European Union.

The Amsterdam plant is part of an aggressive $50 million expansion of European operations for Morton Automotive Safety Products.

Morton's other European locations are concentrated in Germany. They include a technical center in Stuttgart, a marketing and technical service office in Munich, a Morton/Bosch joint venture in Schweiberdingen and an airbag module assembly plant in Braunschweig.

Morton also has two specialty chemical facilities in the Netherlands.

Environmental Issues Stall Denmark-Sweden Link

Work on the Oeresund Bridge, a $2.6 billion super project linking Sweden and Denmark, is stalled, pending further environmental investigations.

Authorized in 1991, the bridge would provide four vehicle and two rail lanes to connect Copenhagen with Malmoe, Sweden. Work, which was to have been completed in the year 2000, has been halted by a Swedish court which ordered more environmental studies to prove the

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project won't affect the Baltic Sea mix of fresh and salt waters or the flows from the North Sea.

Work has already begun on the Danish side of the 10.5-mile (17-km) bridge.

NEC Cites Global Strategy in Silicon Glen Plant

Japanese electronics manufacturer NEC Corp. will build an $800 million next-generation semiconductor plant in Livingston, Scotland. The project, which will employ 430, represents the largest investment in Scotland by a foreign firm.

The plant, on the site of the current NEC Semiconductors (UK) facility, will produce 64M DRAMS, 16M DRAMS and ASICs. The company has facilities for 64M DRAM production in California and Japan, and the new Scottish plant is a step toward a more balanced global strategy, according to a company spokesman.

NEC's announcement came shortly after Motorola revealed plans for a $387 million expansion of its East Kilbride, Scotland, semiconductor plant. That expansion, to be completed in 1996, will be Motorola's largest single investment in Europe.

Ten percent of the world's personal computers and 11 percent of Europe's semiconductors are produced in Scotland's Silicon Glen, a 70-mile wide (133-km) area stretching from Glasgow to Edinburgh.

Scotland broke the $1 billion mark for new capital investments in 1993. Some 134 projects created or retained more than 16,000 jobs.

Electronics-related companies accounted for nearly half of the investments. Such U.S. companies as Compaq Computer, Sun Microsystems, Digital Equipment, Motorola and Tandem Computers announced projects last year. North American companies were the dominant source of investment in Scotland.

After electronics, the next largest number of investments came from chemicals, plastics and rubber.

USA Is World-Rank Garbage Producer

Garnering the dubious honor of garbage maker of the world is the USA. American toss an average of 1,650 pounds (750 kg) of trash a year.

Europeans create less than half that waste, according to the European Union Bureau of Statistics — about 770 pounds (350 kg) per capita. "Most wasteful" honors among EU countries goes to the Dutch, followed by Denmark, Luxembourg and Germany.

About 40 percent of EU household waste is now recycled, says the EU bureau.

Germany leads in recycling, the result of an ambitious solid waste policy enacted in 1991. The solid waste ordinance makes industry responsible for the packaging it produces to the end of its life cycle. The ordinance requires manufacturers and distributors to take back and reuse packaging or recycle it outside the public waste disposal system. The packaging ordinance aims for an average recycling rate of more than 60 percent by 1995.

Barcelona Unveils New Projects

Barcelona is at it again, building a new series of super projects. Giant commercial centers, luxury housing, prestige office blocks and improved transportation are in the offing, as Barcelona bids for the attention of foreign investors.

Projects include a new seaside residential district with 2,000 dwellings and a "Super Apple" commercial complex.

The area around the city's Llobregat River delta will be converted into a huge distribution center. That project is allied to an improved network of road, rail, sea and air links. The 15-year project will cost an estimated 400 million pesetas. It is reported to be the biggest project since Barcelona's preparation for the Olympic Games.

Previous super projects, including a new ring road and preparations for the 1992 Olympic Games, did much to improve the appeal of the Spanish city to foreign investors.

China Rail, Road Projects to Spur Development

China is not only one of the world's hottest spots for new manufacturing investment — it is also the beneficiary of large number of infrastructure super projects designed to spur development.

- China plans to construct a controlled-access, four-lane expressway of 211 miles (340 km) between the Beijing capital region and Xinxiang. The World Bank is supplying a $340 million loan to finance the project.

The road will form part of the north-south arm of a grand cross at the core of China's planned national highway network. The road traverses two of China's most economically important provinces — Hebei, which encircles Beijing, and Henan, which extends south along the Yellow River and which is China's second most populous province. The provinces are the beneficiaries of burgeoning industrial and agricultural activity. They are in the crucial transportation corridor extending from Beijing to Hong Kong.

- On a larger scale, China is seeking foreign investors to participate in construction of four trunk roads to link the nation east and west and north and south.

The roads will probably be built on the Build-Operate-Transfer (BOT) system, whereby investors construct and manage a project for a fixed time, then turn it over to the government. Hong Kong has had great success improving its infrastructure under this scheme.

The new arteries, which are expected to be completed by 2000, will total 86,940 miles (140,000 km) in length, will traverse more than 20 provinces and autonomous regions and link

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more than 100 cities.

• Studies are under way for a $5.7 billion high-speed railway between Beijing and Shanghai. There may be the possibility of foreign participation in the 907-mile (1,460-km) line.

The line would be a closed system that need not link to the main railway network. China has not been willing to give foreign investors a majority stake in any section of the national network.

In addition, the southern city of Shenzhen is investing $1.5 billion in an underground railway that will eventually link with Hong Kong's rail system. Work on the project is to start in 1995 and be completed in four years.

• China plans to build a road and rail link — the world's longest undersea tunnel — across the Bo Hai Strait. The waterway divides the Bo Hai and Yellow Seas between China and the Koreas.

The $10 billion northeastern China project will include bridge sections linking 10 islands and a 36-mile (58-km) tunnel. The project would cut 620 miles (998 km) from the current land journey from northeast sea ports and Beijing.

• China's southern city of Guangzhou will see a new international airport at a cost of $1.9 billion. The airport is expected to be in operation in 1997.

Oracle Sets India R&D Unit

Citing "rich talent," government incentives and cost-effectiveness, USA-based Oracle Corp. is setting up a software R&D center in Bangalore, southern India. The facility, the first outside the USA and Europe, will be the company's largest abroad when it reaches full operation in two years.

IBM, Motorola and Texas Instruments are among companies operating in India's center of software development. Oracle's San Francisco R&D center directs global research, but some production and R&D is being moved to India. A company spokesman said the move was based on India's greater "synergy" with the Asian region and by the fact that Oracle does business with several Indian software companies. Indian economic reforms were also a factor.

High-Speed Station Opens in Lyon

With the recent opening of a TGV station at Lyon-Satolas International Airport, the French site becomes the first in the world to combine four means of communications: air, high-speed rail, motorways and telecommunications.

The train station represents a pivotal point in expansion of the European high-speed rail network. The trains of the north-south corridor will connect here with the east-west routes under construction.

Lyon also sees itself emerging as a European distribution center. The TGV station has freight-handling capabilities for air-to-high-speed train intermodal connections.

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AOL's Balancing Act:

The Need for Nearness vs. 'Virtual Space'

by JACK LYNE

When AOL hit cyberspace hell in 1996, its problems were rooted in old-fashioned physical space. But the online king has come back, centralizing brainpower and technology to fuel rapid global expansion.

Cyberspace may be where you make your fortune — but not without top-flight facilities support.

That's one of the real estate lessons America OnLine learned from its explosive growth. From 1993's 300 employees in only two U.S. facilities, AOL has become a formidable global force valued at US$26 billion.

"We had about 900 people when I started here almost three and a half years ago. Now we have 9,500," says Mark Stavish, AOL vice president of human resources.

But that abrupt expansion has left AOL with a real estate tiger by the tail, one that bit where it hurts in late 1996.

Offering flat-rate unlimited access expanded AOL's subscriber base so rapidly that it overwhelmed capacity. Customers began repeatedly receiving the dreaded "503 error message" — "The server is too busy to accept your request. Try again later."

Demand Outstrips Facilities' Supply

Best known for its clout in cyberspace, AOL was staggered by problems grounded in old-fashioned *physical* space. Online demand had outrun what real estate could supply, shaking AOL to its cyberspace core.

"Back in the latter part of 1996 and early 1997, when we really were under siege in terms of productivity and service quality, we were in three buildings in Vienna, Va.," says Stavish, who also oversees AOL's facilities, reflecting the connection between real estate and employee productivity. "Originally, we were in one owned building, and we'd leased two others nearby to cope with rapid employee growth.

"A lot of the problems had to do with building out our network. But as customer usage grew, we had to have computer capacity. And that starts with having a facility to put the capacity in."

At the time, AOL simply didn't have a facility big enough to effectively house its network.

The fallout wasn't pretty: class-action suits, refunds and a glut of bad press. "People depending on AOL for email services might think twice," said John Aronsohn, an analyst at Boston-based Yankee Group.

Relocation Fuels Comeback

Today, though, AOL is on a business roll. Kate Delhagen, a senior analyst at Cambridge, Mass.-based Forrester Research, called AOL's comeback 1997's "Cinderella" business story. "They were buckling badly, but they bounced back very successfully."

Much of that comeback is due to the key competitive advantages provided by AOL's new 90-acre (36-hectare) headquarters campus in Dulles, Va., where Stavish sits on a sunny summer afternoon.

With information technology's ascendance, most companies are grappling with space management issues. In particular, they're struggling with balancing two distinctly different kinds of space: space that supports operations that must be centralized, and so-called "virtual space" — the distant, diffuse, often international facilities that must operationally mesh. Add cyberspace, AOL's bread and butter, and the equation is even more complex. (In fact, some industry analysts are using the term "virtual real estate" for the value-adding assets of firms like AOL and Amazon.)

In Dulles, AOL seems to have found a location that optimally supports its core concentration.

Significantly, the new site has promoted stronger network reliability — something AOL has dearly needed in refurbishing its reputation. In the last two years, subscribers have doubled to 12 million, easily the world's largest online service. Daily, AOL is accessed 800 million times, a 300 percent increase over 1997. Peak demand of 675,000 simultaneous users is a 200 percent uptake from 1997. (Those figures would be even higher with the five million users of CompuServe, which AOL acquired in late 1997.)

What's more, the expansion-ready Dulles site provides huge flexibility in meeting sharp demand surges that can turn online to *off*line in the blink of an eye.

"The campus provided a short-term solution, plus long-term room to grow," Stavish says.

No Thanks, AT&T

Today's AOL is so strong that on June 17th it rejected a takeover offer from mighty AT&T, the world's biggest phone company. An underperformer in cyberspace, AT&T reportedly bid well above AOL's market value. But with its new site's strengths and an internal realignment, AOL had moved to a posi-

tion of strength.

That strength was evident in a June 17 email to employees from CEO Steve Case and President Robert Pittman. "Independence is critical to our continued success," Case and Pittman wrote. "It provides us with flexibility in establishing alliances [and] nimbleness in managing our business."

Flexibility and nimbleness have helped AOL rebound since the dark days of 1996-97. It's now expanded its global presence into Europe, the Asia-Pacific and the Middle East. In fact, it's Europe's No. 1 online service.

The Fast-Track Dulles Deal

None of that ambitious diffusion, though, would've been possible without the Dulles headquarters, located in northern Virginia's Loudoun County. Without it, AOL might still be online in Dante's Inferno.

"People always say, 'They must be giving you terrific incentives.' But it's not really that at all," Stavish says. "In our business, as quick as we've grown and as quick as we need to move, time really *is* money.

"What the Loudoun County economic development people *have* given us is terrific service. They've expedited things, getting inspectors quickly onto our site and removing red tape."

AOL decided to move its headquarters to Dulles in August of 1996, when capacity problems were a distant rumble. A few months later, relocation was the stuff of survival. "Moving into this campus was absolutely mission-critical," Stavish says.

It's the Speed, Stupid

That fact wasn't lost on Loudoun County officials, who'd long courted AOL. They expedited approval of the headquarters site plan, slashing it to 30 days, a third of the standard time. More time was saved by simultaneously reviewing and approving building plans and issuing building and occupancy permits on a floor-by-floor basis.

With that whirlwind pace, AOL moved into its new headquarters, floor by floor, only five months after submitting its renovation plan.

That turbo-charged clip has continued. AOL now occupies well over 500,000 sq. ft. (46,450 sq. m.) of space at the new headquarters campus, including a renovated office building, a renovated and expanded Creative Center, and a new data processing center, each roughly 180,000 sq. ft. (16,700 sq. m.). A second, 230,000-sq.-ft. (21,400-sq.-m.) Creative Center is under construction.

"With our data center, it was literally only 12 months from the start to when began putting the computer boxes in," Stavish explains.

"With a facility as intricate as that data center, that's as hyper-track as is humanly possible, which we couldn't have done without county support. That's been a big advantage in gaining capacity to meet subscribers' needs." (In fact, local officials even renamed the headquarters road "AOL Way.")

The White Elephant Dances

Ironically, the cyberspace king found its new home in a space and air industry player's stalled expansion. Years earlier, British Aerospace (BA) had vacated the 250,000-sq.-ft. (23,200-sq.-m.) facility, now considered a white elephant.

For AOL, though, the elephant looked like opportunity. The site was immediately available, along with a yawning expanse of adjacent land. BA's old facility would up AOL's space by almost 40 percent, providing critical capacity room. What's more, it would facilitate the right mesh of the knowledge workers that are the lifeblood of knowledge-based firms like AOL.

Without that one-time white elephant, AOL was facing huge real estate problems, Stavish says.

"Two or three years ago, we looked at our growth," he explains. "We realized that if we didn't find or build a campus setting, we would end up with our people in eight to 10 different locations, because no large facilities had been built in northern Virginia in five years."

That would've been an operational nightmare, given the complexity of AOL's operations.

"A big part of our company is AOL Interactive Services, a large programming group that functions much like a TV network," Stavish says. "Then we have a big computer operations group with some 130,000 sq. ft. (12,100 sq. m.) of raised-floor space, and a big software development organization that does our systems engineering. Plus, we have a big service organization that manages call centers.

"All those pieces really have to fit together hand in glove. Distance would be very difficult to manage with those kinds of inter-relationships. With this big, concentrated campus, we get the synergies of having our knowledge workers at one basic location."

Call Centers Scatter

The larger part of AOL's operation, however, lies far from its campus headquarters.

Says Stavish, "Sixty percent of our work force of 9,500 people is in our call centers. In most cases, that argues to geographically break up the centers, so you tap multiple markets with maximum time zone coverage."

AOL has located its U.S. call centers in a widely dispersed group of what some analysts call "second-tier cities" — Albuquerque, N.M.; Jacksonville, Fla; Ogden, Utah; Oklahoma City; and Tucson, Ariz.

"We try to site our call centers in markets that can support our labor needs, maximizing the labor market," Stavish says. "For example, all our U.S. call centers are in areas with a lot of colleges and universities, and many have nearby military bases.

"Those pools flush out labor needs. A major portion of our calls are technically related, and a lot of work is in the evenings and on weekends. So it's the perfect job for college students, who've been a key source of talent."

Partners Going Global

AOL might well stand for "Alliances OnLine." It's elevated alliance-making to a cross between art and mass production.

That army of alliances has been a particular boon in AOL's rapid expansion in the global market, where its subscriber base is expanding most rapidly.

Joint venture partner Bertelsmann AG, a $13 billion-a-year media company that's the world's third-largest, has been a key in AOL's nimble European expansion. With facilities in 40-plus

countries, Bertelsmann is a long-time power in print and electronic media (recently acquiring Random House). Of late, European multi-media has become part of its orbit.

That powerful partner has enabled AOL, in less than three years, to establish European offices in Paris, London, Baar, Switzerland, and Hamburg, Ger-many, plus call centers in Dublin and Saarbrucken, Germany. Bertelsmann's real estate savvy added speed and cost-effectiveness to AOL's European entry, Stavish says.

"All facilities are owned by the AOL Bertelsmann Online 50/50 joint venture," Stavish explains. "Because Bertelsmann had such a terrific presence in Europe and a huge amount of European market knowledge, we were able to use their corporate infrastructure to outsource work like site selection and hiring.

"When you go international, you find very different laws, customs, practices and cultures. When you have a successful partner like Bertelsmann, you want to use their know-how, rather than trying to figure it out on your own."

With that fast-track expansion assistance, AOL Bertelsmann Europe has rapidly penetrated the market, landing more than 2 million subscribers in 30-plus countries. "We have exceeded our expectations and can claim to be the first interactive service to become a pan-European mass medium," says Heinz Wermelinger, AOL Bertelsmann Europe president and CEO.

As in most of AOL's key alliances, Bertelsmann also supplies content, online's ultimate make-or-break factor. In March, for example, Bertelsmann's RTL channel began distributing its evening news online in Germany, its first step in creating an all-news AOL channel.

AOL has followed a similar model in setting up operations in Japan, where it's allied with Nikkei, a leading publishing concern, and Mitsui, one of the world's largest trading firms.

Profits Back Business Model

For all its recent success, AOL is at a critical juncture in its business evolution.

Right now, the bottom line looks good. Third-quarter fiscal revenues of $575.6 million were up 50 percent from a year ago, while advertising and commerce revenues of $117.9 million mark a 74 percent increase.

Those figures bolster the business model to which AOL has doggedly adhered. Having reached a critical mass of customers, AOL's revenue from sales by online merchants is starting to subsidize the rising equipment costs necessary to serve customers.

"We've always felt that a balanced revenue model is the key to our business," Stavish says. "For example, about 10 percent of the cost of producing a newspaper is paid for by subscriptions; the other 90 percent is in advertising. We see that as where the value is going to be migrating."

But AOL is certain to face further fierce competition — and, likely, further criticism.

Says Mark Mooradian, an analyst at New York-based Jupiter Communications, "AOL is doing a lot of the right things now. Still, it faces big challenges that could make its past problems look small." Past problems also still fuel the ire of a lot of hard-core cyber-citizens.

Going It Alone

AOL's biggest challenge, though, lies in media moguls like AT&T, CNN, Disney/ABC, Fox, Microsoft, Sony and Warner Brothers, who're lusting for a slice of the cyberspace pie. AOL President Case seems undaunted. If deep-pocketed cable TV, phone, and satellite firms develop faster Internet access, they'll still carry AOL if it delivers what consumers want, he maintains.

Continued on page 643

So AOL goes it alone, banking on the alliances and acquisitions that are extending its global empire in both geographic and virtual space.

On one hand, AOL in early May paid $25 million in cash for NetChannel, a direct competitor with Microsoft's WebTV.

"TV is largely viewed by groups, while a PC has an audience of one," Stavish says. "So even as extend the brand, we'll probably build in a unique functionality for that platform."

On the other hand, AOL three weeks later entered the Middle East, paying $287 million in cash to acquire Tel Aviv-based Mirabilis, whose ICQ ("I seek you") technology creates virtual communities more sophisticated than AOL's "Buddy Lines." In addition, AOL is eyeing new markets, particularly South America.

Time will tell whether AOL's strategy keeps the big boys at bay. In cyberspace, "rules" are still being written — and promptly rewritten.

One thing, though, seems certain in AOL's geographic and virtual expansion. After the debacle of 1996-97, its internal real estate house will surely be in shipshape order. *SS*

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PM News on BRAC

Anonymous. **PM. Public Management**. Washington: Apr 2005.Vol. 87, Iss. 3; pg. 33, 1 pgs

Subjects:	Local government, Military base closures, Environmental cleanup
Author(s):	Anonymous
Document types:	News
Publication title:	PM. Public Management. Washington: Apr 2005. Vol. 87, Iss. 3; pg. 33, 1 pgs
Source type:	Periodical
ISSN/ISBN:	00333611
ProQuest document ID:	820683861
Text Word Count	315
Document URL:	http://proquest.umi.com/pqdweb?did=820683861&sid=2&Fmt=4&clientId=63453&RQT=309&VName=PQD

Abstract (Document Summary)

The ICMA Base Reuse Consortium has translated the base realignment and closure selection process into a timeline to keep local government officials up to date. Some of the tasks for which a local government must take leadership in order to facilitate the base transition and to protect community interests include forming a local redevelopment authority, collaborating with the military, conducting stakeholder outreach and collecting community input, and developing reuse plans and alternatives.

Full Text (315 words)

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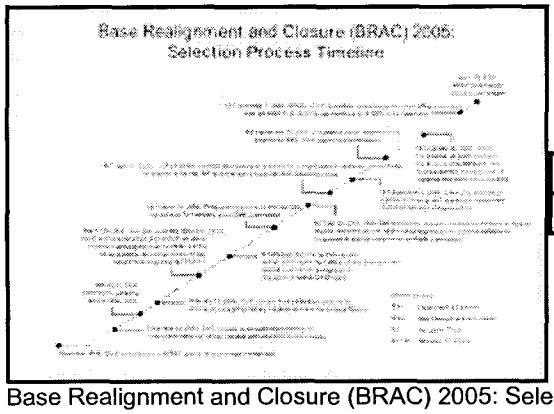
The 2002 Defense Authorization Act empowered the Department of Defense (DoD) to conduct a new base realignment and closure (BRAC) round in 2005.There is a legislatively mandated process for determining which military bases will be selected for whole or partial closure.The ICMA Base Reuse Consortium has translated the BRAC selection process into a timeline to keep local government officials up to date (see accompanying chart).

Previous BRAC rounds have shown that local communities experience economic downturns as a result of closure. Recovery from these effects depends in part on the advance preparation and planning undertaken by the local government. In most cases, local governments play a leading role in planning and implementing a base's redevelopment. Once their base is recommended for closure, local government officials and leading community members need to be aware of the remaining base selection process and prepared for probable outcomes.



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Base Realignment and Closure (BRAC) 2005: Selection Process Timeline

Some of the tasks for which a local government must take leadership in order to facilitate the base transition and to protect community interests include:

* Possibly forming a local redevelopment authority.

* Identifying funding.

* Collaborating with the military.

DCN:11697

* Complying with regulatory requirements.

* Conducting stakeholder outreach and collecting community input.

* Developing reuse plans and alternatives.

* Understanding the links between environmental cleanup and reuse plans.

* Developing, implementing, monitoring, and enforcing land use controls (LUCs).

The ICMA Base Reuse Consortium (BRC) assists local governments contending with the environmental cleanup and the redevelopment of closed/closing military installations (or other federal properties) by delivering customized technical assistance packages, researching relevant issues, and providing networks for the exchange of information.

The consortium investigates issues of importance to communities and shares the results and best practices through meetings, publications, a series of newsletters, and the Web site at www.icma.org/military. For more information, contact Bryan Barnhouse at ICMA, 202/962-361 3; e-mail, bbarn house@icma.org.

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Chamber enlisted to keep MacDill open

Jeff Harrington. **Knight Ridder Tribune Business News**. Washington: Mar 25, 2005. pg. 1

People:	Diehl, Arthur "Chip", Bush, Jeb
Author(s):	Jeff Harrington
Publication title:	Knight Ridder Tribune Business News. Washington: Mar 25, 2005. pg. 1
Source type:	Wire feed
ProQuest document ID:	812669651
Text Word Count	601
Document URL:	http://proquest.umi.com/pqdweb?did=812669651&sid=1&Fmt=3&cli entId=63453&RQT=309&VName=PQD

Abstract (Document Summary)

On a mission to keep MacDill Air Force Base in Tampa off of the military's base closing list, [Arthur "Chip" Diehl] visited the Greater Tampa Chamber of Commerce board at its monthly meeting Thursday morning to rally the business community.

Gov. Jeb Bush has said he would be shocked if MacDill closed. In addition to being headquarters for Central Command, which oversaw the war in Iraq, the base houses U.S. Special Operations Command, which oversees the nation's secret commandoes.

The timetable, as outlined by Diehl, moves quickly from here. On May 16, Defense Secretary Donald Rumsfeld will present his recommendations to the BRAC; by Sept. 8, the commission is to forward its recommendations to the Oval Office; by Sept. 23, President Bush is slated to approve or disapprove each closing and realignment; Congress then has 45 days to act.

Full Text (601 words)

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Mar. 25--TAMPA -- Retired Air Force Brig. Gen. Arthur "Chip" Diehl came here looking for a few good business contacts.

On a mission to keep MacDill Air Force Base in Tampa off of the military's base closing list, Diehl visited the Greater Tampa Chamber of Commerce board at its monthly meeting Thursday morning to rally the business community.

His suggestions: Work any contacts the executives have on the nine-member military commission that is recommending which bases to close. Present a unified front if and when panel members visit Tampa. And downplay what could be the base's biggest liability: a concern that it's hemmed in by residential development.

The retired general, formerly with MacDill's U.S. Central Command, said he believes there is adequate space for aircraft entering and leaving MacDill's air space. The only possible squeeze is in a small northeast area that includes 100-year-old homes.

"We do not in my opinion have an encroachment problem," Diehl said. "There's been no encroachment (issue) in five years."

Pentagon officials have indicated all 425 domestic bases are under scrutiny as the military looks to squeeze efficiencies and billions of dollars in savings from a Cold War installation network that has nearly 25 percent more capacity than what the armed services say they need.

Gov. Jeb Bush has said he would be shocked if MacDill closed. In addition to being headquarters for Central Command, which oversaw the war in Iraq, the base houses U.S. Special Operations Command, which oversees the nation's secret commandoes.

Bush and the state's congressional delegation have been waging a campaign to protect 21 installations, including MacDill, that generate $44-billion a year for the economy, second only to tourism and agriculture in the state.

DCN:11697

MacDill has a $6.5-billion economic effect on the region. About 7,000 military and civilian personnel work on base, making it one of the region's top four employers.

This month, the U.S. Senate approved Anthony Principi, a former secretary of veterans affairs, as head of the Base Realignment and Closure Commission, widely known as the BRAC. The Senate must approve the nine members of the panel.

The timetable, as outlined by Diehl, moves quickly from here. On May 16, Defense Secretary Donald Rumsfeld will present his recommendations to the BRAC; by Sept. 8, the commission is to forward its recommendations to the Oval Office; by Sept. 23, President Bush is slated to approve or disapprove each closing and realignment; Congress then has 45 days to act.

"We're about to enter the fourth quarter of a process . . . that we can't afford to lose," Diehl said in a presentation laden with sports analogies. "Let's continue to promote what got us to this lead."

He shared a list of the BRAC commissioners and urged chamber members to examine their spheres of relationships to find a one-on- one connection that would help in lobbying. Former Gov. Bob Martinez, who said he recognized at least one commission member, suggested chamber leaders write members of the base-closing panel.

The four previous rounds of base closures in 1988, 1991, 1993 and 1995 eliminated 97 bases and several hundred smaller facilities, and reduced capacity by 20 percent.

During previous rounds, the focus was on the military value of each base. This time, military value is just one of the criteria; others include the economic effect of the base, infrastructure needs and environmental issues. Times files were used in this report.

Credit: St. Petersburg Times, Fla.

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THE CHRISTIAN SCIENCE MONITOR
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Pentagon's long list of bases to close ; Next month's proposal for the biggest-ever round of cuts could transform both the military and many communities.; [ALL Edition]

Mark Sappenfield Staff writer of The Christian Science Monitor. **Christian Science Monitor**. Boston, Mass.: Apr 12, 2005. pg. 01

Subjects:	Military base closures
Companies:	Department of Defense (NAICS: 928110)
Author(s):	Mark Sappenfield Staff writer of The Christian Science Monitor
Document types:	News
Dateline:	*WASHINGTON*
Section:	*USA*
Publication title:	Christian Science Monitor. Boston, Mass.: Apr 12, 2005. pg. 01
Source type:	Newspaper
ISSN/ISBN:	08827729
ProQuest document ID:	820256101
Text Word Count	913
Document URL:	http://proquest.umi.com/pqdweb?did=820256101&sid=2&Fmt=3&cli entId=63453&RQT=309&VName=PQD

Abstract (Document Summary)

The question, then, is which bases fit the Pentagon's new strategy. Not surprisingly, the Pentagon has said little. Many military installations employ thousands of civilians and infuse billions of dollars into local economies, so any leak would flood the Pentagon with lobbyists and legislators pleading for their bases.

Almost certainly, future missions will value rapid response over the geographic isolation of the cold-war years, and that could change the footprint of America's bases. In one sense, the shift could benefit many American bases, since the Pentagon is likely to cut back on a number of major installations overseas in favor of smaller outposts dotted across the globe. Most of those troops will return to US bases.

The desire to have bases serve joint functions is perhaps one of the strongest clues to [Donald Rumsfeld]'s view of the future. For decades, the military branches - Army, Navy, Air Force, Marines - have acted like fiefdoms, each working largely independently of the others. Rumsfeld wants a more seamless military, and putting multiple branches on one base is seen as an efficient, potent way to recast the armed forces' culture and cooperation.

Full Text (913 words)

Copyright Christian Science Monitor Apr 12, 2005

As the Pentagon prepares to embark on its first base closings in a decade, it is already clear that this round will be unlike any that has come before, both in its scope and its intent.

The Defense Department has made no secret of the fact that this year's list of suggested closings figures to be the biggest in history. But unlike past rounds, when the process focused primarily on paring down a bloated military, the goal this year is largely to recast the military.

For 50 years, the United States aligned its bases against the Soviet foe, enfolding critical air squadrons in the safety of the heartland, and supporting America's military heft at massive industrial bases.

Now, in what could be a boost for bases as far afield as Guam and as close as the Carolinas, the diffuse threats of a new century call for a strategy of flexibility and quick deployment to the far reaches of the world.

As a result, the list presented to Congress May 16 is expected to be not only a way to cut costs, but also a way to reflect the changing character and shape of the military's mission.

"That is unique to this round," says Tim Ford, executive director of the Association for Defense Communities here. "What they're trying to do is much more broad. It's a transformation."

The transformation goes well beyond base closures. Under Defense Secretary Donald Rumsfeld, the military is in large part reinventing itself, shifting its emphasis from massive divisions toward smaller and more agile brigades. Base closures and realignments represent a way to make these changes adamantine, replacing iron-cast cold-war installations with a more malleable network.

It is one of the Defense Department's strongest tools for change. Once the Pentagon presents its recommendations in May, an independent commission will look at the list and either revise it or endorse it unchanged. Then the Congress and the president must vote yes or no on the whole list; neither can make changes. The previous four rounds - in 1988, 1991, 1993, and 1995 - closed 97 bases.

"Today's environment requires more agile, fast, and lean forces able to project power into theaters that may be distant from where they are based," said Philip Grone, a deputy undersecretary of Defense, in a statement to Congress last week. "This agility requires not only a shift in military forces, capabilities, and equipment, but also a new basing strategy."

The question, then, is which bases fit the Pentagon's new strategy. Not surprisingly, the Pentagon has said little. Many military installations employ thousands of civilians and infuse billions of dollars into local economies, so any leak would flood the Pentagon with lobbyists and legislators pleading for their bases.

Yet there are clues. When Secretary Rumsfeld earlier this year released his criteria for deciding which bases should be saved, cost came fourth. Before that were flexibility in dealing with fluctuating numbers of troops, space for training, and - No. 1 - the ability to respond to the needs of future missions, as well as the needs of the different branches of the military.

Almost certainly, future missions will value rapid response over the geographic isolation of the cold-war years, and that could change the footprint of America's bases. In one sense, the shift could benefit many American bases, since the Pentagon is likely to cut back on a number of major installations overseas in favor of smaller outposts dotted across the globe. Most of those troops will return to US bases.

The Pentagon had once suggested that it had as much as 24 percent excess capacity at its more than 400 bases. "The fact that we're bringing so many forces home from overseas reduces that number," said Rumsfeld in a recent briefing. A realignment of forces could occur within the US, as well, as the military gravitates toward coastal states - many with cheap land and supportive congressional delegations.

"Any favorably located place like Hawaii or ... the Carolinas will probably receive missions rather than lose them in the future," says Loren Thompson, a defense analyst at the Lexington Institute. "Contrast a base in the Carolinas with a base in the nation's interior, which is far from the coast and difficult to deploy."

The desire to have bases serve joint functions is perhaps one of the strongest clues to Rumsfeld's view of the future. For decades, the military branches - Army, Navy, Air Force, Marines - have acted like fiefdoms, each working largely independently of the others. Rumsfeld wants a more seamless military, and putting multiple branches on one base is seen as an efficient, potent way to recast the armed forces' culture and cooperation.

"The department is looking to maximize the utility of whatever base it has," says Jeremiah Gertler of the Center for Strategic and International Studies. "They're looking for more flexibility and versatility."

In small ways, the process has already begun. Langley Air Force Base in Virginia is integrating active members of the Air Force with members of the Guard. Now the Air National Guard's 192nd Fighter Wing will train at Langley, even flying the new $150 million FA-22 Raptor.

a small step, but one that may be indicative of the future.

"Looking at the challenges ahead, how do we integrate the Guard and Reserve more effectively?" asks Maj. Jeff Glenn of Langley's

DCN:11697

1st Fighter Wing: "This is just a test case ... but maybe a mind-set changes."(c) Copyright 2005. The Christian Science Monitor

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Cleanup fights stall new uses for old bases

By Peter Eisler
USA TODAY

Redeveloping a military site

can revitalize a community

— but not if the site is polluted

ALAMEDA, Calif. — Taking in the million-dollar views of San Francisco Bay from the old Alameda Naval Air Station, it's easy to see why this city staked its future on redeveloping the abandoned base. Its thousands of feet of coastline are prime real estate in one of the nation's most expensive and congested markets.

But looking inland at a maze of empty airplane hangars and rusting warehouses, the promise fades.

The air station accounts for a third of the city's area. By now, more than a decade after the base's closure was announced, the site was supposed to be the thriving heart of a revitalized community, full of new homes, shopping areas, boat slips, and a luxury hotel and golf course. Instead, the redevelopment of the base is mired in a massive environmental cleanup. Groundwater is contaminated with solvents and other chemicals used in aircraft maintenance. The soil is fouled by dumped munitions and fuel spills.

"Every time you turn a spade of dirt, you're likely to find (more pollution) that will drive your cost to clean higher," says David Brandt, Alameda's assistant city attorney.

Alameda is among dozens of cities and towns nationwide where lingering pollution has upset plans to redevelop closed military bases, a USA TODAY investigation finds.

The environmental problems are crushing many communities' best hopes for recovering from the economic blow of losing bases shuttered by the Defense Department in the past 15 years. And they're hindering the Pentagon's efforts to save billions of dollars by getting unused land off its property rolls.

As the Pentagon prepares to close dozens more bases in 2005 — the first round of closures in a decade — Defense officials are working with Congress to change the rules so communities shoulder more of the responsibility for cleanups.

Defense officials have long argued that the opportunity for redevelopment makes up for the job losses and other financial hits inflicted when a base is closed. But that potential is getting harder — and more expensive — to realize.

In the next round of base closings, new laws and policies allow the armed services to more easily transfer land to communities or private developers before it's cleaned. State and local officials say the changes leave communities with less leverage to force the services to address pollution problems that are discovered years later.

Pentagon officials are looking to control their restoration costs for closed bases, which have grown by billions of dollars as new problems with water and soil contamination have emerged.

Defense officials "are very concerned about these environmental costs," says George Schlossberg, a lawyer who served as the Pentagon's chief counsel on base closure and property disposal in the Reagan and first Bush administrations.

DCN: 11697

"When we began the base closure process in 1987 and '88, we never knew how high the environmental costs were going to be," says Schlossberg, now counsel for the National Association of Installation Developers, which represents cities and towns dealing with abandoned military land. "The costs are better defined now, ... and that's the number one impediment to getting properties conveyed to communities."

But communities are paying a price for the Pentagon's efforts to cut environmental cleanup costs at abandoned bases. Among USA TODAY's findings:

•Contamination is delaying redevelopment of closed bases.

Nearly 10 years after the first four rounds of base closings ended, 60,000 acres of military property abandoned in that process still is owned by the Defense Department. Environmental problems have delayed the transfer of 80% of that land, Pentagon records show.

•The Pentagon is cutting cleanup funds for closed bases.

Funding for cleanup at closed military bases fell 57% from 2001 to 2004, despite big increases in total defense spending. That has forced communities and managers of military cleanups to stretch restoration schedules.

•New policies aim to reduce military cleanup obligations.

The services have gotten more leeway to sell closed bases to communities or developers before they are cleaned. By aiming to transfer abandoned installations in "as-is" condition, the Pentagon hopes to give local officials or private buyers more responsibility for overseeing restoration work.

State and local officials are wary of the changes.

The military "never has done a very good job of identifying the environmental issues (at closed bases), and that's the show-stopper," says Barry Steinberg, a former Army environmental lawyer now representing communities fighting base closures. "It's like going to someone with a paper bag and asking, 'Do you want to buy what's in this bag?' The first question is, 'What's in the bag?' And that's the question the military has been unable to answer again and again."

Through 2001, the Pentagon had saved $17 billion from the 97 base closures completed since it began systematically shutting down excess installations in 1988, records show. And officials hope the recent changes in base-closure laws and policies will save more money.

Congress has scrapped a longtime requirement that abandoned military bases be transferred to communities at little or no cost to soften the economic blow of the closures. Under the Pentagon's plan to sell more properties "as-is," the services would disclose known pollution problems and remain financially liable for contamination, but the new owners would clean it up.

Pentagon officials say that under those conditions, local officials are less likely to consider impractical development, such as putting homes on land that requires extensive and costly cleanup. Once a redevelopment plan is in place, the services can write the buyer a check for the expected cleanup costs — or cut the base's price accordingly — and transfer the property with an agreement that the new owner will restore it.

Communities will get quicker "economic development, (and) property moves onto their tax rolls sooner," says Raymond DuBois, deputy undersecretary of Defense for installations and environment.

"When all the interests in a local community think they can get something for free, they tend to bicker," DuBois says. If a site is auctioned, communities often work with commercial developers to focus quickly on realistic redevelopment plans, he adds.

The new approach also will save tax dollars because local officials and private developers can manage cleanups more efficiently, Pentagon officials say. And those savings, coupled with proceeds from the sale of closed bases, will help offset the cuts in military cleanup budgets.

Local officials like the idea of getting the property quickly, but they worry about what happens if unforeseen pollution problems arise later. Though the services remain liable, redevelopment can be delayed for years if they dispute local cleanup demands. And once the services have gotten a property off their rolls, there's little incentive for them to heed a community's call for more cleanup work.

That problem has come up in several communities that have taken custody of military property before it is cleaned.

The services "move pathetically slowly" to address pollution on land they no longer own, says Dan Miller, Colorado's assistant attorney general for environmental matters. "Developers and communities have to clean up with their own money and hope to get it back.

DCN:11697

In 1997, Colorado sued the Air Force to get it to accept state standards for clearing unexploded ordnance at the old Lowry Bombing Range, which sits in one of Denver's fastest-growing suburbs. Today, new homes and a high school are in sight of areas still littered with unexploded ordnance. Based on a state settlement with the Air Force, military engineers are working with the developers' contractors to remove bombs and other old munitions. But Miller says the military "hasn't come close" to meeting the settlement's cleanup schedule.

Congress was poised to allow the military even more leeway to avoid costly cleanups by giving the Pentagon the option of declaring a closed base "inactive" and retaining custody. The legislation initially was approved, but state and local officials complained that it would allow the services to close a contaminated base and walk away, leaving the property unavailable for redevelopment. In one of its final acts before recessing last week, Congress scrapped the law.

The controversy over cleanup costs at closed bases is expected to continue asnewly recognized pollution problems addbillions of dollars to the military's liabilities at abandoned installations.

The most daunting is contamination from munitions. Ordnance that failed to explode in military exercises is the big concern, not only because it can blow up if disturbed, but also because it can leak toxins into soil and water.

More than 15 million acres of military land is thought to be polluted with used or dumped munitions, according to a study by the Government Accountability Office, the investigative arm of Congress. The costs of cleaning up that contamination, spread across nearly 1,400 sites, are estimated at $8 billion to $35 million.

Based on the Pentagon's current spending for cleaning up ordnance — about $200 million a year — it could take a century to deal with contamination from munitions, according to federal studies. Last year, a Pentagon task force recommended doubling the budget for cleaning up munitions. It warned that the Pentagon will face more conflicts with local regulators and "lose control of its own destiny" if it doesn't move more quickly.

Alameda's stalled efforts to redevelop the old naval air station offer a stark lesson in the ways that environmental problems can derail a community's plans to turn a closed base into an economic asset.

In the years since the installation closed, new pollution problems have cropped up repeatedly. Investigations have found previously unknown ammunition dumps, soil contamination from long-ago fuel spills and underground pools of industrial solvents. Each new discovery has thrown the city into new disputes with the Navy.

Alameda officials estimate that it will cost $450 million to sufficiently clean the air station, and they want a check from the Navy before taking custody of most of the land. The Navy, which is legally liable for the contamination, says $180 million worth of restoration is adequate.

The impasse has frozen a deal to transfer the property. And Alameda's grand plans for redeveloping the site remain little more than a hopeful vision.

"We need to have (properties) cleaned sufficiently, and that's where the tension occurs between the local community and the federal government," Alameda City Manager Jim Flint says. "We just have different standards for what is sufficiently clean."

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Defense Department Report Cites Need for More Base Cuts

By Gerry J. Gilmore
American Forces Press Service

WASHINGTON, March 24, 2004 – The U.S. military still has too many bases and other infrastructure, a senior Defense Department official said here March 23.

DoD's 2005 base realignment and closure report just submitted to Congress estimates the department doesn't need about a quarter of its current overall infrastructure, Raymond F. DuBois, deputy undersecretary of defense for installations and environment, told reporters at a Pentagon media roundtable.

"This is exactly the time we need to do a BRAC," DuBois said, pointing to today's changed national security environment and the ongoing need for the department to become more efficient to better manage taxpayers' dollars.

Congress authorized DoD to perform another BRAC for 2005. Recommendations from four previous BRACs conducted in 1988, 1991, 1993 and 1995 resulted in the accumulated closure of 97 installations.

DoD is transforming to meet 21st-century threats like global terrorism, Dubois said, noting the U.S. military is now "fighting in new and different ways, using new and different weapons systems." However, he said, the department's Cold-War-era based infrastructure "is not where we would like it to be and how we would like it to be." And the imbalance between DoD's changing force structure and infrastructure, he noted, will grow as time goes on.

Because modern military units coming into the pipeline -- like the Army's Stryker brigades – pack a bigger punch but require fewer soldiers than predecessor organizations, DuBois said, another round of base realignments and closures makes sense.

Army Chief of Staff Gen. Peter J. Schoomaker made that point in October at the Association of the U.S. Army's annual meeting. "We can get more power out of smaller organizations," the general said.

In the training realm, however, DuBois pointed out that many new weapon systems - like precision-guided missiles - require more training space than is available at some older installations. Increased joint operations, he noted, also are part of BRAC criteria.

The BRAC report, DuBois emphasized, provides an inventory of DoD bases and installations, but no recommended list of base closures or realignments. That process, he

DCN:11697

said, will be worked out between the Defense Department and a nine- member Defense Base Closure and Realignment Commission over the next two years.

The commission, according to DoD documents, is required to provide the president with a report no later than Sept. 8, 2005, containing its findings and conclusions based on a review of DoD's recommendations.

Biography:
Deputy Undersecretary of Defense for Installations and Environment Raymond F. DuBois
Gen. Peter J. Schoomaker

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BRAC Criteria Focus on 'Military Value'

By Sgt. 1st Class Doug Sample, USA
American Forces Press Service

WASHINGTON, Feb. 28, 2004 -- Military value will be the focus for the final selection criteria to be used in the 2005 round of base realignment and closures.

That value represents the ability of the installation to contribute to DoD future mission capabilities and operational readiness, said Philip Grone, principal assistant deputy undersecretary of defense for installations and environment, in an interview with American Forces Radio and Television Service Feb. 26. In fact, four of the eight guiding principles are centered on military value.

The final selection criteria are also based on factors such as potential costs and savings, community support and environmental considerations, Grone said. However, he added, "ultimately, the secretary must base his recommendations principally on how it contributes to our current and future mission capabilities, how it contributes to military value, how it supports the force."

The selection criteria for the upcoming BRAC round were finalized and published Feb. 12 in the Federal Register, a publication that fulfills the legal requirements to publish items such as proposed rules and notices, among other documents, for public comment.

Grone said Secretary of Defense Donald Rumsfeld approved the final selection criteria after an earlier public comment period for the draft version. The BRAC timetable also called for sending the draft and final criteria to defense congressional committees. Congress has 30 days to carry out any disapproval action on the criteria.

More review work continues in coming months on items such as a force structure plan and infrastructure inventory. The secretary makes final recommendations on base realignment and closures to an independent commission in May 2005.

The commission's nine members will review the secretary's BRAC recommendations before making their own recommendations to the president by September 2005. The president then either approves or rejects the commission's recommendation before sending them to Congress in November 2005. Congress has 45 legislative days to enact a joint resolution rejecting the recommendations or they become binding.

While the mechanics of the basic BRAC process are similar to prior rounds, Grone pointed out that the department's emphasis on transformational options and a "capabilities-based" approach is a significant change. "BRAC can make a profound contribution to our defense posture by realigning our infrastructure to support the new

DCN:11697

defense strategy," he explained.

And equally important, he added, emphasis will be placed on joint utilization for functions and facilities, as well as converting what he called "waste to warfighting."

"We have facilities that we no longer require that are costing us millions or billions of dollars to maintain over their useful life. Those facilities are not adequate to the mission; we don't need them. Those resources that are devoted to facilities we do not need, need to be converted to warfighting capabilities," he said.

In addition to eliminating waste at bases in the United States, Grone said the department will also look at overseas assets through a global posture review. "The important part about the global review is to look at all of our infrastructure and to look carefully at how they are positioned to support the mission, and to assess whether or not we can make changes -- not just where the wars of the 20th century ended, but where we need to realign and re-position our assets to deter, or where necessary, defeat any potential adversary in the 21st century," he explained.

Meanwhile, Grone said BRAC has become a "key component" of the secretary's transformation initiatives to realign the department's warfighting capability. He said the department's transformation will not be the best possible "unless we have the infrastructure in the right place to support the missions where they need to be. ... We can only accomplish that through a comprehensive base closure and realignment effort."

Although he emphasized there are no specific goals on the number of bases the department plans to close, he indicated past studies have estimated there to be roughly a 23 percent excess capacity across DoD. However, he said, "That doesn't translate into a number of bases that we might close or realign.

"There are no lists of bases to close, we have no specific targets," he explained. "And the reason we don't have specific targets is because it is important for us to put all of our transformational options on the table and not be constrained to an artificial number that we must close a given number of bases."

Grone said that installations affected by a closure and realignment recommendation must begin to implement the closure or realignment within the first two years in which the recommendation becomes law. All closure and realignment activity must be completed within a six-year window, he said.

"So it is a phased approach, but we want to get on with it aggressively because we want to do what we can to get the missions where they need to be to support force and business transformation of the department."

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Base Realignment and Closure

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DoD Asks Commanders for Data as 2005 BRAC Process Begins

By K.L. Vantran
American Forces Press Service

WASHINGTON, Jan. 6, 2004 – Base commanders in the United States and its territories and possessions have been asked to gather data on their installations in preparation for the 2005 round of base realignments and closures, Defense Department officials said here today.

The fiscal 2002 National Defense Authorization Act authorized DoD to pursue one BRAC round in 2005. The department will use BRAC to eliminate unnecessary infrastructure and to increase military capability and effectiveness, officials said.

Formal data calls, said officials, ensure the department collects and uses the most current data on installations throughout the BRAC analysis. This data call is one of many steps in the BRAC process, officials explained. Others will be added as needed.

Since each installation will take part in these data calls, officials emphasized that does not mean DoD is considering that installation for closure or realignment. Questions and data associated with the questions will be available to the public once the Defense Base Closure and Realignment Commission receives them.

The department published draft selection criteria in the Dec. 23 Federal Register for public comment. Comments are due by Jan. 28. The list of BRAC recommendations will be submitted to the independent BRAC commission by May 16, 2005.

The Defense Base Closure and Realignment Act of 1990 (Public Law 101-501), as amended by the National Defense Authorization Act for Fiscal Year 2002, requires that closure and realignment recommendations be based on published criteria that make military value the primary consideration.

Criteria include:

Military Value

- Current and future mission capabilities and the impact on operational readiness of DoD's total force, including the impact on joint warfighting, training and readiness.
- The availability and condition of land, facilities and associated airspace (including training areas suitable for maneuver by ground, naval or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the armed forces in homeland defense missions) at both existing and potential receiving locations.
- The ability to accommodate contingency, mobilization, and future total force

DCN:11697

requirements at both existing and potential receiving locations to support operations and training.
- The cost of operations and the manpower implications.

Other Considerations
- The extent and timing of potential costs and savings, including the number of years, beginning with the date of completion of the closure or realignment, for the savings to exceed the costs.
- The economic impact on existing communities in the vicinity of military installations.
- The ability of both the existing and potential receiving communities' infrastructure to support forces, missions and personnel.
- The environmental impact, including the impact of costs related to potential environmental restoration, waste management and environmental compliance activities.

Information on DoD's BRAC process is available online.

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U.S. Will 'Reposition' Overseas Footprint Before BRAC Cuts at Home

By Sgt. 1st Class Doug Sample
American Forces Press Service

WASHINGTON, Oct. 7, 2003 -- Although many in the standing-room-only audience expected to hear the Army's plans for the next Base Realignment and Closure round scheduled for 2005, Raymond DuBois, deputy undersecretary of defense for installations and environment, said that for now, the major issue concerning the Pentagon is the military's global footprint overseas.

DuBois spoke at the Association of the U.S. Army convention here Oct. 6.

The BRAC process has become an important part of the military's transformation efforts, he said, as the Pentagon tries to eliminate excess capacity and infrastructure and free up funds for those installations that will be vital to the war on terrorism and future warfighting efforts.

"The secretary of defense promised the Congress of the United States that he would rearrange his overseas footprint before he began to rearrange his domestic footprint," DuBois said during his briefing on installations and transformation at the convention.

DuBois said the reason behind the secretary's decision to focus on its "overseas footprint" is because the terrorism threat to the United States is "clearly more global than ever before."

Defense Secretary Donald H. Rumsfeld left this week for Denver, where he is meeting with NATO representatives to discuss the global basing requirements facing the United States and its allies.

"Secretary Rumsfeld knows that in order to fight and deter that global threat, we've got to have a repositioning of our global footprint," he said. Just this week, he said, the Pentagon announced it was moving forces in South Korea away from the capital of Seoul.

Describing the global basing issue facing the Pentagon as "very, very" crucial, DuBois noted the 2004 budget was "reprioritized" to shift and realign millions of dollars in military construction funds away from what he calls 'nonenduring" overseas bases -- those bases where the military's long-term presence is questionable -- to installations that will fulfill critical operational, logistical or training mission requirements, which he said are "key to (the U.S) global basing posture."

DCN: 11697

Using Germany as an example, DuBois said that in fiscal 2003 and 2004, the Pentagon canceled 26 military construction projects worth some $280 million. That money was then funneled to 18 new projects in the United States.

"For anyone in the media or anyone in Congress to suggest that we didn't make some serious decision or move some serious money is incorrect," he said.

DuBois also noted that in South Korea, construction money was diverted from nonenduring installations there to Camp Humphries, a base he said will be "central" to future U.S. strategy.

President Bush's $87 billion supplemental spending request includes $412 million for military construction, DuBois said, with the Army slated for $120 million to replace and rebuild "aged or almost nonexistent" infrastructure for deployed U.S. soldiers.

DuBois explained that when the military deploys, the local community's infrastructure supports the military's need for portable water, sewage, and electric power. And in the case of Iraq, where that infrastructure has been "problematic at best," he said, it is "imperative" that the U.S. military doesn't "pull away" in terms of the civilian infrastructure in that country.

"He said every megawatt of electricity U.S. forces uses in Iraq takes about 1,000 Iraqi homes out of the power grid. "So you can see it is to our advantage, both militarily and from a civilian reconstruction standpoint, to spend these precious dollars on water, sewage (and) electricity for our military, specifically for Army troops in Iraq," DuBois said.

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AMERICAN FORCES INFORMATION SERVICE
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Next BRAC Will Reflect Changing Times

By Gerry J. Gilmore
American Forces Press Service

WASHINGTON, July 14, 2003 – There were 97 major base closures and 55 major realignments during previous base realignment and closure actions in 1988, 1991, 1993 and 1995, according to DoD documents.

Besides cutting redundant infrastructure, those BRACS resulted in a net savings of $16 billion through fiscal 2001, according to DoD figures, and annually recurring savings of $6 billion beyond then.

However, almost a decade has passed since the last BRAC was conducted, Raymond DuBois, deputy undersecretary of defense for installations and environment, noted during a July 10 Pentagon interview. Congress authorized DoD to execute a new BRAC round in 2005.

Much has changed since 1995, DuBois emphasized, pointing to today's war against global terrorism.

"A great deal has changed in the last 10 years that ought to lead any thinking person to the conclusion that … (another BRAC) is a good thing to do," he said.

The next BRAC will affect stateside and U.S. territory bases. DoD, he added, is also looking at its global military force structure to see if it meets today's national security needs. Lessons learned from 9-11 and the ensuing war on terrorism, DuBois noted, suggest that adjustments should also be conducted with forces stationed overseas.

And besides trimming excess real estate that's costly to maintain, he explained, another BRAC would assist DoD to become more "joint."

"We ought to look at how all four services can utilize a reconfigured footprint to better support the warfighting plans of the combatant commanders," DuBois said.

Although not addressed in the 2005 BRAC, it's well known, DuBois pointed out, that "there are (overseas) places where we have a concentration of troops basically as a legacy from the Cold War -- as a legacy of the post-World War II situation between the Warsaw Pact and NATO."

The Cold War "has gone away," he asserted. Consequently, he pointed out, there is no longer a need for having 70,000 U.S. troops based in Germany. In fact, DuBois noted

DCN:11697
that U.S. combatant commanders are slated to meet soon to study today's worldwide basing and warfighting needs.

The 2005 BRAC, DuBois noted, will reconfigure stateside military infrastructure to meet the realities of the 21st century. Some installations, he explained, will gain assets while others will be closed.

"The secretary of defense, the chairman of the Joint Chiefs (of Staff) and the combatant commanders have learned that our force structure is not necessarily positioned in the right place," DuBois pointed out, to carry out U.S. military deployment and warfighting plans in the most efficient way.

Another potential result derived from another round of base realignments and closures, DuBois noted, is fewer duty station moves: Remaining military installations would be in advantageous locations related to their military missions.

If service members move less from station to station during their careers, then "I think that has a positive impact on quality of life," DuBois said.

Basically, the war against global terrorism has caused DoD to rethink "what opportunities should we have for basing, for deployment, for supply lines – globally," DuBois concluded.

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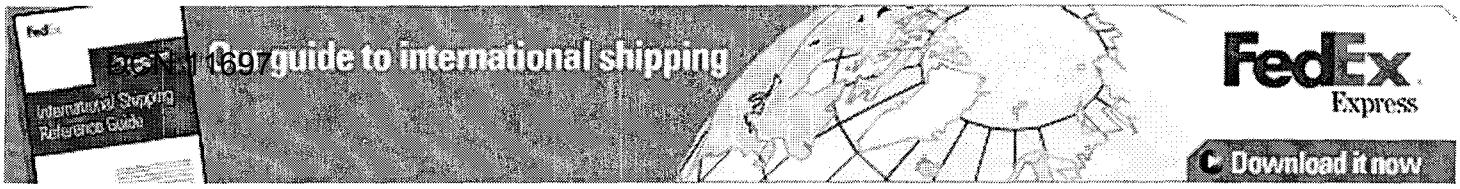

BusinessWeek online

DECEMBER 8, 2004

AFFAIRS OF STATE

By Stan Crock

A Tale of Two Military Bases

California and Massachusetts communities fight the threat of their closure in different ways. But a shutdown may not be so disastrous

The communities around March Air Reserve Base in Riverside County, Calif., and Hanscom Air Force Base outside Boston are taking quite different tacks in their campaigns to avoid the ax in March, when Defense Secretary Donald Rumsfeld is scheduled to announce proposed base closings. The Southern California community has enlisted PMA Group, a little-known but powerful Arlington (Va.) firm, to deploy its lobbyists in a traditional effort to avert a shutdown. Massachusetts is trying something more innovative: A public-private-academic coalition that plans to create an indispensable laboratory for 21st century military capabilities.

Which strategy will succeed won't be known until September, when the Base Realignment & Closure (BRAC) Commission makes a final determination, which is then subject to a vote by Congress. As much as 25% of current base capacity isn't needed because the military's rolls have shrunk by a third since the Cold War's end. Though the military isn't expected to slash all the excess, this fifth round of base realignments is sending tremors through every community that hosts a military facility.

BIG GUNS. That's clearly true for Riverside County. The March Joint Powers Authority controls 4,400 acres that were part of the 7,000-acre base until the 1993 BRAC round. Authority Executive Director Philip Rizzo says the impact from the 1993 realignment has meant a two-thirds drop in the $1 billion the base used to inject into the local economy. March now is used by the Air Force Reserve instead of the active Air Force.

With the threat of further cuts looming, the authority at first planned to hire retired Air Force Colonel Peter T. Bentley, the former commander of the 452nd air-mobility wing stationed at the base, and a bigger gun -- retired General Ronald Fogelman, a former Air Force Chief of Staff. The two were supposed to receive $400,000 over 20 months, plus a $150,000 bonus if March stayed off the closure list.

While Bentley is still helping out, PMA has replaced Fogelman. Rizzo says the commissioners were looking for a firm that could help them tell their story and be an advocate for March. PMA, which the Washington-based Center for Public Integrity says took in more fees from defense contractors than any outfit with a defense specialty, will receive nearly $200,000 from the March Joint Powers Authority.

ODD DUCKS. The strategy is an interesting -- though some would say dubious -- one because the base-closing process has been set up to be immune from politics and influence peddling. The military services assess their needs, and the nonpartisan commission makes the big decisions. Lawmakers can't logroll each other because they can't alter the list presented by the commission. Their option is just to vote down or approve the entire list.

Chris Hellman, a defense analyst at the Center for Arms Control & Non-Proliferation, questions the value of lobbyists and consultants in efforts to protect bases. "I find it hard to believe that services that operate these facilities don't already know the story," he says. "It's hard to believe there's that much of a value-added [from lobbyists], certainly compared to what these guys are charging." PMA didn't respond to a request for comment.

Massachusetts also has hired consultants -- including Fogelman -- but is using them differently. Instead of waltzing through the corridors of the Pentagon, clients in tow, the advisers study lessons to be learned from previous BRAC rounds, according to Alan Macdonald, executive director of the Massachusetts Defense Technology Initiative (MDTI), the public-private-academic coalition created to keep the Bay State's bases open. The consultants found that the emphasis in the past had been on the value of bases to military operations, with little attention paid to odd ducks such as Hanscom, which are technical facilities.

EXPANSION POTENTIAL. On its 850-acre site, Hanscom's Electronics Systems Center develops command, control, and communications systems, computers, and technologies for intelligence, surveillance, and reconnaissance -- a group of functions known in the trade as "C4ISR." And the base has access to a broad spectrum of high-tech companies as well as the

Massachusetts Institute of Technology, Harvard, and the University of Massachusetts.

DCN:11697

The consultants, along with base staff and local businesses, governments, and universities, mapped out a strategy that emphasizes these advantages and the need to protect them to preserve the Pentagon's technological edge. What's more, MDTI offered a plan to spend $410 million to build more research space and housing at Hanscom if the base is kept open. In a move that's a little like trying to lure a professional sports team with a new stadium, the state offered to shell out $241 million on 1.25 million new square feet of labs and offices.

The plan calls for building on parking lots to show that further expansion of tiny Hanscom is indeed possible. The $168 million price tag of 800 housing units would be bankrolled by private developers, whose financing would rely on a steady stream of revenue from the troops' housing allowances.

MORE DIVERSIFIED ECONOMIES. By September, it'll be clear whether politics or positioning means more in the base-closing process. But the irony is that these communities may be overreacting, trying to avoid a situation that wouldn't cause such dire consequences. Cities near March may have been "clobbered" when the base shrank, says John Husing, a Redland (Calif.) economist who has studied base closings. But the region is starting to dig out. Rizzo notes that some of the base buildings have been converted to commercial use, and development is starting on an industrial park and airport that could create as many as 38,000 jobs.

What's more, according to a Government Accountability Office report, three years after a base closing or realignment, two-thirds of the communities had unemployment rates at or below the national average. Economic growth rates were at or above the national average. These cities end up with a more diversified economy than they had when the military was there. It's a lesson plenty of cities now know -- and a lot more are about to learn.

Crock covers national security and foreign affairs for *BusinessWeek* from Washington. Follow his views in **Affairs of State** twice a month, only on BusinessWeek Online

Edited by Patricia O'Connell

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The Drill on Military Base Conversion

By H. Lee Murphy

Jul 1, 2003 12:00 PM

Since the early 1990s, three waves of military base closings have resulted in the decommissioning of 97 facilities, releasing more than 100,000 acres and thousands of buildings for redevelopment. From Long Beach, Calif., to Limestone, Maine, communities that faced devastating job losses as a result of base closings have been able to redevelop the sprawling properties into housing developments, office parks and industrial zones. Now, the government is contemplating more cuts, which could result in the closing of as many as 70 more bases.

At a time when well-situated greenfield sites are disappearing, base redevelopment can be the best opportunity to create major new projects in desirable locations. Developers, working with local authorities, have turned shooting ranges into shopping centers, barracks into apartment buildings and runways into golf courses. A decade of experience has convinced developers that these projects can produce healthy returns for those with the resources, political skills and patience to carry off such ambitious development.

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Returns on most office and industrial projects around the U.S. range from 8% to 10% in the first year. Many developers of military reuse sites say their returns are close to those figures, or a bit higher. "It's hard to compare the returns, because our military business is so different from our other development work," says Cleve Johnson, managing director of Clark Realty Capital LLC in Bethesda, Md., which is developing nearly 14,000 rental housing units on military bases around the country. "Essentially we get the opportunity to make a good investment and get a fair return."

Lower Land Costs Are A Catalyst

One of the big winners in the first rounds of base conversions was Catellus, which acquired 87 prime acres in the Chicago suburb of Glenview after the Glenview Naval Air Station closed three years ago. Even though the company was bidding against more than 50 other developers, Catellus executives say it walked away with a bargain price — 20% below the then-going rate of $8 per sq. ft. for raw land. The 87 acres are already half filled with corporate settlement, including medical offices, build-to-suits and speculative mid-rise towers.

"With lower land costs we have been able to offer competitive lease rates," says Kevin Matzke, Catellus senior vice president. "That's why this and so many other closed military bases have been turned into successful redevelopment projects." He estimates that for Catellus the returns on Glenview are about the same as for other corporate complexes, but "we feel more secure with this kind of investment because the local municipality is very motivated to work as a partner in helping us attract business."

Developers hoping to get into this sector may not be able to get land so cheaply in future — at least not in the most desirable areas. The Department of Defense has realized that it can make more money off these properties than in the past. For example, the former El Toro Marine Corps Air Station near Irvine, Calif., which was closed in 1999, is being sliced into four parcels and put up for auction this fall. The 4,700-acre site, in fast-growing Orange County, is expected to fetch at least $1 billion. That's more than the government earned from the other 96 base closings combined.

Lessons Learned

Even if they can get a good price, investors need to understand how base conversion differs from other forms of development. It's important to be large, for example, because local authorities favor developers with deep pockets and great staying power to see the transformation of a sprawling military facility through to completion. The process can take five years or more — including waiting for the Pentagon to complete the environmental cleanup that is required in many sites.

Also, a developer has to be able to work with the local and state officials whose political fortunes are tied to the redevelopment. Many closed bases cut across multiple jurisdictions, complicating all sorts of processes, such as obtaining zoning and building permits. Developers also have to handle interest groups, including environmentalists.

Still, base redevelopment is a promising business. All or part of most of the bases closed since 1988 have been turned over to local authorities or developers. "In places where a portion of property still hasn't been conveyed by the military, it's almost always an

DCN 11697

environmental issue. The clean-up of these sites has been a challenge for us," acknowledges Patrick O'Brien, director of the Department of Defense's Office of Economic Adjustment in Arlington, Va., created to assist communities faced with base closings. "Every town has had its own experience, but overall we've found that as these bases are returned to the communities they've created a positive economic impact."

The success stories include the former England Air Force Base in Alexandria, La., Fort Ben Harrison in Indianapolis and the Long Beach Naval Complex near Los Angeles. Most have had the advantage of committed municipalities ready to extend subsidies and a timely building schedule, in addition to a dense population base. Almost every base has been turned to mixed-use development, usually involving a combination of open space or parkland, residential, retail and industrial/office. There's an obvious reason for such multiplicity — the parcels are too big for a single reuse.

How the Process Works

The shutdown and subsequent redevelopment often follow a similar formula: as the closing is announced, a local redevelopment authority is created and work starts on both the environmental clean-up and a master plan for development. Eventually the government deeds the land to the authority, usually at no cost, and private developers make their pitches. Any money the authority realizes from the sale of the land for development is poured back into infrastructure investment.

"The idea is to use this land to help the local economy stimulate job growth," says David Haase, realty officer for the General Services Administration in San Francisco. "The closing of a base takes jobs out of a community. It's hoped that the land can be employed to bring jobs back again."

The biggest successes are at bases that are located in areas that are already seeing healthy economic growth. The Glenview Naval Air Station, for example, was located on 1,100 acres surrounded by households with average incomes exceeding $100,000. Colorado's Lowry Air Force Base was in a fast-growth pathway between Denver and suburban Aurora. Since 1994, its 1,850 acres have been redeveloped with 3,000 homes, 2 million sq. ft. of commercial space and a community college campus for 10,000 students.

When the Naval Air Station closed in 1995, the town of Glenview had a master plan ready to go. In October, San Diego-based OliverMcMillan LLC is scheduled to finish its $250 million, 480,000 sq. ft. Glen Town Center mall, flanked by 183 apartments and condominium row homes. That will make the air station's redevelopment 85% complete.

OliverMcMillan, which had never tackled a military reuse project before, got its land free, plus the village kicked in tax-increment financing of $80 million. In return, the developer will house some of its retail tenants in an historic hangar. The total value of construction at the former air station is expected to approach $1.4 billion. That will increase the assessed value of local land for tax purposes by 35% to some $1.35 billion. Yet the air station represents only 15% of Glenview's land mass.

"In the next 50 years, the village will recoup $1 billion in property and sales taxes on just our sector of the air station, so they're getting a good return on their investment," says Morgan Dene Oliver, CEO of OliverMcMillan. Oliver declines to pinpoint the return he expects on Glen Town, but adds, "We signed our contract in 2000 and we've been able to build this project more quickly than most others we've been involved in."

Location Is A Factor

Being situated in a growth area is a key to success, emphasizes James Meadows, president of the National Association of Installation Developers in Washington, D.C., which educates communities facing base closure. Meadows also is senior vice president for development in the Napa, Calif., office of Actus Lend Lease Corp., which is privatizing housing for 6,000 military families at Fort Hood in Killeen, Texas. "If you're in a rural area, your opportunities may well be much more limited."

On the other hand, some remote bases have been successfully recycled. When the Loring Air Force Base in Limestone, Maine, near the Canadian border, shut down in 1994 it displaced nearly 5,000 military personnel working on 8,700 acres, devastating the town of 2,000. After a $160 million government-sponsored environmental cleanup, the Loring Development Authority went to work. It has created a 4,500-acre park, a private airport and a corporate complex for 20 companies, which is made up of refurbished base buildings. Volvo, for example, runs an aircraft maintenance business in a former hangar, while Sitel Corp. employs 350 in a call center in a former dining hall.

"We lost 1,100 civilian jobs when the base closed, and we've already created 1,500 new jobs here to replace what we've lost," explains Brian Hamel, president and CEO of the Loring Authority.

Don't ask him about the price of his commercial space that remains on the market unsold. Like a lot of base authorities, Loring keeps its prices flexible: "Our leases depend on a lot of circumstances, like how many jobs a new tenant expects to create and what kind of stimulus the company will create in our economy," Hamel says.

Risks and Rewards

Major bases, however, can produce major delays for would-be developers. Take Fort Ord, which sits on 28,000 acres on Monterey Bay in Marina, Calif. Only a small chunk of the 45-square-mile site has been redeveloped since the army vacated in 1991, even though a master plan was adopted by adjacent communities six years ago. The plan calls for 12,000 housing units, two hotels, two golf courses, a corporate park of 430 acres with 3 million sq. ft. of office and industrial space, and 150 acres with 1.5 million sq. ft. of retail.

Only a few projects have gotten off the ground — a new $120 million campus for the California State University system now serves 3,800 students and 380 homes are under construction. A 20,000 sq. ft. incubator office building was recently finished and a Hilton hotel will begin construction in the fall.

DCN 11697

Why the holdup? The No. 1 reason, says Michael Houlermard, executive officer of the Fort Ord Reuse Authority, is that the base cuts across four different municipal jurisdictions, while 62 federal and local agencies — ranging from the U.S. Bureau of Fish and Wildlife to the state Department of Waste Management and the state's Coastal Commission — all have had a voice in redevelopment.

The Sierra Club, for example, was invited to comment on the use of the base's ecologically sensitive land, and the NAACP weighed in on making minority housing available on the base for the area's sizable minority population. "If we only had one town and a few agencies to deal with, this process could be simple and fast," Houlermard says. "But Fort Ord has become very political. There's just no way of avoiding that."

Sometimes bases present unique opportunities for developers. Joliet Army Arsenal, some 40 miles southwest of Chicago, struck CenterPoint Properties Trust as an ideal site for an industrial park. When 23,500 acres were carved up for redevelopment in the late 1990s, CenterPoint Properties Trust of Oak Brook won the rights to almost 2,000 acres where it will create the largest industrial project in metro Chicago.

With two major railroads intersecting on the property, CenterPoint decided to build a railroad intermodal center on 620 acres, which would anchor a sprawling distribution hub — a total of 17 million sq. ft. of warehouse and distribution space. Several big tenants, including Potlach Corp. and Partners Warehouse, have signed on and the industrial park is off and running.

John Gates Jr., CenterPoint's chairman and CEO, won't say what his firm paid for the land, but he had the support of state grants to help build roads and utilities. "We've had infrastructure expenses of over $100 million," Gates says. "To make the site flat, we had to move 8 million cubic yards of dirt, which was twice the dirt moved to build the Hoover Dam. Then we spent $30 million building sewer and water facilities."

Today, the military continues to hold thousands of acres of land — most of it awaiting environmental clean-up — it doesn't need. Wayne Army, deputy assistant secretary of the Navy for installations and facilities, says the military will place a higher priority in the future on faster divestiture, something that impatient developers doubtless will be glad to hear.

"We realize much of this land has great value and needs to be turned over to the private sector to become useful again," Army said. "For us, it's an administrative burden overseeing these closed bases. We would rather get rid of them and go home so that we can get back to fighting wars."

H. Lee Murphy is a Chicago-based writer. *Please send comments on this story to* tomvalley@primediabusiness.com.

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Pentagon Sends List of Military Base Closings to Congress

Christian Science Monitor
Mark Sappenfield - Staff writer of The Christian Science Monitor

April 11, 2005

WASHINGTON - As the Pentagon prepares to embark on its first base closings in a decade, it is already clear that this round will be unlike any that has come before, both in its scope and its intent.

The Defense Department has made no secret of the fact that this year's list of suggested closings figures to be the biggest in history. But unlike past rounds, when the process focused primarily on paring down a bloated military, the goal this year is largely to recast the military.

For 50 years, the United States aligned its bases against the Soviet foe, enfolding critical air squadrons in the safety of the heartland, and supporting America's military heft at massive industrial bases.

Now, in what could be a boost for bases as far afield as Guam and as close as the Carolinas, the diffuse threats of a new century call for a strategy of flexibility and quick deployment to the far reaches of the world.

As a result, the list presented to Congress May 16 is expected to be not only a way to cut costs, but also a way to reflect the changing character and shape of the military's mission.

"That is unique to this round," says Tim Ford, executive director of the Association for Defense Communities here. "What they're trying to do is much more broad. It's a transformation."

The transformation goes well beyond base closures. Under Defense Secretary Donald Rumsfeld, the military is in large part reinventing itself, shifting its emphasis from massive divisions toward smaller and more agile brigades. Base closures and realignments represent a way to make these changes adamantine, replacing iron-cast cold-war installations with a more malleable network.

It is one of the Defense Department's strongest tools for change. Once the Pentagon presents its recommendations in May, an independent commission will look at the list and either revise it or endorse it unchanged. Then the Congress and the president must vote yes or no on the whole list; neither can make changes. The previous four rounds - in 1988, 1991, 1993, and 1995 - closed 97 bases.

"Today's environment requires more agile, fast, and lean forces able to project power into theaters that may be distant from where they are based," said Philip Grone, a deputy undersecretary of Defense, in a statement to Congress last week. "This agility requires not only a shift in military forces, capabilities, and equipment, but also a new basing strategy."

The question, then, is which bases fit the Pentagon's new strategy. Not surprisingly, the Pentagon has said little. Many military installations employ thousands of civilians and infuse billions of dollars into local economies, so any leak would flood the Pentagon with lobbyists and legislators pleading for their bases.

Yet there are clues. When Secretary Rumsfeld earlier this year released his criteria for deciding which bases should be saved, cost came fourth. Before that were flexibility in dealing with fluctuating numbers of troops, space for training, and - No. 1 - the ability to respond to the needs of future missions, as well as the needs of

the different branches of the military.

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Almost certainly, future missions will value rapid response over the geographic isolation of the cold-war years, and that could change the footprint of America's bases. In one sense, the shift could benefit many American bases, since the Pentagon is likely to cut back on a number of major installations overseas in favor of smaller outposts dotted across the globe. Most of those troops will return to US bases.

The Pentagon had once suggested that it had as much as 24 percent excess capacity at its more than 400 bases. "The fact that we're bringing so many forces home from overseas reduces that number," said Rumsfeld in a recent briefing. A realignment of forces could occur within the US, as well, as the military gravitates toward coastal states - many with cheap land and supportive congressional delegations.

"Any favorably located place like Hawaii or ... the Carolinas will probably receive missions rather than lose them in the future," says Loren Thompson, a defense analyst at the Lexington Institute. "Contrast a base in the Carolinas with a base in the nation's interior, which is far from the coast and difficult to deploy."

The desire to have bases serve joint functions is perhaps one of the strongest clues to Rumsfeld's view of the future. For decades, the military branches - Army, Navy, Air Force, Marines - have acted like fiefdoms, each working largely independently of the others. Rumsfeld wants a more seamless military, and putting multiple branches on one base is seen as an efficient, potent way to recast the armed forces' culture and cooperation.

"The department is looking to maximize the utility of whatever base it has," says Jeremiah Gertler of the Center for Strategic and International Studies. "They're looking for more flexibility and versatility."

In small ways, the process has already begun. Langley Air Force Base in Virginia is integrating active members of the Air Force with members of the Guard. Now the Air National Guard's 192nd Fighter Wing will train at Langley, even flying the new $150 million FA-22 Raptor.

It's a small step, but one that may be indicative of the future.

"Looking at the challenges ahead, how do we integrate the Guard and Reserve more effectively?" asks Maj. Jeff Glenn of Langley's 1st Fighter Wing. "This is just a test case ... but maybe a mind-set changes."

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DCN:11697

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COMPREHENSIVE MARKET ANALYSIS REPORTS

Policy Development & Research

Analysis of the Wilmington-Newark, Delaware-Maryland Housing Market

As of April 1, 2003

ECONOMIC RESEARCH

U.S. Department of Housing and Urban Development

Foreword

This analysis has been prepared for the assistance and guidance of the U.S. Department of Housing and Urban Development (HUD) in its operations. The factual information, findings, and conclusions may be useful also to builders, mortgagees, and others concerned with local housing conditions and trends. The analysis does not purport to make determinations with respect to the acceptability of any particular mortgage insurance proposals that may be under consideration in a particular locality or the housing market area.

The factual framework for this analysis was developed by HUD's Economic and Market Analysis Division as thoroughly as possible on the basis of information available on the "as-of" date from both local and national sources. As such, they may be modified by subsequent developments. We wish to express our appreciation to those industry sources and government officials who provided data and information on local economic and housing market conditions.

This analysis takes into consideration changes in the economic, demographic, and housing inventory characteristics of the market area during three periods: 1990 to 2000, 2000 to the as-of date of the analysis ("Current date"), and from the Current date to a "Forecast date." The analysis presents counts and estimates of employment, population, households, and housing inventory as of the 1990 and 2000 Censuses, the Current date, and Forecast date. For the purpose of this analysis the forecast period is 24 months.

The prospective demand expressed in the analysis should not be construed as a forecast of building activity; rather, it presents the prospective housing production that would maintain a reasonable balance in demand-supply relationship given the market's condition on the as-of date of the analysis. This analysis was prepared by Ms. Patricia C. Moroz, the Division's Field Economist in the Philadelphia Regional Office, based on fieldwork conducted in April 2003. If there are questions regarding the findings and conclusions of the analysis, she may be reached at (215) 656–0500, extension 3031 and at Patricia_C._Moroz@hud.gov.

Housing Market Area

The Wilmington-Newark, Delaware-Maryland Housing Market Area (HMA) is comprised of New Castle County, Delaware and Cecil County, Maryland. For the purposes of this analysis the HMA has been divided into three submarkets: the city of Wilmington, the remainder of New Castle County (in this study referred to as New Castle County), and Cecil County. Wilmington, the central city of the HMA, is the largest city in Delaware.

Summary

The economy of the Wilmington-Newark HMA grew steadily during the 1990s as credit card companies, banks, other financial institutions, and information-related firms continually added new employees. However, the area economy has slowed since 2000 due to layoffs of temporary back-office employees. The economy is expected to improve during the forecast period, with a rate of employment growth slightly less than the average annual gain since 2000.

During the 1990s the population and households in the HMA grew both as a result of increasing employment opportunities and availability of affordable single-family housing for workers in other metropolitan areas. Homeowners comprised 71 percent of the households in the HMA in 2000. Approximately three-quarters of the total residential production in the HMA since 2000 has occurred in New Castle County. The rates of growth in population and households have declined slightly in recent years, but are expected to continue growing at a moderate pace.

The current demand-supply conditions in the Wilmington-Newark HMA's housing market can best be described as balanced. There is some tightness in the sales market, a balanced overall rental market, and weakness in the upper rent levels of the market. Demand for new sales housing is very strong due to the availability of affordably priced homes and low interest rates.

Conditions in the sales and rental housing markets are expected to remain balanced during the forecast period. The tightness in the sales market is expected to continue due to land use regulations. The weakness in the upper end of the rental market is expected to improve gradually as apartments currently under construction are absorbed.

Demand for new sales housing during the 2-year forecast period ending April 2005 is estimated at 2,000 homes annually. Demand for new market-rate rental housing during the period is estimated at 100 units annually. Given the number of rental units currently under construction in the HMA, any need for additional rental production to meet future demands will occur toward the the end of the 2-year forecast period and beyond.

Economy of the Area

The chemical industry and the DuPont Company dominated the economy of the Wilmington-Newark HMA for much of its history. However, during the past 20 years the economy has become more diverse. In 1981 the Delaware state legislature approved the Financial Center Development Act. The law removed restrictions on interest and fees charged by credit card companies, and lowered the state income taxes paid by banks. As a result more than half of the nation's largest credit card companies, including MBNA Corporation, have established operations in downtown Wilmington. MBNA is the largest private sector employer in the HMA with an estimated 10,000 employees.

As a result of the increase in banking and other financial services firms, Service Producing industries grew steadily throughout the 1990s, offsetting the employment losses in other sectors. The trends in average annual civilian labor force and total employment and nonfarm employment by industry sector from 1990 through the Current date are presented in Tables 1 and 2, respectively.

From 1990 to 2000 total resident employment increased steadily at a rate of 1.4 percent annually and nonfarm employment increased at a 1.9-percent annual rate. Gains in nonfarm wage and salary employment, however, were quite different in the second half of the 1990s compared with the first half. Nonfam wage and salary employment increased an average of 0.2 percent annually during the first half of the decade and 3.1 percent annually during the latter half. The HMA's economy expanded as banking institutions such as MBNA grew steadily. As banking and credit card activity increased, information, technology, and other business services firms responded by hiring additional employees.

As a result of the national economic slowdown, nonfarm employment has declined since 2000. In the 12 months ending March 2003 nonfarm wage and salary employment in the Wilmington HMA averaged 316,200 persons, or a 2.3 percent decline from the comparable period ending in March 2002. Resident employment has also declined 1.8 percent in the 12 months ending March 2003.

The difference between residential employment and nonfarm wage and salary employment is due to the substantial numbers of workers from areas commuting to the HMA. From 1970 to 2000 in-commutation steadily increased. As of 2000 the U.S. Department of Commerce's Bureau of Economic Analysis estimated approximately 45,500 workers from other areas of Delaware, Maryland, Pennsylvania, and New Jersey commuted to jobs in the Wilmington HMA. As banks opened offices in the Wilmington area, upper and middle management executives from New York City relocated to Pennsylvania suburbs. In addition, a number of employees are former bank employees from the Philadelphia area who lost jobs during bank mergers and now commute to Wilmington. Overall, there is a net commutation of 13,500 workers into the HMA. The 32,000 workers that commute to jobs outside the area, many to the Philadelphia suburbs, reside in the HMA where housing is more affordable.

Manufacturing employment in the HMA declined from 1990 to 2000. Decreases of 2.4 percent a year during the first half of the decade were followed by some recovery and annual increases of 1.6 percent from 1995 to 1999. However, with the recent economic slowdown manufacturing employment has declined 8.4 percent annually since 2000. Job losses in manufacturing are expected to continue through the forecast period as automobile assembly plants eliminate jobs. Manufacturing employment in the HMA is diversified, including chemicals, pharmaceuticals, and automobile assembly plants. The largest firm in the HMA remains the DuPont Company, employing an estimated 9,900 persons as of the Current date. The pharmaceutical industry, represented by AstraZeneca, employs 4,000 workers. In addition, DaimlerChrysler and General Motors have automobile assembly plants in the HMA with a combined total of 3,900 employees.

Service Producing employment increased an average of 2.2 percent annually from 1990 through 1999, however, the increase averaged 3.1 percent from 1995 to 1999. Employment in the Financial Activities sector was the major factor behind the gains. Employment in the sector increased a rapid 4.8 percent annually during the first half of the decade, and continued to increase 3.4 percent annually during the second 5 years. Following the increase in finance and banking, the data communications and computer-based Information sector also registered a very rapid increase in employment, averaging 7.4 percent annually from 1990 to 2000. Since 2000 the economic slowdown has forced credit card companies and other financial institutions to eliminate a number of temporary back-office jobs.

Throughout the 2-year forecast period the regional economy is expected to recover as the national economy strengthens and the financial services and related institutions gradually increase employment. Education and Health Services and Other Services sectors of the economy are expected to be the source of many of the new jobs in the HMA. During the next 2 years total resident employment is forecast to increase 1.4 percent annually or 2,075 jobs, approximately half the rate of increase recorded during the past 24 months, as financial institutions restore temporary back-office jobs eliminated during the past 12 months.

Household Incomes

The Economic and Market Analysis Division of HUD estimated the median family income in the Wilmington-Newark HMA to be $70,000 in 2003. The annual rate of increase in median family income during the past 3 years is slightly higher than the 3.9-percent average annual rate of increase from 1990 to 2000.

Population

As of April 1, 2003 the population of the Wilmington-Newark HMA was estimated to be 601,900, or an average annual gain of 0.9 percent since 2000, which is less than that recorded for the prior decade. From 1990 to 2000 the population increased by an average annual gain of 1.3 percent. The decline reflects slower economic growth and a declining birth rate.

More than 78 percent of the increase during the 1990s occurred in New Castle County, outside of the city of Wilmington. Approximately 20 percent of the population increase in the period occurred in Cecil County, reflecting the relative stability of the submarket. The trends in population from 1990 through the Forecast date for the HMA and the submarkets are presented in Table 3.

The population increase in the HMA from 1990 to 2000 was roughly evenly divided between in-migration, 51 percent of the change, and net natural increase (resident births minus resident deaths) 49 percent. During the prior decade in-migration averaged approximately 3,725 persons annually. From 2000 to the Current date in-migration declined, averaging an estimated 2,275 persons annually, as the result of slowing economic conditions. Population change as a result of net natural increase averaged approximately 3,575 persons a year between 1990 and 2000. Annual data from Delaware Health and Social Services and the Maryland Department of Health indicated an overall decline in net natural increase with the exception of a brief increase during the late 1990s. Since 2000 net natural increase has decreased. During the forecast period the average annual net natural increase is expected to continue to decline slightly.

While the HMA is the location of the state's major university the number of students at the University of Delaware has been fairly stable since the mid-1990s, and it has not been a factor in the area's population growth. Combined undergraduate and graduate student enrollment totaled approximately 17,650 in the fall term of 2002. As of the Current date approximately 7,230 students at the university were living on campus in dormitories or apartments. The remainder of the students resides in off-campus housing, mostly in the rental market.

Based on the level of economic growth, in-migration, and net natural increase anticipated during the 2-year forecast period, population growth is expected to continue but at a slower rate than previously. As of April 1, 2005 population of the Wilmington-Newark HMA will be an estimated 611,700 persons. This translates to an average annual gain of 4,900 persons, or 0.8 percent.

Households

The trends in growth of the number of households in the Wilmington-Newark HMA have been comparable to the changes in the area's population during the past 13 years. Between 1990 and 2000 the HMA recorded steady growth with an average annual rate of growth of 3,125 households, or 1.5 percent. As of the Current date there are an estimated 227,100 households in the Wilmington-Newark HMA, or an average annual increase of more than 2,300 since 2000.

The trends in households from 1990 through the Forecast date for the HMA and the three submarkets are presented in Table 3. Based on current characteristics of household size and the rate of population growth expected as a result of employment increases and continued in-migration, it is estimated that the number of households in the HMA will increase by 2,100 annually during the 2-year forecast period to total 231,300 households as of April 2005.

Housing Inventory

The HMA's housing inventory grew at a moderate rate between 1990 and 2000. The inventory of single-family units increased by approximately 2,475 units annually from 1990 to 2000, and the multifamily inventory increased an average of 640 units during the same period. As of the Current date it is estimated that there are approximately 242,100 housing units in the Wilmington-Newark HMA, or an average annual increase of more than 2,700 units since 2000. The counts of housing inventory, occupancy, and vacancy by tenure for 1990, 2000, and the Current date are presented in Table 4. The trends in building permit activity from 1993 through the Current date for single-family and multifamily housing in the HMA and the three submarkets are presented in Table 5.

In 1997 the Unified Development Code (UDC) was passed by New Castle County to rezone and regulate the planning, subdivision, and development of unincorporated land in New Castle County. As a result developers have gradually shifted their development plans from unincorporated areas covered by the UDC to towns further south such as Middletown and Smyrna. These communities are less than an hour away from downtown Wilmington. Middletown annexed farmland adjacent to its boundaries, and 1,100 single-family homes have been developed in the community in 2000 and 2001. Plans for development over the next 20 years include a total of 3,000 new homes in Middletown and 1,500 to 1,800 new homes in Smyrna.

During the 1990s single-family permit activity averaged more than 2,975 a year, with activity slowing in the second half of the decade. From 1990 through 1994 single-family building permit activity averaged 3,075 homes annually; from 1995 through 1999 the annual average declined to 2,875. Then from 2000 through the Current date new home construction declined to an average of 2,675 a year, or 7 percent less than the annual activity during the last half of the prior decade. More recently, construction activity increased to 2,975 units in 2002. Approximately 80 percent of new home construction

has been single-family detached homes. However, single-family attached townhouse communities are also popular.

The change in the distribution of the housing inventory by tenure is a reflection of the area's changing market conditions. Economic growth and diversity of the economy in the Wilmington-Newark HMA have led to a steady increase in homeownership since 1990. In 1990, 69 percent of all households in the HMA were owners. By 2000 the homeownership rate had increased to 71 percent. During the 3 years from the 2000 Census to the Current date the rate has increased to 72 percent. Much of the shift in tenure in the past 3 years reflects continued low interest rates and the available supply of relatively affordable new homes.

In response to the rapid increase in employment in the service sector during the 1990s multifamily housing production increased from an annual average of 250 units from 1990 to 1996 to 600 units annually from 1997 to 2000. As the economy has slowed construction of new units has tapered off to an average of 300 units annually from 2000 to the Current date. New developments have included traditional garden apartment projects as well as townhouse developments.

The impact of household growth on the housing inventory varies throughout the HMA's submarkets. New Castle County accounts for 73 percent of the increase in the housing inventory in the HMA since 2000. Cecil County accounted for 24 percent of growth in the housing inventory. The city of Wilmington registered a slight decline in population due to out-migration since 2000, accounting for only 3 percent of the increase in the housing inventory. The majority of new development during the forecast period will continue to occur in suburban New Castle County.

Housing Vacancy

Since 1990 vacancy rates in the HMA have been relatively stable. As of 1990 the sales vacancy rate was 2 percent. With strong demand for homes in the 1990s the sales vacancy rate declined to 1.3 percent in 2000. Conditions in the rental market are not as tight as in the sales market. The rental vacancy rate in the HMA remained almost unchanged during the decade. The rate as of 1990 was 7.4 percent and declined only slightly to 7.3 percent as of 2000. As of April 2003 the sales vacancy rate declined slightly to 1.2 percent, and the rental vacancy rate increased to 7.9 percent. Vacancy trends between 1990 and the Current date for the HMA and the three submarkets are presented in Table 4.

Sales Market Conditions

The sales market in the Wilmington-Newark HMA is currently strong in all price ranges. Growth in households during the 1990s increased demand for new single-family homes. Even the recent economic slowdown has not reduced demand for sales housing, and the market remains tight. The HMA's supply of relatively affordable housing is expected to continue to attract residents who work in nearby areas such as the Philadelphia area.

According to the New Castle County Board of REALTORS® and the Cecil County Board of REALTORS®, the median sales price of an existing home increased an average of 8.6 percent annually since 2000 to approximately $151,000 in 2002. During the same period sales volume increased 4 percent annually to 8,225 units as of the end of 2002. Single-family detached homes continue to dominate the sales market in the HMA. New condominium activity has been minimal in recent years and condominium conversions have not been a significant part of the sales market either.

Rental Market Conditions

The Wilmington-Newark HMA rental market is balanced as of the Current date. However, since 2000 market conditions have weakened as lower interest rates have allowed a larger segment of the rental market to become first-time homebuyers. Market conditions are expected to improve toward the end of the forecast period as the pipeline of more than 1,000 units currently under construction are completed and absorbed. As of the Current date vacancies in newer upscale apartments average more than 10 percent throughout the HMA.

Housing options in the Wilmington downtown area are expanding with the conversion of three blocks of historic buildings and a former office tower to luxury rentals. When completed the developments are expected to add more than 380 luxury apartments to the downtown market. These developments are the first major efforts in years to bring housing to the downtown area. While the demand for upscale rentals in the downtown area hasn't been tested, indications from pre-leasing and marketing indicate considerable interest.

Rent trends in recent months indicate the average gross rent for a two-bedroom/two-bath unit in a newly completed Class A development is $1,100 in the Wilmington-Newark HMA.

Forecast Housing Demand

Based on anticipated household growth and current market conditions, it is estimated that there will be a demand for approximately 4,000 new sales units and 200 rental units during the 2-year forecast period ending April 1, 2005. This level of construction will allow for a balanced market condition. The current pipeline of rental housing currently under construction is adequate to meet the estimated annual demand of 100 units annually during the forecast period. To maintain a balanced rental market any demand for additional new construction will occur toward the end of the 2-year forecast period and thereafter. Any rental units added to the inventory prior to that will contribute to overbuilding of the market. Given current market conditions and recent trends, it is anticipated that much of the future demand for new rental housing will occur in the suburbs. A tabular summary of the annual rental qualitative demand for the HMA in total is located in Table 6.

Table 1

Labor Force and Total Employment

Wilmington-Newark HMA

1992 to April 1, 2003

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Prior[a] 12 Mos.	Current[b] 12 Mos.
Labor Force	273,700	279,400	284,300	283,600	287,700	287,500	294,900	292,900	306,000	312,400	312,600	313,000	310,500
Total Employment	256,700	263,800	269,900	270,300	270,400	274,600	282,800	282,900	293,700	300,900	298,400	301,500	296,200
Unemployment	16,900	15,600	14,400	13,300	17,300	13,000	12,000	9,900	12,300	11,500	14,200	11,400	14,400
Rate (%)	6.2	5.6	5.1	4.7	6.0	4.5	4.1	3.4	4.0	3.7	4.6	3.7	4.6

[a]Ending March 2002
[b]Ending March 2003

Source: U.S. Department of Labor, Bureau of Labor Statistics

Table 2

Nonfarm Employment

Wilmington-Newark HMA

1992 to April 1, 2003

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Prior[a] 12 Mos.	Current[b] 12 Mos.
Total	263,800	270,700	276,100	283,000	290,300	301,500	311,400	321,200	327,300	325,000	318,200	323,600	316,200
Construction and Mining	14,000	14,000	13,600	14,900	16,700	16,900	16,800	18,500	18,600	18,500	18,600	18,700	18,100
Manufacturing	30,500	30,300	29,400	28,700	26,900	29,700	30,700	31,600	28,200	25,600	24,300	25,500	23,700
Trade, Transportation, and Utilities	48,400	49,900	51,600	53,000	53,300	53,700	55,400	57,400	58,800	59,200	57,400	58,700	56,800
Information	2,900	2,900	3,500	3,900	4,000	5,100	5,900	6,400	6,900	7,100	6,900	7,000	7,000
Financial Activities	26,000	27,100	28,400	28,900	29,200	30,600	32,600	33,500	33,400	33,500	32,500	33,300	32,200
Professional and Business Services	50,200	51,100	51,600	54,000	56,900	59,300	61,400	63,300	66,700	64,800	61,400	61,200	61,100
Education and Health Services	27,500	28,700	30,800	31,500	32,300	32,900	33,500	34,100	35,600	36,200	37,500	36,400	37,800
Leisure and Hospitality	20,000	20,900	21,200	21,900	22,600	23,300	23,800	24,300	24,900	25,200	24,900	25,100	24,800
Other Services	9,500	9,700	10,100	10,200	10,800	11,600	11,900	12,200	12,500	13,000	13,300	13,000	13,300
Government	34,500	35,700	35,500	35,700	37,100	37,900	38,900	39,400	41,400	41,900	41,400	41,900	41,500

[a]Ending March 2002
[b]Ending March 2003

Note: Numbers may not add to totals due to rounding.

Source: U.S. Department of Labor, Bureau of Labor Statistics

Table 3

Population and Household Trends

Wilmington-Newark HMA

1990 to April 1, 2005

	April 1, 1990	April 1, 2000	Current Date[1]	Forecast Date[2]	Average Annual Change: 1990 to 2000 Number	1990 to 2000 Rate (%)	2000 to Current Number	2000 to Current Rate (%)	Current to Forecast Number	Current to Forecast Rate (%)
Population										
Wilmington-Newark HMA	513,293	586,216	601,900	611,700	7,292	1.3	5,228	0.9	4,900	0.8
Wilmington City	71,529	72,664	72,450	72,350	114	0.2	–71	–0.1	–50	–0.1
Remainder New Castle County	370,417	427,601	439,300	446,500	5,718	1.4	3,900	0.9	3,600	0.8
Cecil County, Maryland	71,347	85,951	90,150	92,850	1,460	1.9	1,400	1.6	1,350	1.5
Households										
Wilmington-Newark HMA	188,886	220,158	227,100	231,300	3,127	1.5	2,314	1.0	2,100	0.9
Wilmington City	28,556	28,617	28,550	28,550	6	0.0	–22	–0.1	0	0.0
Remainder New Castle County	135,605	160,318	165,300	168,300	2,471	1.7	1,661	1.0	1,500	0.9
Cecil County, Maryland	24,725	31,223	33,250	34,400	650	2.3	676	2.1	575	1.7

[1]April 1, 2003
[2]April 1, 2005

Notes: Rates of change calculated on a compound basis.
Numbers have been rounded for comparison.

Sources: 1990 and 2000—U.S. Census Bureau
Current and Forecast—Estimates by Analyst

Table 4

Housing Inventory Tenure and Vacancy

Wilmington-Newark HMA

1990 to April 2003

	Wilmington-Newark HMA			Wilmington City Submarket Area			Remainder of New Castle County Submarket Area			Cecil County, Maryland Submarket Area		
	1990	2000	Current	1990	2000	Current	1990	2000	Current	1990	2000	Current
Total housing inventory	201,216	233,982	242,100	31,244	32,138	32,350	142,316	167,383	173,000	27,656	34,461	36,850
Occupied units	188,886	220,158	227,100	28,556	28,617	28,550	135,605	160,318	165,200	24,725	31,223	33,350
Owners	130,574	155,918	162,600	15,179	14,332	14,350	96,861	118,182	122,900	18,534	23,404	25,300
%	69.1	70.8	71.6	53.2	50.1	50.3	71.4	73.7	74.4	75.0	75.0	76.0
Renters	58,312	64,240	64,550	13,377	14,285	14,200	38,744	42,136	42,350	6,191	7,819	8,025
%	30.9	29.2	28.4	46.8	49.9	49.7	28.6	26.3	25.6	25.0	25.0	24.0
Vacant units	12,330	13,824	14,950	2,688	3,521	3,650	6,711	7,065	7,750	2,931	3,238	3,500
Available units	7,275	7,059	7,550	1,517	1,694	1,650	4,934	4,432	4,850	824	933	1,050
For sale	2,629	1,989	2,000	518	388	350	1,730	1,240	1,250	381	361	410
Rate (%)	2.0	1.3	1.2	3.3	2.6	2.4	1.8	1.0	1.0	2.0	1.5	1.6
For rent	4,646	5,070	5,550	999	1,306	1,300	3,204	3,192	3,600	433	572	650
Rate (%)	7.4	7.3	7.9	7.0	8.4	8.4	7.6	7.0	7.8	6.7	6.8	7.6
Other vacant	5,055	6,765	7,425	1,171	1,827	2,000	1,777	2,633	2,900	2,107	2,305	2,450

Note: Numbers have been rounded for comparison.

Sources: 1990 and 2000—U.S. Census Bureau
Current and Forecast—Estimates by Analyst

Table 5

Residential Building Permit Activity

Wilmington-Newark HMA

1993 to April 1, 2003

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003*
Wilmington-Newark HMA											
Total	3,311	3,451	2,959	2,951	2,966	4,046	3,325	3,099	2,806	3,222	811
Single-family	3,223	3,248	2,873	2,812	2,620	3,152	2,971	2,324	2,348	2,975	754
Multifamily	88	203	86	139	346	894	354	775	458	247	57
Wilmington City											
Total	22	77	71	80	85	113	116	116	118	124	30
Single-family	22	47	40	45	45	53	54	55	58	64	15
Multifamily	0	30	31	35	40	60	62	61	60	60	15
Remainder New Castle County											
Total	2,628	2,539	2,277	2,140	2,224	2,594	2,459	2,215	1,748	2,130	447
Single-family	2,628	2,523	2,223	2,132	2,032	2,274	2,219	1,585	1,588	2,008	435
Multifamily	0	16	54	8	192	320	240	630	160	122	12
Cecil County, Maryland											
Total	661	835	610	731	657	1,339	750	768	940	968	334
Single-family	573	678	610	635	543	825	698	684	702	903	304
Multifamily	88	157	0	96	114	514	52	84	238	65	30

* Partial building activity through March 31, 2003.

Source: U.S. Census Bureau, C–40 Series

Table 6

Estimated Qualitative Annual Demand for
New Market Rate Rental Housing

Wilmington-Newark HMA

April 1, 2003 to April 1, 2005

One Bedroom		Two Bedrooms		Three Bedrooms	
Monthly Gross Rent ($)	Units of Demand	Monthly Gross Rent ($)	Units of Demand	Monthly Gross Rent ($)	Units of Demand
900	30	1,100	50	1,350	20
950	26	1,150	42	1,400	16
1,000	24	1,200	37	1,450	15
1,050	21	1,250	32	1,500	13
1,100	18	1,300	26	1,550	12
1,150	14	1,350	21	1,650	10
1,200	11	1,400	17	1,750	0
1,300	0	1,500	13	1,850	0
1,400	0	1,600	10	1,950	0
1,500	0	1,700	0	2,050	0
1,600 or more	0	1,800 or more	0	2,100 or more	0

Notes: Demand shown above will occur in the suburbs toward the end of the forecast period and after April, 2005.
Distribution above is noncumulative. Demand of fewer than 10 units is shown as 0.
Numbers have been rounded for comparison.

Source: Estimates by Analyst

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Percent Change in MSA House Prices through Q1 2005

MSA	Rank*	1-Yr.	1-Qtr.	5-Yr.
Top 20 - Highest Rates of Home Price Appreciation				
Bakersfield, CA	1	33.67	5.52	101.61
Las Vegas-Paradise, NV	2	33.25	2.88	89.06
Reno-Sparks, NV	3	31.78	4.39	85.2
Visalia-Porterville, CA	4	31.6	6.18	77.27
Palm Bay-Melbourne-Titusville,	5	31.21	7.72	98.4
Salinas, CA	6	30.94	4.9	117
Riverside-San Bernardino-Ontar	7	28.71	3.85	116.38
Stockton, CA	8	27.71	5.39	110.69
Merced, CA	9	27.44	5.77	118.45
Fresno, CA	10	26.89	5.04	111.23
Santa Barbara-Santa Maria-Gole	11	26.75	3.52	121.77
Yuba City, CA	12	26.03	4.52	121.96
Port St. Lucie-Fort Pierce, FL	13	26.03	5.5	109.35
Sacramento-Arden-Arcade-Rosevi	14	25.84	4.1	112.53
West Palm Beach-Boca Raton-Boy	15	25.82	5.55	102.17
Modesto, CA	16	25.64	4.57	117.67
Los Angeles-Long Beach-Glendal	17	25.55	3.36	105.52
Sarasota-Bradenton-Venice, FL	18	25.48	5.96	89.39
San Diego-Carlsbad-San Marcos,	19	25.1	3.13	117.72
Santa Ana-Anaheim-Irvine, CA	20	24.46	2.94	106.97
Bottom 20 - Lowest Rates of Home Price Appreciation				
Bloomington-Normal, IL	246	3.35	-0.78	17.92
Greensboro-High Point, NC	247	3.32	1.6	18.75
Spartanburg, SC	248	3.31	-0.02	18.7
Akron, OH	249	3.01	-0.17	21.01
Dallas-Plano-Irving, TX (MSAD	250	2.96	0.52	21.72
Canton-Massillon, OH	251	2.91	1.24	21.75
Anderson, IN	252	2.82	0.48	18.47
Greeley, CO	253	2.68	0.16	30.88
Burlington, NC	254	2.63	0.46	18.48
Mobile, AL	255	2.32	-1.31	18.5
Wichita, KS	256	2.3	0.27	18.18
Hickory-Lenoir-Morganton, NC	257	2.25	0.93	19.41
Austin-Round Rock, TX	258	1.96	-0.12	21.06
Mansfield, OH	259	1.9	0.87	24.27
Tulsa, OK	260	1.81	0.13	21.57
Macon, GA	261	1.76	-1.16	21.77

DCN:11697

Sioux City, IA-NE-SD	262	1.65	-0.28	17.05
Kokomo, IN	263	1.62	-1.73	13.78
Lafayette, IN	264	1.51	-0.16	12.14
Youngstown-Warren-Boardman, OH	265	0.85	-0.17	20.38

* Note: Rankings based on annual percentage change, for all MSAs containing at least 15,000 transactions since the Fourth Quarter 1990 as measured at the time of the Third Quarter, 2001 HPI Report.

Percent Change in MSA House Prices through Q1 2005

MSA	Rank*	1-Yr.	1-Qtr.	5-Yr.
Bakersfield, CA	1	33.67	5.52	101.61
Las Vegas-Paradise, NV	2	33.25	2.88	89.06
Reno-Sparks, NV	3	31.78	4.39	85.2
Visalia-Porterville, CA	4	31.6	6.18	77.27
Palm Bay-Melbourne-Titusville,	5	31.21	7.72	98.4
Salinas, CA	6	30.94	4.9	117
Riverside-San Bernardino-Ontar	7	28.71	3.85	116.38
Stockton, CA	8	27.71	5.39	110.69
Merced, CA	9	27.44	5.77	118.45
Fresno, CA	10	26.89	5.04	111.23
Santa Barbara-Santa Maria-Gole	11	26.75	3.52	121.77
Yuba City, CA	12	26.03	4.52	121.96
Port St. Lucie-Fort Pierce, FL	13	26.03	5.5	109.35
Sacramento-Arden-Arcade-Rosevi	14	25.84	4.1	112.53
West Palm Beach-Boca Raton-Boy	15	25.82	5.55	102.17
Modesto, CA	16	25.64	4.57	117.67
Los Angeles-Long Beach-Glendal	17	25.55	3.36	105.52
Sarasota-Bradenton-Venice, FL	18	25.48	5.96	89.39
San Diego-Carlsbad-San Marcos,	19	25.1	3.13	117.72
Santa Ana-Anaheim-Irvine, CA	20	24.46	2.94	106.97
Punta Gorda, FL	21	24.27	5.35	94.57
Oxnard-Thousand Oaks-Ventura,	22	23.93	2.58	105.23
Medford, OR	23	23.83	5.78	76
Fort Lauderdale-Pompano Beach-	24	23.62	4.39	105.04
Naples-Marco Island, FL	25	23.57	3.97	93.08
Cape Coral-Fort Myers, FL	26	23.35	5.21	89.31
Washington-Arlington-Alexandri	27	23.14	3.6	93.65
Virginia Beach-Norfolk-Newport	28	22.12	3.8	67.56
Vallejo-Fairfield, CA	29	22.08	3.42	107.87
Honolulu, HI	30	22.02	3.55	71.77
Deltona-Daytona Beach-Ormond B	31	21.98	4.61	81
San Luis Obispo-Paso Robles, C	32	21.69	3.95	107.44
Oakland-Fremont-Hayward, CA (	33	21.09	3.86	85.89
Napa, CA	34	21.08	5.48	105.18
Chico, CA	35	21	3.73	106.82
Miami-Miami Beach-Kendall, FL	36	21	3.65	95.98
Baltimore-Towson, MD	37	20.96	3.95	76.04
Redding, CA	38	20.94	4.28	103.35
Bethesda-Frederick-Gaithersbur	39	20.91	3.4	88.13
Santa Rosa-Petaluma, CA	40	20.51	4.14	86.09

Search

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Flagstaff, AZ-UT	41	20.3	4.46	54.31
Hagerstown-Martinsburg, MD-WV	42	20.19	2.52	68.2
Phoenix-Mesa-Scottdale, AZ	43	20	5.65	51.09
Pensacola-Ferry Pass-Brent, FL	44	19.57	3.96	49.53
Prescott, AZ	45	19.46	5.84	54.33
Bellingham, WA	46	19.41	2.11	60.02
Tampa-St. Petersburg-Clearwate	47	19.03	4.01	73.94
Orlando, FL	48	18.66	4.49	62.07
St. George, UT	49	18.46	3.97	32.86
Santa Cruz-Watsonville, CA	50	18.03	2.44	71.9
Atlantic City, NJ	51	17.69	2.36	81.62
San Francisco-San Mateo-Redwoo	52	17.5	3.49	62.88
Charlottesville, VA	53	17.23	4.79	64.51
Tallahassee, FL	54	16.77	3.04	52.55
San Jose-Sunnyvale-Santa Clara	55	16.76	3.69	52.37
Poughkeepsie-Newburgh-Middleto	56	16.51	3.29	85.35
Bremerton-Silverdale, WA	57	16.46	3.55	50.39
Camden, NJ (MSAD)	58	16.33	3.17	69.78
Lakeland, FL	59	16.05	4.02	50.54
Edison, NJ (MSAD)	60	15.97	2.25	85.88
Nassau-Suffolk, NY (MSAD)	61	15.89	3.1	91.54
Albany-Schenectady-Troy, NY	62	15.66	2.36	57.52
Newark-Union, NJ-PA (MSAD)	63	15.64	2.55	71.78
Tucson, AZ	64	15.64	3.15	48.64
Trenton-Ewing, NJ	65	15.63	1.7	72.93
New York-Wayne-White Plains, N	66	15.57	2.13	76.55
Providence-New Bedford-Fall Ri	67	15.55	1.95	93.51
Norwich-New London, CT	68	15.47	3.17	67.51
Philadelphia, PA (MSAD)	69	15.41	1.89	63.6
Burlington-South Burlington, V	70	15.32	2.23	55.87
Springfield, MA	71	15.05	3.19	63.06
Eugene-Springfield, OR	72	15.04	3.09	34.82
Takoma, WA (MSAD)	73	15.03	3.29	46.06
Wilmington, DE-MD-NJ (MSAD)	74	14.8	1.65	57.3
Jacksonville, FL	75	14.57	2.03	58.93
Barnstable Town, MA	76	14.51	3.16	101.49
Wilmington, NC	77	14.49	2.31	34.1
Bridgeport-Stamford-Norwalk, C	78	14.24	2.52	65.38
Olympia, WA	79	14.16	3.56	42.76
Portland-South Portland-Biddef	80	14.06	2.93	70.7
Savannah, GA	81	13.82	3.24	46.53
New Haven-Milford, CT	82	13.78	2.36	66.43
Richmond, VA	83	13.54	2.85	45.26
Charleston-North Charleston, S	84	13.3	3.63	46.08
Bend, OR	85	13.23	3.25	49.9
Allentown-Bethlehem-Easton, PA	86	13.12	1.24	51.33
York-Hanover, PA	87	12.69	2.82	37.1
Racine, WI	88	12.56	2.73	38.63
Reading, PA	89	12.51	1.68	40.57
Spokane, WA	90	12.45	2.47	31.49
Manchester-Nashua, NH	91	12.31	2.17	75
Seattle-Bellevue-Everett, WA	92	12.14	2.57	38.74

Anchorage, AK	93	11.99	2.6	42.54
Portland-Vancouver-Beaverton,	94	11.99	2.41	35.02
Hartford-West Hartford-East Ha	95	11.81	1.58	54.15
Boston-Quincy, MA (MSAD)	96	11.59	1.87	76.61
Worcester, MA	97	11.55	1.78	73.5
Milwaukee-Waukesha-West Allis,	98	11.23	1.87	39.29
Essex County, MA (MSAD)	99	11.16	2.6	68.68
Fayetteville-Springdale-Rogers	100	11.02	2.01	38.26
Santa Fe, NM	101	11	4.58	50.31
Rockingham County-Strafford Co	102	10.92	1.82	68.3
Chicago-Naperville-Joliet, IL	103	10.57	1.96	45.1
Madison, WI	104	10.52	1.75	33.6
Lancaster, PA	105	10.25	1.03	34.65
Missoula, MT	106	10.21	1.32	51.8
Cheyenne, WY	107	10.06	1.86	39.39
Myrtle Beach-Conway-North Myrt	108	10.06	0.26	30.26
St. Cloud, MN	109	10.06	2.87	52.02
Cambridge-Newton-Framingham, M	110	9.97	1.79	59.96
Bloomington, IN	111	9.5	3.38	28.68
Minneapolis-St. Paul-Bloomingt	112	9.33	1.37	57.6
Sheboygan, WI	113	9.17	3.15	26.93
Fargo, ND-MN	114	9.11	0.86	41.09
Lake County-Kenosha County, IL	115	9.05	1.81	39.05
Asheville, NC	116	9.02	3.6	37.8
Roanoke, VA	117	8.68	1.61	32.63
Albuquerque, NM	118	8.66	2.04	26.32
Kankakee-Bradley, IL	119	8.63	1.72	23.63
Duluth, MN-WI	120	8.54	0.94	53.65
St. Louis, MO-IL	121	8.43	1.65	37.68
Columbus, GA-AL	122	8.19	2.49	28.13
Wenatchee, WA	123	8.15	0.81	18.86
Salem, OR	124	8.11	1.77	25.51
Billings, MT	125	8.11	2.02	38.05
Blacksburg-Christiansburg-Radf	126	8.09	3.45	32.59
Grand Junction, CO	127	8.08	0.66	37.46
Lynchburg, VA	128	8.05	2.37	30.49
Harrisburg-Carlisle, PA	129	8.04	1.69	27.84
Janesville, WI	130	7.74	1.2	22.74
New Orleans-Metairie-Kenner, L	131	7.6	0.38	34
Lafayette, LA	132	7.4	2.42	24.27
Eau Claire, WI	133	7.39	1.85	29.65
Columbia, MO	134	7.36	0.91	23.7
Augusta-Richmond County, GA-SC	135	7.36	1.7	26.62
Tuscaloosa, AL	136	7.32	3.62	27.1
Boise City-Nampa, ID	137	7.31	0.62	27.55
La Crosse, WI-MN	138	7.22	0.99	33.75
Rockford, IL	139	7.2	1.07	24.49
Wausau, WI	140	7.03	1.16	28.53
Knoxville, TN	141	6.93	2.5	28
Niles-Benton Harbor, MI	142	6.87	1.58	31.58
Syracuse, NY	143	6.76	-0.87	33.26
Monroe, MI	144	6.67	0.74	29.33

DCN:11697

Dubuque, IA	145	6.61	1.36	28.97
Buffalo-Niagara Falls, NY	146	6.58	1.25	28.91
Lansing-East Lansing, MI	147	6.56	1.45	30.76
Lawrence, KS	148	6.51	1.36	32.1
Green Bay, WI	149	6.5	0.64	26.19
Gary, IN (MSAD)	150	6.31	1.22	24.03
Logan, UT-ID	151	6.31	1.48	18.73
Jefferson City, MO	152	6.3	0.54	21.44
Oshkosh-Neenah, WI	153	6.24	1.84	25.98
Iowa City, IA	154	6.18	0.78	25.46
Longview, WA	155	6.17	0.44	20.46
Rochester, MN	156	6.16	0.81	34.64
Nashville-Davidson-Murfreesbor	157	6.15	1.65	22.47
Davenport-Moline-Rock Island,	158	6.08	0.67	24.44
Salt Lake City, UT	159	6.08	1.27	18.2
Gulfport-Biloxi, MS	160	6.03	1.31	24.57
Kansas City, MO-KS	161	6.02	1.11	30.21
Birmingham-Hoover, AL	162	6.01	1.53	28.12
Appleton, WI	163	5.97	2.16	24.94
Kalamazoo-Portage, MI	164	5.89	0.64	27.29
Shreveport-Bossier City, LA	165	5.87	0.73	30.63
Des Moines, IA	166	5.85	1.53	26.89
Chattanooga, TN-GA	167	5.85	1.18	28.31
Jackson, MS	168	5.8	1.35	22.84
Champaign-Urbana, IL	169	5.78	-0.26	29.75
Sioux Falls, SD	170	5.75	0.75	26.19
Little Rock-North Little Rock,	171	5.73	0.88	24.16
Lincoln, NE	172	5.69	0.15	20.68
Kingsport-Bristol-Bristol, TN-	173	5.64	2.67	28.31
Colorado Springs, CO	174	5.62	1.15	30.51
Springfield, MO	175	5.61	1.04	23.11
Lima, OH	176	5.61	2.94	25.74
Joplin, MO	177	5.55	1.54	25.41
Bay City, MI	178	5.53	-0.35	29.32
Pittsburgh, PA	179	5.51	0.84	31.08
Athens-Clarke County, GA	180	5.45	1.16	30.98
Cincinnati-Middletown, OH-KY-I	181	5.44	0.63	23.98
Columbus, IN	182	5.42	2.84	16.42
Holland-Grand Haven, MI	183	5.42	1.55	23.54
Columbia, SC	184	5.38	1.63	26.12
San Antonio, TX	185	5.34	1.04	24.76
Ann Arbor, MI	186	5.34	0.95	30.46
Louisville, KY-IN	187	5.31	0.6	24.13
Beaumont-Port Arthur, TX	188	5.18	-2.14	19.32
Cedar Rapids, IA	189	5.11	1.73	21.53
Montgomery, AL	190	5.09	8	17.9
Fond du Lac, WI	191	5.09	9	22.56
Oklahoma City, OK	192	5.05	0.3	27.35
Flint, MI	193	5.05	0.85	24.89
Jackson, MI	194	5.03	-0.26	25.14
Huntsville, AL	195	5.01	1.81	21.27
Omaha-Council Bluffs, NE-IA	196	4.99	0	23.21

DCN:11697

Yakima, WA	197	4.99	1.96	21.41
Columbus, OH	198	4.96	1.21	24.53
Springfield, IL	199	4.91	0.96	17.26
Grand Rapids-Wyoming, MI	200	4.9	0.94	24.79
Lexington-Fayette, KY	201	4.89	-0.32	25.69
Atlanta-Sandy Springs-Marietta	202	4.86	1.26	29.07
Battle Creek, MI	203	4.85	0.84	26.69
Anderson, SC	204	4.73	1.91	23.59
Raleigh-Cary, NC	205	4.7	1.21	18.1
Amarillo, TX	206	4.68	-0.33	19.4
Fort Collins-Loveland, CO	207	4.67	0.61	30.3
Provo-Orem, UT	208	4.64	1.92	15.18
Elkhart-Goshen, IN	209	4.6	0.88	19.49
Kennewick-Richland-Pasco, WA	210	4.6	-5.99	27.32
Dayton, OH	211	4.59	1.11	19.72
Boulder, CO	212	4.59	1.39	31.5
Gainesville, GA	213	4.55	-0.25	29.29
Winston-Salem, NC	214	4.52	0.63	20.73
Durham, NC	215	4.49	1.14	23.42
Waterloo-Cedar Falls, IA	216	4.43	0.72	30.42
Charlotte-Gastonia-Concord, NC	217	4.42	0.83	19.6
Topeka, KS	218	4.38	0.32	27.08
Houston-Baytown-Sugar Land, TX	219	4.38	1.86	26.43
Memphis, TN-MS-AR	220	4.3	0.88	16.8
Saginaw-Saginaw Township North	221	4.3	1.2	23.91
Rochester, NY	222	4.28	-0.13	22.28
Peoria, IL	223	4.27	0.56	22.64
Toledo, OH	224	4.26	1.23	24.8
Ogden-Clearfield, UT	225	4.21	1.63	13.51
Bowling Green, KY	226	4.16	0.95	18.8
Warren-Farmington Hills-Troy,	227	4.15	0.69	24.24
El Paso, TX	228	4.08	-0.56	23.89
Muskegon-North Shores, MI	229	4.08	0.43	23.6
Springfield, OH	230	4.08	3	20.86
Evansville, IN-KY	231	4.04	-0.2	20.43
Florence, SC	232	4.02	2.23	24.53
South Bend-Mishawaka, IN-MI	233	4	1.24	22.78
Fort Worth-Arlington, TX (MSA	234	3.96	0.45	21.74
Michigan City-La Porte, IN	235	3.96	-3.33	22.66
Scranton-Wilkes-Barre, PA	236	3.96	0.75	27.46
Greenville, SC	237	3.91	1.3	20.42
Denver-Aurora, CO	238	3.9	0.89	31.66
Charleston, WV	239	3.78	0.56	17.69
Cleveland-Elyria-Mentor, OH	240	3.73	0.32	22.17
Detroit-Livonia-Dearborn, MI	241	3.66	0.89	25.9
Fort Wayne, IN	242	3.57	0.3	15.82
Baton Rouge, LA	243	3.52	0.73	19.84
Indianapolis, IN	244	3.49	0.81	19.28
Pueblo, CO	245	3.37	-0.68	23.36
Bloomington-Normal, IL	246	3.35	-0.78	17.92
Greensboro-High Point, NC	247	3.32	1.6	18.75
Spartanburg, SC	248	3.31	-0.02	18.7

DCN:11697

Akron, OH	249	3.01	-0.17	21.01
Dallas-Plano-Irving, TX (MSAD	250	2.96	0.52	21.72
Canton-Massillon, OH	251	2.91	1.24	21.75
Anderson, IN	252	2.82	0.48	18.47
Greeley, CO	253	2.68	0.16	30.88
Burlington, NC	254	2.63	0.46	18.48
Mobile, AL	255	2.32	-1.31	18.5
Wichita, KS	256	2.3	0.27	18.18
Hickory-Lenoir-Morganton, NC	257	2.25	0.93	19.41
Austin-Round Rock, TX	258	1.96	-0.12	21.06
Mansfield, OH	259	1.9	0.87	24.27
Tulsa, OK	260	1.81	0.13	21.57
Macon, GA	261	1.76	-1.16	21.77
Sioux City, IA-NE-SD	262	1.65	-0.28	17.05
Kokomo, IN	263	1.62	-1.73	13.78
Lafayette, IN	264	1.51	-0.16	12.14
Youngstown-Warren-Boardman, OH	265	0.85	-0.17	20.38

PERSONAL BANKRUPTCY FILING RATE (per 1,000 population)

Maine

County	Filing Rate 1999	2000	2001	2002	2003	2004	Rank In State	County	Filing Rate 1999	2000	2001	2002	2003	2004	Rank In State
United States									4.59	4.32	5.09	5.35	5.59	5.32	
Maine contains 16 counties/subunits									3.15	3.04	3.41	3.33	3.48	3.32	
Androscoggin County, ME	3.79	3.79	4.67	4.47	4.52	3.94	5	Oxford County, ME	3.01	3.03	3.30	3.39	3.85	3.65	7
Aroostook County, ME	4.20	5.01	4.61	4.75	4.67	5.37	1	Penobscot County, ME	3.39	3.98	4.68	4.17	4.50	3.73	6
Cumberland County, ME	2.82	2.41	2.75	2.64	2.79	2.60	15	Piscataquis County, ME	3.54	4.69	5.54	5.05	4.43	4.35	2
Franklin County, ME	1.87	2.34	1.70	2.19	2.05	2.77	13	Sagadahoc County, ME	2.73	2.75	3.17	3.12	2.91	3.19	10
Hancock County, ME	2.84	2.81	3.25	3.12	2.86	3.28	9	Somerset County, ME	3.39	2.99	4.38	3.57	3.58	4.03	4
Kennebec County, ME	3.42	3.19	3.36	3.40	4.02	3.64	8	Waldo County, ME	2.88	2.66	2.53	3.02	3.48	2.78	12
Knox County, ME	2.47	2.49	2.45	2.23	2.55	1.97	16	Washington County, ME	3.60	3.33	4.19	3.96	4.48	4.29	3
Lincoln County, ME	2.65	1.96	2.93	2.53	2.82	2.72	14	York County, ME	2.97	2.37	2.64	2.91	2.83	2.84	11

SAAR = Seasonally Adjusted Annual Rate na = not available - data not reported from source

Source: Administrative Office of the U.S. Courts (Economy.com). Includes Chapter 7 and Chapter 13 filings.

Last Updated: 03/02/2005

TOTAL EMPLOYMENT GROWTH (NSA)

MAINE

County	2001	2002	2003	2004	YTD 04Q1	YTD 05Q1
United States						
Maine						
Androscoggin County ME	-1.1%	1.3%	0.7%	2.1%	2.0%	-9.3%
Aroostook County ME	-2.2%	0.5%	1.2%	0.9%	-0.6%	-2.6%
Cumberland County ME	1.2%	0.7%	1.4%	1.9%	2.2%	4.3%
Franklin County ME	-1.7%	1.8%	0.3%	1.2%	0.8%	-0.5%
Hancock County ME	-2.3%	2.0%	2.3%	-0.6%	0.1%	1.3%
Kennebec County ME	-0.1%	0.4%	-0.5%	0.9%	0.3%	0.4%
Knox County ME	0.6%	1.8%	1.2%	-0.2%	0.1%	-3.1%
Lincoln County ME	0.1%	0.4%	2.2%	0.5%	0.7%	0.4%

County	2001	2002	2003	2004	YTD 04Q1	YTD 05Q1
	0.0%	-0.3%	0.9%	1.1%	0.7%	1.3%
	-0.2%	0.7%	0.8%	1.2%	1.1%	0.5%
Oxford County ME	-0.9%	0.0%	1.6%	0.9%	0.8%	7.7%
Penobscot County ME	1.0%	1.2%	-0.2%	1.5%	1.6%	-6.3%
Piscataquis County ME	-0.2%	-0.1%	-0.7%	1.0%	-0.1%	-12.5%
Sagadahoc County ME	-2.3%	-1.4%	0.7%	1.9%	3.2%	22.9%
Somerset County ME	-3.6%	-1.3%	0.5%	-1.6%	-1.5%	-2.2%
Waldo County ME	2.0%	-0.6%	2.1%	0.8%	1.6%	-21.4%
Washington County ME	-1.1%	-1.4%	1.1%	-0.7%	-3.7%	0.8%
York County ME	-0.3%	1.3%	0.2%	1.3%	1.5%	9.4%

NSA = Not Seasonally Adjusted Quarterly data is the Year-To-Date % change from the prior year's YTD data.

Source: Bureau of Labor Statistics, Household Survey (Haver Analytics)

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DCN:11697

UNEMPLOYMENT RATE
MAINE

County (NSA)	04Q2	04Q3	04Q4	05Q1	County (NSA)	04Q2	04Q3	04Q4	05Q1
United States (NSA)						5.5%	5.4%	5.1%	5.6%
Maine (NSA)						4.5%	4.0%	4.3%	5.4%
Androscoggin County ME	4.1%	4.0%	4.0%	5.3%	Oxford County ME	6.6%	6.0%	6.1%	5.9%
Aroostook County ME	6.7%	5.3%	5.9%	6.6%	Penobscot County ME	5.6%	4.8%	5.0%	5.7%
Cumberland County ME	2.7%	2.7%	2.8%	3.7%	Piscataquis County ME	7.2%	5.1%	6.1%	8.4%
Franklin County ME	6.5%	5.5%	6.0%	6.0%	Sagadahoc County ME	3.3%	3.1%	3.5%	4.5%
Hancock County ME	4.9%	3.1%	5.5%	7.9%	Somerset County ME	8.7%	7.9%	8.4%	9.1%
Kennebec County ME	4.5%	4.3%	4.4%	5.8%	Waldo County ME	3.9%	3.4%	4.1%	7.1%
Knox County ME	3.0%	2.6%	3.1%	5.0%	Washington County ME	8.7%	7.0%	7.6%	10.4%
Lincoln County ME	3.0%	2.3%	3.5%	5.3%	York County ME	3.7%	3.5%	3.9%	4.7%

NSA = Not Seasonally Adjusted

Source: Bureau of Labor Statistics (Haver Analytics)

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DCN:11697

Frequently Asked Questions

Why doesn't BAH cover all my housing costs? Or my mortgage payment?
One of the common misconceptions regarding BAH is that it was intended to cover all of a service member's housing costs. The original BAH law stated that the allowance could cover no more than 80% of housing costs. Accordingly, the average service member had at least 20% in out-of-pocket expenses. In 2000, the Secretary of Defense committed to reducing the average out-of-pocket expense for the median member to zero by 2005. In 2002, it is 11.3%. Continuing, we expect 7.5% for 2003, 3.5% for 2004 and 0% for 2005.

As noted previously, the actual out-of-pocket expense for an individual may be higher or lower than the typical, based on his/her actual choice of housing. For example, if a service member chooses a bigger or more costly residence than the median, he or she will have larger out-of-pocket expenses. The opposite is true if a service member chooses to occupy a smaller or less costly residence. Only for the member with median costs do we say that out-of-pocket expense is the same for a given pay grade and dependent status in any location in the United States.

By design, BAH does not consider mortgage costs. Homeowners' monthly mortgage payments do not necessarily relate directly to rent, so we do not use them in the calculations. Mortgage payments are affected by:

- Expected appreciation in the value of the residence
- Amount of down payment
- Opportunity costs of interest from down payments
- Settlement costs
- Tax savings due to the deduction of interest payments

In contrast, BAH reflects current rental market conditions, not the historical circumstances surrounding existing mortgage loans.

Why is BAH based on my duty station rather than where I live?
BAH compensates members for typical housing costs within a reasonable commuting distance of their duty location. Once the duty station is known, the BAH is fixed, regardless of where the member chooses to live. If the location of the member's residence were used as a basis for the entitlement, members who commute from lower cost areas would have lower BAH rates, even though their commuting expenses were higher. The BAH rate is determined by the duty station so that members may live near their duty location, but they remain free to live where they choose. Actual member choices, remember, do not influence the *calculation* of rates.

The opportunity for service members to choose their off-base housing is important to DoD. Each member has the freedom to decide how to allocate his or her income (including housing allowance) without a penalty for deciding to conserve some dollars on rent to pay other expenses.

One such choice that members frequently make is to "trade-off" a longer commute to work for either a larger or less expensive house in an outlying area. For example, two members assigned to a downtown duty station may make drastically different housing choices. One member may choose to use all of his or her housing allowance to rent an apartment in the city, with a commute time of only 10 minutes to the downtown duty station. The second member might prefer to rent a less expensive three-bedroom house in

an outlying neighborhood and commute to that same downtown duty station from 20 or 30 miles away. Both members are free to choose the situation that best suits them.

Why can I get a bigger or better residence on-base/post?
Two reasons. First, government housing (especially privatized housing) often surpasses typical local community housing in quality and size. Second, family size is the basis for on-base housing assignment. That is, Services house families with more dependents in units with enough bedrooms to meet their family needs. The BAH approach is based on comparing a member's compensation with that of civilians who earn the same. That is, members at higher grades are entitled to more bedrooms and larger dwelling types. The only distinction is with or without dependents, not the number of dependents.

Is square footage a factor in BAH?
BAH rates reflect the typical square footage of rental housing in each MHA; that is, BAH rates and square footage are specific to each location. Typical housing square footage varies so greatly across the country that nation-wide standards should not be formulated. For example, a typical one-bedroom apartment in New York City is much smaller than a one-bedroom apartment in Pocatello, Idaho.

How do you define a "reasonable" commuting distance?
Generally within twenty miles or one hour's drive in rush hour traffic. The goal is that members receive a BAH that is sufficient to permit them to live a reasonable distance from their duty station. Of course, members are free to choose a neighborhood that suits their individual needs.

It should be noted that Military Housing Areas often contain several military installations or activities, and, therefore, multiple cities. BAH research includes housing costs for each of the cities in the MHA

What is the basis for the current definition of my MHA?
Military Housing Areas (MHAs) were originally defined using the Defense Enrollment Eligibility Reporting System (DEERS) data. DEERS data provided information on where members at each installation were currently living. This created a data set that naturally excluded undesirable neighborhoods, which members had already avoided. However, DoD and the Services realize that populations, neighborhoods, and housing conditions can change over time. Periodic re-examining of MHA boundaries is an important and on-going part of the BAH process.

What method do you use to calculate BAH in locations that are not in an MHA?
BAH is defined for every location in the United States, even though some locations may have no military population, because we must be prepared to pay BAH in case a member or dependent ever establishes eligibility in that location. Collecting rental data for all such locations is not practical. To handle these situations, we combine these areas with other MHAs of similar cost for which we have sufficient rental cost data. Pooling the data in this manner gives us sufficient data to establish statistically reliable housing costs and BAH rates.

We determine comparable housing costs using Fair Market Rents (FMRs) published annually for all counties by the Department of Housing and Urban Development (HUD). After grouping or pooling the data, the result is a set of counties with comparable housing costs and BAH rates called a County Cost Group (CCG). There are about 30 CCGs. Each group includes a statistically sufficient quantity of rental cost data to calculate average housing costs by size and type of dwelling for that group of counties. Although half the US counties (about 1,500) are in County Cost Groups, these counties contain less than two percent of military members eligible to receive BAH.

DCN:11697

Where can I obtain more information on BAH?
For an overview of BAH, visit www.dtic.mil/perdiem/ and militarypay.dtic.mil. You can look up individual rates at this site, calculate your tax advantage, and review additional Frequently Asked Questions regarding the program.

To review the BAH section of the DoD Financial Management Regulation (FMR), read Volume 7A, Chapter 26 at www.dtic.mil/comptroller/fmr/07a/07AIC14-99.pdf

To review BAH Law, refer to Title 37 USC § 403 at www4.law.cornell.edu/uscode/37/403.html

For issues regarding your BAH, contact your Service Compensation Representative through your chain of command:

Service	Name	COM Phone	DSN	E-mail
Air Force	Major Karyn Wright	(703) 695-1113	225-1113	Karyn.Wright@pentagon.af.mil
Army	Major Leslie Gerald	(703) 697-9027	222-5943	Leslie.Gerald@hqda.army.mil
Coast Guard	Cliff Samuels	(202) 267-2210	N/A	Csamuel@comdt.uscg.mil
Marines	Major Andy Gilmore	(703) 784-9386	278-9388	GilmoreAJ@manpower.usmc.mil
Navy	Lt Benjamin Bryant	(703) 695-3304	225-3304	n130c4@bupers.navy.mil

Glossary of Terms

ANCHOR POINT - A profile for which cost data is collected. BAH rates are calculated for anchor points, then extrapolated for non-anchor point grades.

APARTMENT (APT) - A rental unit located in a larger building. Apartment buildings are typically multi-storied, and there are usually common hallways providing entrance to each unit.

INSTALLATION - A military fort, post, base, camp, or station.

MEDIAN - The 50th percentile; calculated by finding the "middle" value when values are sorted from low to high. Unlike a mean, the median is not strongly influenced by very large or very low values in the set. By definition, half the values will be higher than the median and half will be lower. The median is the customary scientific measure for describing housing costs.

MILITARY HOUSING AREA (MHA) - The defined housing area surrounding an installation or activity.

MILITARY HOUSING OFFICE (MHO) - A housing referral office at a military installation.

OUT-OF-POCKET (OOP) EXPENSE - The portion of a member's housing expense that is not covered by BAH.

PROFILE - The various types of housing used in the study. For example, a two-bedroom apartment is a profile. There are six housing profiles.

SINGLE FAMILY DETACHED (SFD) HOUSE - A dwelling that is not attached to any other dwellings.

TOWNHOUSE (TH) - A rental unit that is attached to similar units. There are common (or shared) walls between the units. Each unit has a separate entrance; that is, there are no common hallways. Typically, townhouses are multi-storied, but may be one story. Duplexes are included with townhouses in this study.

UTILITIES - Electricity, heat (such as gas or oil), and water and sewer.

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BRAC news a boon to home builders

Likely new arsenal jobs mean 'hotter' real estate market

Monday, May 16, 2005

By MARIAN ACCARDI
Times Business Writer accardi@htimes.com

The announcement that Redstone Arsenal could gain more than 1,655 jobs in the 2005 round of base realignments and closures is good news for longtime home builder Louis Breland.

His company, Breland Properties, specializes in large, master-planned communities such as Lake Forest, a 1,200-lot, 750-acre development in the southwest corner of Huntsville at Zierdt and Martin roads - just outside Redstone Arsenal's Gate 7.

Site preparation is under way at the site, and Lake Forest's first phase of about 300 lots should be completed in the next six to eight months, Breland said. That phase will include garden homes in the $200,000 to $300,000 range and luxury homes from $400,000 to $600,000, a 30-acre lake, walking trails and other amenities.

The announcement "speeds up our development plans," said Breland. "Absolutely, we feel safer to continue with our development now."

the overall local development and real estate market, "demand is very strong now and the demand will continue to be strong," he said. "There's a hot real estate market now and it's fixing to get hotter."

Sales of new and existing homes in Huntsville and Madison reached a new record of 5,537 last year, making 2004 the third consecutive record-setting year for home sales here. That number is based on residential sales transactions processed through the Multiple Listing Service at the Huntsville Area Association of Realtors.

Local residential builders have been hearing for some time about the possibility of an influx of new jobs from the 2005 BRAC process, said Donna Henry, chairwoman of the government affairs committee of the Huntsville/Madison County Builders Association. "We've been hopeful this would happen. I think we're prepared for the growth," Henry said after a Friday morning news conference on the BRAC recommendation at the Huntsville/Madison County Chamber of Commerce.

Residential growth should be "spread across North Alabama communities," said Dallas Fanning, the city of Huntsville's planning director. "We'll get our share. We're prepared for the growth, and we can handle it."

Jeff Enfinger, an owner of Enfinger Steele Development, also believes that the local housing market will be big enough to absorb a large influx of people, particularly if the BRAC-related moves were to take place over two to four years.

"If it takes two to four years to implement, I don't think you'll even notice it," Enfinger said. If Redstone Arsenal does gain the jobs, "it's certainly good news and a positive sign for our economy."

Enfinger Steele Development also specializes in large residential projects that could benefit from BRAC transfers. There's McMullen Cove in east Huntsville where about 1,000 homes are planned. Work to provide utilities there is expected to start on 175 lots next April, and home construction should start in August 2006. Enfinger Steele Development and Breland are also developing The Reserve off Zierdt Road, where about lots are planned. Work on utilities gets started this summer on that development's second phase.

If BRAC jobs move here, more indirect employment could follow.

Dr. Niles Schoening, professor of economics at the University of Alabama in Huntsville, said if Redstone

DCN:11697

does get these jobs and those people transfer here, that could mean another 1,650 jobs in Madison County, using a multiplier of two, that are created indirectly. "So the total change could be in the neighborhood of 3,200 jobs in the long run."

people transferring to Redstone choose to retire here, "that kicks up the long-term impact even more," ening said.

"A lot of benefits will come out of this for people who already live here," said Schoening. More jobs here means more retail offerings, more personal services ranging from car repair to doctor's offices, and more direct airline service because of increased traffic at Huntsville International Airport.

"There's no question there will be retail growth in Huntsville and Madison County" if Redstone gains jobs, because of the goods and services those people will require, said Don Beck of the Shopping Center Group of Alabama. "And there's a high probability that it will happen in surrounding counties."

"More specialty retail will be forthcoming; that would be a pretty safe bet," said Beck.

The BRAC job growth "is not a watershed event that will completely change the retail face of Huntsville," said D. Scott McLain of Coldwell Banker Commercial McLain Real Estate. McLain is the managing partner of Disraeli LLC, which is now developing an apartment and retail project north of U.S. 72 west.

But for retailers considering Huntsville and debating whether or not to commit to Huntsville, "this makes a difference," McLain said. "If someone is handling real-estate evaluation in Alabama (for a retailer) and sees the announcement about Huntsville, it might be enough to get them to look at Huntsville."

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Publication: DailyNews;**Date:** Sunday, May 15, 2005 ;**Section:**Front page;**Page:**1

BRAC's a 'blessing,' challenge

• Officials realize that influx of troops puts pressure on schools, roads and housing.

By MLADEN RUDMAN Daily News Staff Writer

With thousands more people likely on their way to communities surrounding Eglin Air Force Base, elated area officials and business leaders are speculating on how best to manage their arrival.

As expected, the Base Realignment and Closure plan announced Friday boosted the number of troops at Eglin — by 2,218 servicemen, a 10 percent increase in the base's personnel.

Those troops, and the families they bring with them, will pump an estimated $220 million annually into the area's economy, according to the Haas Center for Business Development.

But they will also tax an already tight housing market, add children to area schools and increase traffic on roads that are already congested.

Officials say that considering the upside to having additional troops at Eglin, the challenges are worth it.

"There are logistical challenges to overcome, but this is a blessing to our community," said Okaloosa County Schools Superintendent Don Gaetz. "We will work with the Air Force to meet the needs of these new families." A home for Green Berets Officials cautioned not to draw too many immediate conclusions until the BRAC process clears some political hurdles in upcoming months. Even then, it may not be entirely clear when new troops would arrive, or even where on Eglin they will call home.

Perhaps the main outstanding question is where the Army 7th Special Forces Group from Fort Bragg, N.C., would establish its headquarters. With 1,402 soldiers in the Green Beret unit, traffic on already crowded roadways would increase when those troops arrive.

"It does depend on how this population is distributed," said Mike Zeigler, West Florida Regional Planning Council Transportation Planning director. The worst-case scenario imagines some 20,000 more daily car trips locally.

The Green Berets could locate at Hurlburt Field, home of the Air Force's equivalent of commandos. That would make for convenient joint training, but the traffic grind along U.S. Highway 98 would worsen, Zeigler said.

If the 7th Special Forces Group ends up at Duke Field, where the Air Force Reserve special operations wing is located, the traffic impact on less-congested State Road 85 would be more tolerable.

"Put them at Duke Field," said Fort Walton Beach Councilman and decorated Army Ranger Jim Tucker. "They have the aircraft available and it's a great landing strip." Tucker said Duke is less congested and offers plenty room for ground war training.

The Silver Star recipient was enthusiastic about getting more of an Army presence on Eglin reservation. "I don't know who the guy was who came up with this idea, but I want to kiss him," he added.

Retired Army Maj. Gen. Ed Scholes, a former Ranger and Green Beret, agreed it was a smart move to relocate the 7th Special Forces Group to Eglin.

He said Army commandos and Hurlburt and Duke air commandos would benefit from regularly training together. They also would be able to deploy more quickly to hot spots.

DCN: 11697

"It makes a lot of sense. It's a very (progressive) step to take," Scholes continued. "This is significant for the armed forces and it's going to be significant to the area because it brings in highly trained people." Scholes, of Bluewater Bay, added the Fort Bragg unit doesn't come with heavy equipment, meaning area residents won't be seeing M1A2 battle tanks or Bradley fighting vehicles on roads.

Eglin commander Col. Edmond B. Keith had no worry about finding places for the troops. In addition to the Green Berets, the Joint Strike Fighter initial training program and a tobe-consolidated weapons development unit are on the way.

"We have a large base here, 724 square miles, lots of ranges, lots of space," Keith said. His main concern is having enough funding to construct the facilities the troops would need.

The colonel added the Eglin and Hurlburt housing privatization program now taking shape could be amended to ensure there are homes for at least some of the additional troops.

More housing, schools As officials plan for the new arrivals and their families, business people in the area almost uniformly anticipate more folks spending money at stores, restaurants, car repair garages and dry cleaning shops.

"Anytime you increase bodies, the better it is," said Richard Helton, owner of Bangkok Cleaners in Fort Walton Beach. "We're so geared to the numbers. The more people, the more cleaning." It's unclear at this point when the realigned troops might start arriving at Eglin. The beginning of the migration could be a couple of years off.

In the interim, some folks hope the area would be more prepared than it is now to welcome the troops, including the availability of affordable housing.

"It's a timing question," said Larry Dreaden, a real estate agent at Caldwell Banker JME Realty in Crestview. "If it's next year, it'll make it harder. If it's in the next two-and-a-half years, we may not have caught up, but we'll be more even." Though it's difficult to predict how many spouses and children the 2,218 troops coming to Eglin would bring, the number is likely in the thousands.

The influx of so many new families would almost certainly force the Okaloosa County School District, which is already enduring a space crunch, to build new schools, said Gaetz.

Gaetz noted that military families are often younger and so are their children. If half of the families have one child, more than one new school could be needed.

"If we had a thousand more students moving into the county, we'd probably need one to two new schools," he said.

The district currently owns two parcels of land relatively close to Eglin where schools could be built, one between Niceville and Bluewater Bay and another in Shalimar.

Gaetz said the district had some advance knowledge BRAC would favor Eglin, and he has already started working with Air Force officials to help smooth the transition.

"If these military families wish to do so, we will provide guidance counseling and academic counseling well in advance of their arrival here," he said.

• Business Editor Morris Fraser and Staff Writers Zac Anderson and Isaac Sabetai contributed to this report.

Green Berets could invade Eglin under the BRAC plan.

BRAC FALLOUT

■ Rumsfeld's plan will leave a lasting mark on the military for years to come/A3.

BRAC TIMELINE

■ **Sept. 8:** Deadline for BRAC Commission to submit final realignment and closure recommendations to President Bush.

■ **Sept. 23:** Last day for presidential approval of the BRAC list. If approved, recommendations are binding 45 legislative days after submission to Congress, unless it enacts a joint resolution of disapproval.

■ **Oct. 20:** If the president disapproves the BRAC Commission's initial recommendations, the commission must resubmit revised recommendations no later than this date.

■ **Nov. 7:** Last day for the president to provide his revised BRAC recommendations to Congress, or the process ends.

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BRAC: How Will it Affect You and Your Community?

On May 13, DoD released its long-awaited list of military installations it recommends for closure or realignment consideration by the Base Realignment and Closure (BRAC) Commission. The Department has recommended closing 33 major bases and realigning 29 others as part of a comprehensive reshaping of the military infrastructure through the base realignment and closure process. The recommendations now go to the BRAC Commission chaired by former Veterans Affairs Secretary Anthony J. Principi. The commission started hearings on the specific recommendations May 16. If adopted, the recommendations would give DoD a net savings of almost $50 billion over 20 years, officials said. Annual savings are pegged at $5.5 billion a year after that. This webpage links to several articles about BRAC. The information is based on press reports, briefings, and Volume 1 of the report submitted to the independent BRAC commission. To view DoD press reports about the BRAC process and recommendations, as well as to download copies of the report—approximately 900 pages in two parts—go to: www.defenselink.mil/brac.

BRAC: What Help is Available for Military Families?

BRAC: What Communities Will Change?

BRAC: By the Numbers

BRAC: What's Ahead For Medical Facilities?

BRAC: What Help is Available for Affected Communities?

BRAC: What Happens Next?

BRAC: What Help is Available for Military Families?

Military families at installations affected by base closure or realignment or by the overseas rebasing proposals are now wondering how these changes will affect them. Among the questions families are asking are:

- What is the timeline for closure?
- When will we move?
- Where will we move?

BRAC Information and Resources

DoD BRAC website:
www.defenselink.mil/brac

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- Will support programs go away before we move and will they be in place at our new installation?
- What does this change mean for the spouse's career goals or children's education?
- What if we have to sell our house at a loss?
- Where do we go for more information and support?

BRAC Resources for Military Families: www.defenselink.mil/brac/pdf/Family-Resources.pdf

Education Information for the Mobile Military Student, Parents, Commanders, and School Districts: http://www.militarystudent.org/

Support for Communities Affected by BRAC: http://www.oea.gov/oeaweb.nsf/Home?OpenForm

The first thing military families should remember is that the closures, realignments, and the moves associated with BRAC will not happen immediately, but over the next five to seven years. Families moving from overseas may make these moves faster, but none, except for the move of some troops from Korea to Fort Carson, CO, are projected until 2006.

DoD has posted a BRAC information sheet on its website for servicemembers and families. The sheet, available at www.defenselink.mil/brac/pdf/Family-Resources.pdf, provides information on many support resources, including Military OneSource and other DoD websites. Military OneSource will be a good resource for obtaining information about your new community and for helping families find the services they need in that community. The website created by the DoD Educational Opportunities Directorate, http://www.militarystudent.org/, will contain tool kits for families, installation commanders, and school districts to assist them in making the transition for students as smooth as possible. NMFA and other associations are assisting in the effort to create these tool kits. The Homeowner Assistance Program provides some monetary relief for military and federal civilian personnel faced with losses on the sale of their primary residence when there is an announcement of a base closing or realignment.

As the process unfolds, more resources will be made available for families involved in the moves associated with BRAC and overseas rebasing. NMFA will provide this information as it becomes available.

BRAC: What Communities Will Change?

Fourteen major Army bases are recommended for closure, including Forts Gillem and McPherson in Atlanta; Fort Monroe, VA; Fort Monmouth, NJ; and the Lone Star Army Ammunition Plant and Red River Army Depot in Texas. Nine major Navy bases will close, including Submarine Base, New London, CT; Willow Grove Naval Air Station, PA; Portsmouth Naval Shipyard, ME; Naval Station Pascagoula, MS; and Naval Air Station Atlanta. Ten major Air Force installations are closing, including Ellsworth Air Force Base, SD; Onizuka Air Force Station, CA; Cannon Air Force Base, NM; Otis Air National Guard Base, MA; and Brooks City Base, TX.

DoD defines major realignments as installations losing at least 400 people. The five major Army realignments are Walter Reed Army Medical Center in Washington; the Rock Island Arsenal, IL; Fort Knox, KY; and Fort Eustis, VA; and the Army Reserve Personnel Center in St. Louis. Eleven Navy realignments include Naval Station Great Lakes, IL; Naval Station San Diego; and naval air stations in Brunswick, ME, Corpus Christi, TX, and Pensacola, FL. The Marine Corps Logistics Base in Barstow, CA, also will realign, as will the naval medical centers in Portsmouth, VA, and San Diego. Ten major Air Force realignments include Eielson and Elmendorf Air Force bases, both in Alaska; Maxwell Air Force Base, AL; Lackland and Sheppard Air Force bases, TX; and McChord Air Force Base, WA. DoD agencies in leased spaces throughout the National Capital Area and Defense Finance and Accounting Service offices in Cleveland and in Arlington, VA, face major realignment actions as well.

Forty-nine installations are gaining more than 400 personnel. The Army made provision for units reassigned from Europe and the Pacific. The major gainers in the Army are Fort Belvoir, VA; Fort Jackson, SC; Fort Sam Houston, TX; Fort Sill, OK; Fort Benning, GA; and Fort Bragg, NC. Fort Lee, VA, will gain approximately 6,000 troops and more than 1,000 civilian workers thanks to the consolidation of the Defense Commissary Agency's regional activities with its headquarters and the creation of a Combat Service Support Center and the consolidation of all Services' culinary training as well as training for truck drivers. Navy gainers include Naval Air Station Jacksonville,

FL; Naval Station Norfolk, VA; Naval Station Newport, RI; Marine Corps Logistics Base Quantico, VA; and Naval Station Bremerton, WA. Air Force gainers include Little Rock Air Force Base, AK; Peterson Air Force Base, CO; Scott Air Force Base, Il; Andrews Air Force Base, MD; and Shaw Air Force Base, SC.

This BRAC process had seven joint cross-service groups to examine common business processes in education and training; headquarters and support; technical; industrial; supply and storage; intelligence; and medical. More than half of the future annual savings $2.9 billion of the estimated $5.5 billion is generated from the joint cross-service groups, officials said. The groups looked at military value of the installations and the services they provide, with an emphasis on enhancing joint operations. All groups also assessed the payback to the government in making the change, the economic impact on communities, and the environmental impact. To some degree, all committees also assessed the capability of the community infrastructure to support the proposed missions. Some committees looked at child care, education quality, health care, and employment opportunities.

BRAC: By the Numbers

Where are the big gains and losses in population as a result of BRAC? In the state summary of BRAC decisions, installations and facilities fell into three categories: close, gain, realign (which indicates a net loss in personnel). Remember, that many installations will be experiencing movements of personnel—and families—in and out, as missions are realigned. The numbers, therefore, may mask a far greater degree of turmoil. Here is a list of the installations with a population change of more than 1,000 military or civilian personnel (numbers in parentheses reflect a loss):

- **Alabama:**
  Fort Rucker: Gain: Mil: 1,734 Civ: 154
  Redstone Arsenal: Gain: Mil: (986) Civ: 1586 contractor: 1,055
- **Alaska:**
  Eielson AFB: Realign: Mil: (2,821) Civ: (319) Contractor: 200
  Elmendorf AFB: Realign: Mil: (1102) Civ:168
- **Arkansas:**
  Little Rock AFB Gain: Mil: 3,579 Civ 319
- **California:**
  Naval Air Weapons Station China Lake: Gain: Mil: 154 Civ: 2315
  Naval Station San Diego: Mil: 1,084 Civ: 84 Contractor: 2
  Naval Base Ventura City: Realign: Mil: (239) Civ: (1,295)
  Naval Medical Center San Diego: Realign: Mil: (1,596) Civ: (33)
- **Colorado:**
  Fort Carson: Gain: Mil: 4,178 Civ: 199
- **Connecticut:**
  Submarine Base New London: Close: Mil: (7,096) Civ: (952) Contractor: (412)
- **Washington DC:**
  Walter Reed Army Medical Center: Realign: Mil: (2,651) Civ: (2,357) Contractor (622)
- **Florida:**
  Eglin AFB: Gain: Mil: 2,140 Civ: 78
  Naval Air Station Jacksonville: Gain: Mil: 1,902 Civ: 65 Contractor: 58
  Naval Air Station Pensacola: Realign; Mil: (302) Civ: (1,180) Contractor: (97)
- **Georgia:**
  Fort McPherson: Close: Mil: (2,260) Civ (1,881)
  Naval Air Station Atlanta: Close: Mil: (1,274) Civ (156) Contractor: (68)
  Fort Benning: Gain: Mil: 9,221 Civ: 618
  Submarine Base Kings Bay: Gain: Mil: 3,245 Civ: 102 Contractor: 20
- **Illinois:**
  Naval Station Great Lakes: Realign: Mil: (1989) Civ: (23) Contractor (10)
  Defense Finance and Accounting Service: Indianapolis: Gain: Mil: 114 Civ: 3,378 Contractor: 3
- **Kansas:**
  Fort Riley: Gain: Mil: 2,415 Civ: 440
- **Kentucky:**
  Fort Knox: Realign: Mil: (4,867) Civ: 1,739 Contractor: 184
- **Louisiana:**
  Naval Support Activity New Orleans: Close: Mil: (1,997) Civ: (652) Contractor: (62)
  Naval Air Station New Orleans: Gain: Mil: 1,407 Civ: 446 Contractor 3
- **Maine:**

Naval Shipyard Portsmouth Close: Mil: (201) Civ: (4,032) Contractor: (277)
NAS Brunswick: Realign: Mil: (2,317) Civ: (61) Contractors: (42)

- **Maryland:**
  Aberdeen Proving Ground: Gain: Mil: (3,411) Civ: 5,371 Contractor: 216
  Fort Meade: Gain: Mil: 682 Civ: 2,915 Contractor: 1,764
  National Naval Medical Center Bethesda: Gain: Mil: 982 Civ: 936 Contractor (29)
- **Mississippi:**
  NS Pascagoula: Close: Mil: (844) Civ: (112) Contractor (7)
- **Missouri:**
  Leased Space-MO Close/Realign: Mil: (709) Civ: (1,234) Contractor: (150)
- **Nevada:**
  Nellis AFB: Gain: Mil: 1149 Civ: 263
- **New Jersey:**
  Fort Manmouth: Close: Mil: (620) Civ: (4,652)
- **New Mexico:**
  Cannon AFB: Mil: (2385) Civ: (384) Contractor: (55)
- **North Carolina:**
  Fort Bragg: Gain: Mil: 4,078 Civ: 247
  Pope AFB: Realign: Mil: (4,821) Civ: 808 Contractor: (132)
- **North Dakota:**
  Grand Forks AFB: Realign: Mil: (2,290) Civ: (355)
- **Ohio:**
  Defense Supply Center Columbus: Gain: mil: 63 Civ: 1695
  DFAS Cleveland: Realign: Mil: (15) Civ: (1013)
- **Oklahoma:**
  Fort Sill: Gain: Mil: 3,444 Civ: 161 Contractor (3)
- **Pennsylvania:**
  NAS Willow Grove: Close: Mil: (865) Civ: (362) Contractors (5)
- **South Dakota:**
  Ellsworth AFB: Close: Mil (3,315) Civ: (438) Contractor (99)
- **Texas:**
  Brooks City Base: Close: Mil: (1,297) Civ: (1,268) Contractor (358)
  Naval Station Ingleside: Close: Mil: (1,901) Civ: (260) Contractor: (57)
  Fort Bliss: Gain: Mil: 11,354 Civ: 147
  Fort Sam Houston: Gain: Mil: 7,648 Civ: 1,624 Contractor: 92
  Lackland AFB: Realign: Mil: (2,254) Civ: (770) Contractor (116)
  NAS Corpus Christi: Realign: (926) Civ: (89) Contractor: (10)
  Sheppard AFB: Realign: Mil: (2,468) Civ: (156)
- **Virginia:**
  Fort Monroe: Close: Mil: (1,393) Civ: (1,948) Contractor: (223)
  Leased Space -VA Close/Realign: Mil: (6,199) Civ: (15,754) Contractors: (972)
  Fort Belvoir: Gain: Mil: 4,071 Civ: 5,729 Contractor: 2,058
  Fort Lee: Gain: Mil: 6,139 Civ: 1,149 Contractor: 56
  Naval Station Norfolk: Gain; Mil: 3,447 Civ; (729) Contractor: 89
  Fort Eustis: Realign: Mil: (2,901) Civ: 580 Contractor (169)
- **Washington:**
  NS Bremerton: Gain: Mil: 0 Civ: 1,401
  Germany, Korea, and Undistributed
  Undistributed or Overseas Reductions Realign: Mil: (14,171) Civ: 668

For the complete list, by state, go to:
http://www.defenselink.mil/brac/pdf/Appendix_C_FinalUpdated.pdf.

BRAC: What's Ahead For Medical Facilities?

The 2005 BRAC recommendations include proposals designed to transform and improve how medical care will be delivered to the Department's 9.1 million beneficiaries in the 21st Century. BRAC 2005 medical recommendations include a number of realignments and consolidations of military medical activities and facilities. DoD officials state that in all instances, improving access to care for beneficiaries was a priority consideration; other considerations included military value, quality of care, and opportunities for efficiency through joint organizational solutions. Military Health System activities evaluated in the BRAC 2005 process
included patient care facilities, education and training activities, and research, development and acquisition activities; in all, 234 military medical activities

were evaluated.

The proposed change receiving the most attention from the press calls for the closure of the existing Walter Reed Army Medical Center and the establishment of the Walter Reed National Military Medical Center (WRNMMC) at the site of the National Naval Medical Center in Bethesda, MD. The new facility would be a 300-bed medical center with the full range of intensive and complex specialty and subspecialty medical services, including specialized facilities for the most seriously war injured. This facility will serve as the U.S. military's worldwide tertiary referral center for casualty and beneficiary care. The plan for the realignment of care in the National Capital Region also calls for the construction of a 165-bed Community Hospital at Fort Belvoir, VA, which would be a jointly-staffed facility focused on family and community medicine, especially to serve the large number of military beneficiaries in the southern-most areas of the National Capital Region. Under the plan, Malcolm Grow Hospital at Andrews Air Force Base would be converted to a clinic with ambulatory surgery capability. Some staff from the 89th Medical Group would move to the new WRNMMC and new Fort Belvoir Community Hospital. Existing military outpatient capabilities would continue at Fort Myer, Bolling AFB, the Pentagon, Quantico Marine Corps Base, Fort Meade, and other military clinics in the National Capitol Region.

Officials stated that these realignment actions would afford better placement of healthcare delivery capabilities in the National Capital Region. Demographics show that the beneficiary population has been moving into Northern Virginia for the past several years, straining the capabilities of the current DeWitt Army Community Hospital. To view a chart showing projected population changes in the National Capital Region, go to: http://www.defenselink.mil/news/May2005/d20050513MedBRAC.pdf. While a new hospital has been in the planning stages for Fort Belvoir, the BRAC proposal calls for a much larger jointly staffed, state-of-the-art community hospital to deliver enhanced services to the Northern Virginia military community. Officials also the amount of healthcare provided through military facilities in the National Capital Region will remain the same—or even increase—with markedly improved access for beneficiaries. The plan allows DoD to combine two facilities operating at less than full capacity into one fully utilized, world-class military healthcare complex and also to better leverage both the training capabilities resident in the Uniformed Service University of the Health Sciences on the same campus and the research leadership of the National Institutes of Health immediately across the street.

Changes would also take place in San Antonio, TX. The two big medical platforms there are Brooke Army Medical Center at Fort Sam Houston and the 59th Medical Wing's Wilford Hall Medical Center at Lackland Air Force Base. Plans call for medical care to center at Brooke. It will become the San Antonio Regional Medical Center, and will be a jointly staffed, 425-bed center. At Lackland, BRAC recommends building a world-class outpatient and ambulatory surgery center. The trauma center at Lackland will close, and Brooke will expand to handle the need. San Antonio also will become the hub for training enlisted medical technicians of all Services. Currently, the Army trains at Sam Houston, but the Air Force trains medics at Sheppard Air Force Base, TX, and sailors train at Great Lakes, IL, San Diego, and Portsmouth, VA. The approximate student load would be about 4,500.

Several inpatient military treatment facilities will be downsized to an outpatient clinic with an ambulatory surgery center, These facilities are: Naval Hospital Cherry Point, NC; Fort Eustis Medical Facility, VA; United States Air Force Academy, CO, 10th Medical Group; Malcolm Grow Air Force Hospital at Andrews AFB, MD; MacDill AFB, FL; Keesler AFB, MS; Scott AFB, IL; Naval Hospital Great Lakes, IL; and Fort Knox, KY. The outpatient clinic at McChord AFB, WA, would be closed and medical care shifted to Madigan Army Medical Center.

At installations where health facilities are downsizing or closing, NMFA and other associations will be monitoring access to care and the work of DoD to ensure the TRICARE contractors have developed the robust provider networks necessary to handle the additional care.

Overall, the recommendations will cost $2.4 billion to build new facilities and capabilities. Once in place, the services will save $400 million per year, officials said.

BRAC: What Help is Available for Affected Communities?

DoD officials want communities to know that the Department stands ready to help communities

affected by closures and realignments. To prepare for the closures and realignments, communities should first identify all the jurisdictions affected by that action. Many times installations are not neatly placed within one jurisdiction. They often transcend jurisdictional bounds, even across state lines. The affected community needs to identify all the communities early in the process and then meet with them. The group needs to discuss the ramifications of the BRAC action and agree to what needs to be done. Officials note that communities must "speak with one voice" on what they need, "get over the up-front emotions and start working to fashion long-term solutions." If a base is closing, just vacating the property can have an immediate impact. Schools, as well as the housing market, will be affected. Road and other infrastructure projects may have to be changed. Communities must ensure they have developed a strong local political and financial backing.

While some communities will continue to work during the next few months to keep their installation open, they need to begin planning to deal with a potential closure or realignment. Once the final list is released by the BRAC commission in September, DoD will have help available. Its Office of Economic Adjustment (OEA) works with communities to help them through the base closing process and help them transform. The motto of the office is "Helping Communities Help Themselves." While the public thinks of base closures, the office also helps communities gaining military assets, bases affected by elimination of weapons systems and bases being encroached on by civilian activities. The organization has been around since the early 1960s. It is the conduit for defense money and expertise to the affected communities, but it also serves as the bridge for other federal agencies.

A number of federal agencies play in the closure and realignment process. These include Cabinet members like the Department of Labor, which helps communities with retraining efforts, and the Department of Commerce, which helps communities attract long-term economic development and investment. The Department of the Interior is often involved in transferring land. The Federal Aviation Administration is involved in helping communities as they seek to reuse air bases. Even the Department of Housing and Urban Development helps communities as they address issues of the homeless. The office helps communities also as they work with the military Services.

Officials say the office has learned from past BRAC rounds conducted in 1988, 1991, 1993 and 1995. Communities said the first thing they need is for OEA members to get to the communities as soon as they can after the defense secretary announces the base realignment and closure recommendations. The communities also told the office that representatives need to be realistic. Communities view the Office of Economic Adjustment as an honest broker in the process, and they count on the office to deliver a realistic appraisal of what lies ahead for affected communities. Finally, the communities said they needed more support in looking at the environmental situations at the bases. Communities span the range of capabilities. The office, working with the military departments, must tailor approaches to the communities. There is no "one-size fits all" in the BRAC process. For information on the Office of Economic Adjustment, go to: http://www.oea.gov/oeaweb.nsf/Home?OpenForm.

BRAC: What Happens Next?

DoD's announcement on May 13 of the proposed installations for realignment and closure is only the beginning of a process that will last for the rest of this year. Here is the timeline for the remainder of the selection process:

- Now that it has received the recommendations from the Pentagon, the independent BRAC commission will conduct installation visits and hold both public and classified meetings as it examines each recommendation.
- The Commission will then forward its report on the recommendations to the President by September 8, 2005.
- The President will have until September 23, 2005, to accept or reject the recommendations in their entirety.
- If accepted, Congress will have 45 legislative days to reject the recommendations in their entirety or they become binding on the Department

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DCN:11697

DCN:11697

Federal Register

Wednesday,
December 27, 2000

Part IX

Office of Management and Budget

Standards for Defining Metropolitan and Micropolitan Statistical Areas; Notice

DCN:11697

OFFICE OF MANAGEMENT AND BUDGET

Standards for Defining Metropolitan and Micropolitan Statistical Areas

AGENCY: Executive Office of the President, Office of Management and Budget (OMB), Office of Information and Regulatory Affairs.

ACTION: Notice of decision.

SUMMARY: This Notice announces OMB's adoption of Standards for Defining Metropolitan and Micropolitan Statistical Areas. These new standards replace and supersede the 1990 standards for defining Metropolitan Areas. In arriving at its decision, OMB accepted many of the recommendations of the interagency Metropolitan Area Standards Review Committee (the Review Committee) as published in the August 22, 2000 **Federal Register**. In response to public comment, and with the further advice of the Review Committee, OMB modified the recommended criteria for titling Combined Statistical Areas, identifying Principal Cities, and determining Metropolitan Divisions. The new standards appear at the end of this Notice in Section D.

The Supplementary Information in this Notice provides background information on the standards (Section A), a brief synopsis of the public comments OMB received in response to the August 22, 2000 **Federal Register** notice (Section B), and OMB's decisions on the final recommendations of the Review Committee (Section C).

The adoption of these new standards will not affect the availability of Federal data for geographic areas such as states, counties, county subdivisions, and municipalities. For the near term, the Census Bureau will tabulate and publish data from Census 2000 for all Metropolitan Areas in existence at the time of the census (that is, those areas defined as of April 1, 2000).

EFFECTIVE DATE: This Notice is effective immediately. OMB plans to announce definitions of areas based on the new standards and Census 2000 data in 2003. Federal agencies should begin to use the new area definitions to tabulate and publish statistics when the definitions are announced.

ADDRESSES: Please send correspondence about OMB's decision to Katherine K. Wallman, Chief Statistician, Office of Information and Regulatory Affairs, Office of Management and Budget, Room 10201 New Executive Office Building, 725 17th Street, NW., Washington, DC 20503; fax: (202) 395–7245.

Electronic Availability and Addresses: This **Federal Register** notice, and the three previous notices related to the review of the Metropolitan Area standards, are available electronically from the OMB web site: *http://www.whitehouse.gov/OMB/fedreg/index.html* and from the Census Bureau web site: *http://www.census.gov/population/www/estimates/masrp.html*. **Federal Register** notices also are available electronically from the U.S. Government Printing Office web site: *http://www.access.gpo.gov/su_docs/aces/aces140.html*.

FOR FURTHER INFORMATION CONTACT: Suzann Evinger, Office of Information and Regulatory Affairs, Office of Management and Budget, (202) 395–7315; or E-mail: pop.frquestion@census.gov.

SUPPLEMENTARY INFORMATION:

A. Background

The Metropolitan Area program has provided standard statistical area definitions for 50 years. In the 1940s, it became clear that the value of metropolitan data produced by Federal agencies would be greatly enhanced if agencies used a single set of geographic definitions for the Nation's largest centers of population and activity. Prior to that time, Federal agencies defined a variety of statistical geographic areas at the metropolitan level (including "metropolitan districts," "industrial areas," "labor market areas," and "metropolitan counties") using different criteria applied to different geographic units. Because of variations in methodologies and the resulting inconsistencies in area definitions, one agency's statistics were not directly comparable with another agency's statistics for any given area. OMB's predecessor, the Bureau of the Budget, led the effort to develop what were then called "Standard Metropolitan Areas" in time for their use in the 1950 census reports. Since then, comparable data products for Metropolitan Areas have been available. Because of the usefulness of the Metropolitan Area standards and data products, many have asked that the standards take into account more territory of the United States. Extending the standard to include the identification of Micropolitan Statistical Areas responds to those requests.

1. Concept and Uses

The general concept of a Metropolitan Statistical Area or a Micropolitan Statistical Area is that of an area containing a recognized population nucleus and adjacent communities that have a high degree of integration with that nucleus. The purpose of the Standards for Defining Metropolitan and Micropolitan Statistical Areas is to provide nationally consistent definitions for collecting, tabulating, and publishing Federal statistics for a set of geographic areas. To this end, the Metropolitan Area concept has been successful as a statistical representation of the social and economic linkages between urban cores and outlying, integrated areas. This success is evident in the continued use and application of Metropolitan Area definitions across broad areas of data collection, presentation, and analysis. This success also is evident in the use of statistics for Metropolitan Areas to inform the debate and development of public policies and in the use of Metropolitan Area definitions to implement and administer a variety of nonstatistical Federal programs. These last uses, however, raise concerns about the distinction between appropriate uses—collecting, tabulating, and publishing statistics as well as informing policy—and inappropriate uses—implementing nonstatistical programs and determining program eligibility. OMB establishes and maintains these areas solely for statistical purposes.

In order to preserve the integrity of its decision making with respect to reviewing and revising the standards for designating areas, OMB believes that it should not attempt to take into account or anticipate any public or private sector nonstatistical uses that may be made of the definitions. It cautions that Metropolitan Statistical Area and Micropolitan Statistical Area definitions should not be used to develop and implement Federal, state, and local nonstatistical programs and policies without full consideration of the effects of using these definitions for such purposes.

Metropolitan and Micropolitan Statistical Areas—collectively called Core Based Statistical Areas (CBSAs)—should not serve as a general purpose geographic framework for nonstatistical activities and may or may not be suitable for use in program funding formulas. The Metropolitan and Micropolitan Statistical Area Standards do not equate to an urban-rural classification; all counties included in Metropolitan and Micropolitan Statistical Areas and many other counties contain both urban and rural territory and populations. Programs that base funding levels or eligibility on whether a county is included in a Metropolitan or Micropolitan Statistical Area may not accurately address issues or problems faced by local populations,

organizations, institutions, or governmental units. For instance, programs that seek to strengthen rural economies by focusing solely on counties located outside Metropolitan Statistical Areas could ignore a predominantly rural county that is included in a Metropolitan Statistical Area because a high percentage of the county's residents commute to urban centers for work. Although the inclusion of such a county in a Metropolitan Statistical Area indicates the existence of economic ties, as measured by commuting, with the central counties of that Metropolitan Statistical Area, it may also indicate a need to provide programs that would strengthen the county's rural economy so that workers are not compelled to leave the county in search of jobs.

Program designs that treat all parts of a CBSA as if they were as urban as the densely settled core ignore the rural conditions that may exist in some parts of the area. Under such programs, schools, hospitals, businesses, and communities that are separated from the urban core by large distances or difficult terrain may experience the same kinds of challenges as their counterparts in rural portions of counties that are outside CBSAs. Although some programs do permit large Metropolitan Area counties to be split into "urban" and "rural" portions, smaller Metropolitan Area counties also can contain isolated rural communities.

Geographic information systems technology has progressed significantly over the past 10 years, making it practical for government agencies and organizations to assess needs and implement appropriate programs at a local geographic scale when appropriate. OMB urges agencies, organizations, and policy makers to review carefully the goals of nonstatistical programs and policies to ensure that appropriate geographic entities are used to determine eligibility for and the allocation of Federal funds.

2. Evolution and Review of the Metropolitan Area Standards

From the beginning of the Metropolitan Area program, OMB has reviewed the Metropolitan Area standards and, if warranted, revised them in the years preceding their application to new decennial census data. Periodic review of the standards is necessary to ensure their continued usefulness and relevance. Our current review of the Metropolitan Area standards—the Metropolitan Area Standards Review Project—has been the fifth such review. It has addressed, as a first priority, user concerns with the conceptual and operational complexity of the standards as they have evolved over the decades. Our three previous **Federal Register** notices have discussed this and other key concerns, as well as major milestones of the review.

In the fall of 1998, OMB chartered the Metropolitan Area Standards Review Committee (the Review Committee). We charged it with examining the 1990 Metropolitan Area standards in view of work completed earlier in the decade and providing recommendations for possible changes to those standards. The Review Committee included representatives from the Bureau of the Census (Chair), Bureau of Economic Analysis, Bureau of Labor Statistics, Bureau of Transportation Statistics, Economic Research Service (Agriculture), National Center for Health Statistics, and, *ex officio,* OMB. The Census Bureau provided research support to the Review Committee.

This is the fourth and final Notice pertaining to the Metropolitan Area Standards Review Project. OMB presented four alternative approaches to defining statistical areas in a December 21, 1998 **Federal Register** notice, "Alternative Approaches to Defining Metropolitan and Nonmetropolitan Areas" (63 FR 70526–70561). That Notice also included a discussion of the evolution of the standards for defining Metropolitan Areas as well as the standards that were used to define Metropolitan Areas during the 1990s.

OMB presented the Review Committee's initial recommendations in an October 20, 1999 **Federal Register** notice entitled, "Recommendations From the Metropolitan Area Standards Review Committee to the Office of Management and Budget Concerning Changes to the Standards for Defining Metropolitan Areas" (64 FR 56628–56644). OMB then published the Review Committee's final report and recommendations for revised standards in an August 22, 2000 **Federal Register** notice entitled "Final Report and Recommendations From the Metropolitan Area Standards Review Committee to the Office of Management and Budget Concerning Changes to the Standards for Defining Metropolitan Areas" (65 FR 51060–51077). The final recommendations presented in that Notice reflected some of the concerns raised in comments in response to the Review Committee's initial recommendations.

3. Future Directions

a. Statistical Area Research Projects

Our review of the Metropolitan Area standards over the past 10 years has raised a number of issues and suggested alternative approaches that warrant continued research and consideration. Ongoing research projects will improve understanding of the Nation's patterns of settlement and activity and how best to portray them. For example, Census Bureau staff are investigating the feasibility of developing a census tract level classification to identify settlement and land use categories along an urban-rural continuum. The Economic Research Service, in conjunction with the Office of Rural Health Policy in the Department of Health and Human Services and the University of Washington, has developed a nationwide census tract level rural-urban commuting area classification. This classification is available from the Economic Research Service web site: *http://www.ers.usda.gov:80/briefing/rural/ruca/rucc.htm.* These research efforts may lead to pilot projects at the Census Bureau or other agencies in the future.

b. Review of the Relationship Between Statistical Geographic Classifications and Other Federal Programs

The review of the Metropolitan Area standards also prompted comments about the use of Metropolitan and Micropolitan Statistical Area definitions in the design and administration of nonstatistical Federal programs and funding formulas. Although this relationship was not a criterion in reviewing the standards, the Review Committee and OMB recognize the existence and importance of this relationship. Comments received throughout the review indicated a need to distinguish more clearly between using Metropolitan and Micropolitan Statistical Areas to collect, tabulate, and publish statistics that measure economic and social conditions to inform public policy, and the use of the area definitions as a framework to determine eligibility or allocate funds for nonstatistical programs. Further, the Review Committee and OMB, as well as many commenters, recognize the need to begin a collaborative, interagency process that could result in the development of geographic area definitions that are appropriate for the administration of nonstatistical programs. Such a process could result in the identification of existing geographic area definitions and modifications to them that are already in use by agencies (for instance, there are at least six definitions of "urban" or "urban place" currently in use by Federal agencies), and in the development of guidelines that explain appropriate use of specific area definitions in various

circumstances. A longer-term goal of such an effort could be the development of one or more geographic area classifications designed specifically for use in the administration of nonstatistical Federal programs or of guidance for agencies that need to define geographic areas appropriate for use with specific programs.

B. Summary of Comments Received in Response to the August 22, 2000 Federal Register Notice

The August 22, 2000 **Federal Register** notice requested comment on the Review Committee's final recommendations to OMB concerning revisions to the standards for defining Metropolitan Areas.

OMB received 1,672 comment letters from individuals (1,483), municipalities and counties (88), regional planning and nongovernmental organizations (62), Members of Congress (25), state governments (13), and Federal agencies (1). Of the 1,672 letters, 1,314 offered comments regarding the Fort Worth, Texas area; all of these letters dealt with the identification of Metropolitan Divisions within the Dallas-Fort Worth-Arlington area and with the criteria for titling Combined Areas. OMB also heard concerns about the identification of Metropolitan Divisions and Combined Area titles from 141 other commenters from around the country.

Thirty-two commenters expressed concern about the potential effects of the proposed changes to the Metropolitan Area standards on nonstatistical Federal programs. Eight commenters were concerned about the effect on programs oriented toward rural areas, particularly if Micropolitan Areas were not treated as "rural" for purposes of Federal programs. Nine commenters expressed concern about the impact of the recommended standards on health-related programs. Several commenters suggested that OMB undertake research on the programmatic impact of the recommended standards. Others suggested that OMB state more strongly that it does not define Metropolitan and Micropolitan Areas for use in administering and determining participation in Federal nonstatistical programs.

Eight commenters addressed the Review Committee's recommendations about the qualification requirements for areas and central counties. Three commenters supported the Review Committee's recommendation that areas should qualify for CBSA status if a core of sufficient size—a Census Bureau defined urban cluster of at least 10,000 population or an urbanized area of at least 50,000 population—was present. Three commenters questioned the way in which the recommended standards would use urban clusters and urbanized areas as cores to qualify central counties, in particular when a core crosses county lines but the portion of the core in one county is not sufficient to qualify that county as central.

OMB received six comments about terminology in the proposed standards. Three commenters expressed support for the Review Committee's recommendation to retain the term "metropolitan" in reference to areas containing at least one core of 50,000 or more population. These commenters also expressed support for the use of the term "micropolitan" in reference to areas containing cores of at least 10,000 and less than 50,000 population. Several commenters expressed concern that the term "Core Based Statistical Area" would not be popular among users; only one commenter, however, supported dropping the term. One commenter favored using the terms "megapolitan" and "macropolitan" to distinguish between areas containing cores of at least one million and 50,000 population, respectively, as discussed in the October 20, 1999 **Federal Register** notice.

Twenty-six commenters remarked on the Review Committee's recommendations for identifying categories of CBSAs. Five commenters expressed support for the identification of two categories of CBSAs—metropolitan and micropolitan. Three commenters opposed identification of Micropolitan Areas because of the potential, but as yet unknown, impact such areas might have on the allocation of funds to Metropolitan Areas. One commenter expressed a similar concern without opposing the identification of Micropolitan Areas. Seven commenters favored the qualification of any county containing 100,000 or more population as a Metropolitan Area. Two commenters suggested that Combined Areas should be treated as CBSAs and that their component entities should be treated as Metropolitan Divisions.

Twelve commenters remarked on the Review Committee's recommendation to use the county as the geographic building block for CBSAs. Four commenters expressed support for the continued use of counties as building blocks. Three commenters expressed support for the use of minor civil divisions as building blocks for a primary set of statistical areas in New England. Five commenters expressed concern about the use of counties as building blocks, noting that some geographically large counties may contain populations that are not integrated with the CBSA to which the county qualifies. Several of these comments referred specifically to Douglas County, NV, which has commuting ties with the South Lake Tahoe area in the eastern end of El Dorado County, CA. Populations in the western end of El Dorado County, however, are more closely aligned with the Sacramento, CA area. When the recommended standards were applied to 1990 census data as a demonstration of the standards, the South Lake Tahoe area (El Dorado County, CA and Douglas County, NV) qualified to merge with the Sacramento area.

Forty-three commenters responded regarding the recommended criteria for qualifying outlying counties. Nearly all commenters supported the use of commuting data in determining the qualification of outlying counties. Thirteen of the commenters suggested that other measures should be used in addition to commuting. Six of these commenters suggested including a county in a Metropolitan Area if it is part of that area's metropolitan planning organization for transportation planning purposes. One commenter noted that commuting to work is a less relevant measure of interaction in areas that have high percentages of retirees. Three commenters suggested that commuting is too simplistic and is an insufficient measure of all social and economic interactions between areas. One commenter took issue with the specific wording of the decennial census questionnaire's place of work question, which was the basis of commuting data used to define Metropolitan and Micropolitan Areas under the standards recommended by the Review Committee. Nineteen commenters specifically responded regarding the commuting threshold used in qualifying outlying counties. Three commenters supported a 25 percent commuting threshold for outlying county qualification, as the Review Committee recommended; one commenter suggested reducing the threshold to less than 25 percent, and another specifically proposed a 20 percent threshold. Eleven commenters favored a 15 percent commuting threshold for outlying county qualification; these commenters generally drew attention to a particular county that did not qualify at the 25 percent level. Three commenters expressed general support for the Review Committee's recommendations but did not mention a specific commuting threshold.

OMB received 157 comments about the recommendations for merging and combining adjacent CBSAs. Nearly all commenters supported the recommendation to merge or combine

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adjacent CBSAs when social and economic interaction between adjacent areas is evident. Two commenters suggested eliminating the identification of Combined Areas, arguing that the optional combination recommended by the Review Committee results in an inconsistent application of the Metropolitan and Micropolitan Area standards. Three commenters expressed concern that the criteria for combining adjacent CBSAs were too simplistic and by only measuring interactions between pairs of CBSAs did not account for more complex ties within large regions. One commenter suggested that OMB clarify the relationship between areas defined using the recommended standards (CBSAs, Combined Areas, and Metropolitan Divisions) and areas defined using the 1990 Metropolitan Area standards (Metropolitan Statistical Areas, Consolidated Metropolitan Statistical Areas, and Primary Metropolitan Statistical Areas). Two commenters suggested that Combined Areas should be treated as official Metropolitan or Micropolitan Areas. Eighty-nine commenters supported merging the Brownsville and McAllen areas to form a single Metropolitan Area, although these areas lacked sufficient commuting interchange to merge when the recommended standards were applied with 1990 census data. Twelve commenters expressed opposition to the potential combination of the Sarasota-Bradenton and Port Charlotte areas in Florida (which, according to the Review Committee's recommended standards applied to 1990 data, would combine only if local opinion in both areas favored doing so). Several of these commenters also noted that ties between the Port Charlotte area and the northern (Bradenton) portion of the Sarasota-Bradenton area were minimal. Eighteen commenters responded regarding the delineation of Combined Areas in North Carolina for Raleigh and Durham as well as for Greensboro-High Point, Burlington, and Eden-Reidsville. Of these, one commenter supported the Review Committee's recommendations based on the results of applying the recommended standards with 1990 census data; however, 17 expressed a preference to eliminate the five individual CBSAs that combine and instead recognize only the resultant combined entities.

Forty-seven commenters responded about the recommendations for identification of Principal Cities and the use of those cities in titling Metropolitan and Micropolitan Areas. Eighteen commenters expressed concern about the identification of census designated places as Principal Cities and the use of those places in titling Metropolitan and Micropolitan Areas. Seventeen of these commenters responded regarding the identification of specific census designated places as Principal Cities and the titling of their respective Metropolitan Areas. Eight commenters responded regarding aspects of the Principal City criteria that prevented some locally important cities from qualifying as Principal Cities and being included in their respective areas' titles. These commenters were concerned primarily with the requirement that Principal Cities with less than 250,000 population have a population at least one-third that of the largest place. One commenter suggested modifying the Principal City criteria to designate a larger number of places; this commenter also noted that doing so would reduce the need to use county names in the titles of Metropolitan Divisions. Eleven commenters responded regarding the titles of specific CBSAs in North Carolina; their comments on CBSA titles were related to their comments about the recommendations for merging and combining adjacent CBSAs. One commenter suggested that all cities of 500,000 or more population should be included in area titles.

OMB received 1,352 comments regarding the Review Committee's recommended criteria for identifying Metropolitan Divisions. Of these, 1,332 commenters expressed opposition to the Review Committee's recommendation, suggesting that the criteria were too strict and did not adequately identify all counties that could be considered "main counties." Most of these commenters expressed support for recognizing a specific county or set of counties as a Metropolitan Division within a larger Metropolitan Area; however, some did note that the maximum outcommuting threshold was too low and should be either raised or eliminated. Five commenters supported the Review Committee's recommendation. Three commenters from New Jersey opposed the recommendation, noting that, in their opinion, it resulted in too many Metropolitan Divisions in that state. These commenters suggested lowering the outcommuting threshold so as to reduce the number of counties that qualified as main counties. Two commenters suggested that the boundaries of current Primary Metropolitan Statistical Areas (PMSAs) should be maintained as Metropolitan Division boundaries or the criteria for defining Metropolitan Divisions should result in areas that are consistent with current PMSA boundaries. Four commenters expressed a desire for smaller groupings of counties than those represented by the Metropolitan Divisions that resulted from the application of the recommended standards with 1990 census data. One commenter expressed opposition to the identification of Metropolitan Divisions when doing so would split the component urban core between two or more divisions. In effect, the commenter opposed the Review Committee's recommendation to identify Metropolitan Divisions, since the reason for doing so was to recognize the complexity of social and economic interactions within large Metropolitan Areas that contain individual urban cores that extend across multiple counties.

OMB received 1,394 comments about the Review Committee's recommended criteria for titling Combined Areas. Most of these comments pertained to the recommendation to include in the title the name of the largest Principal City from each of up to three CBSAs that combine. These commenters generally expressed support for titling Combined Areas using the largest Principal Cities within the combination regardless of their CBSA locations. Some commenters expressed concern about the Review Committee's recommendation that the Combined Area title include an additional place name only if the CBSA in which that place is located has a population at least one-third the size of the largest CBSA in the combination. Regardless of the specific circumstances, nearly all commenters noted that a result of the Review Committee's recommendation was to exclude some socially and economically prominent Principal Cities from the titles of their Combined Areas.

Seven commenters responded regarding the Review Committee's recommendations for defining New England City and Town Areas (NECTAs), NECTA Divisions, and NECTA Combined Areas. All seven commenters supported the identification of areas in New England that used cities and towns as building blocks. Three commenters specifically supported the Review Committee's recommendations regarding the identification of NECTAs. Two commenters suggested that cities and towns should be the building blocks for a primary set of areas in New England and that counties should be used to define an alternative set of areas. One commenter expressed support for the designation of NECTAs as either metropolitan or micropolitan. Two

commenters suggested that NECTAs should be defined using criteria that are different from criteria used to define CBSAs in the rest of the country; one of these commenters suggested that other measures should be used in addition to commuting to determine the extent of areas in New England.

OMB has taken all of these comments into account, giving them careful consideration. As outlined below, we have adopted some of the suggested changes and modified criteria recommended by the Review Committee in August 2000. In a number of other cases, however, we have concluded that we could not adopt the suggestions made by commenters without undermining efforts to achieve a consistent, national approach designed to enhance the value of data produced by Federal agencies.

C. OMB's Decisions Regarding Recommendations From the Metropolitan Area Standards Review Committee Concerning Changes to the Standards for Defining Metropolitan Areas

This section of the Notice provides information on the decisions OMB has made on the Review Committee's recommendations. In arriving at these decisions, we took into account not only the public comment on the Review Committee's recommendations published in the **Federal Register** on August 22, 2000, but also the considerable amount of information provided during the 10 years of this review process, including public comments gathered from two conferences, a Congressional hearing, discussions attendant to numerous presentations to interested groups, and responses to two earlier OMB Notices (on December 21, 1998, and October 20, 1999). Our decisions benefitted greatly from the public participation that served as a reminder that, although identified for purposes of collecting, tabulating, and publishing Federal statistics, the Metropolitan and Micropolitan Statistical Areas defined through these standards represent areas in which people reside, work, and spend their lives and to which they attach a considerable amount of pride. Finally, in reaching our decisions, OMB benefitted substantially from the continuing deliberations of the Review Committee in response to the public comment as well as the research support provided by Census Bureau staff. We have relied upon and very much appreciate the expertise, insight, and dedication of Review Committee members and Census Bureau staff.

OMB presents below our decisions on the Review Committee's specific recommendations:

1. OMB accepted the Review Committee's recommendation to define Metropolitan Areas and Micropolitan Areas within a Core Based Statistical Area (CBSA) classification, but modified the title of the standards and the names of the categories to include the word "statistical," as indicated in Section 6 of the standards.

We considered two primary issues regarding the basis for categorizing CBSAs as either Metropolitan Statistical Areas or Micropolitan Statistical Areas. The first issue was whether to base categorization on the total CBSA population or on core population. OMB agrees with the Review Committee that since cores are the organizing entities of CBSAs, categorization should be based on the population in cores, reasoning that the range of services and functions provided within an area largely derive from the size of the core.

The second issue was whether to categorize areas based on the population of the most populous (or "dominant") core or on the total population of all (or "multiple") cores within a CBSA. OMB agrees with the Review Committee's recommendation that a single core of 50,000 or more population provides a wider variety of functions and services than does a group of smaller cores, even when such a group may have a collective population greater than 50,000. OMB was concerned that CBSAs categorized as Metropolitan Statistical Areas on the basis of the population in all cores would not bear the same kinds of characteristics as CBSAs categorized as Metropolitan Statistical Areas on the basis of a single core of 50,000 or more population. This decision also retains the current conceptual approach to defining Metropolitan Areas as based around concentrations of 50,000 or more population. The retention of this concept and the 50,000 population threshold will facilitate comparison of data for Metropolitan Statistical Areas over time.

OMB inserted the word "statistical" into the terms for categories of CBSAs and the title of the standards to make clearer the statistical purpose of these areas.

2. OMB accepted the Review Committee's recommendation to use counties and equivalent entities as the geographic building blocks for defining CBSAs throughout the United States and Puerto Rico, and to use cities and towns as the geographic building blocks for defining New England City and Town Areas (NECTAs).

Using counties and equivalent entities throughout the United States and Puerto Rico continues current practice, except in New England, where historically Metropolitan Areas have been defined using minor civil divisions. The choice of a geographic unit to serve as the building block can affect the geographic extent of a statistical area and its relevance or usefulness in describing economic and demographic patterns. The choice also has implications for the ability of Federal agencies to provide data for statistical areas and their components.

We believe it advantageous to use counties and their equivalents because they are available nationwide, have stable boundaries, and are familiar geographic entities. In addition, more Federal statistical programs produce data at the county level than at any subcounty level. OMB agrees with the Review Committee that the well-known disadvantages of using counties as building blocks for statistical areas—the large geographic size of some counties and resultant lack of geographic precision that follows from their use—are outweighed by the advantages offered by using counties.

We have reached our decision to use the county as the building block for CBSAs in New England, because we attach priority to the use of a consistent geographic unit nationwide. Use of a consistent geographic building block offers improved usability to producers and users of data; data for CBSAs in all parts of the country would be directly comparable. Some statistical programs, such as those providing nationwide economic data and population estimates, also have regarded the Metropolitan Area program's use of minor civil divisions in New England as a hindrance. They have sometimes used the currently available alternative county based areas for New England, known as the New England County Metropolitan Areas, or have minimized the number of data releases for Metropolitan Areas. Under the current Metropolitan Area program, data producers and users typically choose between (1) adhering to the preferred Metropolitan Statistical Areas, Consolidated Metropolitan Statistical Areas, and Primary Metropolitan Statistical Areas throughout the country and having data that limit comparisons between some areas, and (2) using alternative areas in New England and having more comparable data. OMB's decision eliminates the need for this choice.

Demographic and economic data for minor civil divisions in New England are more plentiful than similar data for

subcounty entities in the rest of the Nation. In recognition of the importance of minor civil divisions in New England, the wide availability of data for them, and their long-term use in the Metropolitan Area program, OMB also will use the minor civil division as the building block for a set of areas for the six New England states. These NECTAs are intended for use in the collection, tabulation, publication, and analysis of statistical data, whenever feasible and appropriate, for New England. Data providers and users desiring areas defined using a nationally consistent geographic building block should use the county based CBSAs in New England; however, counties are less well-known in New England than cities and towns.

3. OMB accepted the Review Committee's recommendation to use Census Bureau defined urbanized areas of 50,000 or more population and Census Bureau defined urban clusters of 10,000—49,999 population as the cores of CBSAs and to use the locations of these cores as the basis for identifying central counties of CBSAs. OMB also accepted the Review Committee's recommendation to identify central counties as those counties that (a) have at least 50 percent of their population in urban areas (urbanized areas or urban clusters) of at least 10,000 population or (b) have within their boundaries a population of at least 5,000 located in a single urban area (urbanized area or urban cluster) of at least 10,000 population.

In accepting the Review Committee's recommendation to use Census Bureau defined urbanized areas and urban clusters as the cores of Metropolitan Statistical Areas and Micropolitan Statistical Areas, OMB recognizes that urbanized areas and urban clusters are the organizing entities of CBSAs. The use of urbanized areas as cores is consistent with current practice. To extend the classification to areas based on cores of 10,000 to 49,999 population, OMB will use urban clusters as cores for Micropolitan Statistical Areas. Urban clusters will be identified by the Census Bureau following Census 2000 and will be conceptually similar to urbanized areas.

OMB agreed with the Review Committee that the location of these cores should be used to identify the central county or counties of each CBSA. The identification of central counties facilitates the use of county-to-county commuting data when determining whether additional counties qualify for inclusion in the CBSA.

4. OMB accepted the Review Committee's recommendation to use data on journey to work, or commuting, as the basis for grouping counties together to form CBSAs (i.e., to qualify "outlying counties"). OMB accepted the Review Committee's recommendation to qualify a county as an outlying county if (a) at least 25 percent of the employed residents of the county work in the CBSA's central county or counties, or (b) at least 25 percent of the jobs in the potential outlying county are accounted for by workers who reside in the CBSA's central county or counties. OMB also accepted the Review Committee's recommendation not to use measures of settlement structure, such as population density, to qualify outlying counties for inclusion in CBSAs.

Three priorities guided OMB in reaching this decision. We believe the data used to measure connections among counties should describe those connections in a straightforward and intuitive manner, be collected using consistent procedures nationwide, and be readily available to the public. These priorities steered us to the use of data gathered by Federal agencies and, more particularly, to commuting data from the Census Bureau. Commuting to work is an easily understood measure that reflects the social and economic integration of geographic areas. OMB agrees with the Review Committee that changes in settlement, commuting patterns, and communications technologies have made settlement structure unreliable as an indicator of metropolitan character. We agree that the percentage of a county's employed residents who commute to the central county or counties is an unambiguous, clear measure of whether a potential outlying county should qualify for inclusion. The percentage of employment in the potential outlying county accounted for by workers who reside in the central county or counties is similarly a straightforward measure of ties. Including both criteria addresses the conventional and the less common reverse commuting flows.

There have been changes in daily mobility patterns and increased interaction between communities as indicated by increases in inter-county commuting over the past 40 years. The percentage of workers in the United States who commute to places of work outside their counties of residence has increased from approximately 15 percent in 1960 (when nationwide commuting data first became available from the decennial census) to nearly 25 percent in 1990. OMB agrees with the Review Committee that raising the commuting percentage required for qualification of outlying counties from the 15 percent minimum of the 1990 standards to 25 percent is appropriate against this background of increased overall inter-county commuting coupled with the removal of all settlement structure requirements from the outlying county criteria. In other words, since out-of-county commuting has become more commonplace, a higher percentage of commuting is necessary to demonstrate ties comparable to those indicated by a lower commuting rate in 1960. Further, both the Review Committee and OMB considered the "multiplier effect" (a standard method used in economic analysis to determine the impact of new jobs on a local economy) that each commuter would have on the economy of the county in which he or she lives. The size of the multiplier effect varies depending on the size of a region's economy and employment base, but a multiplier of two or three generally is accepted by regional economists, regional scientists, and economic development analysts for most areas. Applying such a measure in the case of a county with the minimum 25 percent commuting requirement means that the incomes of at least half of the workers residing in the outlying county are connected either directly (through commuting to jobs located in the central county) or indirectly (by providing services to local residents whose jobs are in the central county) to the economy of the central county or counties of the CBSA within which the county at issue qualifies for inclusion.

5. OMB accepted the Review Committee's recommendation to merge contiguous CBSAs to form a single CBSA when the central county or counties of one area qualify as outlying to the central county or counties of another. OMB accepted the Review Committee's recommendation to use the same minimum commuting threshold—25 percent—as is used to qualify outlying counties.

In accepting the Review Committee's recommendation to merge contiguous CBSAs, OMB recognized that patterns of population distribution and commuting sometimes are complex and, as a result, close social and economic ties, as measured by commuting, exist between some contiguous CBSAs. OMB agreed with the Review Committee that strong ties between the central counties of two contiguous CBSAs, similar to the ties between an outlying county and a central county or counties, should be recognized by merging the two areas to form a single CBSA.

6. OMB accepted the Review Committee's recommendations to identify Principal Cities and to use them

to title areas, but modified the recommendation concerning the criteria used to identify Principal Cities as indicated in Section 5 of the standards.

OMB's modifications address two concerns: (1) ensuring that at least one incorporated place of 10,000 or more population (if one is present) is recognized as a Principal City, and (2) allowing a fuller identification of places that represent the more important social and economic centers within a Metropolitan or Micropolitan Statistical Area. In the first instance, we were concerned that an unincorporated place with a large population, but relatively small employment base, would qualify as the only Principal City of its CBSA. OMB noted some instances in which an incorporated place of at least 10,000 population accounted for a larger amount of employment than the most populous place, but lacked sufficient population to qualify as a Principal City. OMB's modification to recognize the largest incorporated place of at least 10,000 population as a Principal City will affect only a small number of areas nationwide in which the most populous incorporated place has less population than a larger unincorporated community.

We also were concerned that the recommended criteria were too restrictive and that many smaller, but locally important, cities would not be recognized as Principal Cities of their respective CBSAs. This was especially the case when the CBSA included one city that was significantly larger in population size than all other cities within the CBSA. OMB's modification will permit a fuller identification of places with at least 50,000 population as Principal Cities. This modification likely will result in the identification of approximately 100 additional Principal Cities, many of which currently are recognized as central cities of Metropolitan Areas.

7. OMB accepted the Review Committee's recommendation to identify Metropolitan Divisions and NECTA Divisions that function as distinct areas within Metropolitan Statistical Areas and NECTAs that contain at least one core of 2.5 million or more population. OMB modified the criteria used to define Metropolitan Divisions within Metropolitan Statistical Areas as well as NECTA Divisions within NECTAs, as indicated in Section 7 of the standards.

OMB's modifications to the Metropolitan Division criteria reflect two concerns. First, OMB was concerned that the Review Committee's recommended criteria for identifying the main counties of Metropolitan Divisions were too strict, particularly with regard to the requirement that a county have less than 15 percent commuting to any other county within the Metropolitan Statistical Area. The purpose of the main county criteria is to identify those counties within a Metropolitan Statistical Area that are self-contained economic centers. Such counties, because of the strength of their employment base, can form the basis for a separate division within the larger Metropolitan Statistical Area. The first two criteria for main counties recommended by the Review Committee—percent of resident workers employed within a particular county and the ratio of jobs to employed residents—provide indicators of the economic strength and relative independence of the county. OMB determined, however, after considering public comment and further discussion by the Review Committee, that the (third) outcommuting requirement was not a direct indicator of a county's economic strength or its identity as an organizing entity around which to form a Metropolitan Division. Therefore, we are eliminating the outcommuting criterion.

Second, upon further review of commuting patterns and related social and economic interactions within the ten Metropolitan Statistical Areas that contained cores of at least 2.5 million population in 1990, OMB discerned two kinds of counties. In the first category are those counties that are strongly self-contained. These are characterized by high percentages (65 percent or greater) of employed residents who remain in the county to work and by high ratios of jobs to resident workers (.75 or greater). These "main counties" stand alone as self-contained social and economic units within the larger Metropolitan Statistical Area or provide the social and economic center around which a group of counties is organized.

A second category of counties consists of those with high ratios of jobs to resident workers, but a lower percentage of employed residents working within the county (50 percent to 64.9 percent). These "secondary counties," while they can be identified as social and economic centers, also connect strongly with one or more adjacent counties through commuting ties. Such counties are only moderately self-contained and can provide the organizing basis for a Metropolitan Division only when paired with one or more counties of similar or greater economic strength. As such, they must combine with another secondary county or with a main county when forming the basis for a Metropolitan Division.

We also note that when combining secondary counties with other main or secondary counties and when qualifying additional outlying counties for inclusion in a Metropolitan Division, the employment interchange measure offers a more appropriate measure of interaction than determining ties based on the strength of commuting in one direction only. (The employment interchange measure is defined as the sum of the percentage of commuting from the entity with the smaller total population to the entity with the larger population and the percentage of employment in the entity with the smaller total population accounted for by workers residing in the entity with the larger total population.) Our decision to use the employment interchange measure is consistent with the reason for defining Metropolitan Divisions-that is, to recognize the complex social and economic interactions that occur within Metropolitan Statistical Areas that contain large urbanized areas. For the same reason, OMB modified the NECTA Division criteria to use the employment interchange measure, instead of the percentage of out-commuters, when qualifying additional outlying cities and towns for inclusion in a NECTA Division.

8. OMB accepted the Review Committee's recommendation to combine contiguous CBSAs when ties between those areas are less intense than those captured by mergers, but still significant. OMB accepted the Review Committee's recommendation to base combinations on the employment interchange measure between two CBSAs. OMB also accepted the Review Committee's recommendations that combinations of CBSAs, based on an employment interchange measure of at least 15 but less than 25, should occur only if local opinion (see Section C.10 below) in both areas is in favor and that combinations should occur automatically if the employment interchange measure between two CBSAs equals or exceeds 25. OMB added the word "statistical" to the term used to refer to areas resulting from the combination of CBSAs as indicated in Section 8 of the standards.

OMB agreed with the Review Committee that ties between contiguous CBSAs that are less intense than those captured by mergers (see Section C.5 above), but still significant, be recognized by combining those CBSAs. Because a combination thus defined represents a relationship of moderate strength between two CBSAs, OMB agrees with the Review Committee that the combining areas should retain their

identities as separate CBSAs within the combination.

OMB inserted the word "statistical" into the term used for combinations to make clearer the statistical purpose of these areas.

9. OMB accepted the Review Committee's recommendations to title (1) Metropolitan Divisions using the names of up to three Principal Cities, or up to three county names if no Principal Cities are present, in order of descending population size; and (2) NECTA Divisions using the names of up to three Principal Cities in order of descending population size, or the name of the largest minor civil division if no principal city is present. OMB modified the Review Committee's recommendations concerning titles of CBSAs, NECTAs, and Combined Statistical Areas, as indicated in Section 9 of the standards.

OMB's modification of the criteria for titling CBSAs addresses instances in which the largest Principal City is an unincorporated census designated place. Titles should provide a means of easily recognizing and locating CBSAs, and we are concerned that titles in which the first-named place is an unincorporated community might not be as recognizable nationally as those in which the first-named place is an incorporated place.

OMB's modification of the criteria for titling Combined Statistical Areas addresses three concerns: (1) The title of a Combined Statistical Area, to the extent possible, should reflect the geographic extent of the combination by including the names of Principal Cities contained within the areas that combine; (2) the title of a Combined Statistical Area, to the extent possible, should contain the names of the largest Principal Cities since these cities often are the social and economic centers for the broad region represented by the combination; and (3) the title of a Combined Statistical Area should not duplicate the title of any of the combining Metropolitan or Micropolitan Statistical Areas or Metropolitan Divisions.

10. OMB accepted the Review Committee's recommendation to apply only statistical rules when defining Metropolitan and Micropolitan Statistical Areas. OMB accepted the Review Committee's recommendation to allow the use of local opinion when contiguous CBSAs qualify to combine with an employment interchange measure of 15 to 24.9, but added one provision (Section 11b of the standards) that would allow for local opinion in titling Combined Statistical Areas.

Applying only statistical rules when defining areas minimizes ambiguity and maximizes the replicability and integrity of the process. Consideration of local opinion in specific circumstances, however, can provide room for accommodating some issues of local significance without impairing the integrity of the classification. OMB agrees with the Review Committee that when two contiguous CBSAs have an employment interchange measure of at least 15 and less than 25, the measured ties may be perceived as minimal by residents of the two areas. In these situations, local opinion is useful in determining whether to combine the two areas. OMB also agrees with the Review Committee that local opinion is useful in determining titles for Combined Statistical Areas that address the issues discussed in Section C.9 above.

11. OMB accepted the Review Committee's recommendation not to define types of settlement structure, such as urban, suburban, rural, and so forth, within the CBSA classification.

OMB recognizes that formal definitions of settlement types such as inner city, inner suburb, outer suburb, exurb, and rural would be of use to the Federal statistical system as well as to researchers, analysts, and other users of Federal data. Such settlement types, however, are not necessary for the delineation of statistical areas in this classification that describes the functional ties between geographic entities. These types would more appropriately fall within a separate classification that focuses exclusively on describing settlement patterns and land uses. We believe the Census Bureau and other interested Federal agencies should continue research on settlement patterns below the county level to describe further the distribution of population and economic activity throughout the Nation. In addition, OMB will consider initiating a collaborative, interagency process to foster improved understanding of geographic area classifications and to investigate the feasibility of developing alternative geographic area classifications that are appropriate for purposes such as the administration of nonstatistical programs.

12. OMB accepted the Review Committee's recommendation that the definitions of current Metropolitan Areas should not be automatically retained (i.e., "grandfathered") in the implementation of the "Standards for Defining Metropolitan and Micropolitan Statistical Areas."

In this context, "grandfathering" refers to the continued designation of an area even though it does not meet the standards currently in effect. The 1990 standards permitted changes in the definitions, or extent, of individual Metropolitan Areas through the addition or deletion of counties on the basis of each decennial census, but those standards did not permit the disqualification of Metropolitan Areas that previously qualified on the basis of a Census Bureau population count. To maintain the integrity of the classification, OMB favors the objective application of the new standards rather than continuing to recognize areas that do not meet the standards. The current status of a county as being within or outside a Metropolitan Area will play no role in the application of the Standards for Defining Metropolitan and Micropolitan Statistical Areas.

13. OMB accepted the Review Committee's recommendation to define new CBSAs between decennial censuses on the basis of Census Bureau population estimates or special census counts and to update the definitions of all existing CBSAs in 2008 using commuting data from the Census Bureau's American Community Survey.

The frequency with which new CBSAs are designated and existing areas updated has been of considerable interest to data producers and users throughout the Metropolitan Area Standards Review Project. The first areas to be designated by OMB using the Metropolitan and Micropolitan Statistical Area Standards and Census 2000 data will be announced in 2003. The sources and future availability of data for updating these areas figured prominently in the Review Committee's discussions and OMB's decisions. The availability of population totals and commuting data affects the ability to identify new CBSAs, reclassify existing areas among categories, and update the extent of existing areas. OMB agreed with the Review Committee that existing CBSAs should be updated every five years, and agreed that the availability of commuting data for all counties from the Census Bureau's American Community Survey in 2008 offered the possibility of updating the definitions of all existing CBSAs at that time.

Our decisions as discussed above are reflected in the text of the official Standards for Defining Metropolitan and Micropolitan Statistical Areas that we are issuing today. The following section presents these standards.

D. Standards for Defining Metropolitan and Micropolitan Statistical Areas

The Office of Management and Budget will use these standards to define Core

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Based Statistical Areas (CBSAs) beginning in 2003. A CBSA is a geographic entity associated with at least one core of 10,000 or more population, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties. The standards designate and define two categories of CBSAs: Metropolitan Statistical Areas and Micropolitan Statistical Areas.

The purpose of the Metropolitan and Micropolitan Statistical Area Standards is to provide nationally consistent definitions for collecting, tabulating, and publishing Federal statistics for a set of geographic areas. The Office of Management and Budget establishes and maintains these areas solely for statistical purposes.

Metropolitan and Micropolitan Statistical Areas are not designed as a general purpose geographic framework for nonstatistical activities or for use in program funding formulas. The CBSA classification does not equate to an urban-rural classification; Metropolitan and Micropolitan Statistical Areas and many counties outside CBSAs contain both urban and rural populations.

CBSAs consist of counties and equivalent entities throughout the United States and Puerto Rico. In view of the importance of cities and towns in New England, a set of geographic areas similar in concept to the county based CBSAs also will be defined for that region using cities and towns. These New England City and Town Areas (NECTAs) are intended for use with statistical data, whenever feasible and appropriate, for New England. Data providers and users desiring areas defined using a nationally consistent geographic building block should use the county based CBSAs in New England.

The following criteria apply to both the nationwide county based CBSAs and to NECTAs, with the exceptions of Sections 6, 7, and 9, in which separate criteria are applied when identifying and titling divisions within NECTAs that contain at least one core of 2.5 million or more population. Wherever the word "county" or "counties" appears in the following criteria (except in Sections 6, 7, and 9), the words "city and town" or "cities and towns" should be substituted, as appropriate, when defining NECTAs.

Section 1. Population Size Requirements for Qualification of Core Based Statistical Areas

Each CBSA must have a Census Bureau defined urbanized area of at least 50,000 population or a Census Bureau defined urban cluster of at least 10,000 population. (Urbanized areas and urban clusters are collectively referred to as "urban areas.")

Section 2. Central Counties

The central county or counties of a CBSA are those counties that:

(a) have at least 50 percent of their population in urban areas of at least 10,000 population; or

(b) have within their boundaries a population of at least 5,000 located in a single urban area of at least 10,000 population.

A central county is associated with the urbanized area or urban cluster that accounts for the largest portion of the county's population. The central counties associated with a particular urbanized area or urban cluster are grouped to form a single cluster of central counties for purposes of measuring commuting to and from potentially qualifying outlying counties.

Section 3. Outlying Counties

A county qualifies as an outlying county of a CBSA if it meets the following commuting requirements:

(a) at least 25 percent of the employed residents of the county work in the central county or counties of the CBSA; or

(b) at least 25 percent of the employment in the county is accounted for by workers who reside in the central county or counties of the CBSA.

A county may appear in only one CBSA. If a county qualifies as a central county of one CBSA and as outlying in another, it falls within the CBSA in which it is a central county. A county that qualifies as outlying to multiple CBSAs falls within the CBSA with which it has the strongest commuting tie, as measured by either (a) or (b) above. The counties included in a CBSA must be contiguous; if a county is not contiguous with other counties in the CBSA, it will not fall within the CBSA.

Section 4. Merging of Adjacent Core Based Statistical Areas

Two adjacent CBSAs will merge to form one CBSA if the central county or counties (as a group) of one CBSA qualify as outlying to the central county or counties (as a group) of the other CBSA using the measures and thresholds stated in 3(a) and 3(b) above.

Section 5. Identification of Principal Cities

The Principal City (or Cities) of a CBSA will include:

(a) the largest incorporated place with a Census 2000 population of at least 10,000 in the CBSA or, if no incorporated place of at least 10,000 population is present in the CBSA, the largest incorporated place or census designated place in the CBSA; and

(b) any additional incorporated place or census designated place with a Census 2000 population of at least 250,000 or in which 100,000 or more persons work; and

(c) any additional incorporated place or census designated place with a Census 2000 population of at least 50,000, but less than 250,000, and in which the number of jobs meets or exceeds the number of employed residents; and

(d) any additional incorporated place or census designated place with a Census 2000 population of at least 10,000, but less than 50,000, and one-third the population size of the largest place, and in which the number of jobs meets or exceeds the number of employed residents.

Section 6. Categories and Terminology

A CBSA receives a category based on the population of the largest urban area (urbanized area or urban cluster) within the CBSA. Categories of CBSAs are: Metropolitan Statistical Areas, based on urbanized areas of 50,000 or more population, and Micropolitan Statistical Areas, based on urban clusters of at least 10,000 population but less than 50,000 population.

Counties that do not fall within CBSAs will represent "Outside Core Based Statistical Areas."

A NECTA receives a category in a manner similar to a CBSA and is referred to as a Metropolitan NECTA or a Micropolitan NECTA.

Section 7. Divisions of Metropolitan Statistical Areas and New England City and Town Areas

(a) A Metropolitan Statistical Area containing a single core with a population of at least 2.5 million may be subdivided to form smaller groupings of counties referred to as Metropolitan Divisions.

A county qualifies as a "main county" of a Metropolitan Division if 65 percent or more of its employed residents work within the county and the ratio of the number of jobs located in the county to the number of employed residents of the county is at least .75.

A county qualifies as a "secondary county" if 50 percent or more, but less than 65 percent, of its employed residents work within the county and the ratio of the number of jobs located in the county to the number of employed residents of the county is at least .75.

A main county automatically serves as the basis for a Metropolitan Division. For a secondary county to qualify as the basis for forming a Metropolitan Division, it must join with either a contiguous secondary county or a contiguous main county with which it has the highest employment interchange measure of 15 or more.

After all main counties and secondary counties are identified and grouped (if appropriate), each additional county that already has qualified for inclusion in the Metropolitan Statistical Area falls within the Metropolitan Division associated with the main/secondary county or counties with which the county at issue has the highest employment interchange measure. Counties in a Metropolitan Division must be contiguous.

(b) A NECTA containing a single core with a population of at least 2.5 million may be subdivided to form smaller groupings of cities and towns referred to as NECTA Divisions.

A city or town will be a "main city or town" of a NECTA Division if it has a population of 50,000 or more and its highest rate of out-commuting to any other city or town is less than 20 percent.

After all main cities and towns have been identified, each remaining city and town in the NECTA will fall within the NECTA Division associated with the city or town with which the one at issue has the highest employment interchange measure.

Each NECTA Division must contain a total population of 100,000 or more. Cities and towns first assigned to areas with populations less than 100,000 will be assigned to the qualifying NECTA Division associated with the city or town with which the one at issue has the highest employment interchange measure. Cities and towns within a NECTA Division must be contiguous.

Section 8. Combining Adjacent Core Based Statistical Areas

(a) Any two adjacent CBSAs will form a Combined Statistical Area if the employment interchange measure between the two areas is at least 25.

(b) Adjacent CBSAs that have an employment interchange measure of at least 15 and less than 25 will combine if local opinion, as reported by the congressional delegations in both areas, favors combination.

(c) The CBSAs that combine retain separate identities within the larger Combined Statistical Areas.

Section 9. Titles of Core Based Statistical Areas, Metropolitan Divisions, New England City and Town Divisions, and Combined Statistical Areas

(a) The title of a CBSA will include the name of its Principal City with the largest Census 2000 population. If there are multiple Principal Cities, the names of the second largest and third largest Principal Cities will appear in the title in order of descending population size. If the Principal City with the largest Census 2000 population is a census designated place, the name of the largest incorporated place of at least 10,000 population that also is a Principal City will appear first in the title followed by the name of the census designated place.

(b) The title of a Metropolitan Division will include the name of the Principal City with the largest Census 2000 population located in the Metropolitan Division. If there are multiple Principal Cities, the names of the second largest and third largest Principal Cities will appear in the title in order of descending population size. If there are no Principal Cities located in the Metropolitan Division, the title of the Metropolitan Division will use the names of up to three counties in order of descending population size.

(c) The title of a NECTA Division will include the name of the Principal City with the largest Census 2000 population located in the NECTA Division. If there are multiple Principal Cities, the names of the second largest and third largest Principal Cities will appear in the title in order of descending population size. If there are no Principal Cities located in the NECTA Division, the title of the NECTA Division will use the name of the city or town with the largest population.

(d) The title of a Combined Statistical Area will include the name of the largest Principal City in the combination, followed by the names of up to two additional Principal Cities in the combination in order of descending population size, or a suitable regional name, provided that the Combined Statistical Area title does not duplicate the title of a component Metropolitan or Micropolitan Statistical Area or Metropolitan Division. Local opinion will be considered when determining the titles of Combined Statistical Areas.

(e) Titles also will include the names of any state in which the area is located.

Section 10. Update Schedule

(a) The Office of Management and Budget will define CBSAs based on Census 2000 data in 2003.

(b) Each year thereafter, the Office of Management and Budget will designate new CBSAs if:

(1) A city that is outside any existing CBSA has a Census Bureau special census count of 10,000 or more population, or Census Bureau population estimates of 10,000 or more population for two consecutive years, or

(2) A Census Bureau special census results in the delineation of a new urban area (urbanized area or urban cluster) of 10,000 or more population that is outside of any existing CBSA.

(c) In the years 2004 through 2007, outlying counties of intercensally designated CBSAs will qualify, according to the criteria in Section 3 above, on the basis of Census 2000 commuting data.

(d) The Office of Management and Budget will review the definitions of all existing CBSAs in 2008 using commuting data from the Census Bureau's American Community Survey. The central counties of CBSAs identified on the basis of a Census 2000 population count, or on the basis of population estimates or a special census count in the case of intercensally defined areas, will constitute the central counties for purposes of the 2008 area definitions. New CBSAs will be designated in 2008 and 2009 on the basis of Census Bureau special census counts or population estimates as described above; outlying county qualification in these years will be based on 2008 commuting data from the American Community Survey.

Section 11. Local Opinion

Local opinion, as used in these standards, is the reflection of the views of the public and is obtained through the appropriate congressional delegations. The Office of Management and Budget will seek local opinion in two circumstances:

(a) When two adjacent CBSAs qualify for combination based on an employment interchange measure of at least 15 but less than 25 (see Section 8). The two CBSAs will combine only if there is evidence that local opinion in both areas favors the combination.

(b) To determine the title of a Combined Statistical Area.

After decisions have been made regarding the combinations of CBSAs and the titles of Combined Statistical Areas, the Office of Management and Budget will not request local opinion again on these issues until the next redefinition of CBSAs.

Section 12. Definitions of Key Terms

Census designated place.—A statistical geographic entity that is

equivalent to an incorporated place, defined for the decennial census, consisting of a locally recognized, unincorporated concentration of population that is identified by name.

Central county.—The county or counties of a Core Based Statistical Area containing a substantial portion of an urbanized area or urban cluster or both, and to and from which commuting is measured to determine qualification of outlying counties.

Combined Statistical Area.—A geographic entity consisting of two or more adjacent Core Based Statistical Areas (CBSAs) with employment interchange measures of at least 15. Pairs of CBSAs with employment interchange measures of at least 25 combine automatically. Pairs of CBSAs with employment interchange measures of at least 15, but less than 25, may combine if local opinion in both areas favors combination.

Core.—A densely settled concentration of population, comprising either an urbanized area (of 50,000 or more population) or an urban cluster (of 10,000 to 49,999 population) defined by the Census Bureau, around which a Core Based Statistical Area is defined.

Core Based Statistical Area (CBSA).—A statistical geographic entity consisting of the county or counties associated with at least one core (urbanized area or urban cluster) of at least 10,000 population, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties with the counties containing the core. Metropolitan and Micropolitan Statistical Areas are the two categories of Core Based Statistical Areas.

Employment interchange measure.—A measure of ties between two adjacent entities. The employment interchange measure is the sum of the percentage of employed residents of the smaller entity who work in the larger entity and the percentage of employment in the smaller entity that is accounted for by workers who reside in the larger entity.

Geographic building block.—The geographic unit, such as a county, that constitutes the basic geographic component of a statistical area.

Main city or town.—A city or town that acts as an employment center within a New England City and Town Area that has a core with a population of at least 2.5 million. A main city or town serves as the basis for defining a New England City and Town Area Division.

Main county.—A county that acts as an employment center within a Core Based Statistical Area that has a core with a population of at least 2.5 million. A main county serves as the basis for defining a Metropolitan Division.

Metropolitan Division.—A county or group of counties within a Core Based Statistical Area that contains a core with a population of at least 2.5 million. A Metropolitan Division consists of one or more main/secondary counties that represent an employment center or centers, plus adjacent counties associated with the main county or counties through commuting ties.

Metropolitan Statistical Area.—A Core Based Statistical Area associated with at least one urbanized area that has a population of at least 50,000. The Metropolitan Statistical Area comprises the central county or counties containing the core, plus adjacent outlying counties having a high degree of social and economic integration with the central county as measured through commuting.

Micropolitan Statistical Area.—A Core Based Statistical Area associated with at least one urban cluster that has a population of at least 10,000, but less than 50,000. The Micropolitan Statistical Area comprises the central county or counties containing the core, plus adjacent outlying counties having a high degree of social and economic integration with the central county as measured through commuting.

New England City and Town Area (NECTA).—A statistical geographic entity that is defined using cities and towns as building blocks and that is conceptually similar to the Core Based Statistical Areas in New England (which are defined using counties as building blocks).

New England City and Town Area (NECTA) Division.—A city or town or group of cities and towns within a NECTA that contains a core with a population of at least 2.5 million. A NECTA Division consists of a main city or town that represents an employment center, plus adjacent cities and towns associated with the main city or town, or with other cities and towns that are in turn associated with the main city or town, through commuting ties.

Outlying county.—A county that qualifies for inclusion in a Core Based Statistical Area on the basis of commuting ties with the Core Based Statistical Area's central county or counties.

Outside Core Based Statistical Areas.—Counties that do not qualify for inclusion in a Core Based Statistical Area.

Principal City.—The largest city of a Core Based Statistical Area, plus additional cities that meet specified statistical criteria.

Secondary county.—A county that acts as an employment center in combination with a main county or another secondary county within a Core Based Statistical Area that has a core with a population of at least 2.5 million. A secondary county serves as the basis for defining a Metropolitan Division, but only when combined with a main county or another secondary county.

Urban area.—The generic term used by the Census Bureau to refer collectively to urbanized areas and urban clusters.

Urban cluster.—A statistical geographic entity to be defined by the Census Bureau for Census 2000, consisting of a central place(s) and adjacent densely settled territory that together contain at least 2,500 people, generally with an overall population density of at least 1,000 people per square mile. For purposes of defining Core Based Statistical Areas, only those urban clusters of 10,000 more population are considered.

Urbanized area.—A statistical geographic entity defined by the Census Bureau, consisting of a central place(s) and adjacent densely settled territory that together contain at least 50,000 people, generally with an overall population density of at least 1,000 people per square mile.

John T. Spotila,

Administrator, Office of Information and Regulatory Affairs.

[FR Doc. 00–32997 Filed 12–26–00; 8:45 am]

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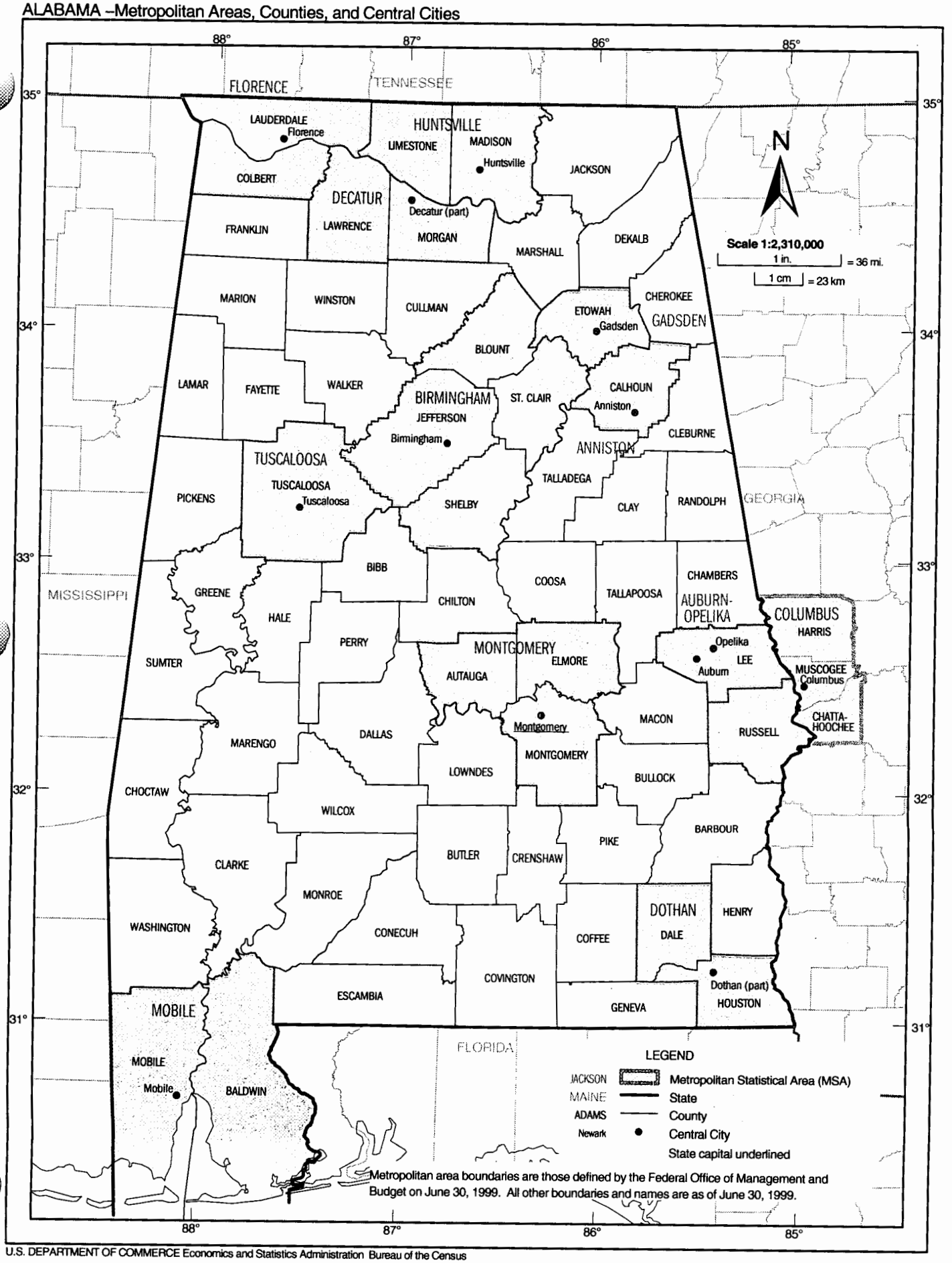
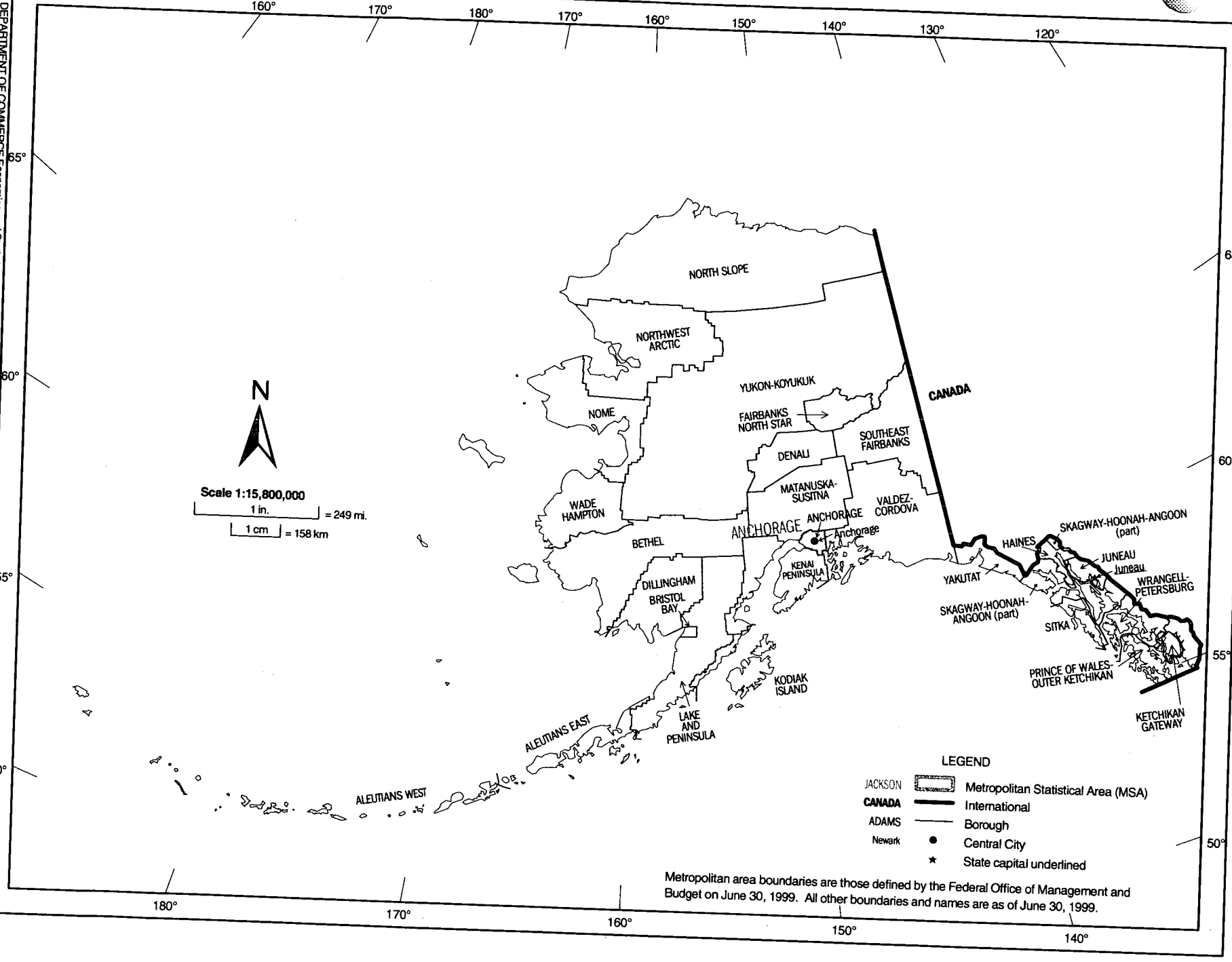
ALABAMA –Metropolitan Areas, Counties, and Central Cities



Metropolitan area boundaries are those defined by the Federal Office of Management and Budget on June 30, 1999. All other boundaries and names are as of June 30, 1999.

U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

ALASKA—Metropolitan Area, Boroughs, Census Areas, and Central Cities



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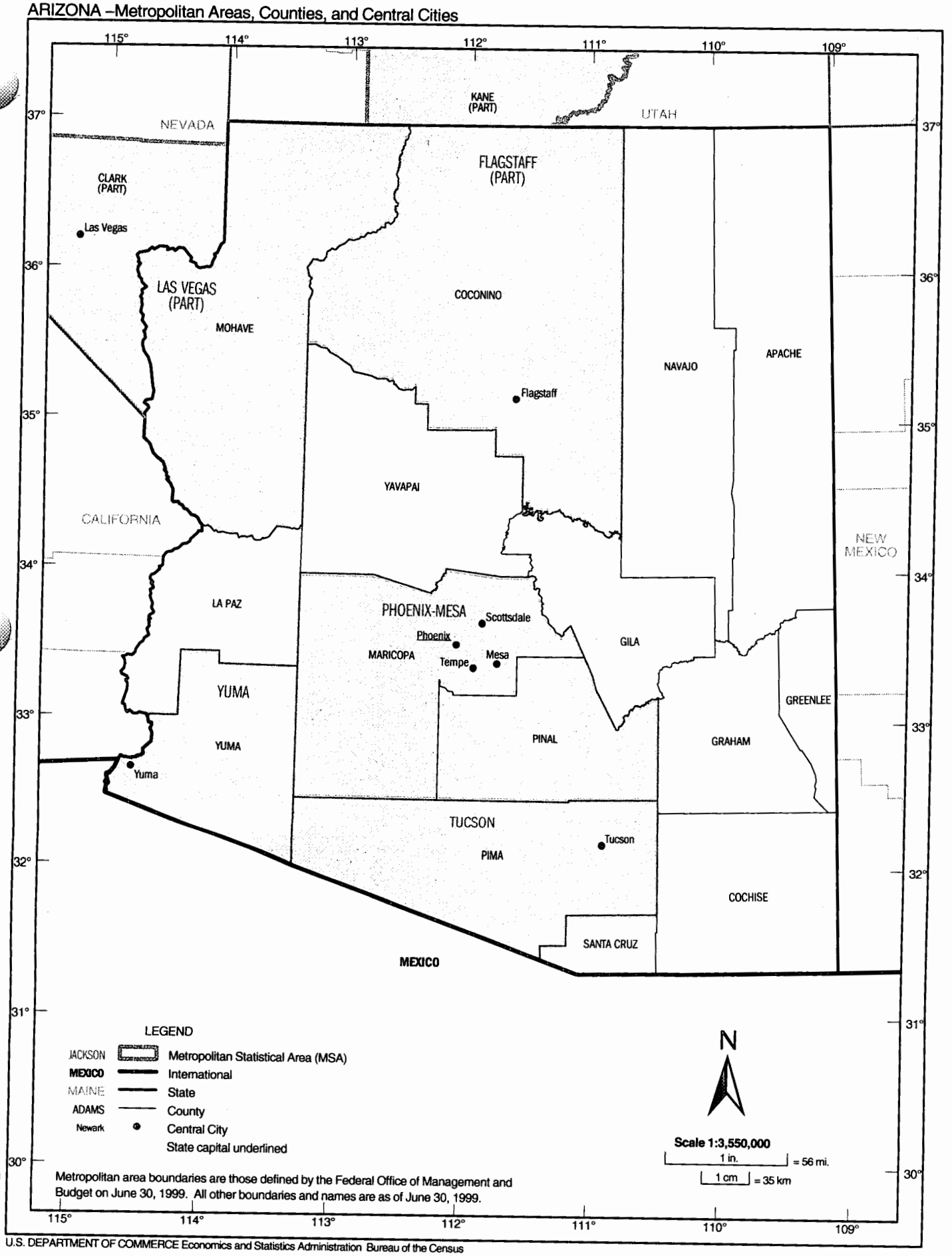
ARIZONA –Metropolitan Areas, Counties, and Central Cities

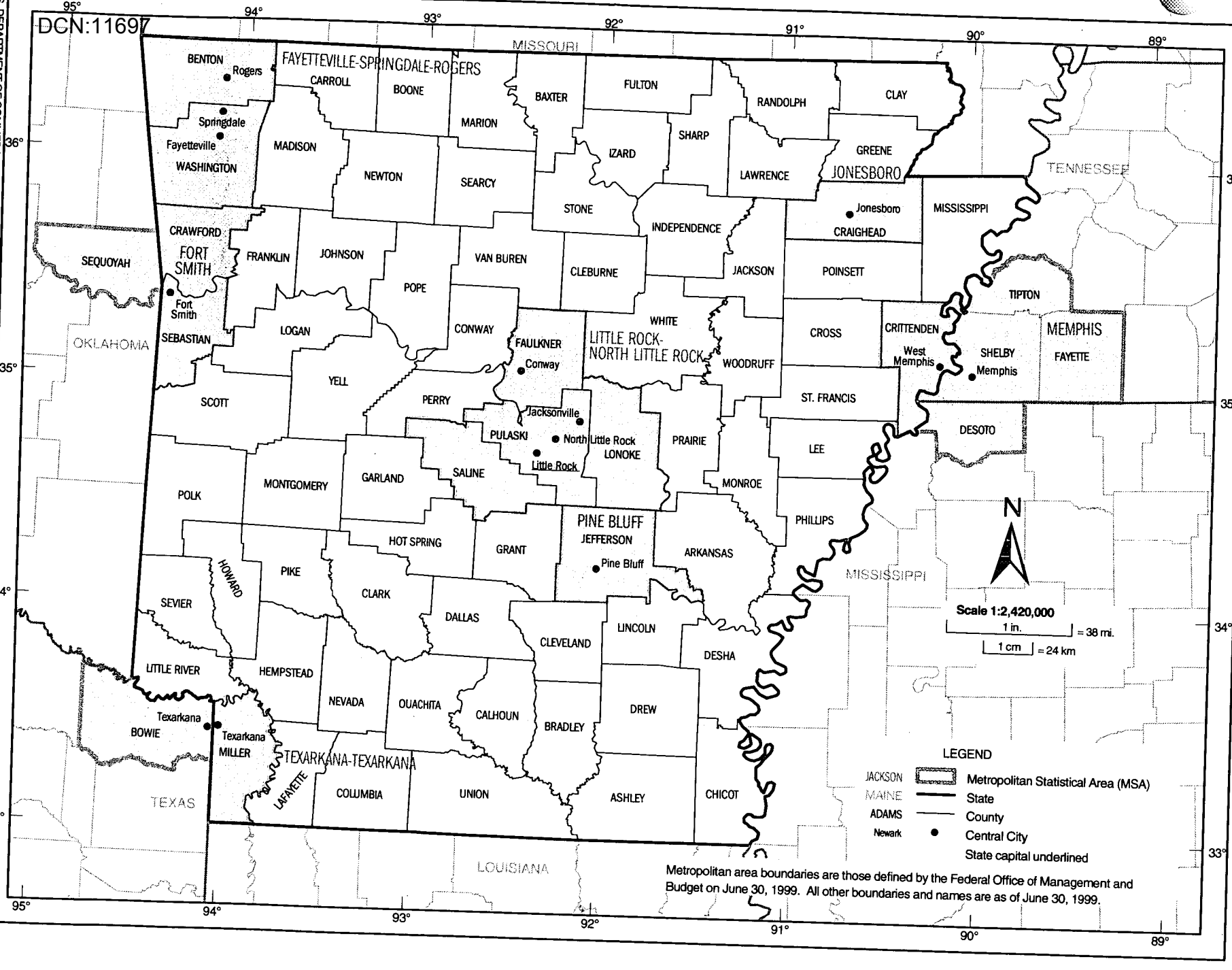


Metropolitan area boundaries are those defined by the Federal Office of Management and Budget on June 30, 1999. All other boundaries and names are as of June 30, 1999.

U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN:11697

ARKANSAS –Metropolitan Areas, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

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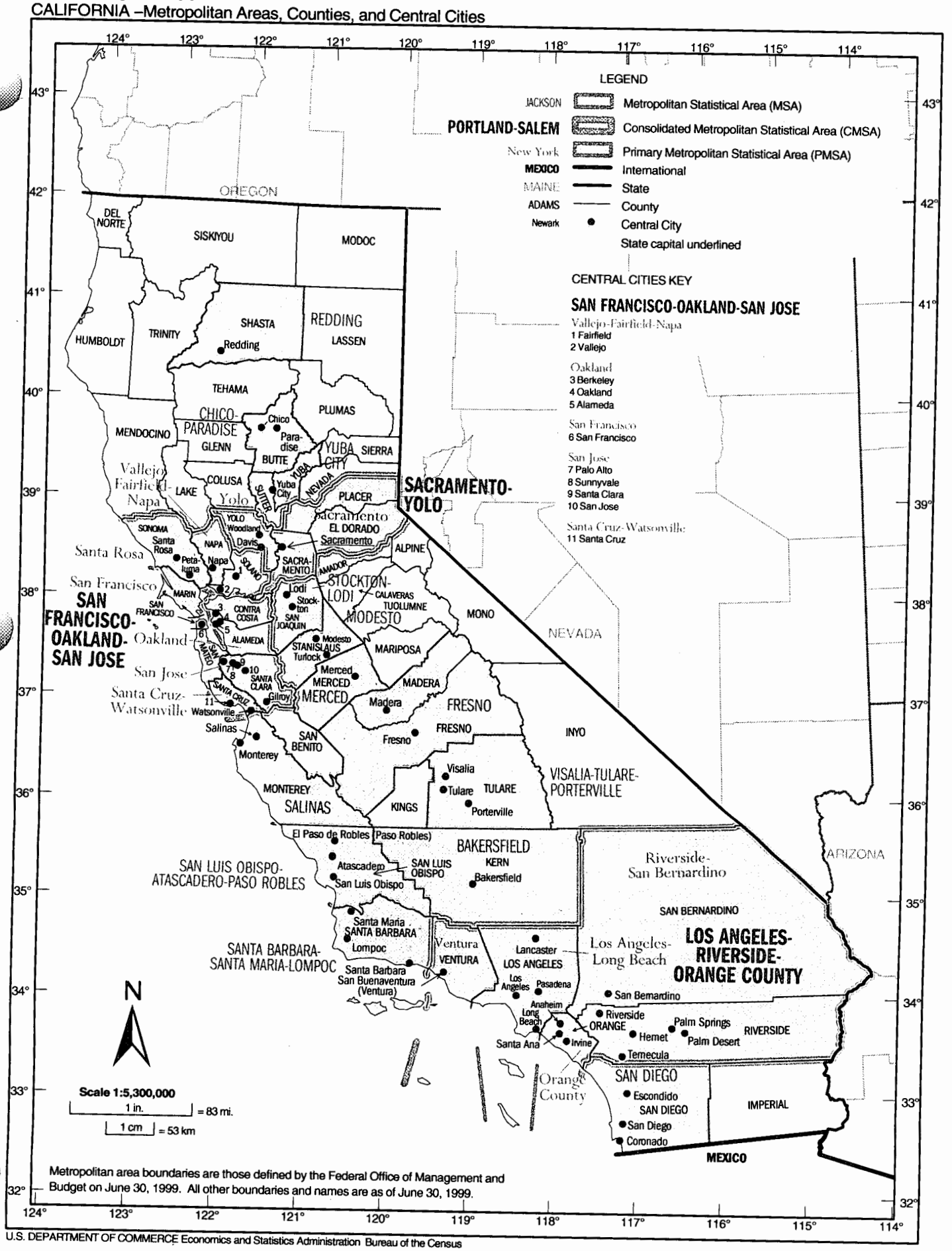
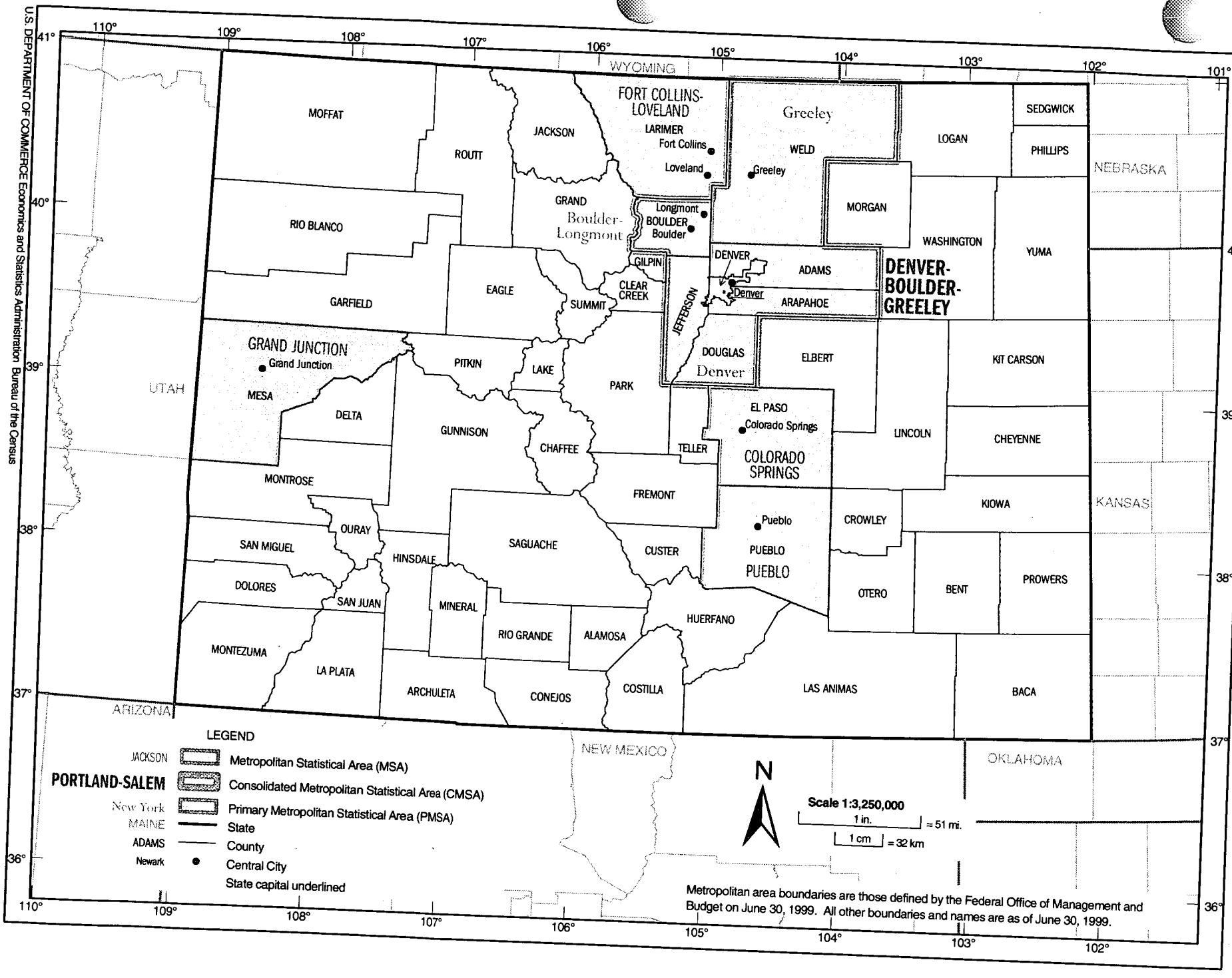
CALIFORNIA –Metropolitan Areas, Counties, and Central Cities



Metropolitan area boundaries are those defined by the Federal Office of Management and Budget on June 30, 1999. All other boundaries and names are as of June 30, 1999.

U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

COLORADO - Metropolitan Areas, Counties, and Central Cities



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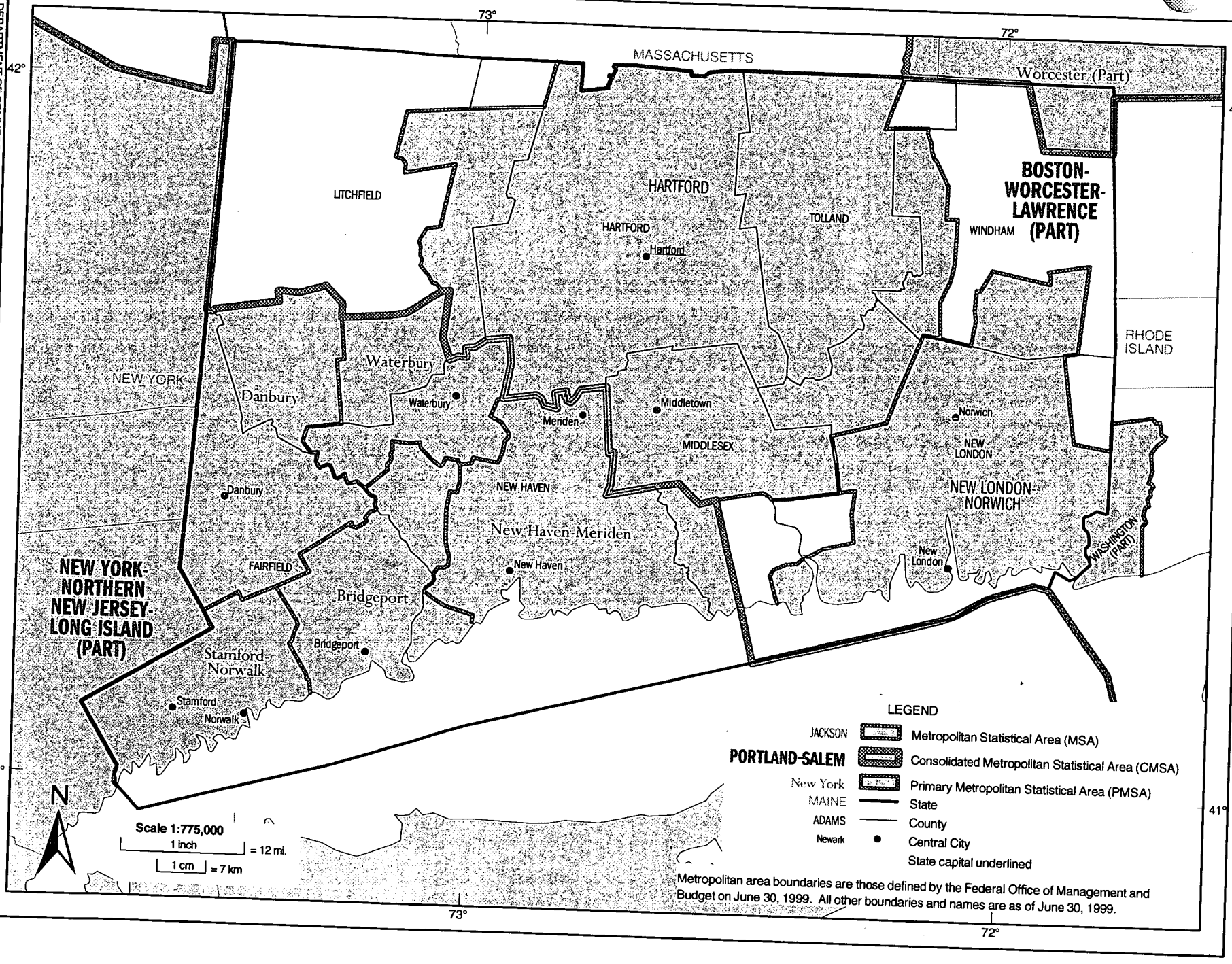
73°
72°
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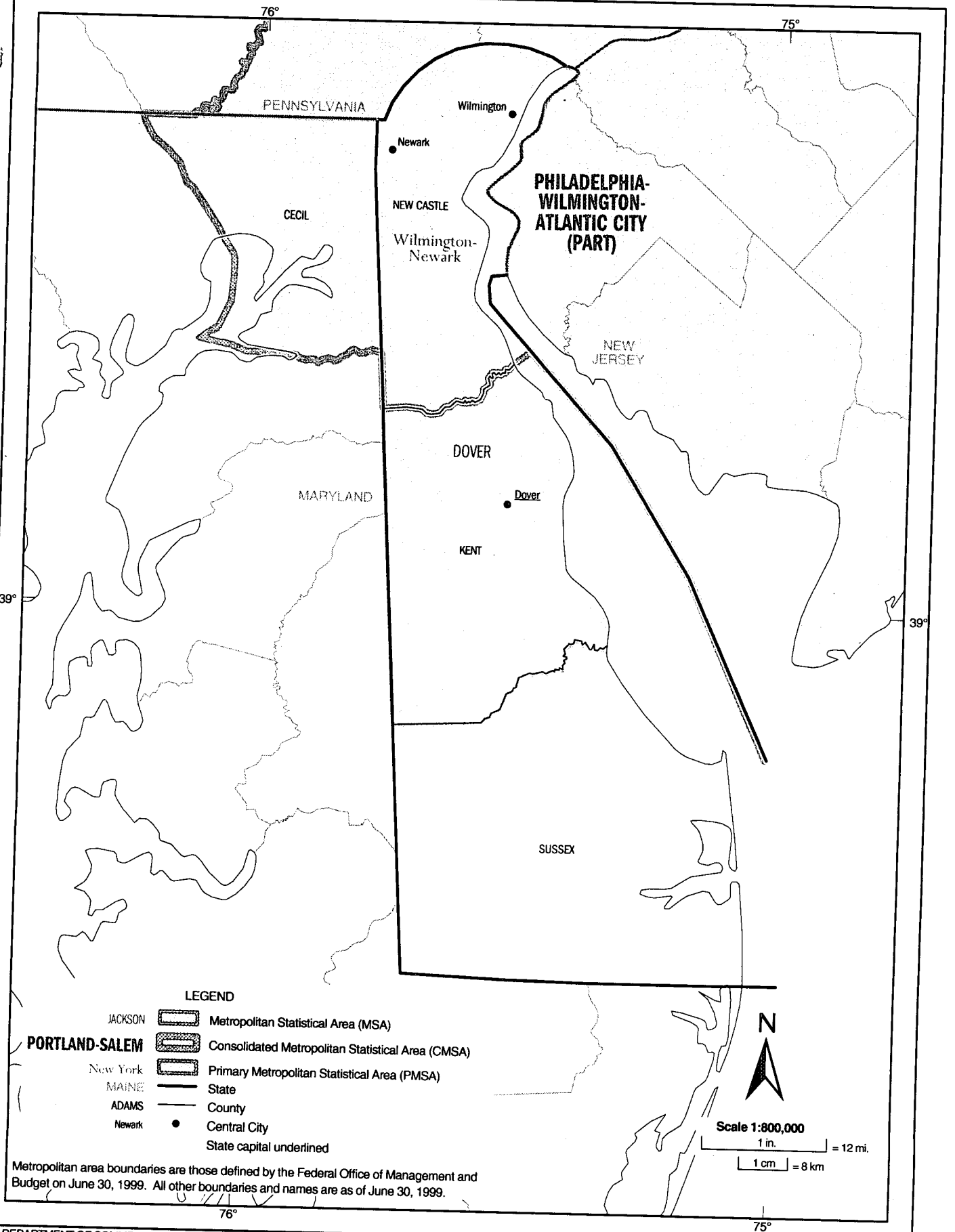
41°
MASSACHUSETTS
Worcester (Part)
LITCHFIELD
HARTFORD
HARTFORD
Hartford
TOLLAND
WINDHAM
BOSTON-WORCESTER-LAWRENCE (PART)
RHODE ISLAND
NEW YORK
Waterbury
Danbury
Waterbury
Meriden
Middletown
MIDDLESEX
Norwich
NEW LONDON
NEW LONDON-NORWICH
Danbury
NEW HAVEN
New Haven-Meriden
New Haven
New London
WASHINGTON (PART)
FAIRFIELD
Bridgeport
Bridgeport
Stamford-Norwalk
Stamford
Norwalk
NEW YORK-NORTHERN NEW JERSEY-LONG ISLAND (PART)
N
Scale 1:775,000
1 inch = 12 mi.
1 cm = 7 km
LEGEND
JACKSON Metropolitan Statistical Area (MSA)
PORTLAND-SALEM Consolidated Metropolitan Statistical Area (CMSA)
New York Primary Metropolitan Statistical Area (PMSA)
MAINE State
ADAMS County
Newark Central City
State capital underlined
Metropolitan area boundaries are those defined by the Federal Office of Management and Budget on June 30, 1999. All other boundaries and names are as of June 30, 1999.

DCN:11697

DELAWARE—Metropolitan Areas, Counties, and Central Cities

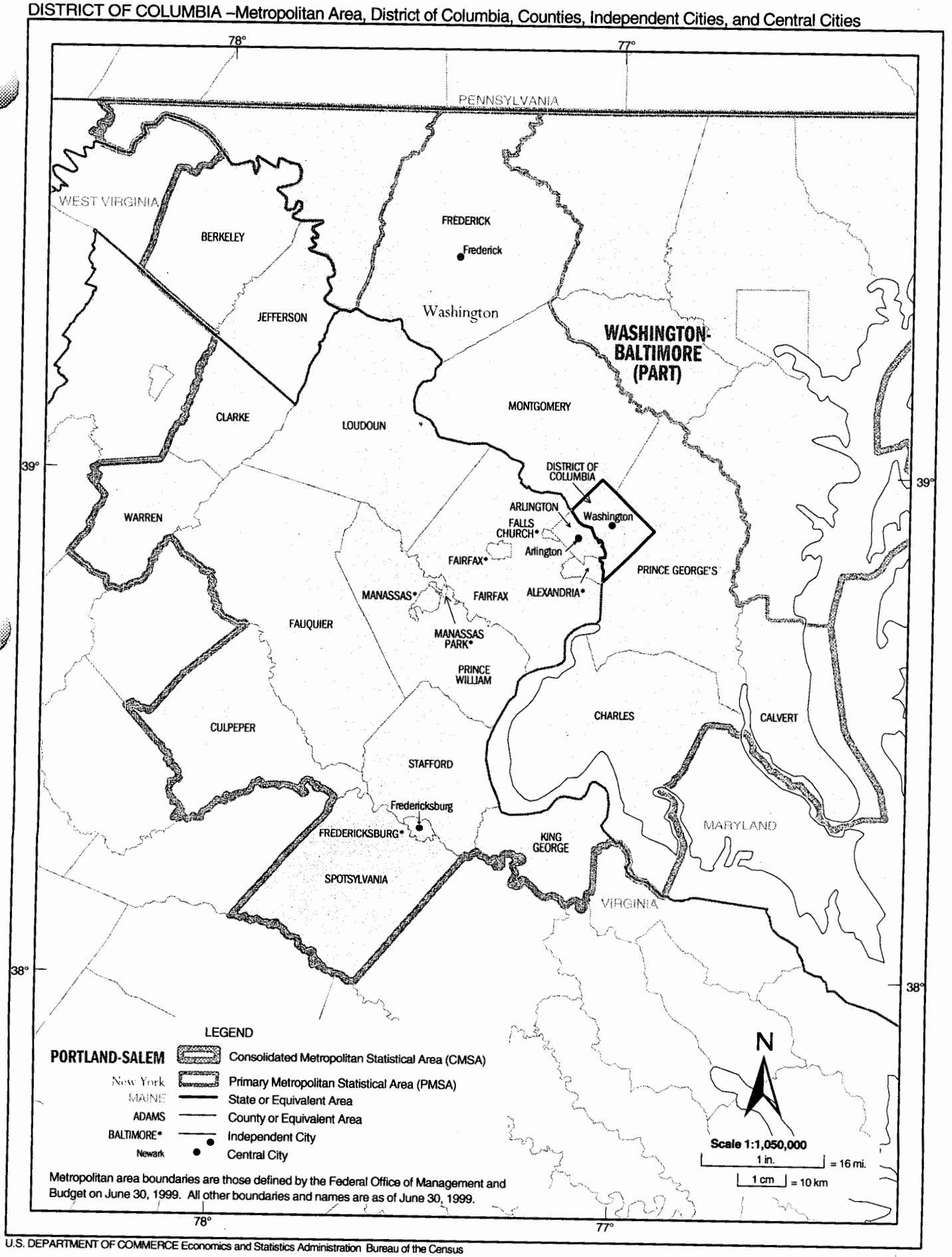


Metropolitan area boundaries are those defined by the Federal Office of Management and Budget on June 30, 1999. All other boundaries and names are as of June 30, 1999.

U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN:11697

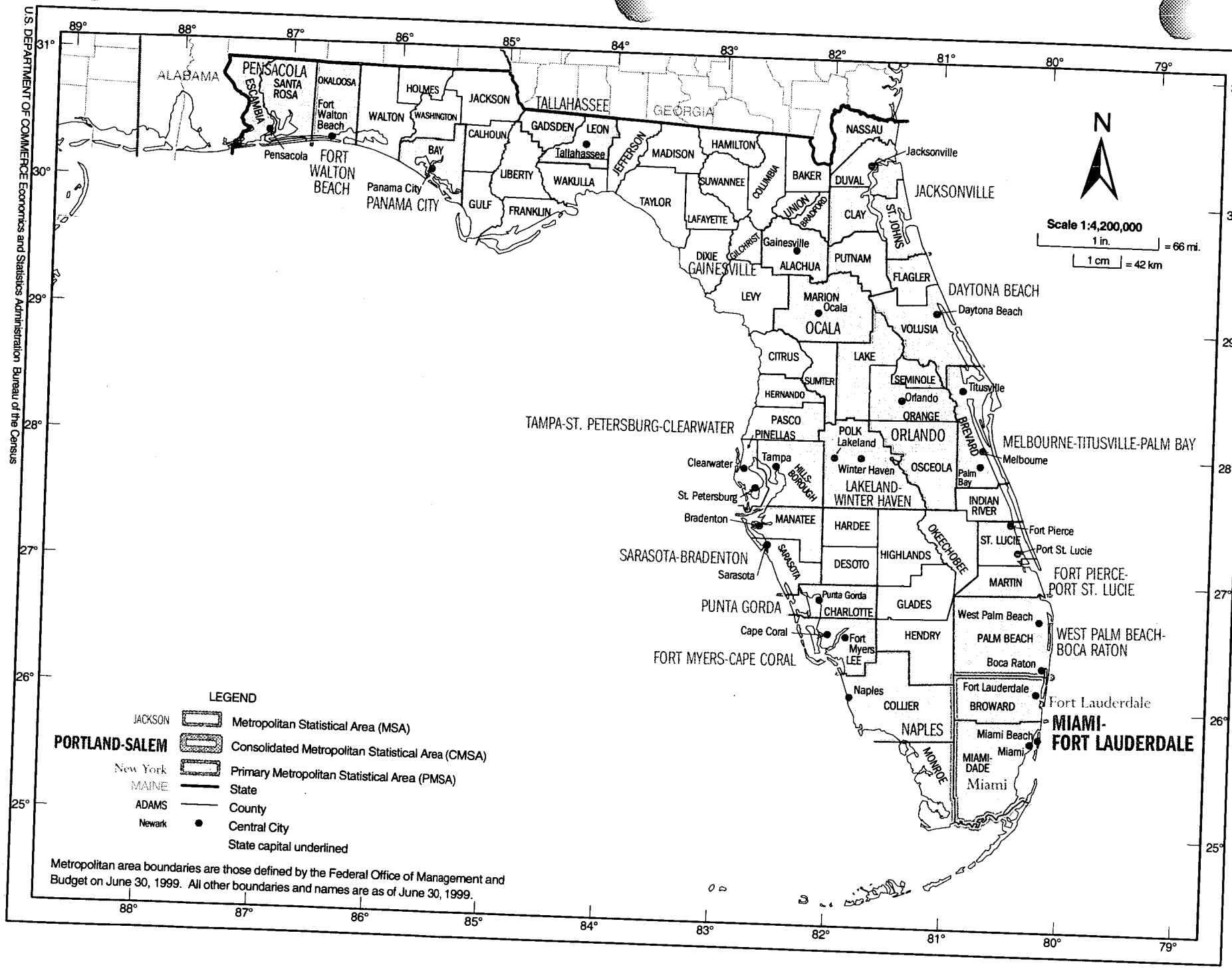
DISTRICT OF COLUMBIA –Metropolitan Area, District of Columbia, Counties, Independent Cities, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

FLORIDA: Metropolitan Areas, Counties, and Central Cities

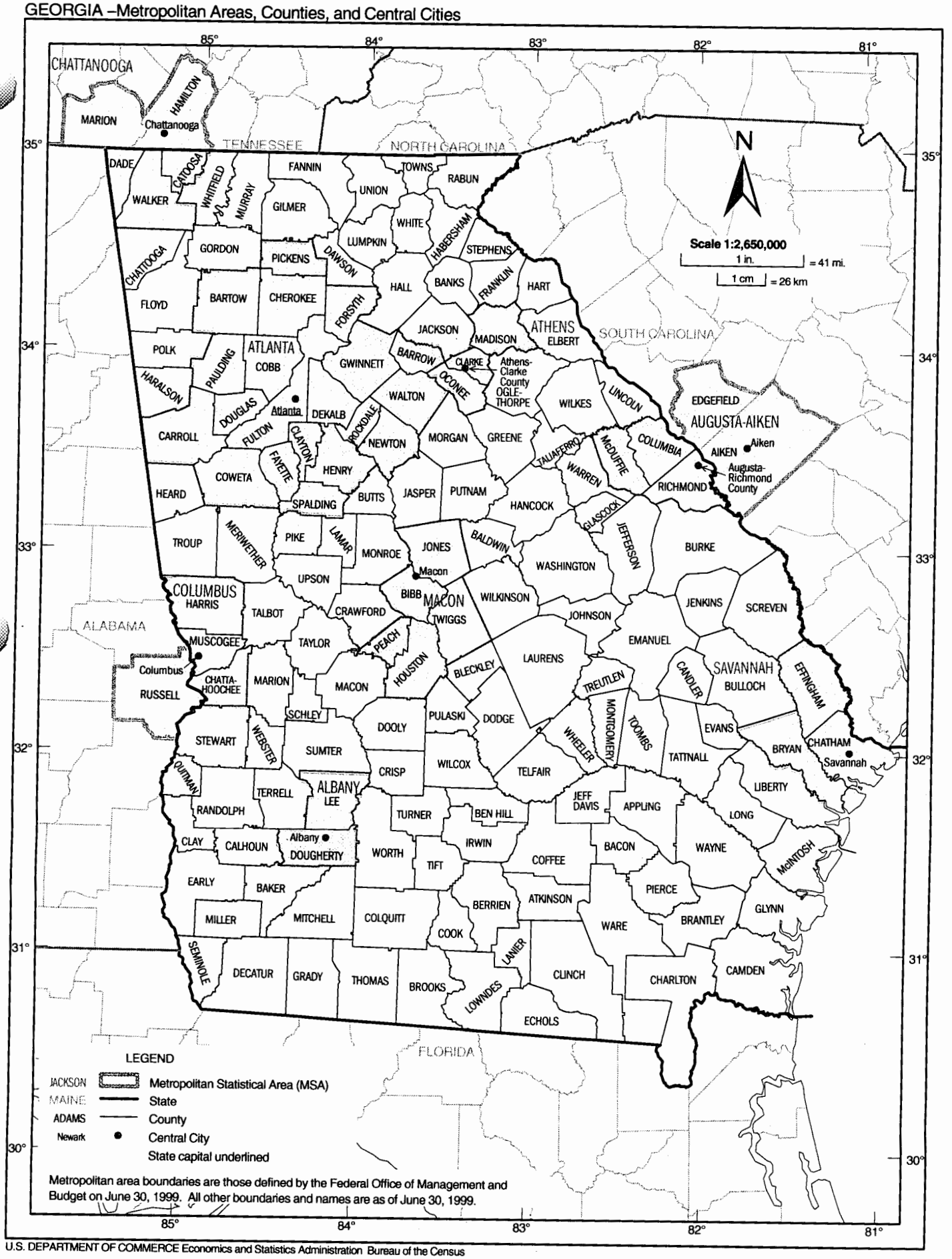
DC-N1-1697



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN:11697

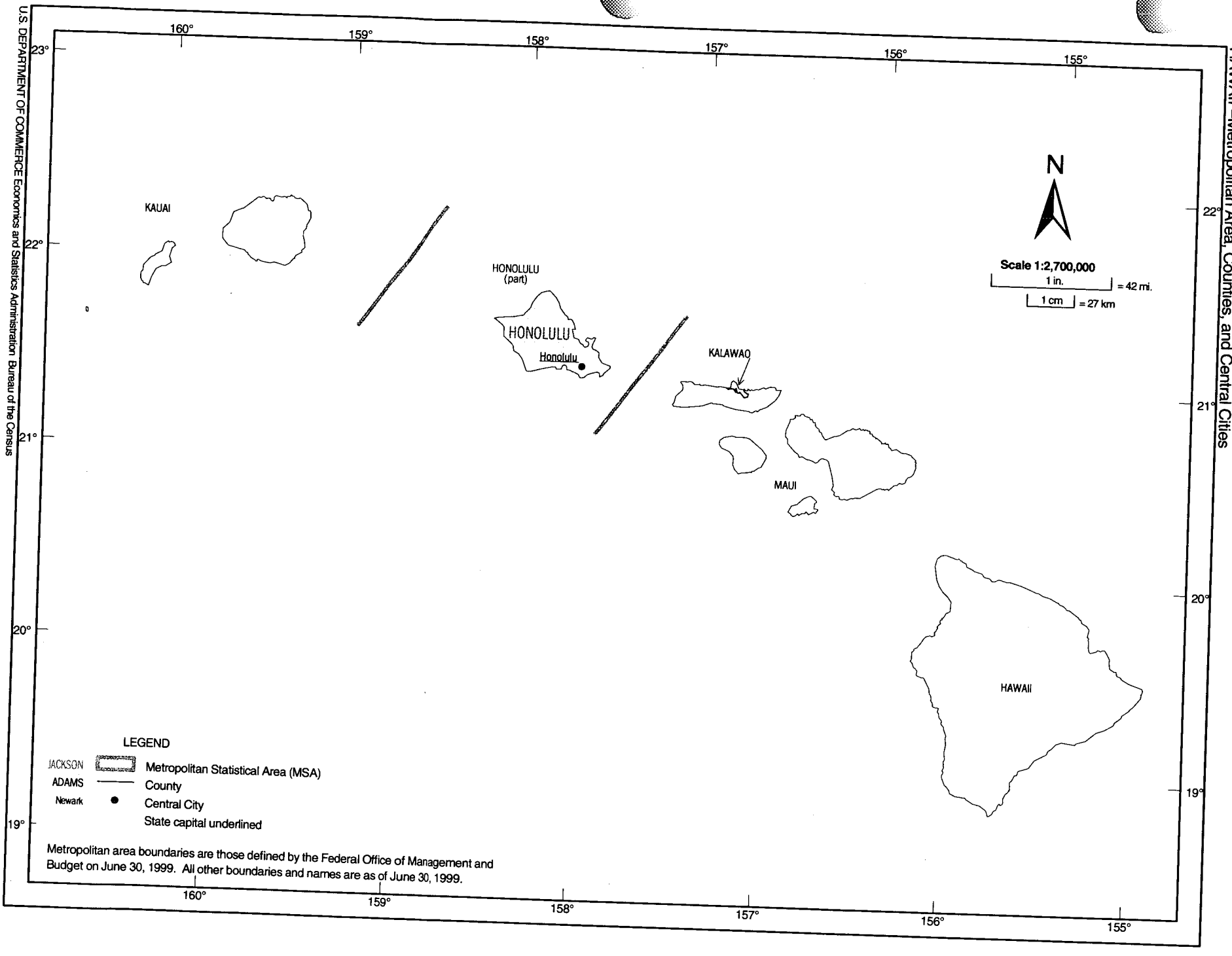
GEORGIA –Metropolitan Areas, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN:11697

HAWAII—Metropolitan Area, Counties, and Central Cities

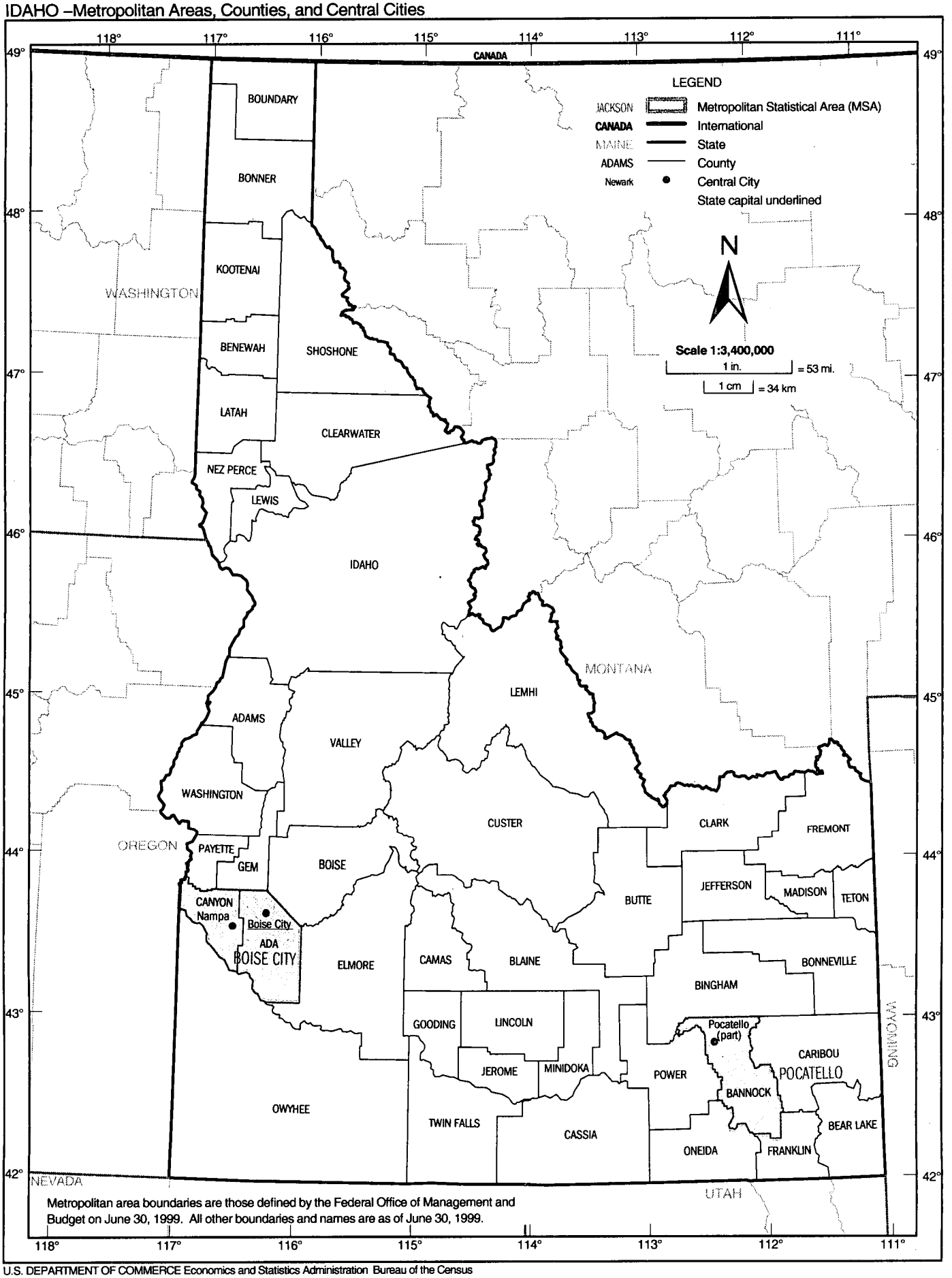


Metropolitan area boundaries are those defined by the Federal Office of Management and Budget on June 30, 1999. All other boundaries and names are as of June 30, 1999.

U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN:11697

IDAHO –Metropolitan Areas, Counties, and Central Cities



Metropolitan area boundaries are those defined by the Federal Office of Management and Budget on June 30, 1999. All other boundaries and names are as of June 30, 1999.

U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

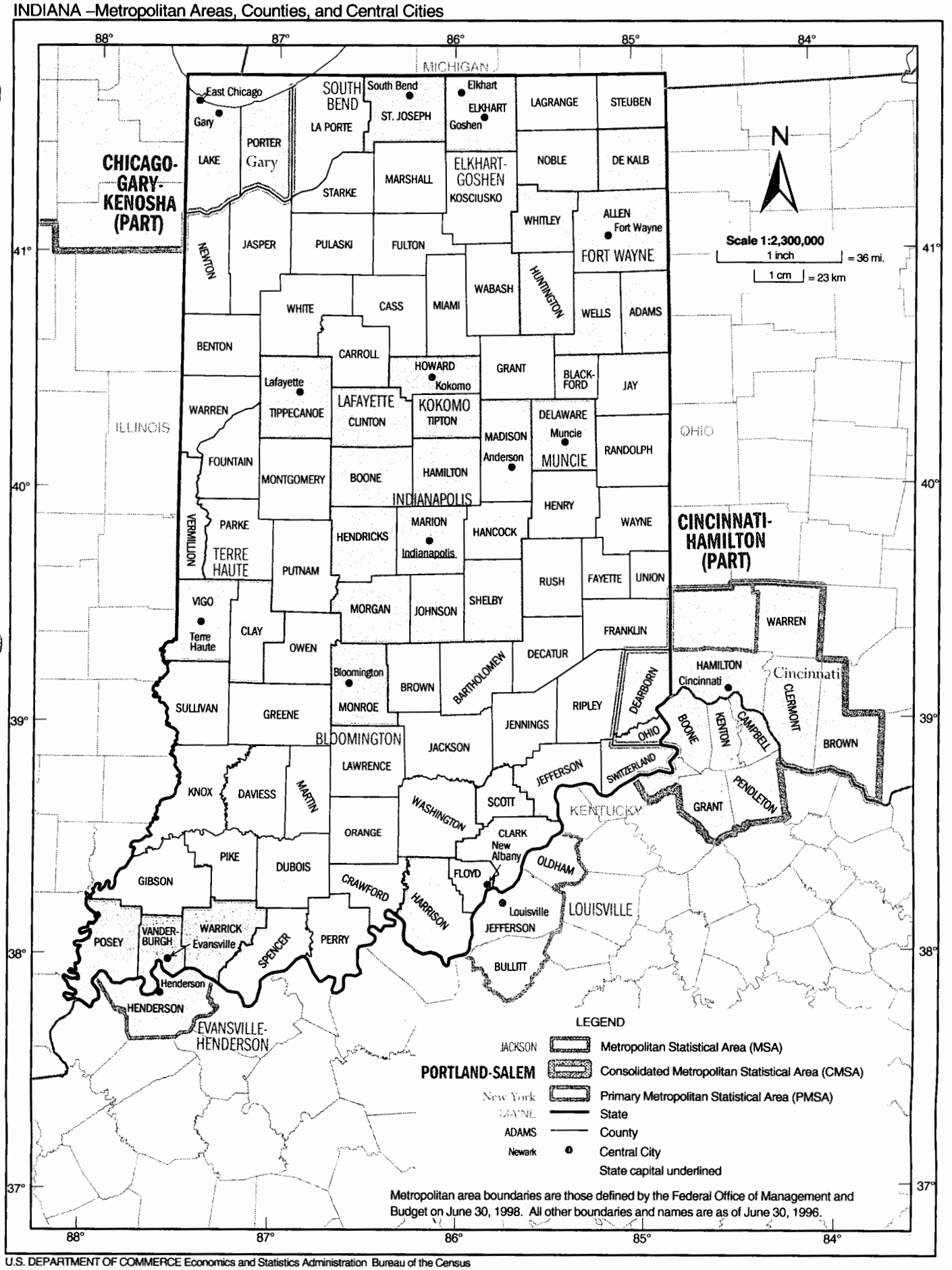
DCN:11697

ILLINOIS –Metropolitan Areas, Counties, Independent City, and Central Cities

U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN:11697

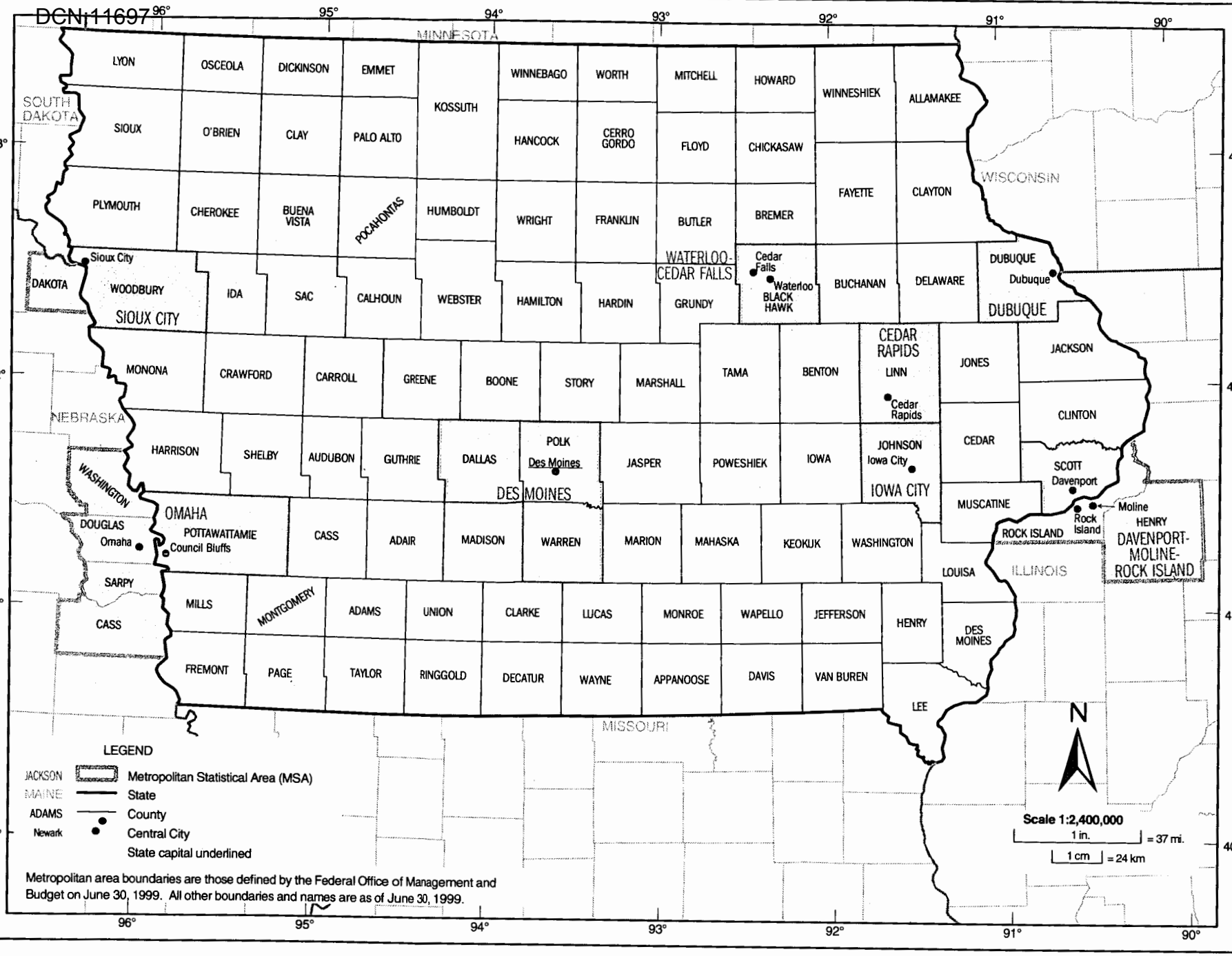
INDIANA –Metropolitan Areas, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

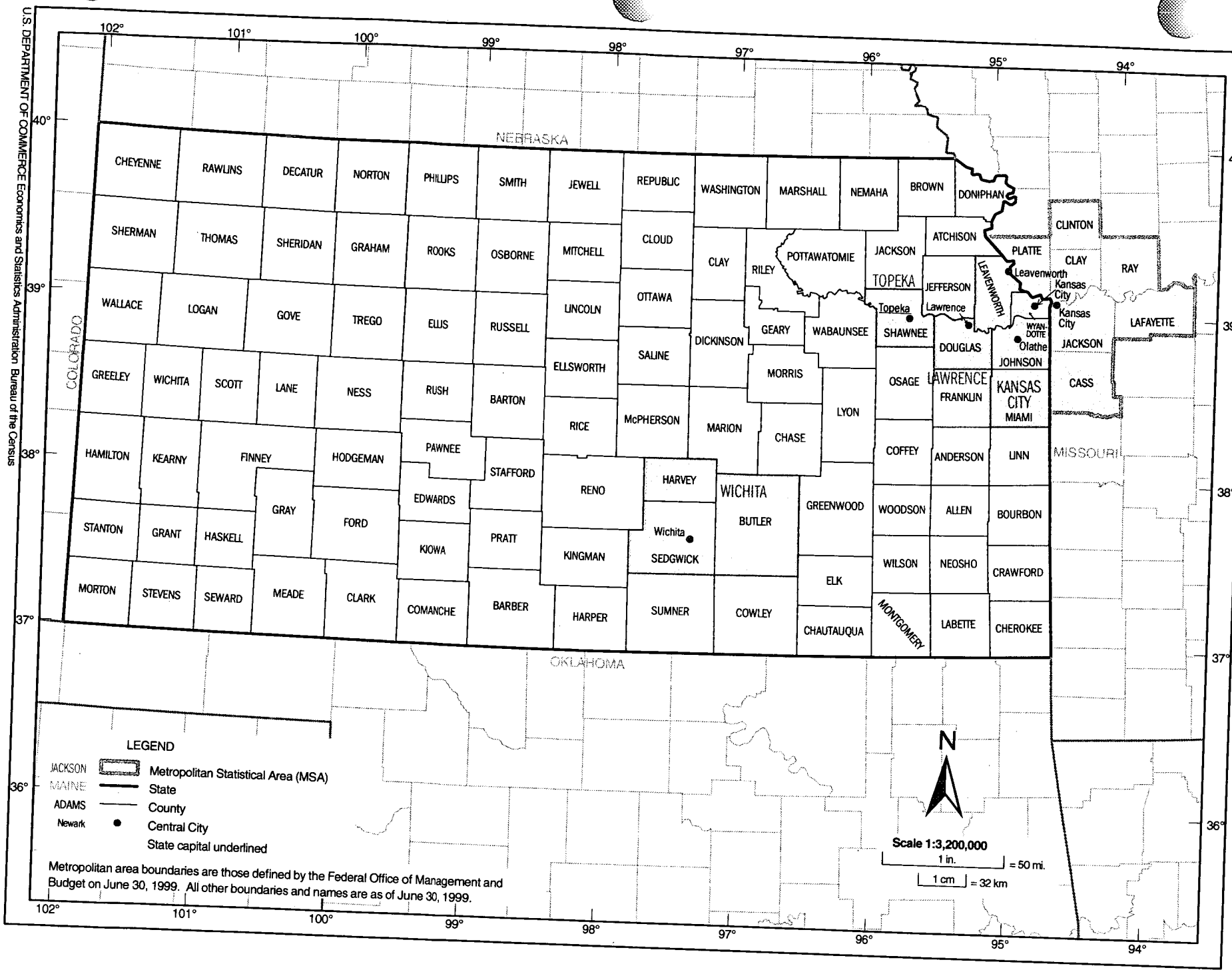
DCN 11697

IOWA –Metropolitan Areas, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

KANSAS: Metropolitan Areas, Counties, and Central Cities

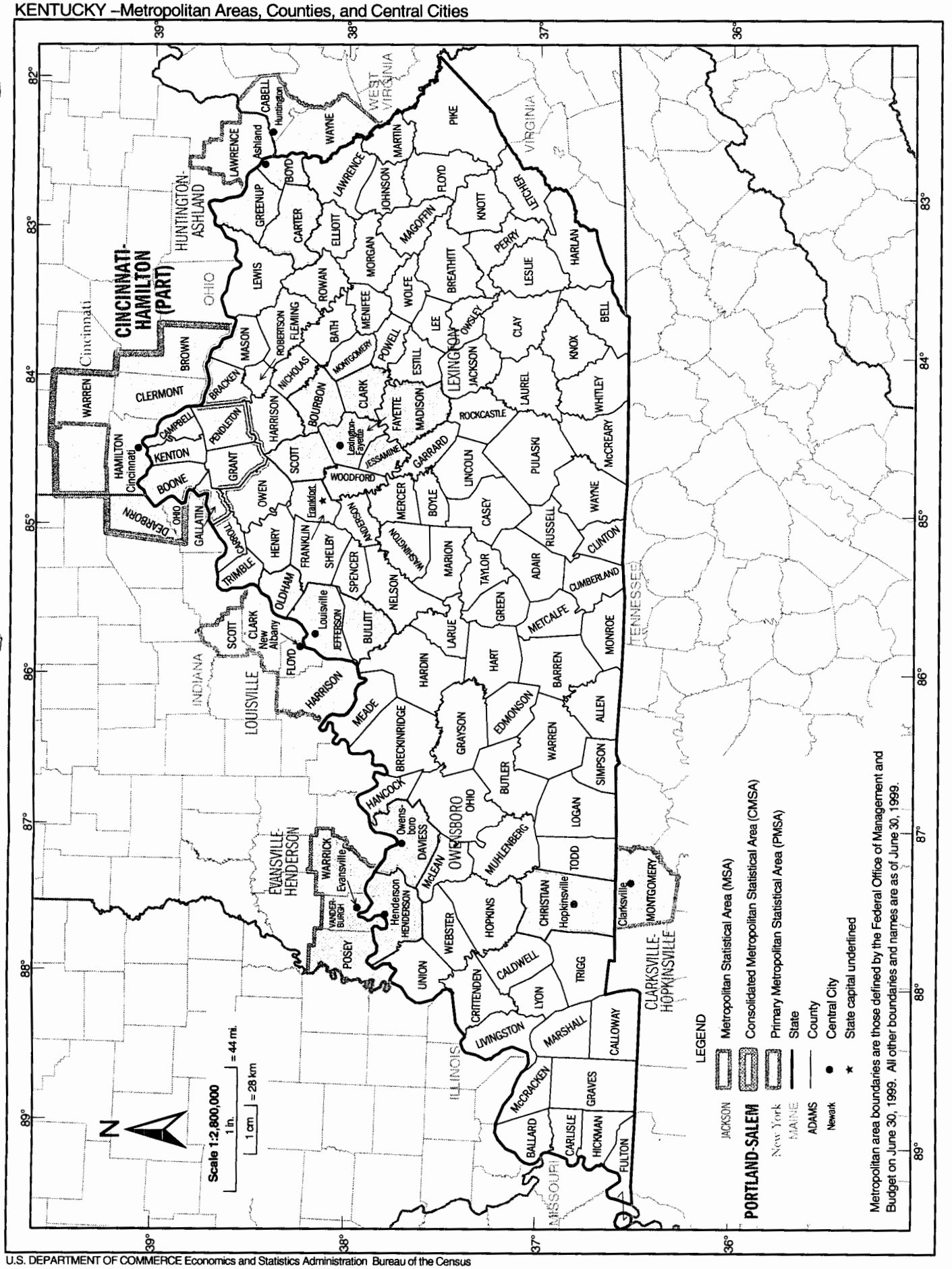


U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

PCN-11-1697

DCN:11697

KENTUCKY –Metropolitan Areas, Counties, and Central Cities

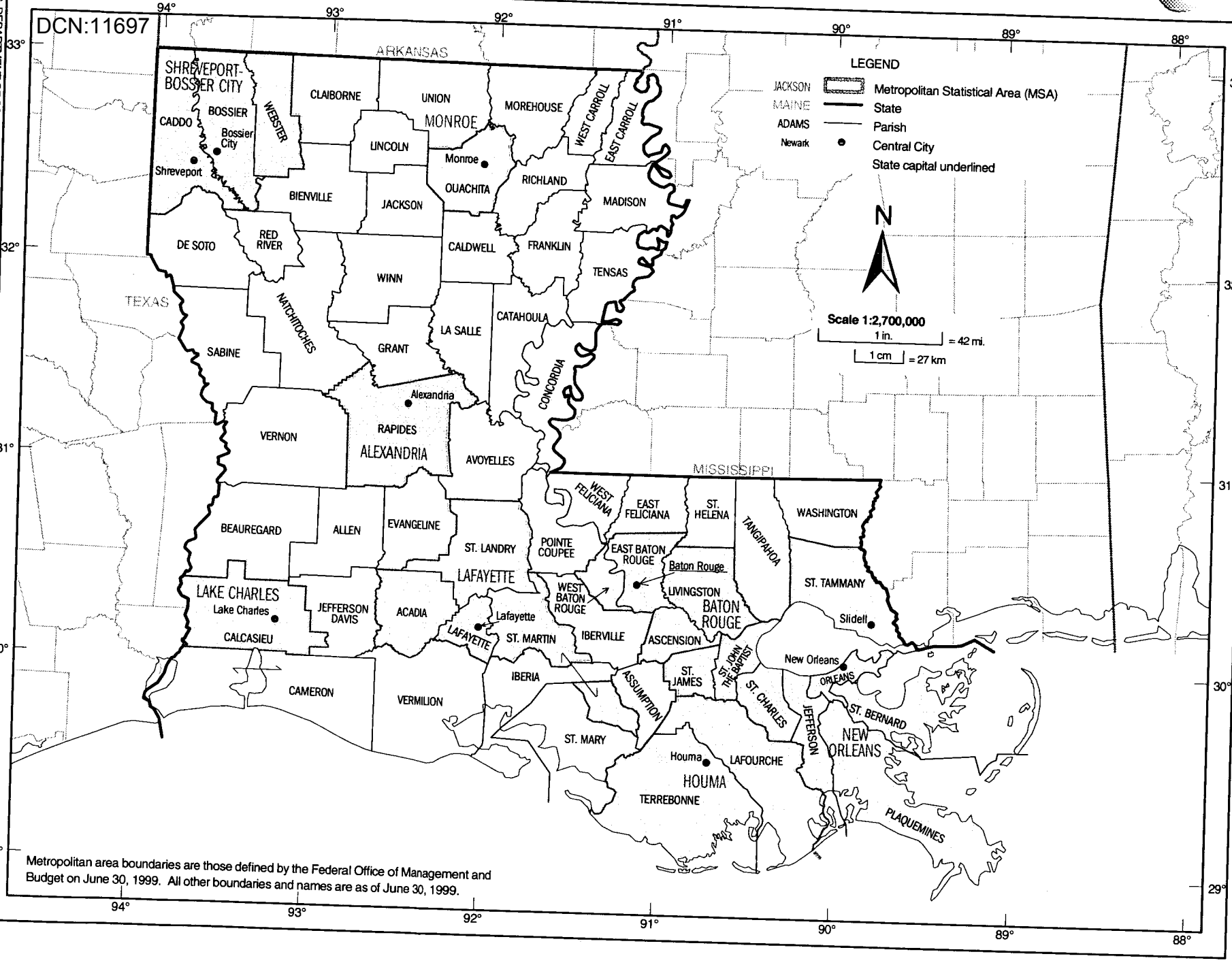


U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN:11697

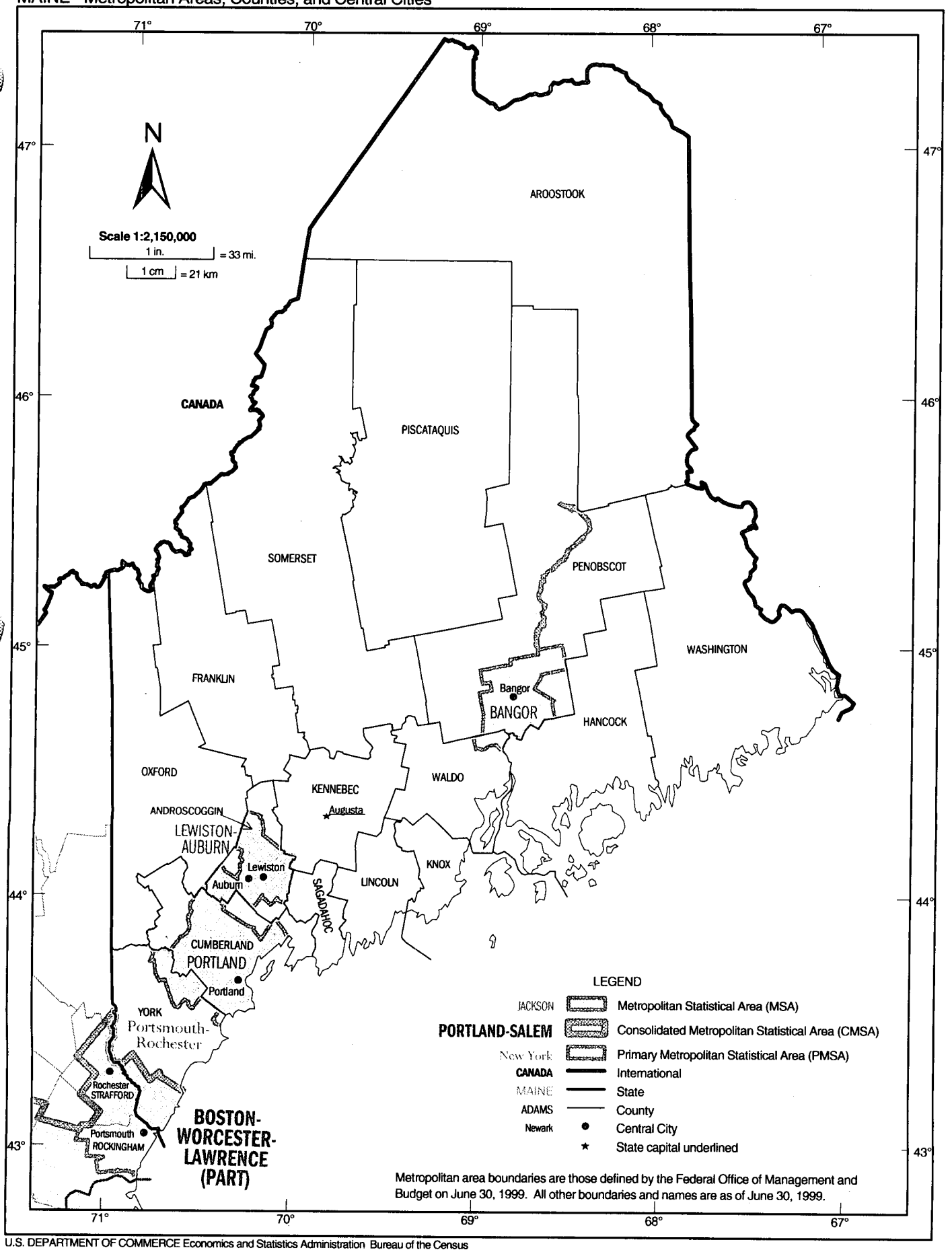
LOUISIANA –Metropolitan Areas, Parishes, and Central Cities



Metropolitan area boundaries are those defined by the Federal Office of Management and Budget on June 30, 1999. All other boundaries and names are as of June 30, 1999.

DCN:11697

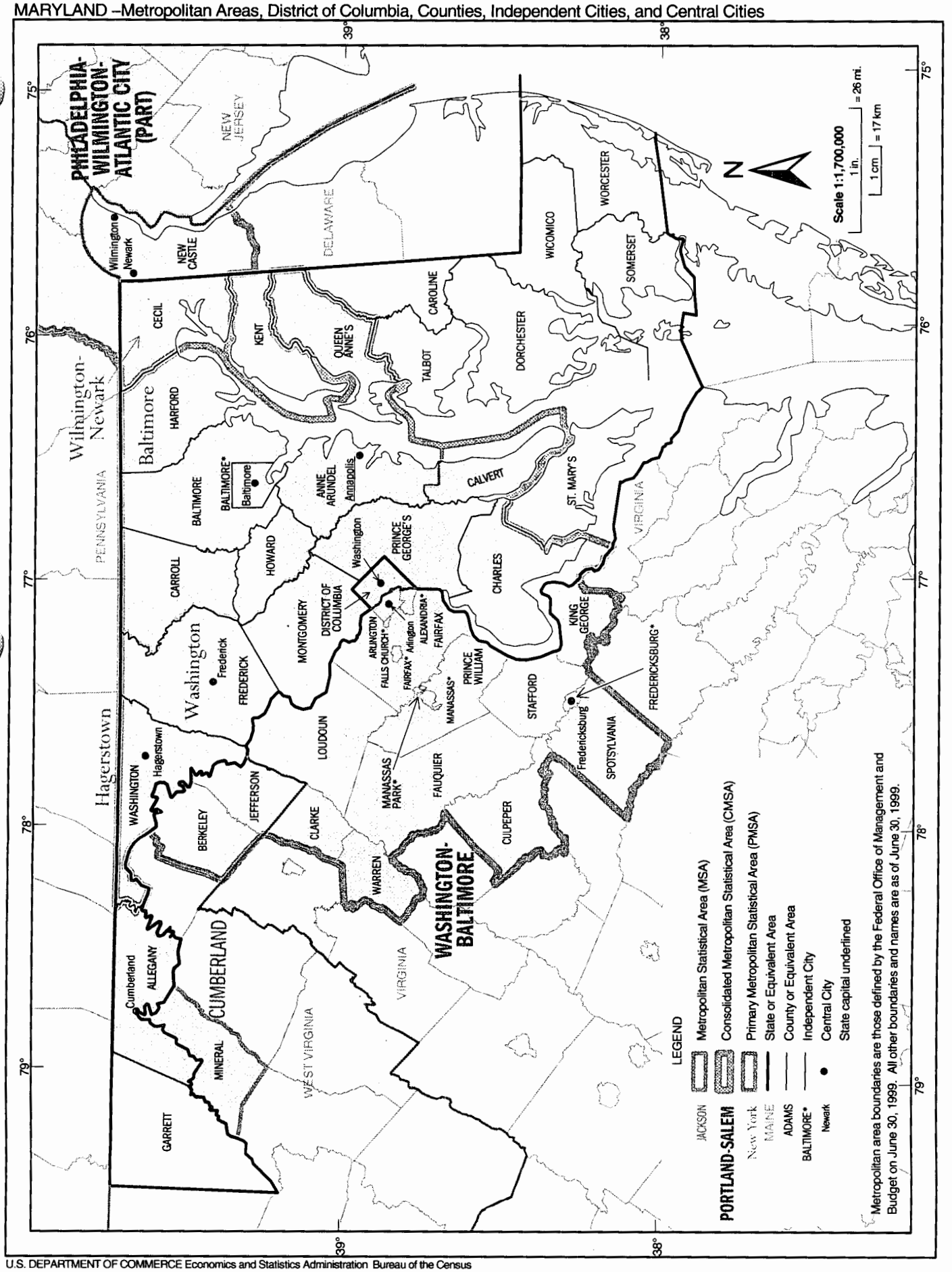
MAINE –Metropolitan Areas, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

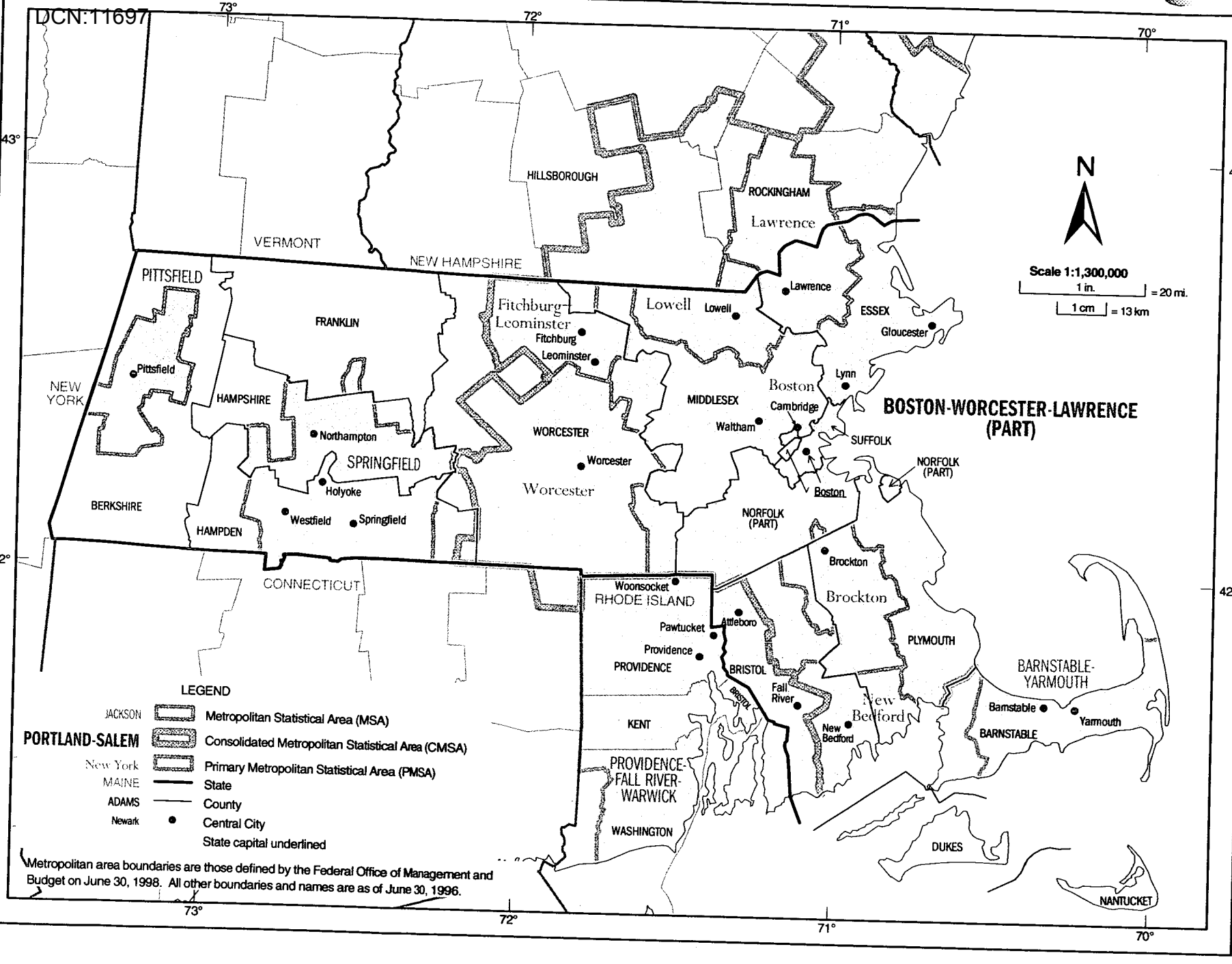
DCN:11697

MARYLAND –Metropolitan Areas, District of Columbia, Counties, Independent Cities, and Central Cities



DCN:11697

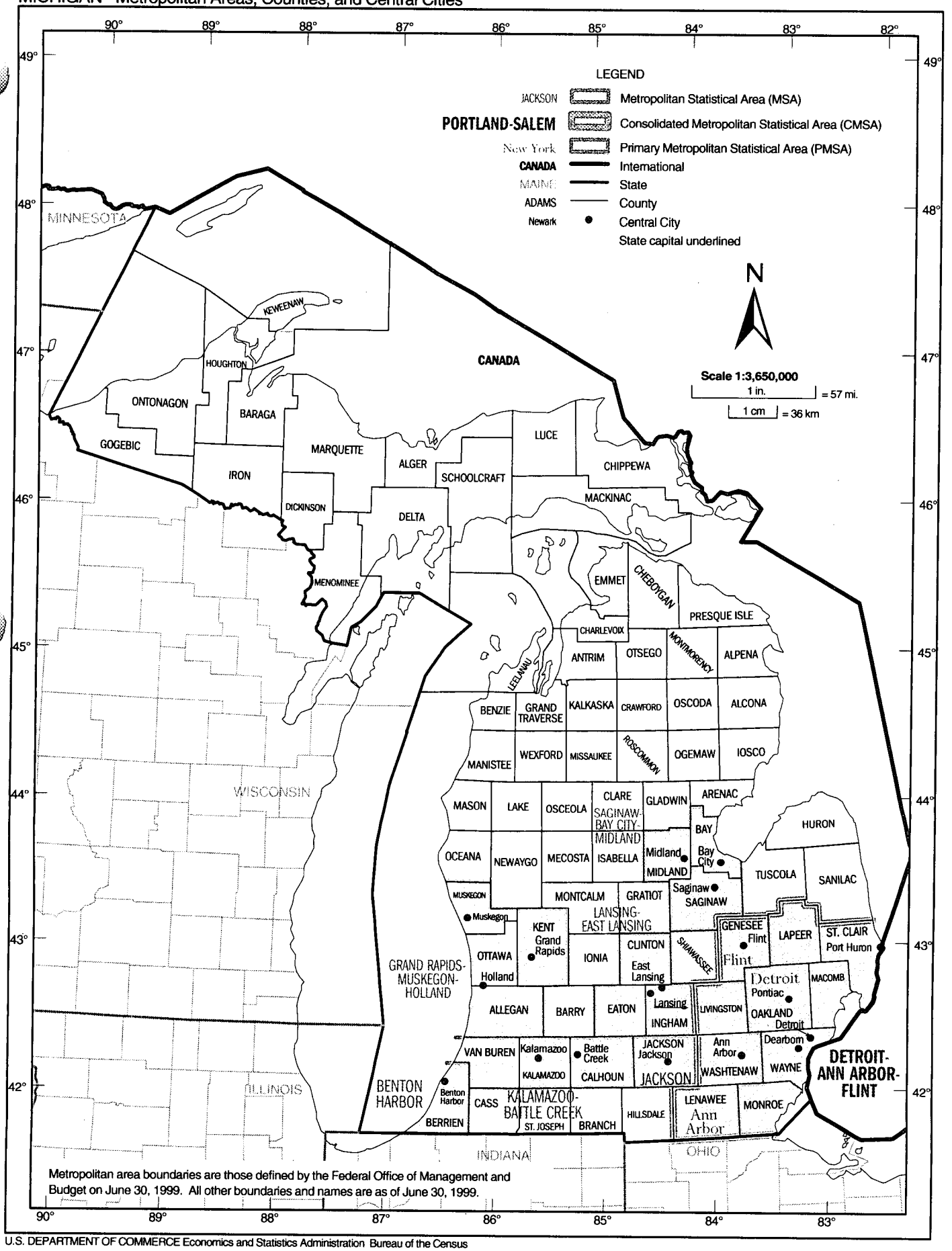
MASSACHUSETTS–Metropolitan Areas, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN:11697

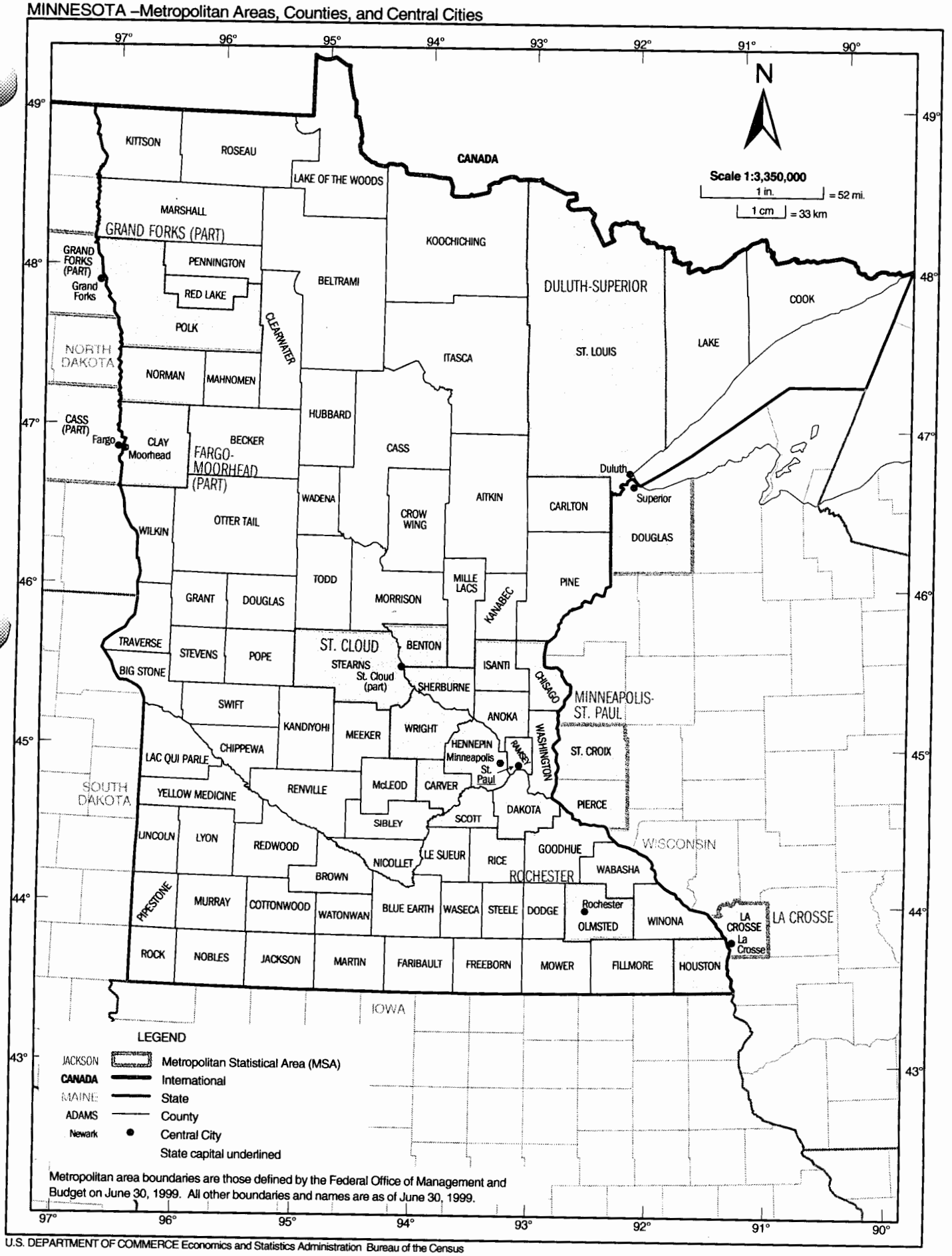
MICHIGAN –Metropolitan Areas, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN:11697

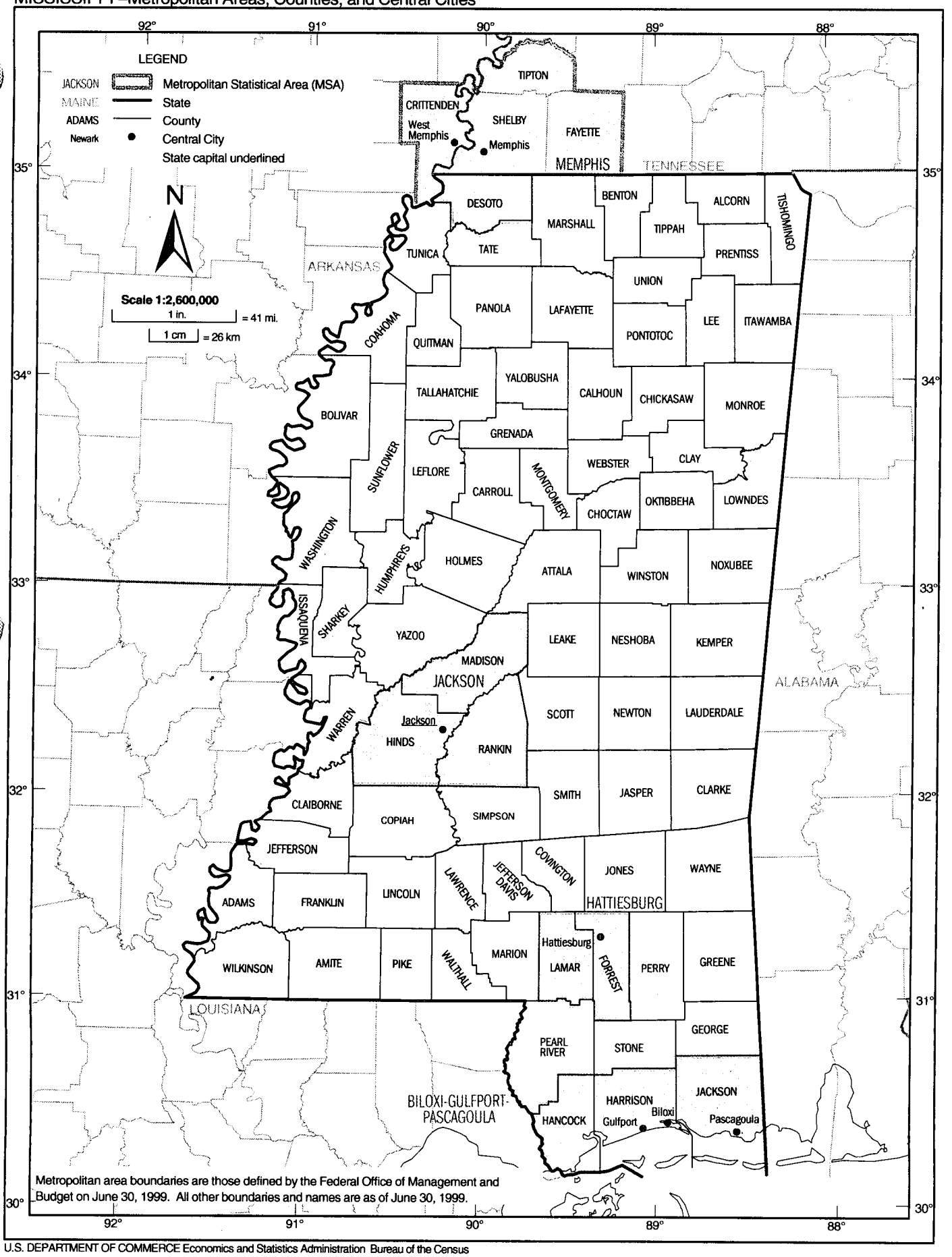
MINNESOTA –Metropolitan Areas, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN:11697

MISSISSIPPI –Metropolitan Areas, Counties, and Central Cities

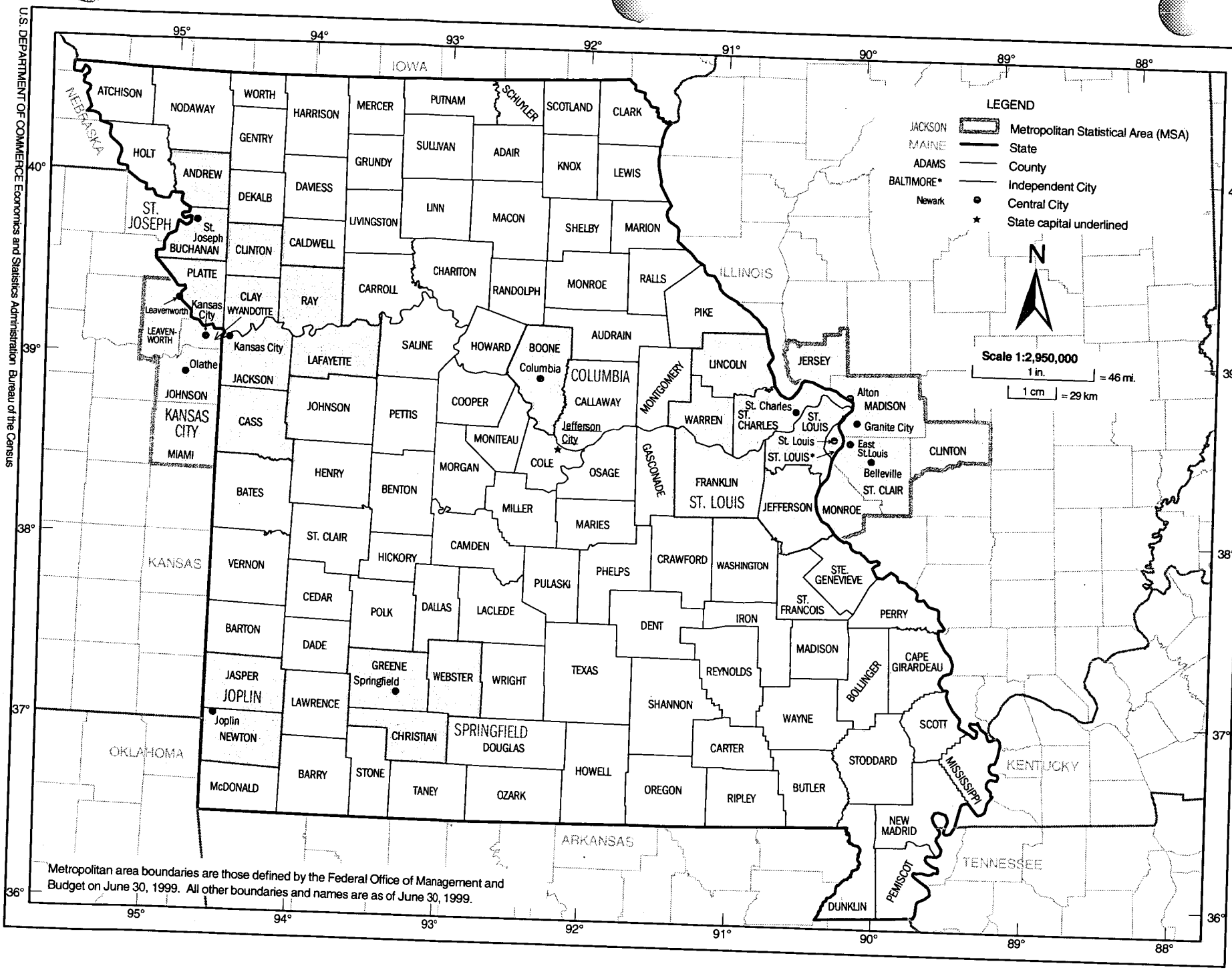


Metropolitan area boundaries are those defined by the Federal Office of Management and Budget on June 30, 1999. All other boundaries and names are as of June 30, 1999.

U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

MISSOURI—Metropolitan Areas, Counties, Independent City, and Central Cities

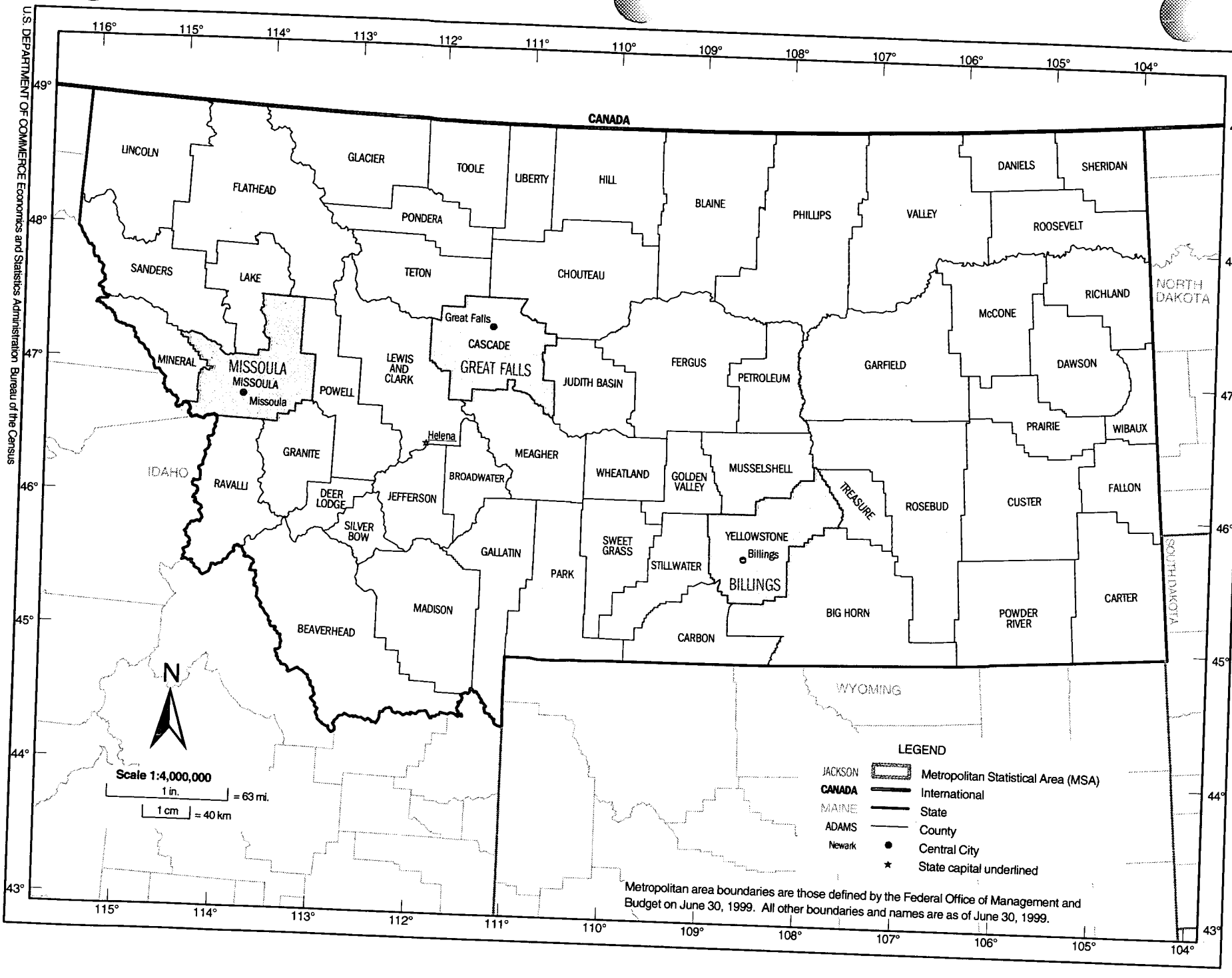
DCN-11-1697



Metropolitan area boundaries are those defined by the Federal Office of Management and Budget on June 30, 1999. All other boundaries and names are as of June 30, 1999.

U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

MONTANA: Metropolitan Areas, Counties, and Central Cities

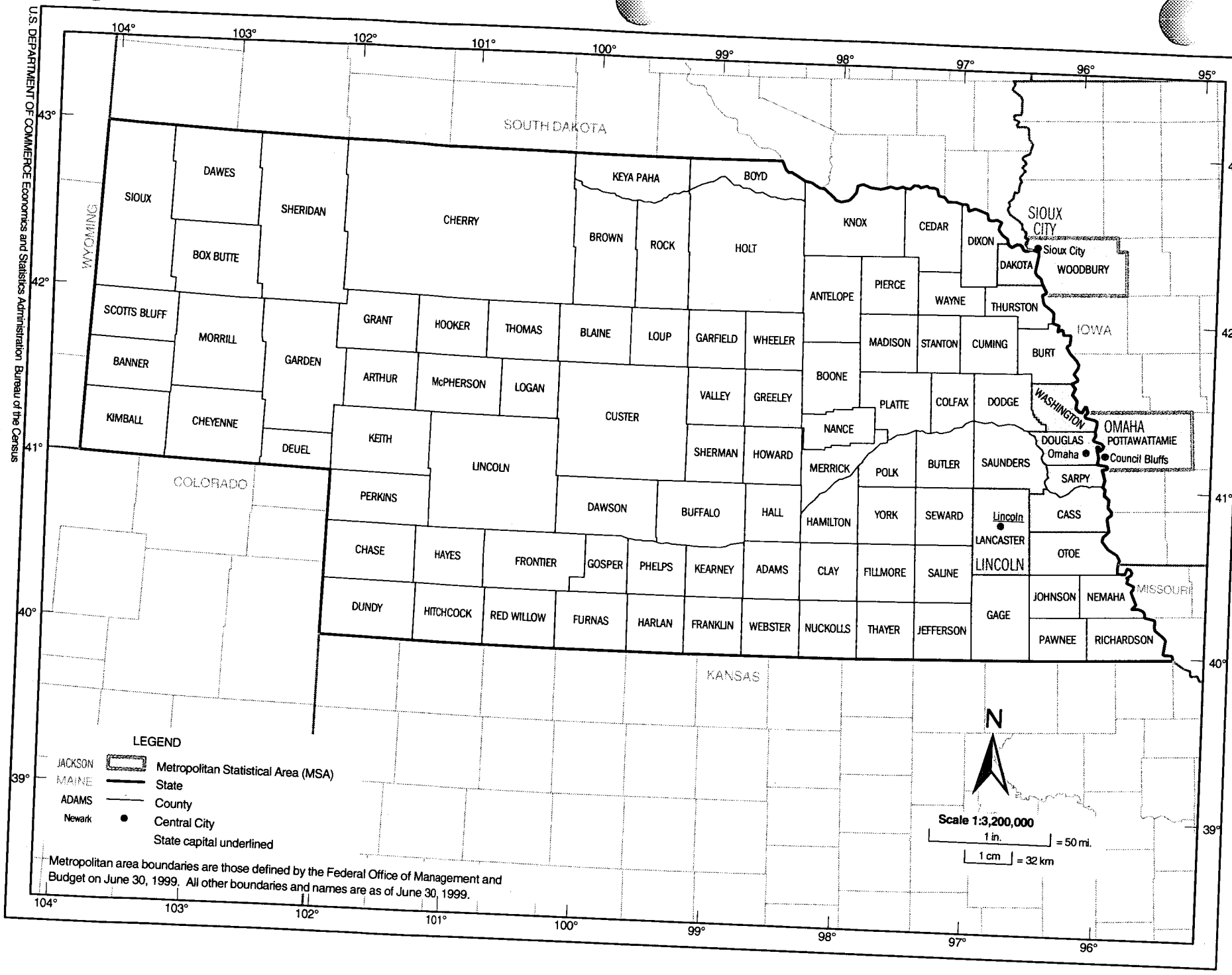


U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

PBC-N-11697

NEBRASKA - 16697

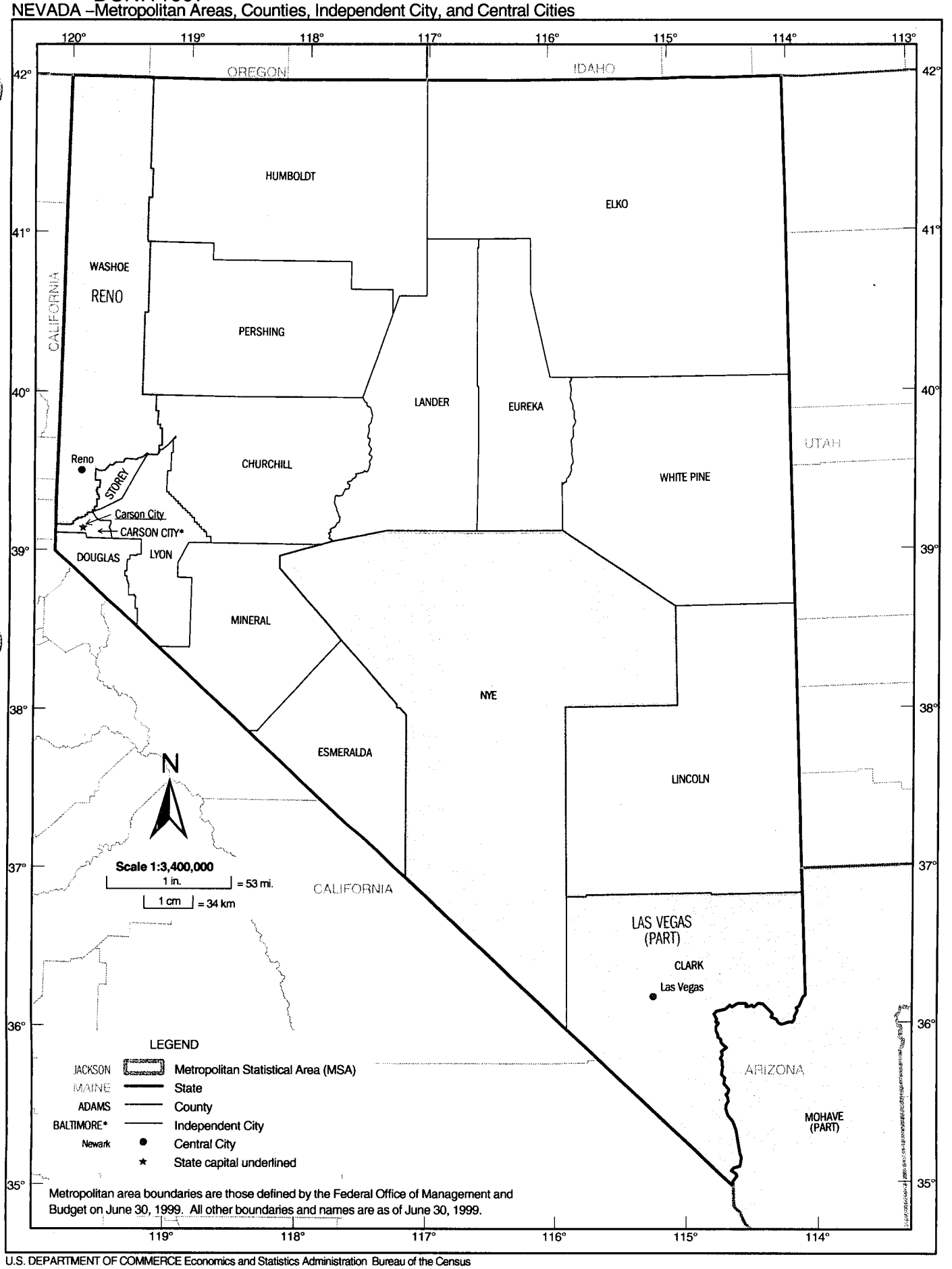
Metropolitan Areas, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN:11697

NEVADA –Metropolitan Areas, Counties, Independent City, and Central Cities



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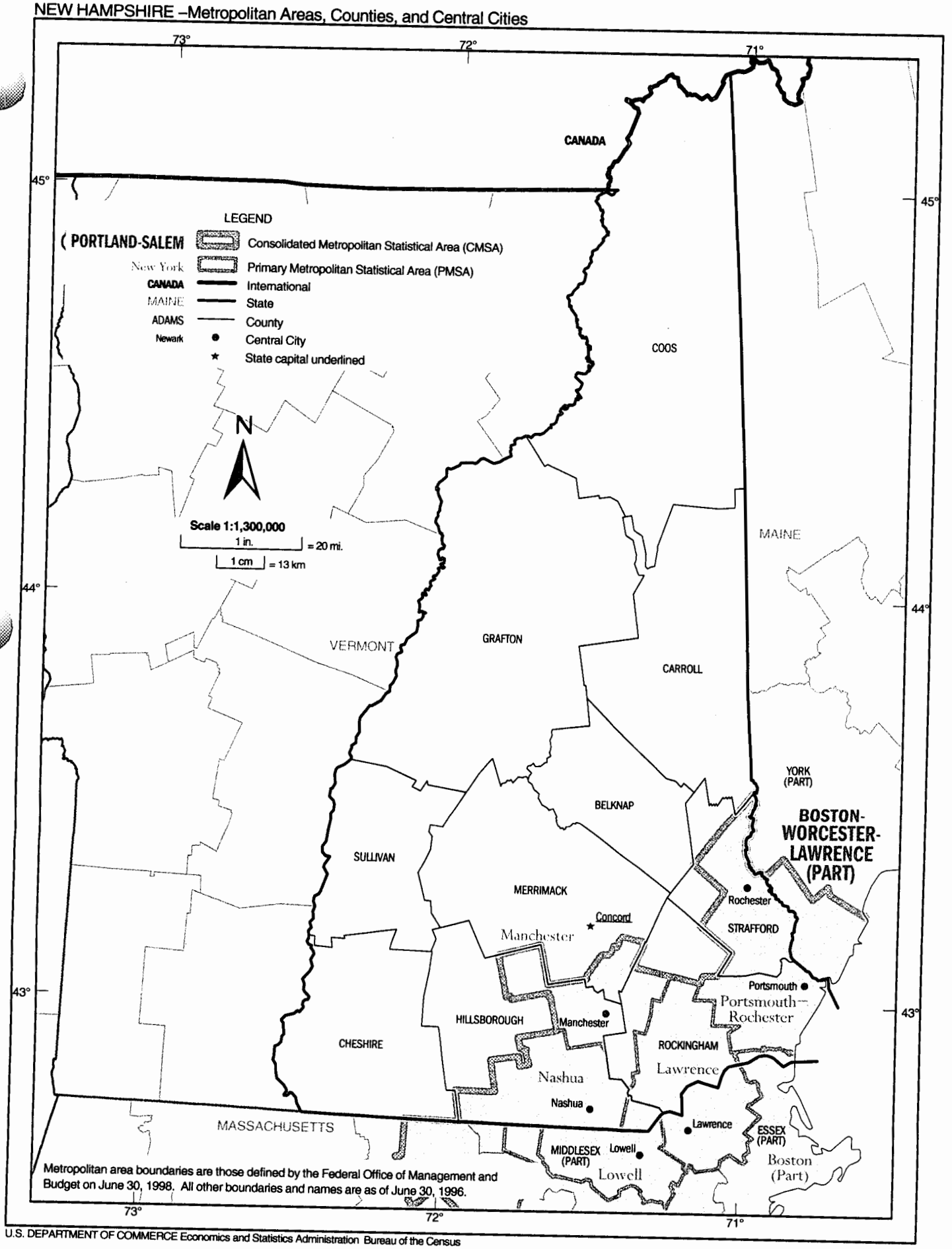
U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN:11697

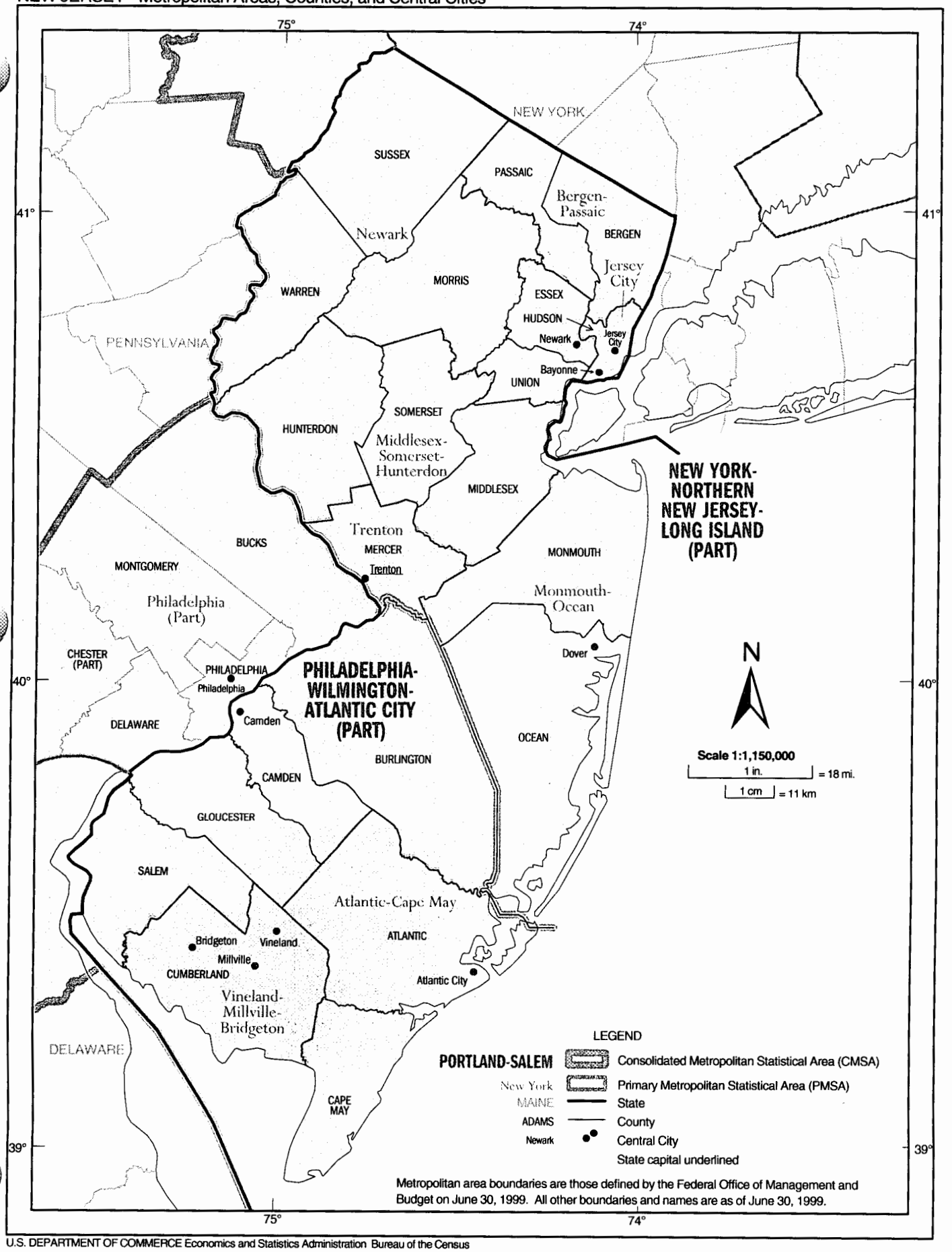
NEW HAMPSHIRE –Metropolitan Areas, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN:11697

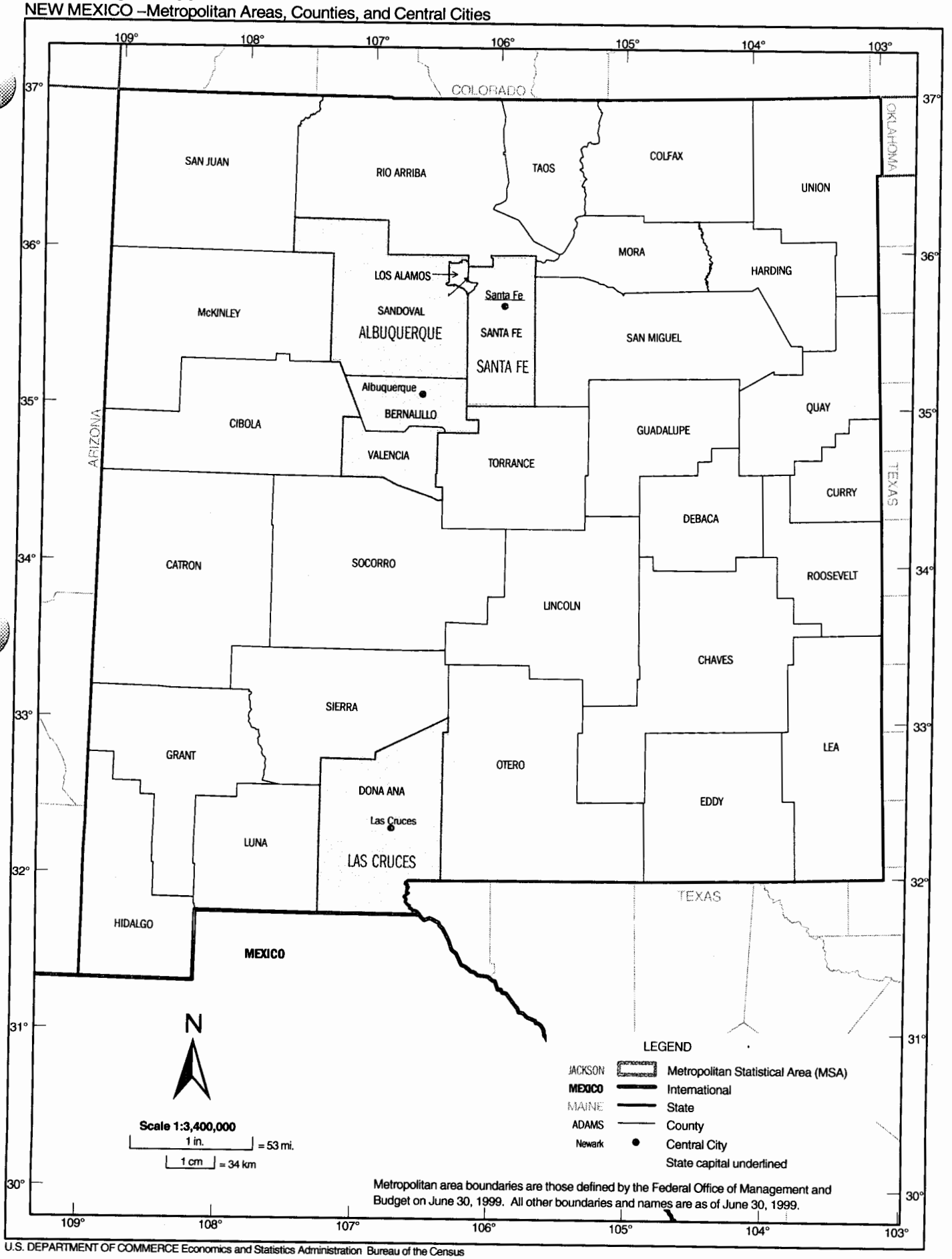
NEW JERSEY –Metropolitan Areas, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN:11697

NEW MEXICO –Metropolitan Areas, Counties, and Central Cities



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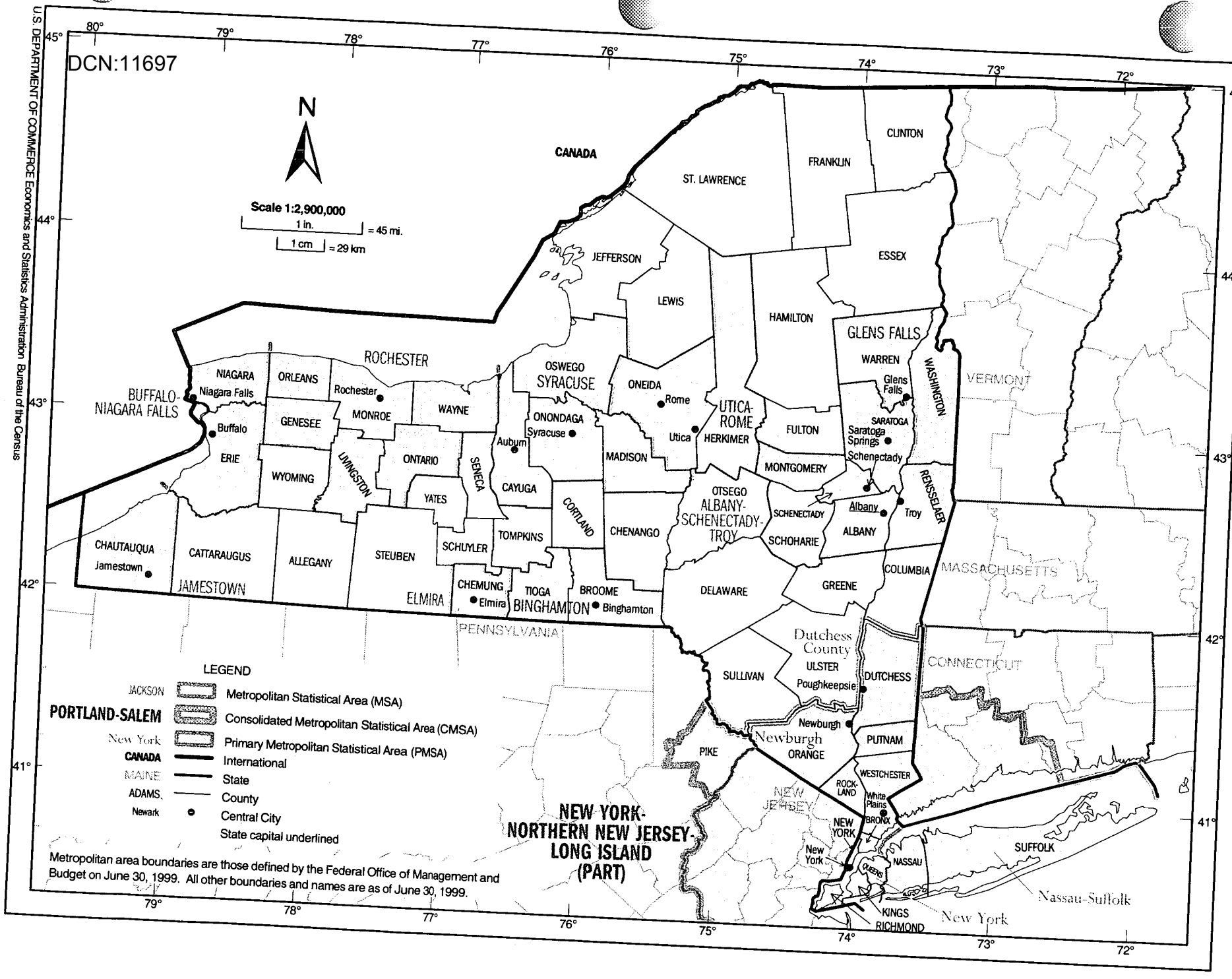
U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN:11697

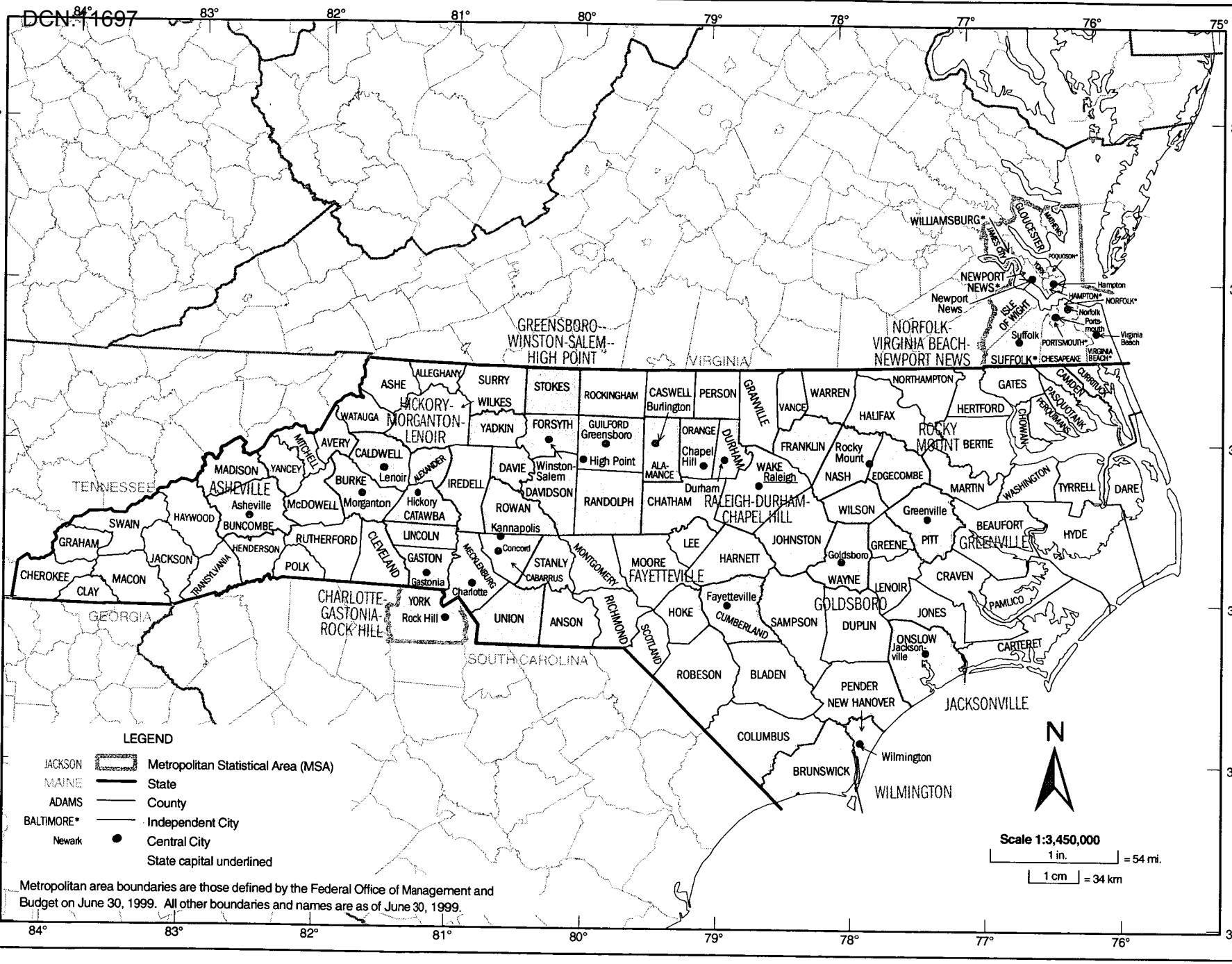
NEW YORK –Metropolitan Areas, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN: 11697

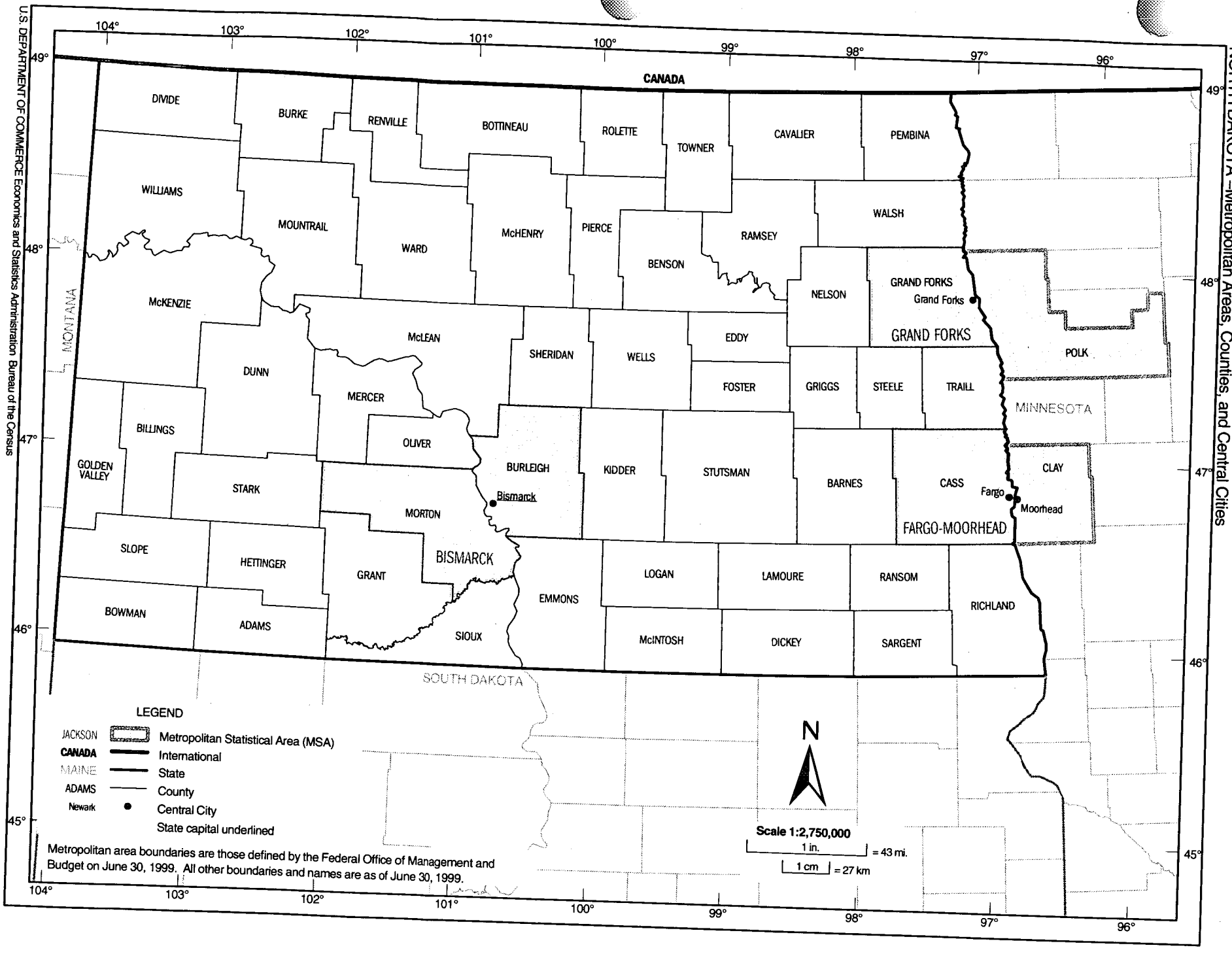
NORTH CAROLINA –Metropolitan Areas, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN-11697

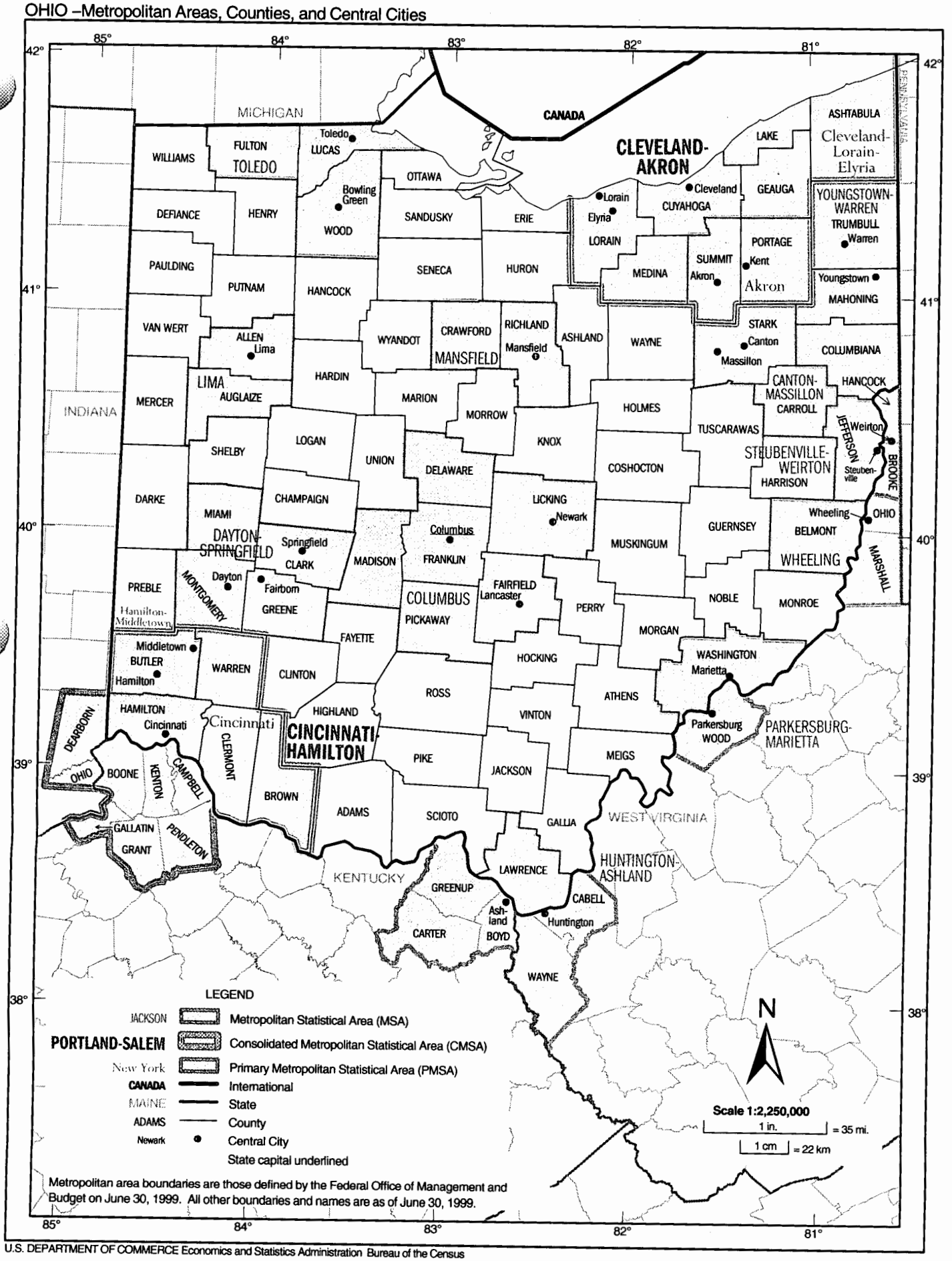
NORTH DAKOTA—Metropolitan Areas, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN:11697

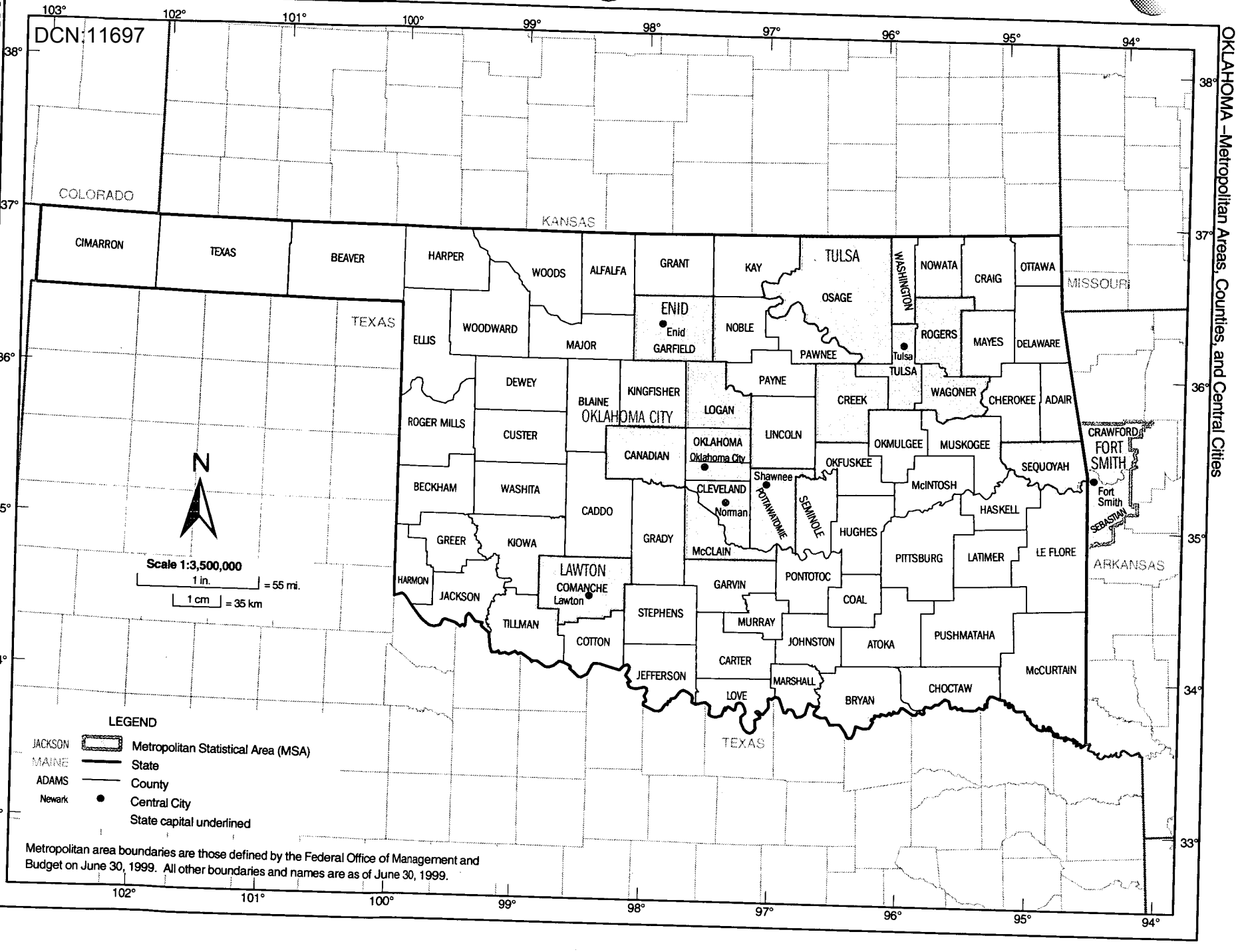
OHIO –Metropolitan Areas, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN 11697

OKLAHOMA –Metropolitan Areas, Counties, and Central Cities



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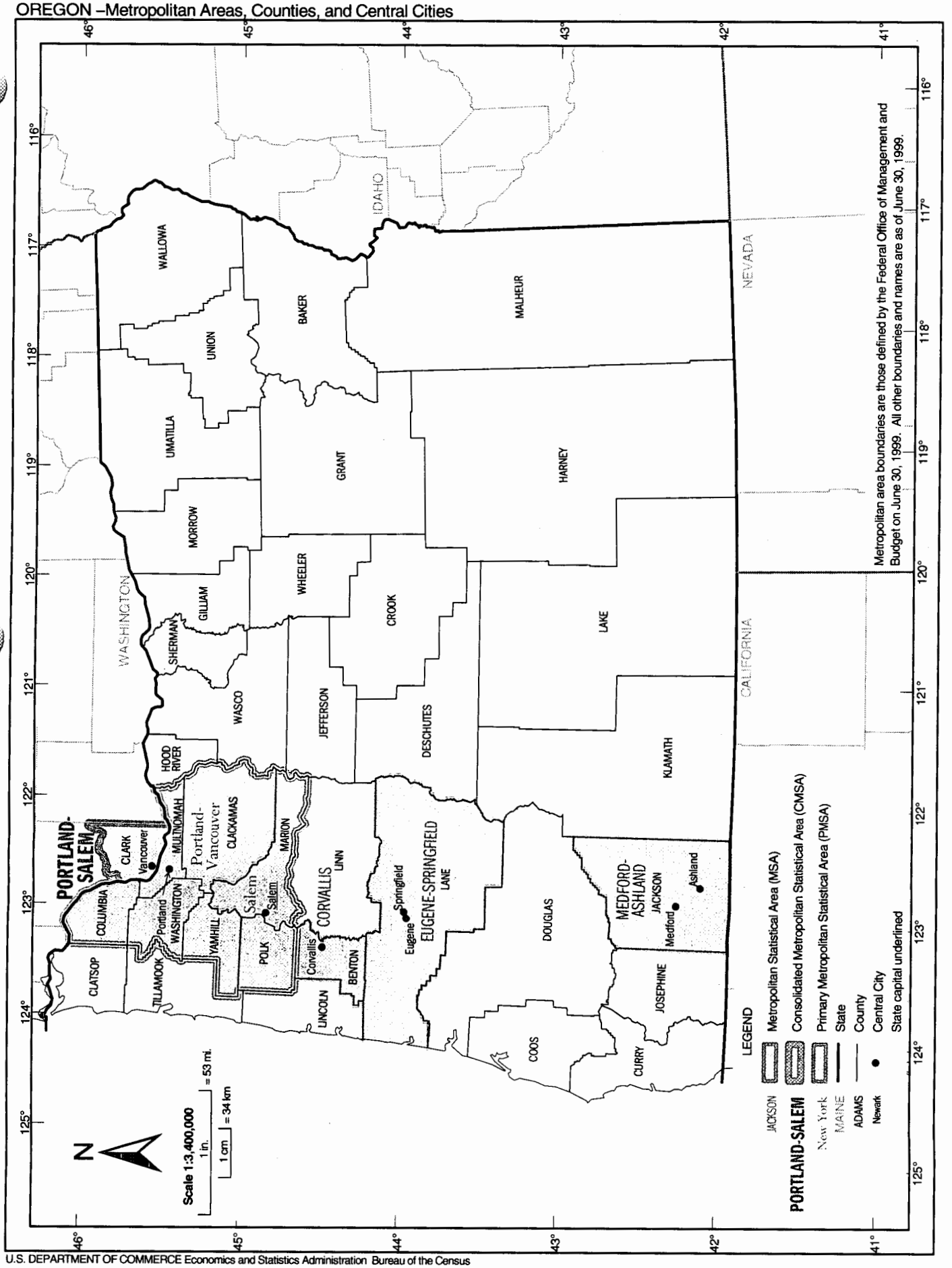
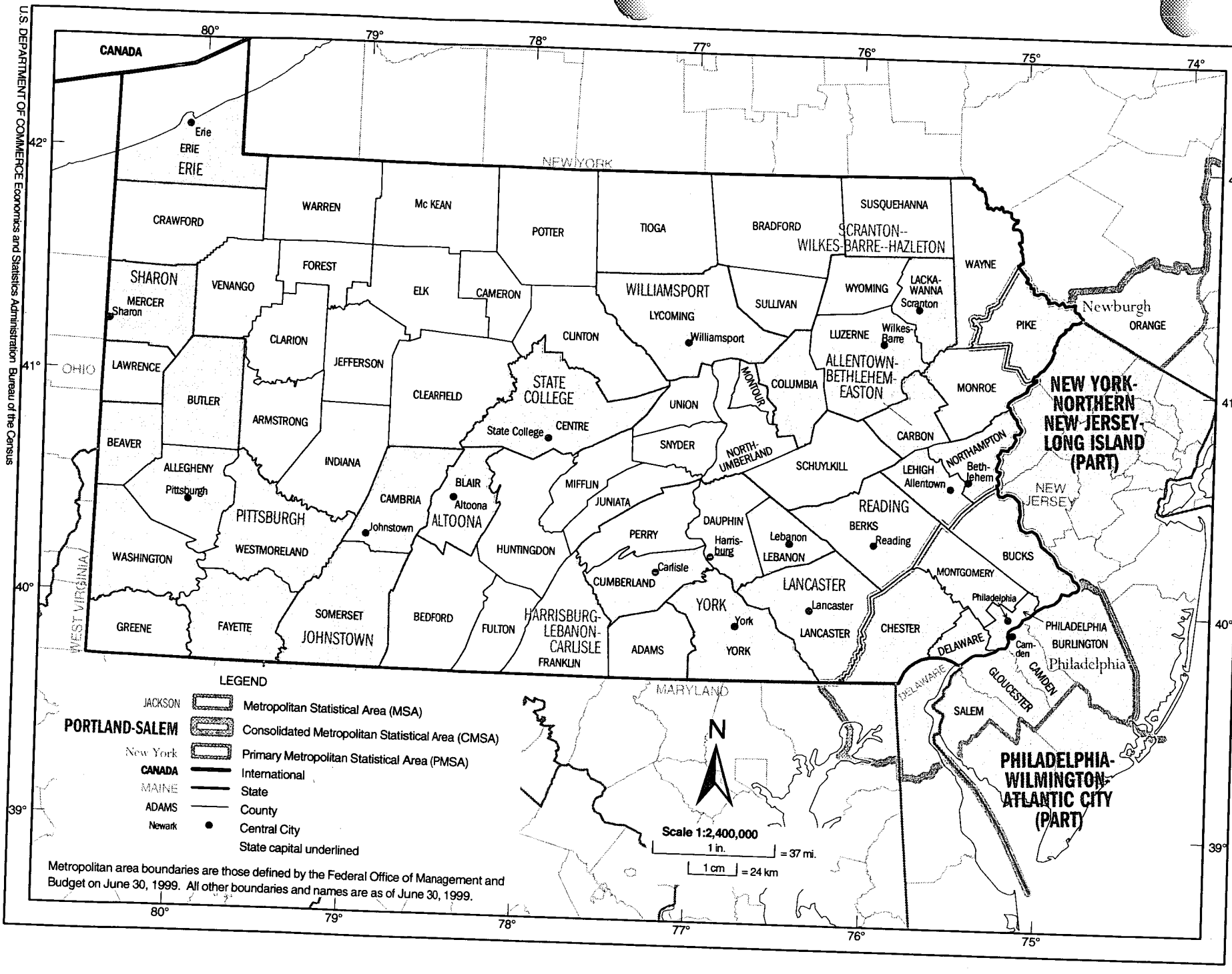
U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN:11697

OREGON –Metropolitan Areas, Counties, and Central Cities

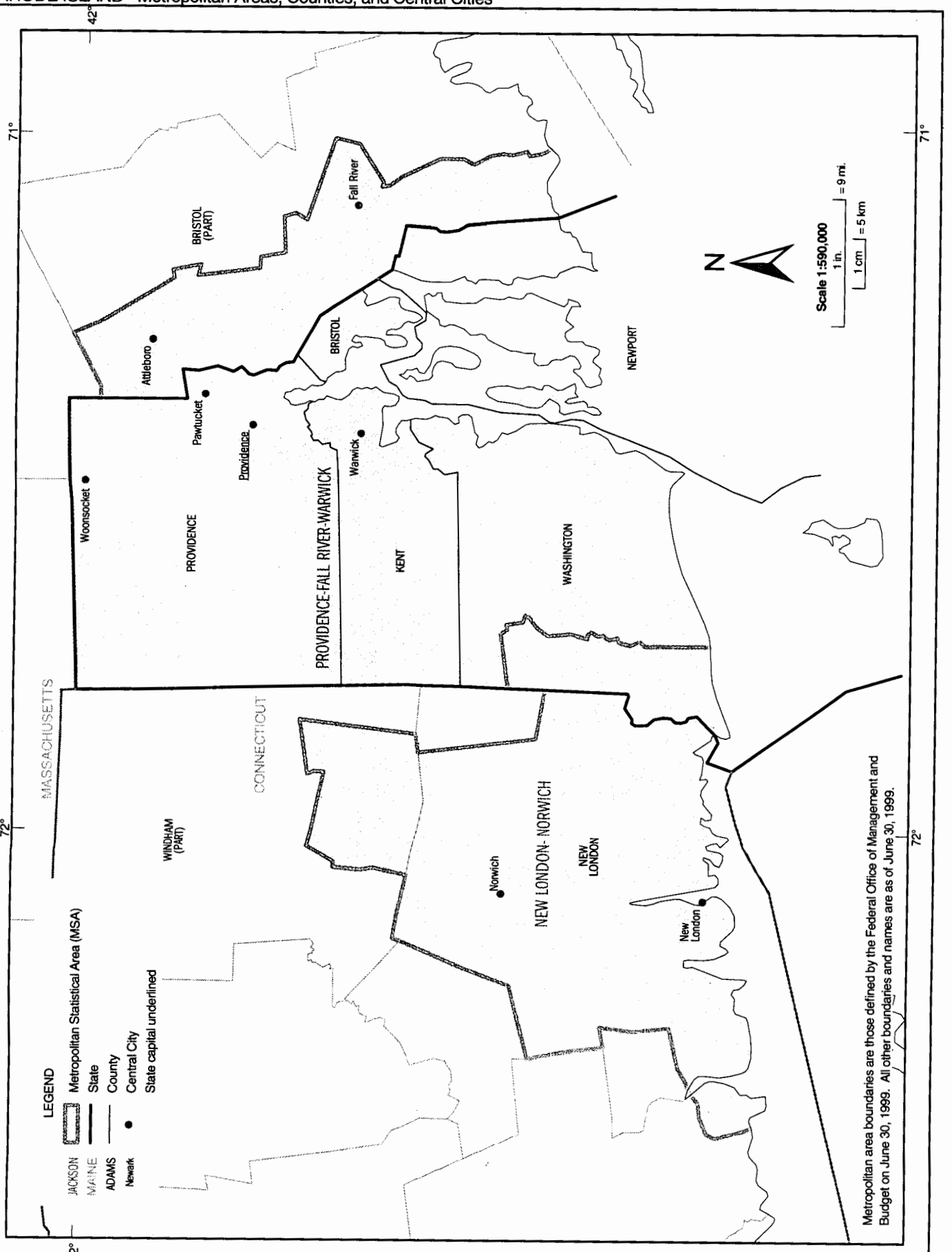


U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census


CANADA
NEW YORK
OHIO
WEST VIRGINIA
MARYLAND
NEW JERSEY
DELAWARE
ERIE
CRAWFORD
WARREN
Mc KEAN
POTTER
TIOGA
BRADFORD
SUSQUEHANNA
SCRANTON--WILKES-BARRE--HAZLETON
WAYNE
SHARON
MERCER
VENANGO
FOREST
ELK
CAMERON
WILLIAMSPORT
LYCOMING
SULLIVAN
WYOMING
LACKA-WANNA
Scranton
PIKE
Newburgh
ORANGE
LAWRENCE
BUTLER
CLARION
JEFFERSON
CLEARFIELD
CLINTON
STATE COLLEGE
State College
CENTRE
Williamsport
LUZERNE
Wilkes-Barre
ALLENTOWN-BETHLEHEM-EASTON
MONTOUR
COLUMBIA
MONROE
NEW YORK-NORTHERN NEW JERSEY-LONG ISLAND (PART)
BEAVER
ARMSTRONG
UNION
SNYDER
NORTH-UMBERLAND
SCHUYLKILL
CARBON
NORTHAMPTON
LEHIGH
Allentown
Beth-lehem
ALLEGHENY
Pittsburgh
INDIANA
CAMBRIA
BLAIR
Altoona
ALTOONA
MIFFLIN
JUNIATA
READING
BERKS
Reading
PITTSBURGH
Johnstown
WASHINGTON
WESTMORELAND
HUNTINGDON
PERRY
DAUPHIN
Harris-burg
Lebanon
LEBANON
Carlisle
CUMBERLAND
LANCASTER
Lancaster
MONTGOMERY
Philadelphia
BUCKS
GREENE
FAYETTE
SOMERSET
JOHNSTOWN
BEDFORD
FULTON
HARRISBURG-LEBANON-CARLISLE
FRANKLIN
ADAMS
YORK
York
CHESTER
Cam-den
PHILADELPHIA
BURLINGTON
CAMDEN
GLOUCESTER
SALEM
PHILADELPHIA-WILMINGTON-ATLANTIC CITY (PART)
LEGEND
JACKSON Metropolitan Statistical Area (MSA)
PORTLAND-SALEM Consolidated Metropolitan Statistical Area (CMSA)
New York Primary Metropolitan Statistical Area (PMSA)
CANADA International
MAINE State
ADAMS County
Newark Central City
State capital underlined
Metropolitan area boundaries are those defined by the Federal Office of Management and Budget on June 30, 1999. All other boundaries and names are as of June 30, 1999.
N
Scale 1:2,400,000
1 in. = 37 mi.
1 cm = 24 km
80°
79°
78°
77°
76°
75°
74°
42°
41°
40°
39°

DCN:11697

RHODE ISLAND –Metropolitan Areas, Counties, and Central Cities



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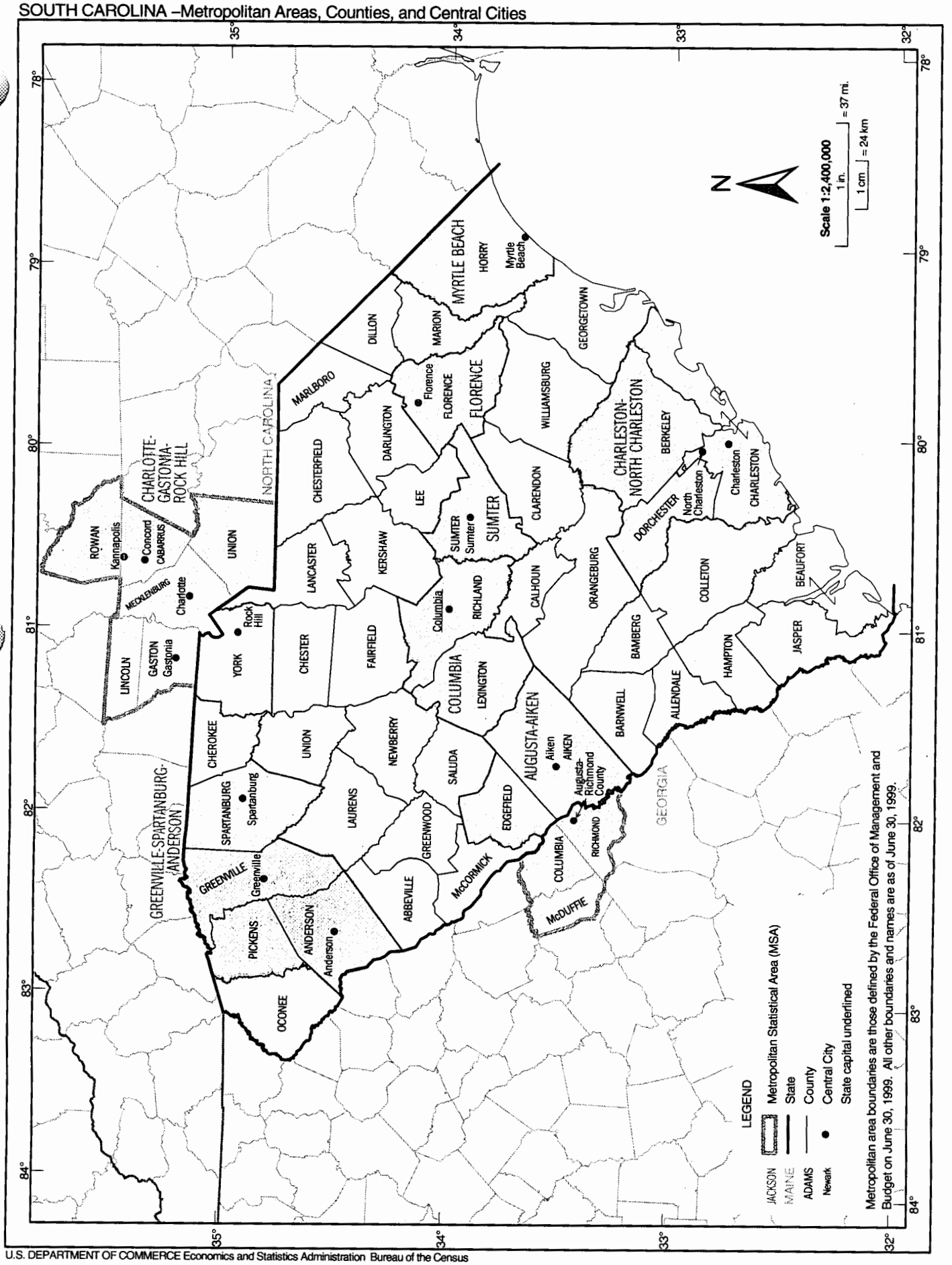
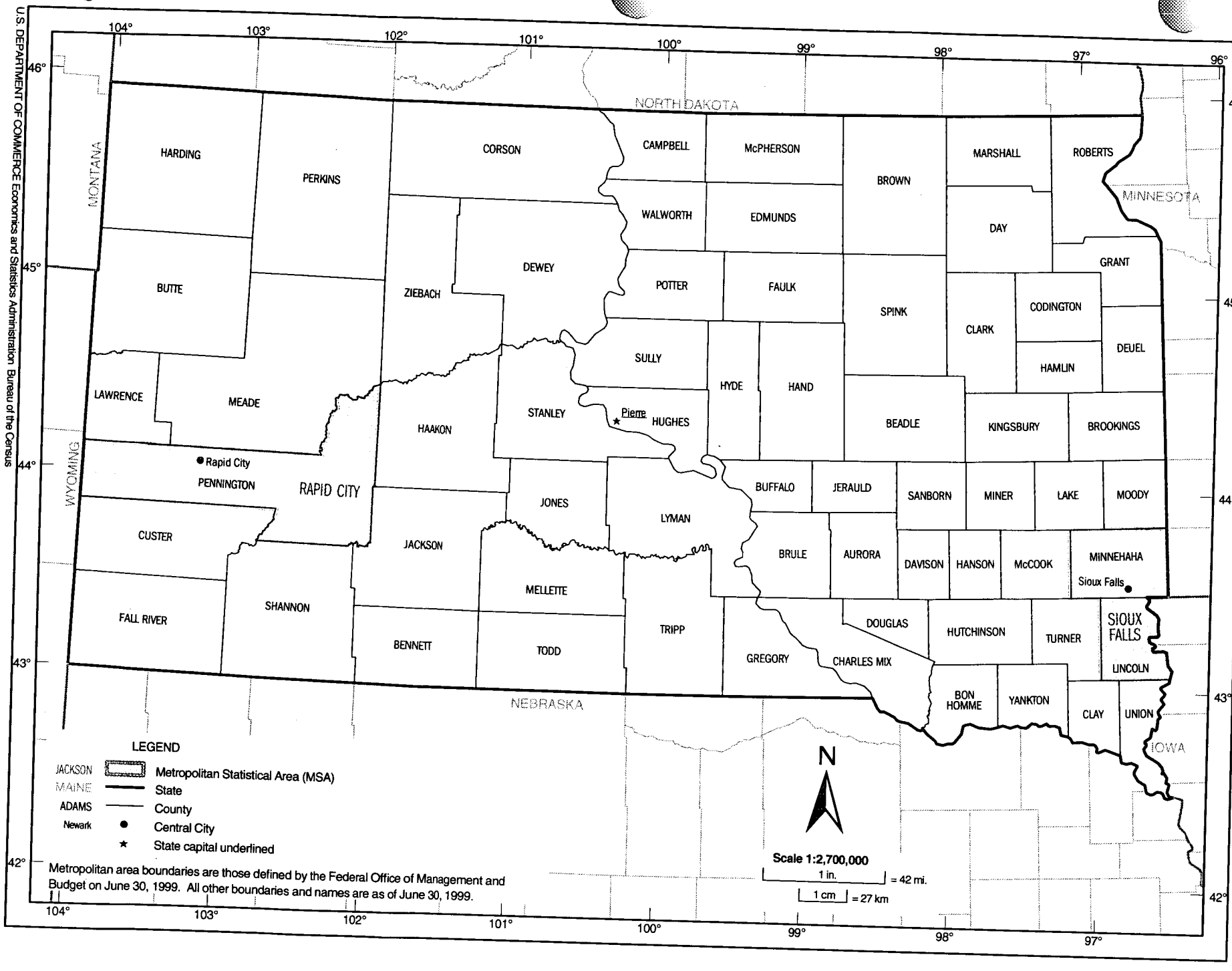
DCN:11697

SOUTH CAROLINA –Metropolitan Areas, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

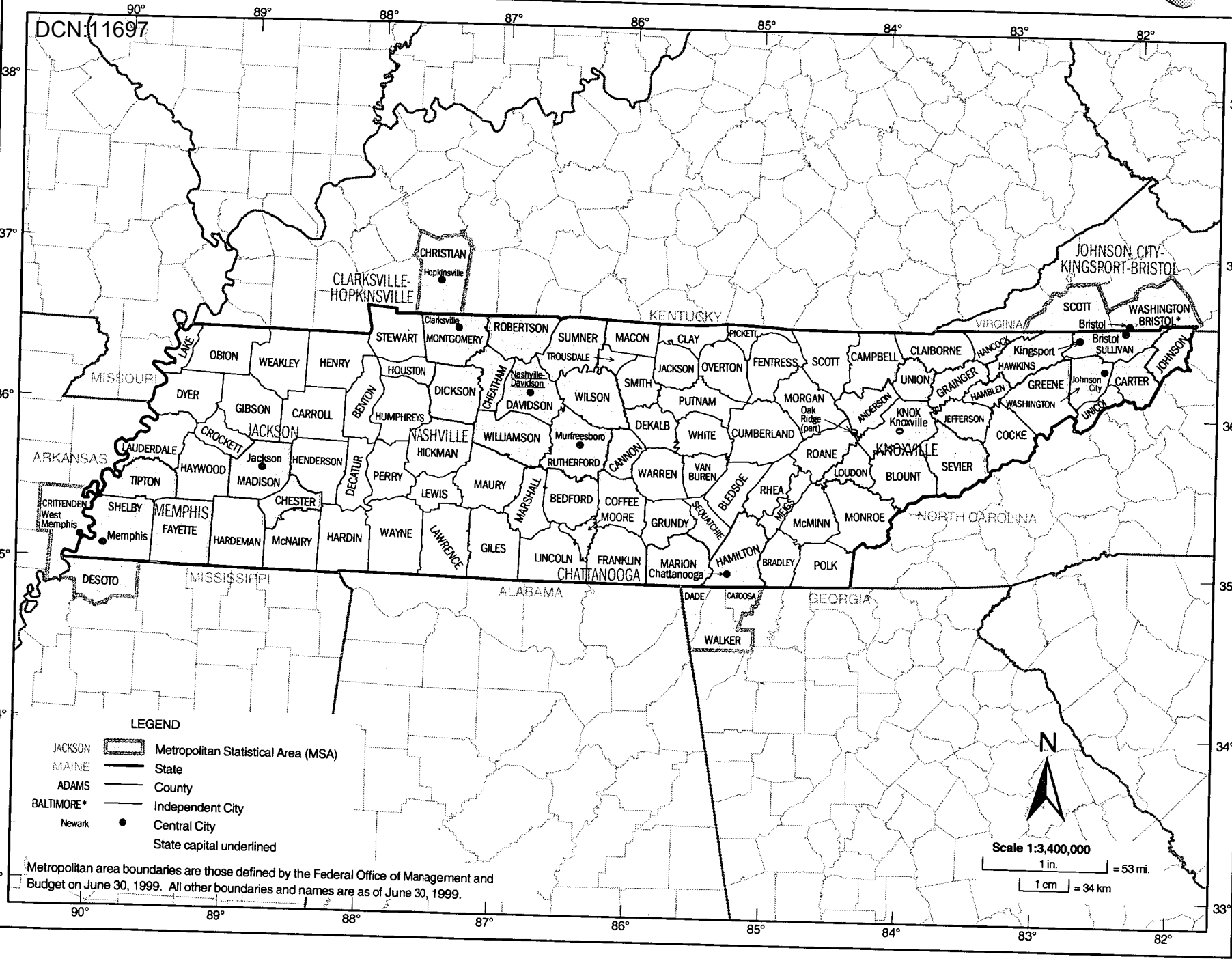
SOUTH DAKOTA—Metropolitan Areas, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

PGN-1697

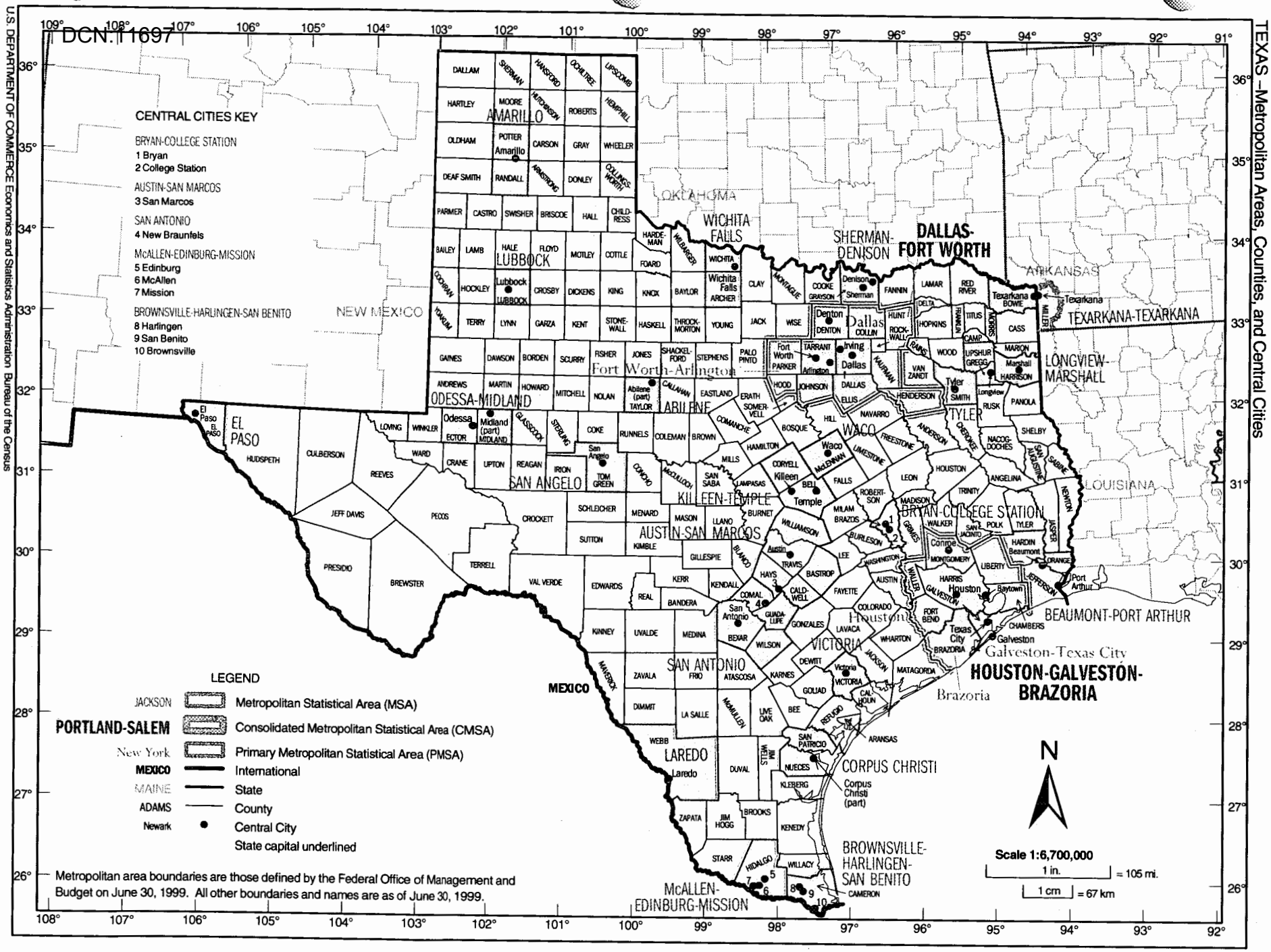
TENNESSEE –Metropolitan Areas, Counties, Independent City, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN:11697

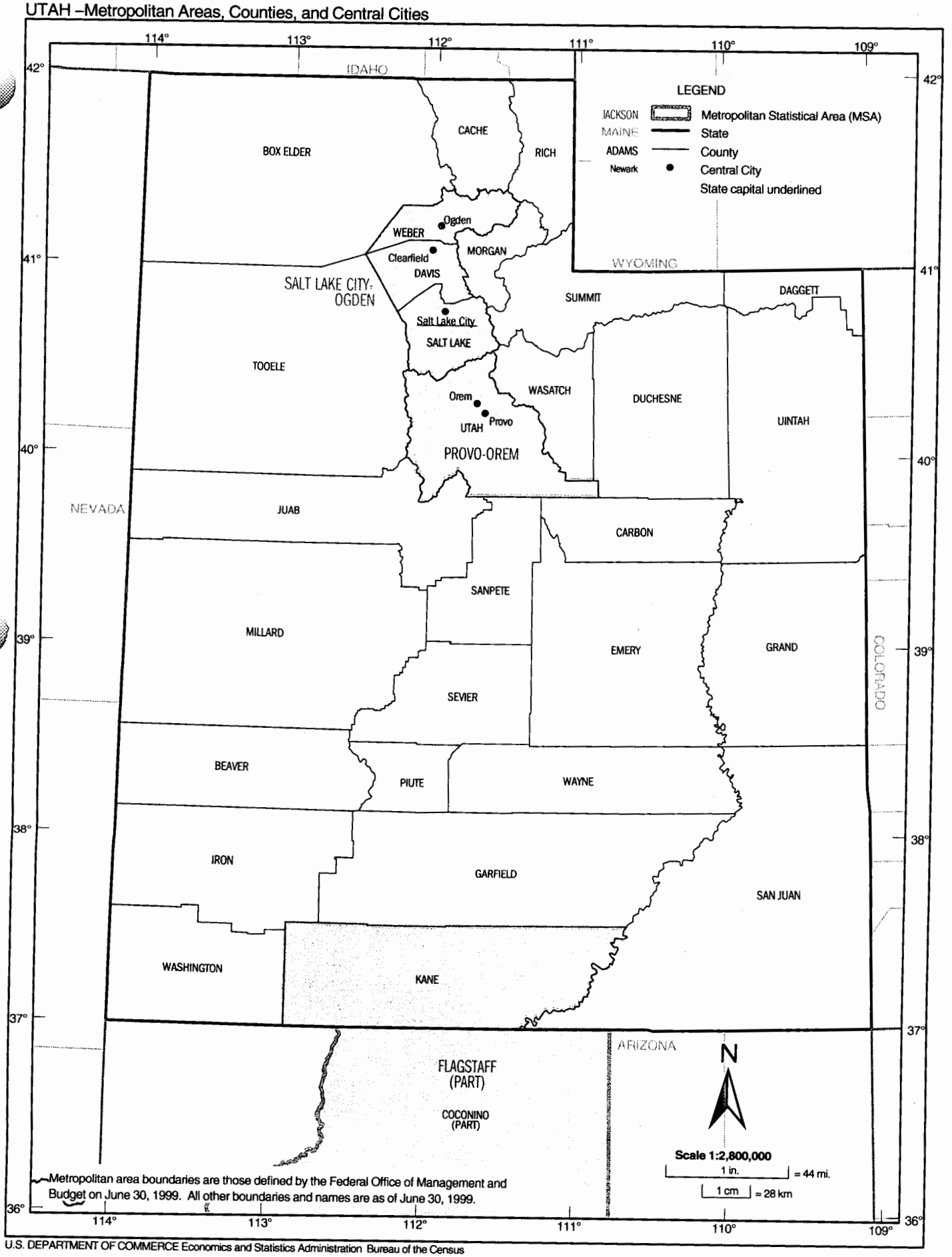
TEXAS –Metropolitan Areas, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

DCN:11697

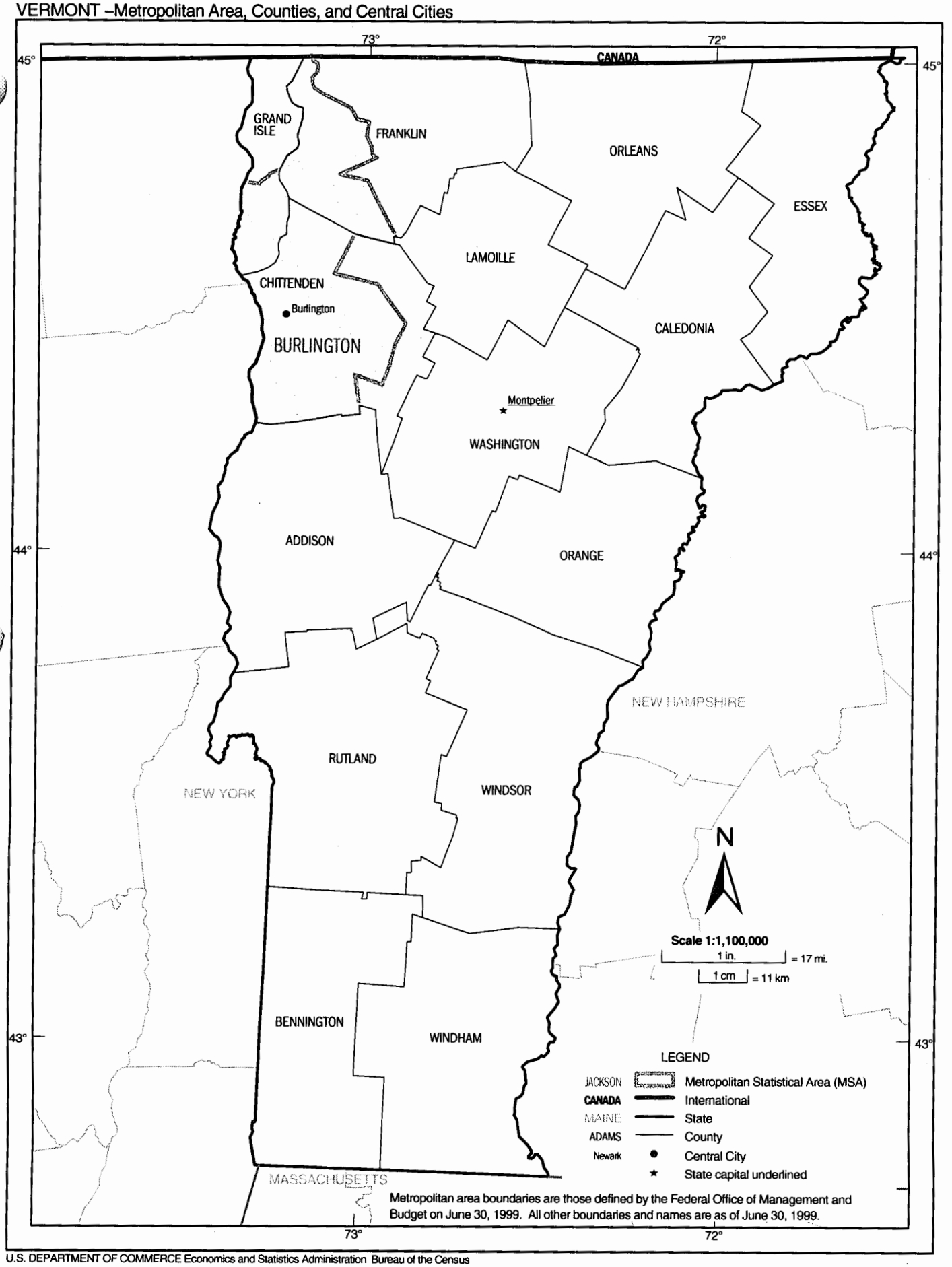
UTAH –Metropolitan Areas, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

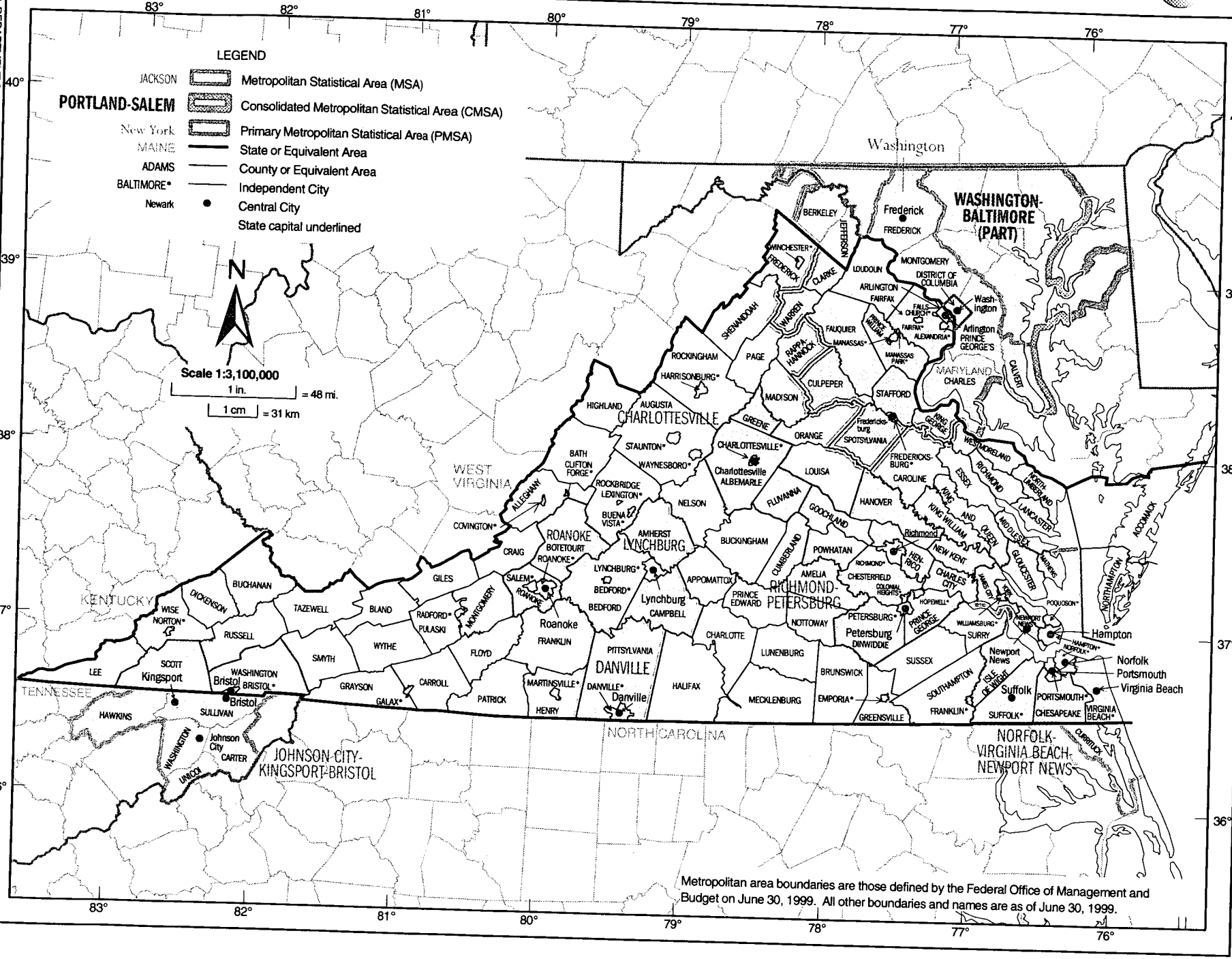
DCN:11697

VERMONT –Metropolitan Area, Counties, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

VIRGINIA –Metropolitan Areas, District of Columbia, Counties, Independent Cities, and Central Cities



U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

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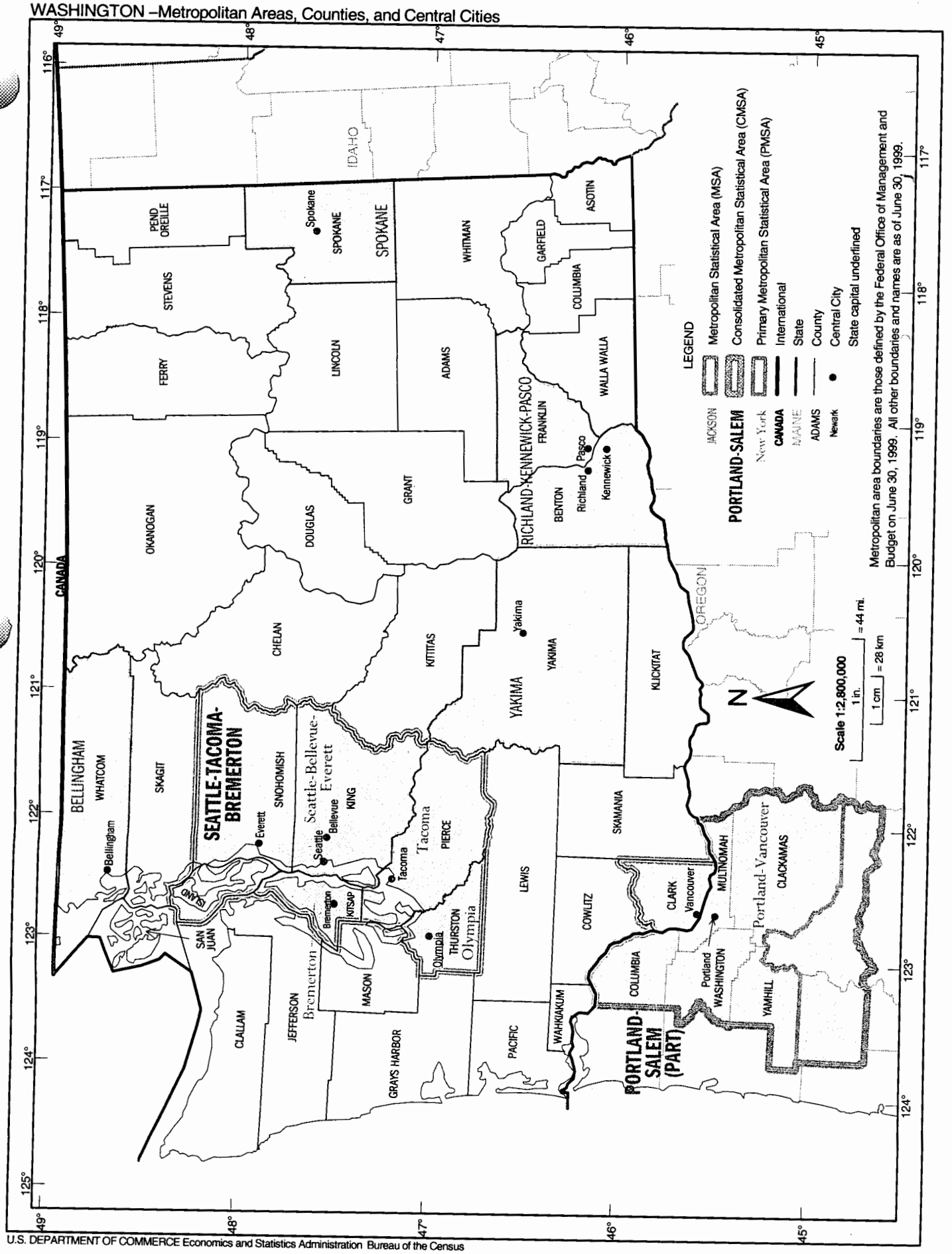
WASHINGTON –Metropolitan Areas, Counties, and Central Cities



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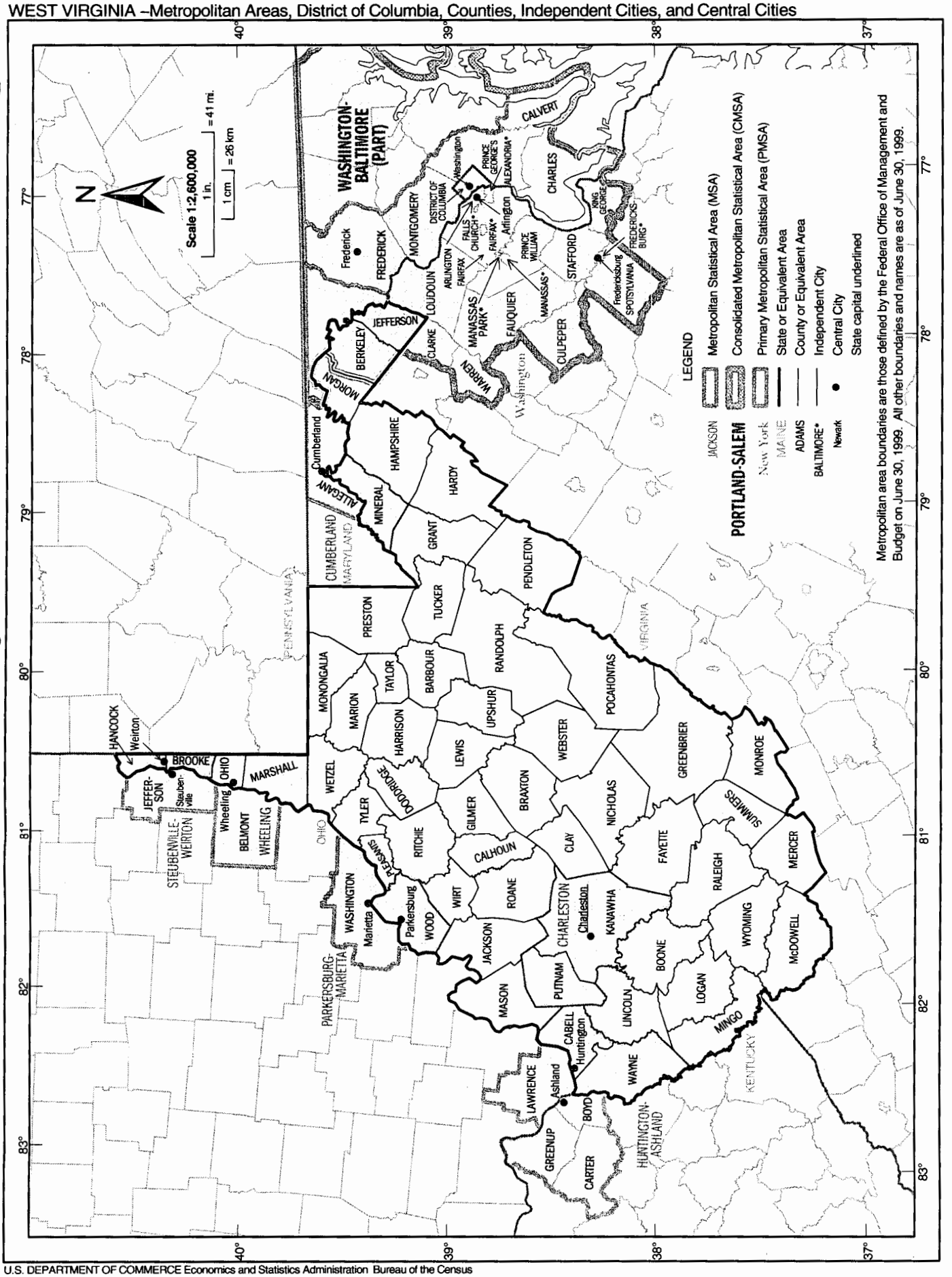

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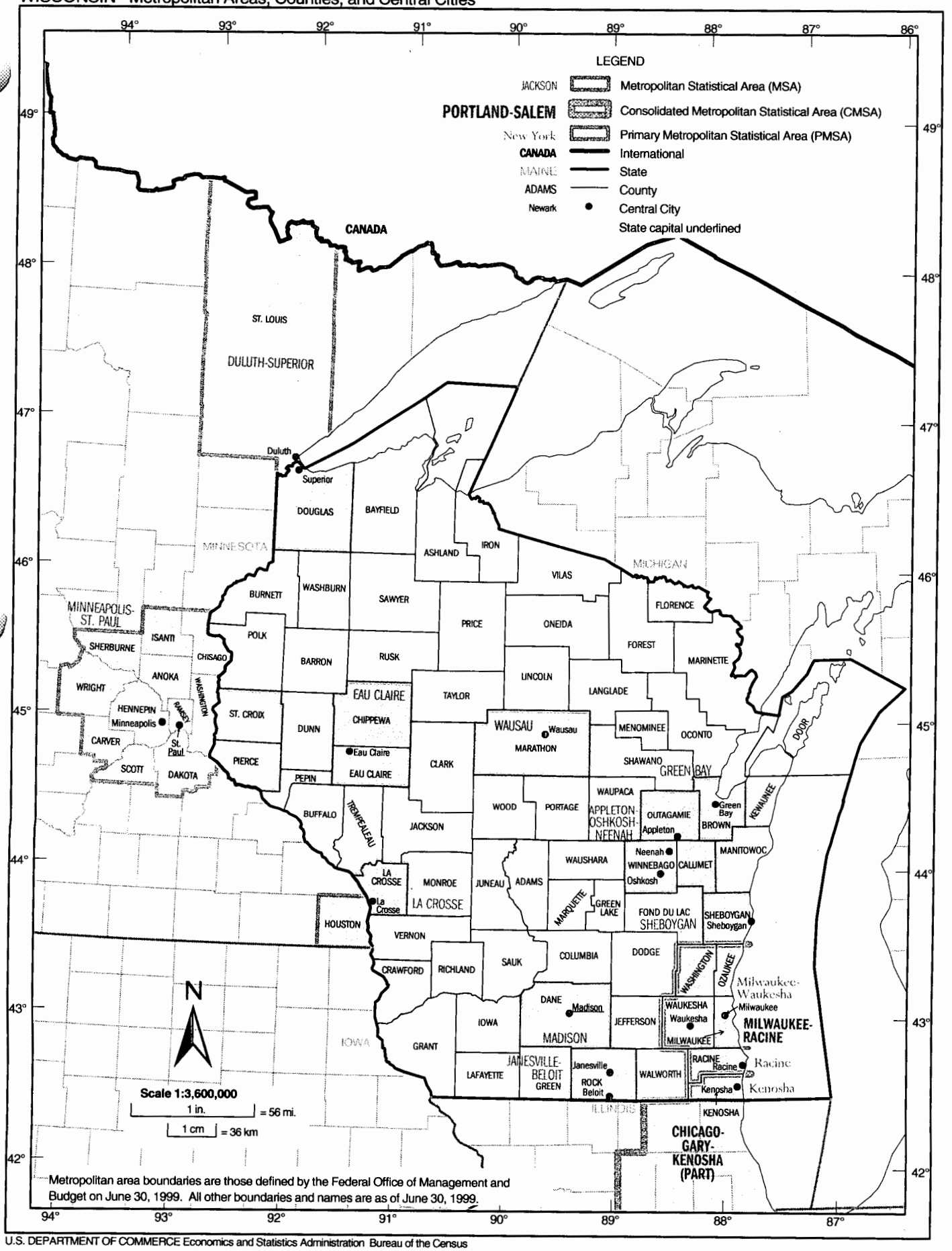
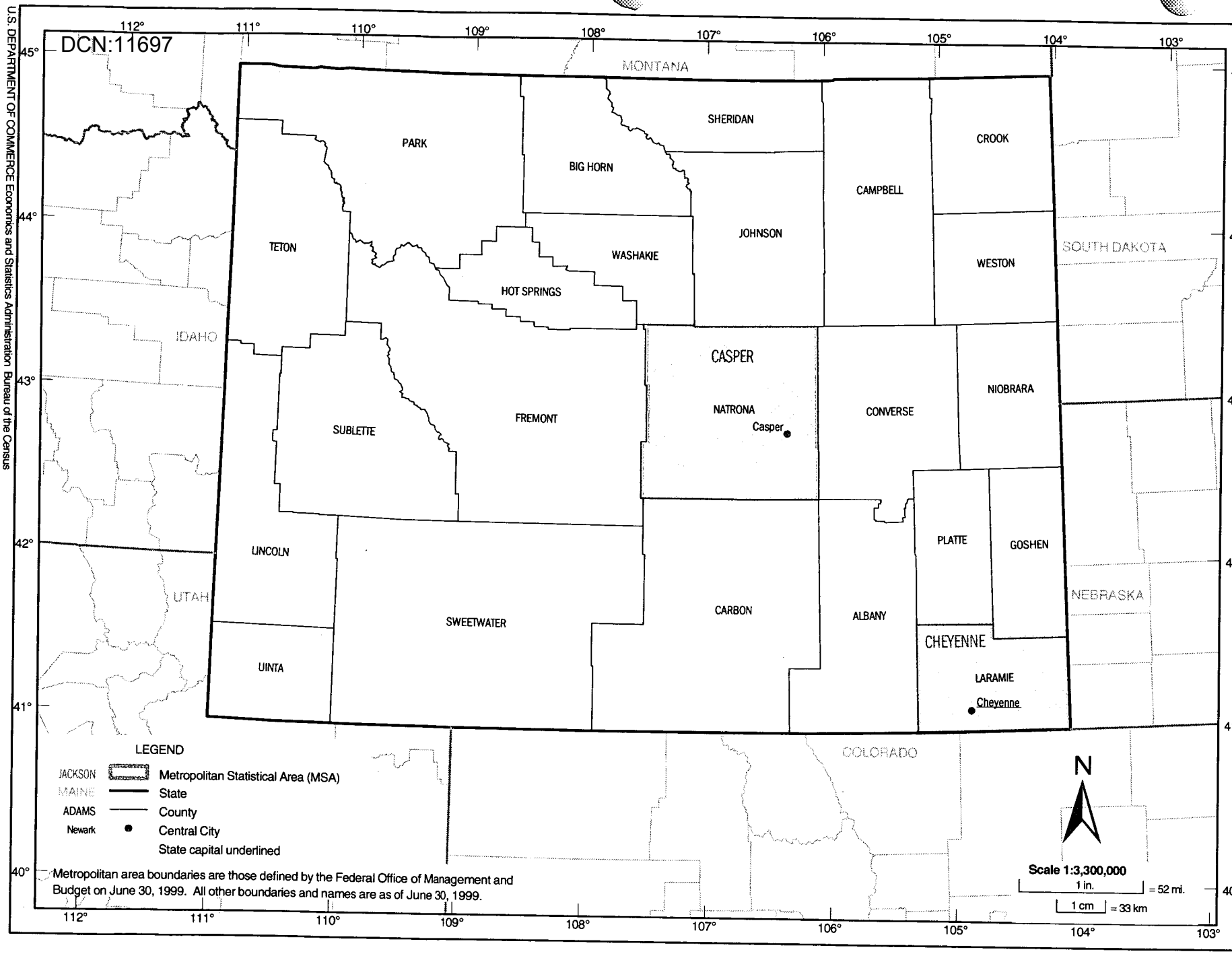
WISCONSIN –Metropolitan Areas, Counties, and Central Cities



Metropolitan area boundaries are those defined by the Federal Office of Management and Budget on June 30, 1999. All other boundaries and names are as of June 30, 1999.

U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration Bureau of the Census

WYOMING –Metropolitan Areas, Counties, and Central Cities



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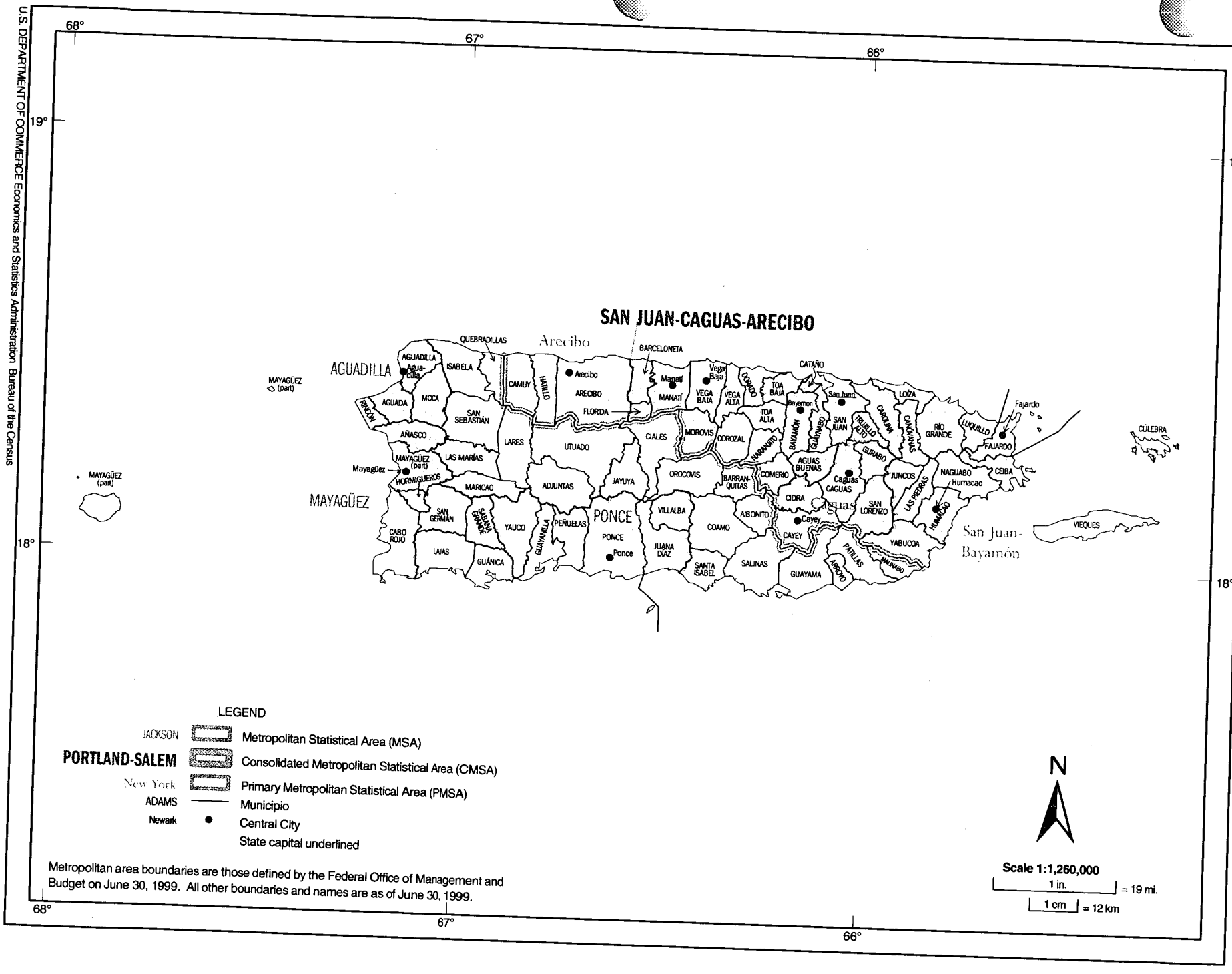

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Areas With Concentrated Poverty: 1999

Issued July 2005

Census 2000 Special Reports

CENSR-16

By
Alemayehu Bishaw

This report discusses demographic and socioeconomic characteristics of census tracts using data collected in Census 2000, as categorized by the census tract's poverty rate. Analyses of small geographic areas require data from the decennial census long form or, in the future, data from the American Community Survey.

For this report, census tracts were grouped into four categories based on their poverty rates and described as follows: Category I (0.0 percent to 12.3 percent), Category II (12.4 percent, the national poverty rate, to 19.9 percent), Category III (20.0 percent to 39.9 percent), and Category IV (40.0 percent or more).[2] In previous census publications, and also in this report, tracts with a poverty rate of 20 percent or more are referred to as "poverty areas." (See text box "How Poverty is Defined.")

Based on data collected from the Census 2000 long form, the poverty rate in the United States for all people in 1999 was 12.4 percent.[3] However, poverty rate estimates varied by region (from 10.2 percent in the Midwest to 13.9 percent in the South) and by state (from 6.5 percent in New Hampshire to over 19 percent in Louisiana, Mississippi, and the District of Columbia). Even larger variations were observed when comparing poverty rates among counties, places, and other sub-state areas. Further details are available in the Census 2000 Brief, *Poverty: 1999* [C2KBR-19].

In 1999, most people, 81.5 percent, lived in tracts with less than 20 percent in poverty (Categories I and II combined) (see Table 1). The percentage in this category increased from 1989 when 78.2 percent lived outside poverty areas.[4] This increase is echoed at the other end of the distribution: 2.8 percent lived in tracts with poverty rates of 40 percent or more in 1999 (Category IV), a reduction from the 1989 estimate of 4.6 percent.

Geographic Distribution

In 1999, about 62 percent of the country's population lived in tracts with poverty rates lower than the national

[1] This report discusses estimates for the United States, including the 50 states and the District of Columbia. Estimates for the Commonwealth of *Puerto Rico* are shown in Table 1 and are discussed only briefly. The estimates in this report (which may be shown in text, figures, and tables) are based on responses from a sample of the population and may differ from actual values because of sampling variability or other factors. As a result, apparent differences between the estimates for two or more groups may not be statistically significant. All comparative statements have undergone statistical testing and are significant at the 90 percent confidence level unless otherwise noted.

[2] The categories used in this report are based on the ones used in the 1990 Census Statistical Brief, *Poverty Areas*. The 1990 brief used three categories, less than 20 percent, 20 percent to 40 percent, and 40 percent or more. This report, while adopting all three categories, further divides tracts with a less-than-20-percent poverty rate into two categories using the national poverty rate as the reference point.

[3] The most recent official estimate of poverty in the United States, for 2003, was 12.5 percent, and the official estimate for 1999 was 11.8 percent. The official poverty, employment, and unemployment statistics for the country come from the Current Population Survey (CPS). Because the CPS asks more extensive questions about income than the census, respondents tend to report more completely. These higher reported incomes lead to lower official poverty rates. For more information go to <www.bls.census.gov/cps/cpsmain.htm>.

[4] According to the 1990 census, the poverty rate in the United States for all people was 13.1 percent in 1989.

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United States Census 2000

How Poverty is Defined

The current official poverty measure has two components—poverty thresholds (income cutoffs) and the definition of family income that is compared to these thresholds, as specified by the Office of Management and Budget. More specifically, 48 thresholds are arranged in a two-dimensional matrix consisting of family size (from one person to nine or more) cross-classified by presence and number of family members under 18 years old (from no children present to eight or more children present). Unrelated individuals and two-person families are differentiated by the age of the reference person (under 65 years old and 65 and older). These thresholds are revised annually to allow for changes in the cost of living as reflected in the Consumer Price Index. The poverty thresholds are not adjusted for regional, state, or local variation in the cost of living.

To determine whether someone is in poverty, their total family income is compared with the poverty threshold appropriate for that person's family size and composition. If the total income of the family is less than the threshold, then the person and every member of the family is considered to be in poverty. Census 2000 was only able to identify families based on the relationship to the householder. If a person is not related to the householder; or the person is a householder who is not related to anyone in the household by birth, marriage, or adoption; or the person does not live in a household, then the person's own income is compared with his or her poverty threshold. The total number of people below the poverty level is the sum of people in families and the number of unrelated individuals with incomes below the poverty thresholds.

Census 2000 asked people about their income in the previous calendar year. Thus, poverty estimates in this report compare family income in 1999 to the corresponding 1999 poverty thresholds. The dollar amount of these thresholds is listed in Table 2.

Poverty estimates based on Census 2000 differ from those based on the Current Population Survey's (CPS) Annual Social and Economic Supplement (ASEC) in several ways. First, the ASEC is able to identify families that are not related to the householder and treat them as separate units for determination of poverty status. Second, the ASEC asks more extensive questions than Census 2000 about various sources of income, helping respondents include more of their incomes from the previous calendar year. Third, ASEC data are collected by experienced interviewers who are trained about how to discuss and explain complex topics like income. In contrast, the Census 2000 long-form data were primarily collected with mail-back paper questionnaires.

The data on poverty status were derived from Census 2000 long-form questionnaire items 1 and 2 on the number of people in the household and each person's relationship to the householder, and items 31 and 32, which provide information on the amount of income people received from various sources.

The poverty rate used to classify tracts is based on calculations for people in the "poverty universe." The poverty universe, when using data from Census 2000, includes all U.S. residents except the institutionalized population, people in military group quarters and college dormitories, and unrelated individuals under 15 years of age. Subfamilies cannot be identified separately in Census 2000.

This report describes characteristics of all people living in the 65,004 census tracts with at least one household within its boundaries. These tracts comprised 99.95 percent of the total population of the United States counted during Census 2000.

rate of 12.4 percent (Category I), while 2.8 percent lived in Category IV tracts, with poverty rates of 40.0 percent or more (see Table 1). Regionally, 87.8 percent of people residing in the Midwest lived in tracts with poverty rates under 20 percent. The proportions in the Northeast, the West, and the South were 83.2 percent, 79.8 percent, and 77.8 percent, respectively. On the other hand, 3.4 percent of the

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Table 1.
Distribution of People in Census Tracts by Poverty Levels: 1999

(For information on confidentiality protection, sampling error, nonsampling error, and definitions, refer to *www.census.gov/prod/cen2000/doc/sf3.pdf)*

State	Number	Percent			
		Poverty levels of census tracts			
	All census tracts	Category I [0.00–12.39%]	Category II [12.40–19.99%]	Category III [20.00–39.99%]	Category IV [40.00% or more]
United States	**281,283,909**	**62.4**	**19.1**	**15.6**	**2.8**
Regions					
Northeast	53,554,708	69.2	14.0	13.4	3.4
Midwest	64,376,475	73.7	14.1	10.0	2.1
South	100,194,782	53.8	24.0	19.1	3.1
West	63,157,944	58.9	20.9	17.6	2.6
States					
Alabama	4,447,100	42.0	31.8	21.9	4.3
Alaska	626,932	78.9	12.9	8.2	0.0
Arizona	5,130,347	55.8	19.8	20.3	4.1
Arkansas	2,673,400	36.4	39.9	21.5	2.2
California	33,843,203	54.7	20.4	21.5	3.5
Colorado	4,292,018	73.1	17.0	9.3	0.6
Connecticut	3,404,544	82.4	7.1	9.2	1.3
Delaware	783,600	76.9	16.3	4.6	2.2
District of Columbia	572,059	29.3	28.7	30.4	11.5
Florida	15,981,054	61.9	21.4	14.4	2.3
Georgia	8,183,033	58.9	20.6	17.4	3.1
Hawaii	1,211,537	68.6	18.7	12.1	0.7
Idaho	1,293,953	58.8	34.5	5.8	0.8
Illinois	12,418,780	72.2	12.9	12.1	2.8
Indiana	6,073,668	76.2	13.8	8.3	1.6
Iowa	2,926,324	80.6	14.4	4.1	1.0
Kansas	2,688,418	72.9	17.4	8.5	1.2
Kentucky	4,041,769	45.4	24.3	27.9	2.3
Louisiana	4,468,919	33.2	25.1	34.1	7.6
Maine	1,274,923	63.5	28.9	7.1	0.4
Maryland	5,280,161	79.2	12.1	7.1	1.7
Massachusetts	6,346,106	76.2	11.1	11.3	1.4
Michigan	9,934,431	73.3	12.4	11.8	2.5
Minnesota	4,917,469	82.9	10.3	5.3	1.4
Mississippi	2,844,658	27.2	31.1	36.2	5.5
Missouri	5,593,356	62.7	22.0	13.5	1.8
Montana	902,195	49.4	29.7	18.9	2.1
Nebraska	1,711,024	74.3	17.6	7.4	0.7
Nevada	1,998,257	66.2	22.8	10.9	0.2
New Hampshire	1,235,786	90.5	7.5	1.1	0.8
New Jersey	8,414,333	79.4	10.1	8.8	1.7
New Mexico	1,819,046	33.2	29.8	32.5	4.5
New York	18,944,153	57.1	17.2	19.8	6.0
North Carolina	8,049,313	60.3	25.1	13.3	1.2
North Dakota	642,200	63.1	26.2	9.8	0.9
Ohio	11,352,286	71.2	14.8	11.5	2.4
Oklahoma	3,450,586	43.3	32.0	22.9	1.8
Oregon	3,421,399	61.2	28.2	9.8	0.8
Pennsylvania	12,277,717	71.6	14.4	11.0	3.0
Rhode Island	1,048,319	68.3	10.9	17.8	3.0
South Carolina	4,004,615	50.4	28.5	19.3	1.8
South Dakota	754,844	61.7	24.3	10.0	4.0
Tennessee	5,689,051	53.4	28.8	15.3	2.5
Texas	20,838,754	49.1	22.7	23.7	4.5
Utah	2,232,602	77.6	11.4	8.8	2.2
Vermont	608,827	78.1	17.5	3.8	0.6
Virginia	7,078,366	73.6	16.7	8.3	1.4
Washington	5,892,673	69.0	20.0	10.0	1.1
West Virginia	1,808,344	25.4	40.8	32.1	1.7
Wisconsin	5,363,675	83.0	8.3	6.4	2.3
Wyoming	493,782	67.6	24.6	7.1	0.7
Puerto Rico	3,806,566	1.4	4.3	21.7	72.6

Details may not sum to totals due to rounding.
Source: U.S. Census Bureau, Census 2000.

Table 2.
Poverty Thresholds (Annual Dollar Amounts) by Size of Family and Number of Related Children Under 18 Years Old: 1999

Size of family unit	Related children under 18 years								
	None	One	Two	Three	Four	Five	Six	Seven	Eight or more
One person (unrelated individual)									
Under 65 years	8,667								
65 years and over	7,990								
Two people									
Householder under 65 years	11,156	11,483							
Householder 65 years and over	10,070	11,440							
Three people	13,032	13,410	13,423						
Four people	17,184	17,465	16,895	16,954					
Five people	20,723	21,024	20,380	19,882	19,578				
Six people	23,835	23,930	23,436	22,964	22,261	21,845			
Seven people	27,425	27,596	27,006	26,595	25,828	24,934	23,953		
Eight people	30,673	30,944	30,387	29,899	29,206	28,327	27,412	27,180	
Nine people or more	36,897	37,076	36,583	36,169	35,489	34,554	33,708	33,499	32,208

Source: U.S. Census Bureau, <www.census.gov/hhes/poverty/threshld/thresh99.html>.

population in the Northeast lived in tracts with poverty rates of 40 percent or more, followed by 3.1 percent in the South, 2.6 percent in the West, and 2.1 percent in the Midwest.[5]

Of the total 51.9 million people who lived in poverty areas (with rates of 20 percent or more), 42.9 percent resided in the South, a region with 35.6 percent of the total population (see Figure 1).

In 13 states (Alaska, Connecticut, Delaware, Indiana, Iowa, Maryland, Massachusetts, Minnesota, New Hampshire, New Jersey, Utah, Vermont, and Wisconsin), three-fourths or more of the population lived in census tracts with poverty rates lower than 12.4 percent (the national poverty rate) (see Table 1).

In 16 states and the District of Columbia, 20 percent or more of the population lived in poverty areas (see Figure 2). Louisiana, Mississippi, and the District of Columbia had the largest proportions of people living in these areas of any states (approximately 40 percent).

Given the geographic size and number of census tracts in the United States, it is not feasible to include a national tract-based map in this report. The District of Columbia is used as an example, since it has an economically diversified population residing in different sections of the city and is small enough in land area for the census tract boundaries to be distinguishable. Figure 3 presents a map of the District of Columbia that demonstrates how poverty rates vary by tract within a city. The map shows that poverty areas are concentrated around the central part of the city and the areas in the southeastern section of the city near the Anacostia River.

The same poverty thresholds used to determine poverty status in the 50 states and the District of Columbia were used to determine poverty status in Puerto Rico. Of the 3.8 million people who resided in Puerto Rico in 1999, 72.6 percent lived in tracts with poverty rates of 40 percent or more (see Table 1).

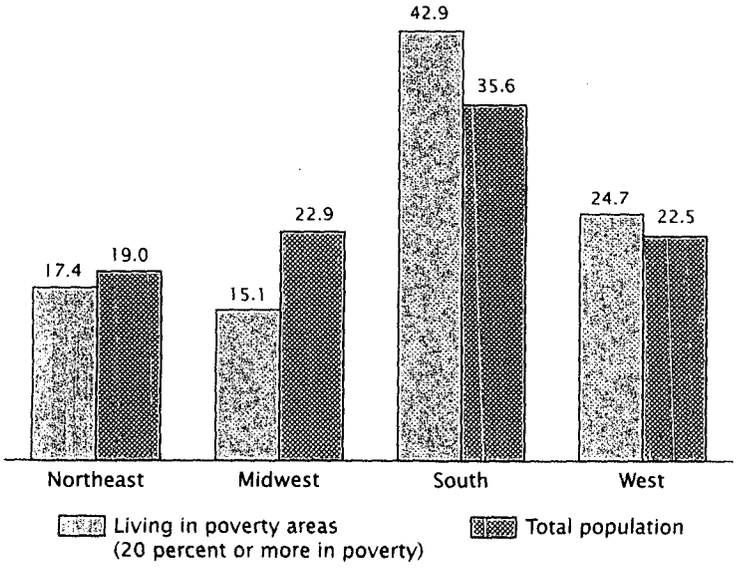
Age Composition

According to Census 2000, 25.6 percent of the population of the United States were children under 18 years of age, while 61.9 percent were adults between 18 and 64 and 12.4 percent were 65 or older (see Table 3). The proportion of children under 18 was larger (29.4 percent) in tracts with poverty rates of 40 percent or more (Category IV) than in tracts with poverty rates of less than 12.4 percent (Category I), where it was 24.9 percent.

The proportion of people 65 or older was higher in tracts with lower poverty rates. In tracts in

[5] The Northeast region includes the states of Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. The Midwest region includes the states of Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. The South region includes the states of Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia, a state equivalent. The West region includes the states of Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

Figure 1.
Percentage Distribution of People Living in Poverty Areas and the Total Population by Region: 1999



Source: U.S. Census Bureau, Census 2000.

Categories I and II, 12.9 percent were people 65 or older, while the proportion in tracts in Category III and Category IV were 10.9 percent and 8.0 percent, respectively.

Race and Hispanic Origin

Of the total 281 million people in the United States in 2000, 75.1 percent reported the single race of White, while 12.2 percent reported only Black (see Table 3).[6] People who reported the single races of American Indian or Alaska Native, Asian, or Native Hawaiian or Other Pacific Islander composed 0.9 percent, 3.6 percent, and 0.1 percent, respectively, of the population. About 12.5 percent of respondents indicated they were Hispanic.[7]

More than 70 percent of non-Hispanic Whites lived in tracts with a poverty rate less than 12.4 percent (Category I), compared with 31.8 percent of Blacks, 36.2 percent of American Indians and Alaska Natives, 54.0 percent of Native Hawaiians and Other Pacific Islanders, and 65.6 percent of Asians (see Figure 4). In 1999, of the nearly 8.0 million people who lived in Category IV tracts, 24.1 percent were non-Hispanic White, 39.9 percent were Black, and 28.9 percent were Hispanic (see Table 3).

Education

About one-fifth of the 209.1 million people who were 18 years or older in 1999 had less than a high school education, while 57.4 percent had completed high school or earned an associate's degree and 22.3 percent had graduated from college or had more education (see Table 3).

Of the 131.8 million people who lived in tracts with poverty rates less than 12.4 percent (Category I), 27.5 percent had graduated from college or had more education. The corresponding proportions for tracts in Categories II, III, and IV were 15.4 percent, 11.6 percent, and 8.6 percent, respectively.

In contrast, of the 5.6 million people who lived in tracts with poverty rates of 40 percent or more (Category IV), 37.9 percent had not completed a high school education, higher than the proportions for the tracts in Categories III, II, and I, whose proportions were 35.5 percent, 25.9 percent, and 14.3 percent, respectively.

Residential Mobility

To determine residential mobility status, data were collected for people 5 and older on whether they lived in the same home 5 years ago. Of these people, 54.1 percent had lived in the same home, while 45.9 percent had lived in a different home (including both domestic and international moves, as shown in Table 3).

[6] Census 2000 asked respondents to choose one or more races. With the exception of the Two or More Races group, all race groups discussed in this report refer to people who indicated only one racial identity among the six major categories: White, Black or African American, American Indian or Alaska Native, Asian, Native Hawaiian or Other Pacific Islander, and Some Other Race. The use of the single-race population in this report does not imply that it is the preferred method of presenting or analyzing data. The Census Bureau uses a variety of approaches.

[7] Because Hispanics may be any race, data in this report for Hispanics overlap with data for racial groups. Based on Census 2000 long-form data, the proportion reporting as Hispanic was 8.0 percent for single-race Whites, 1.9 percent for single-race Blacks, 14.6 percent for single-race American Indians and Alaska Natives, 1.0 percent for single-race Asians, 9.5 percent for single-race Pacific Islanders, 97.1 percent for those reporting only "Some Other Race," and 31.1 percent for those reporting Two or More Races.

People living in tracts with higher poverty rates were more likely to have lived in a different home 5 years earlier. Of the people who lived in tracts with poverty rates of 40 percent or higher (Category IV), 53.9 percent had lived in a different home 5 years earlier, while 48.9 percent, 47.1 percent, and 44.4 percent of those who lived in tracts in Categories III, II, and I, respectively, had changed residence.

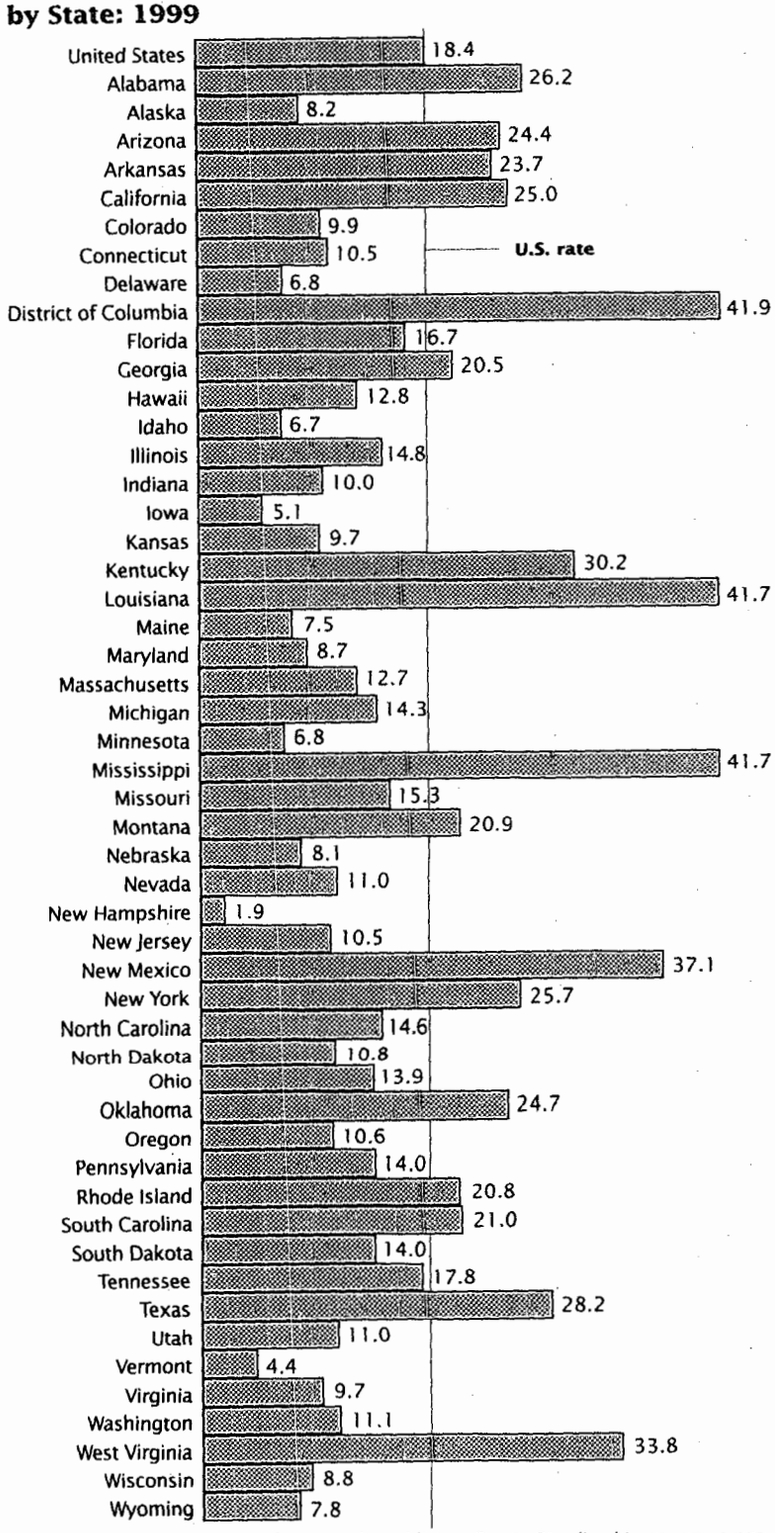
Marital Status

Of the 221.0 million people who were 15 years or older, 54.4 percent were currently married, while 27.1 percent had never been married (see Table 3). An additional 6.6 percent were widowed, while 9.8 percent were divorced and 2.2 percent were separated.

The distribution of people by marital status varied among tracts with different poverty rates. Of the 139.2 million people who lived in tracts with poverty rates of less than 12.4 percent (Category I), 59.2 percent were currently married. In tracts with higher poverty rates, this proportion declined to 51.1 percent in Category II tracts and to 42.8 percent and 30.3 percent, respectively, in Category III and Category IV tracts.

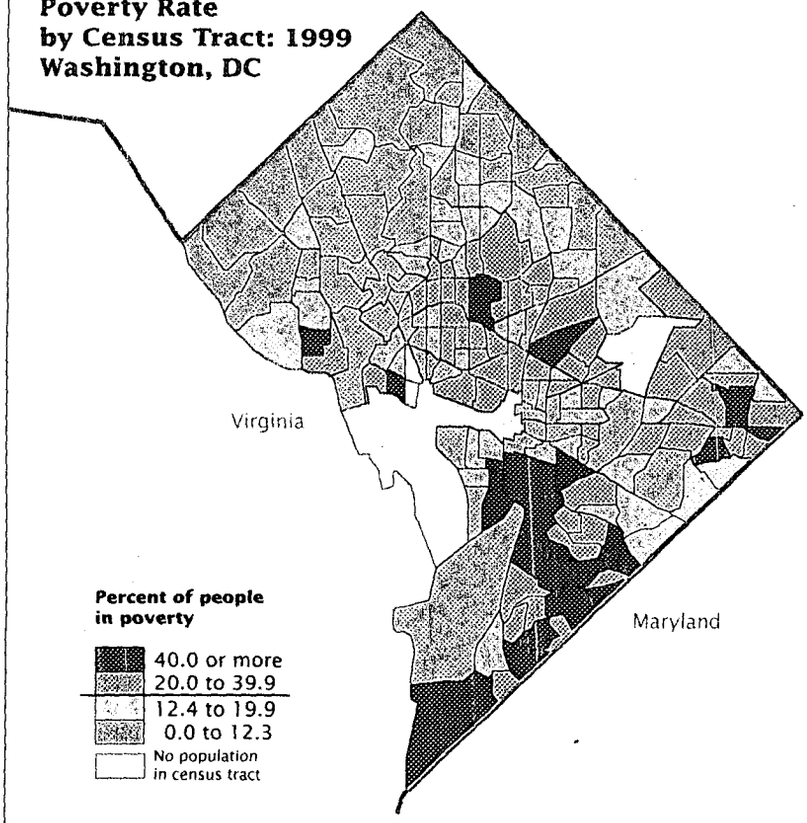
The pattern of people who were 15 or older and who had never married was the reverse. Of the people who resided in Category I tracts, 23.8 percent reported never being married, while that proportion was 28.1 percent, 35.5 percent, and 50.2 percent for people who lived in tracts in Categories II, III, and IV, respectively.

Figure 2.
Percentage of the Population Living in Poverty Areas by State: 1999



Note: In 1999, 94.3 percent of the people residing in Puerto Rico lived in poverty areas.
Source: U.S. Census Bureau, Census 2000.

Figure 3.
Poverty Rate by Census Tract: 1999 Washington, DC



Source: U.S. Census Bureau, Census 2000.

Unemployment

Nationally, of the 137.6 million civilians 16 or older who were in the labor force, the unemployment rate was 5.8 percent (see Table 3). This proportion was lower in tracts with lower poverty rates and higher in tracts with higher poverty rates. The unemployment rate was 4.0 percent for people who lived in tracts with poverty rate of less than 12.4 percent (Category I), compared with 6.8 percent, 10.9 percent, and 18.6 percent in tracts in Categories II, III, and IV, respectively.

Family Size

About 74 percent of people in the United States who lived in family households lived in families with four or fewer people, while about 21 percent lived in families of five or six people, and about 5 percent in families of seven or more people (see Table 3).

The distribution of families of different sizes varied among tracts with different poverty rates. Of the 147.6 million people who lived in tracts with poverty rates of less than 12.4 percent (Category I), 77.4 percent lived in families of four or fewer people. In tracts with higher poverty rates, this proportion was 73.7 percent, 65.9 percent, and 59.2 percent in Category II, Category III, and Category IV tracts, respectively.

About 3 percent of people in families residing in Category I tracts lived in large family households with seven or more people. This proportion increased to 5.9 percent, 9.8 percent, and 13.7 percent for families who lived in Categories II, III, and IV tracts, respectively.

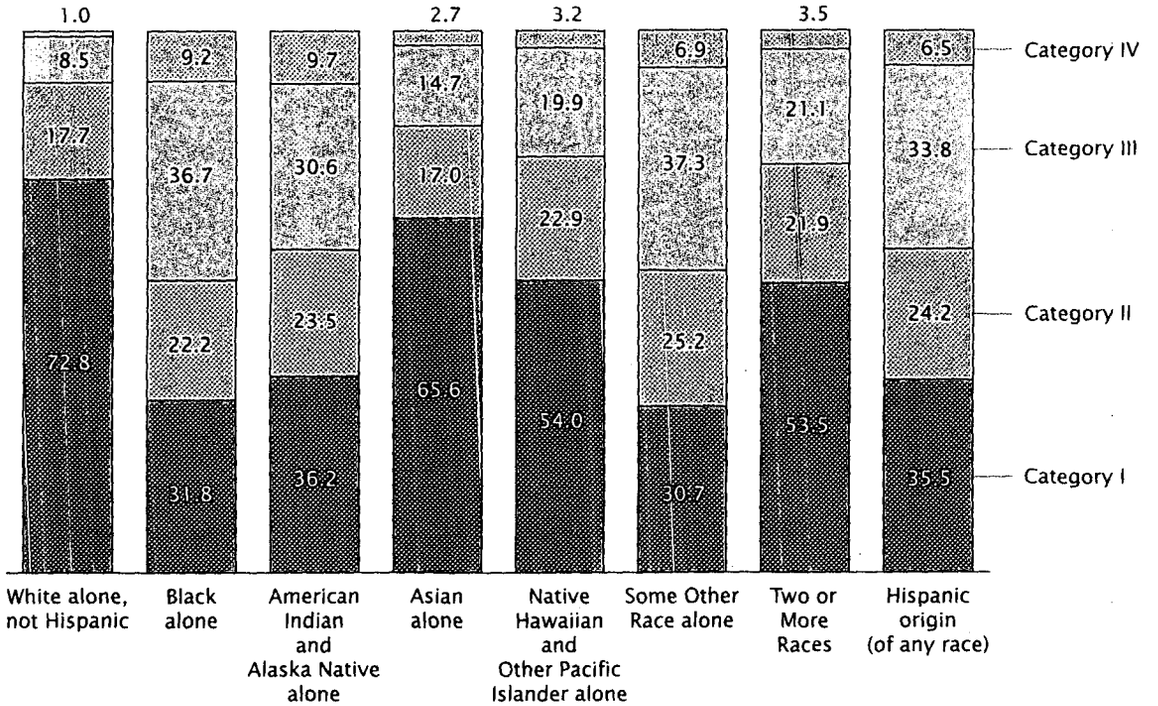
Type of Family

Of the 72.3 million families in the United States in 1999, 76.7 percent were families with married couples living together, while 17.3 percent were female-householder families with no husband present, and 6.0 percent were male-householder families with no wife present (see Table 3).[8]

The proportion of married-couple families was higher in tracts with poverty rates of less than 12.4 percent (Category I) than in tracts with higher poverty rates (categories II, III, and IV). Among all families residing in Category I tracts, 82.4 percent were married couples. This proportion was 72.7 percent, 60.5 percent, and 43.8 percent in tracts in Categories II, III, and IV, respectively.

[8] One-person households and households consisting only of unrelated individuals are not considered families.

Figure 4.
Distribution of People by Race and Ethnicity and by Poverty Level of Tracts: 1999
(In percent)



Source: U.S. Census Bureau, Census 2000.

In contrast, the proportion of families with female householder with no husband present and families with male householder with no wife present was higher in Category IV tracts than in tracts in other categories. For families with female householders with no husband present, the proportions ranged from 12.7 percent in Category I tracts to 47.0 percent in Category IV tracts. For families with male householders and no wife present, the corresponding figures were 4.9 percent and 9.2 percent.

Family Income

Nationally, about 50 percent of families had annual incomes of $50,000 or more in 1999, and 15.3 percent had incomes of $100,000 or more, while 4.8 percent had incomes of $9,999 or less (see Table 3).[9] About 60 percent of families in tracts with poverty rates of less than 12.4 percent (Category I) had incomes of $50,000 or more, while 14.3 percent had that level in tracts with poverty rates of 40 percent or more (Category IV).

The proportions of families with annual incomes in 1999 below $10,000 were 2.2 percent in Category I tracts, and 6.3 percent, 11.9 percent, and 24.2 percent in Categories II, III, and IV tracts, respectively.

[9] Nationwide, about 690,000 families, or about 1.0 percent of the total number of families, reported no income in 1999. Some of these families with no income were living on income "in kind," savings, or gifts; were newly created families; or were families in which the sole breadwinner had recently died or left the household.

Home Ownership

Of the 105.5 million occupied housing units reported in Census 2000, 66.2 percent were owned by residents, while 33.8 percent were rented (see Table 3). The proportion of homeowners was highest at 73.9 percent in tracts with poverty rates of less than 12.4 percent (Category I), followed by tracts in Categories II, III, and IV—60.6 percent, 46.8 percent, and 27.2 percent, respectively.

Accuracy of the Estimates

The data contained in this report are based on the sample of households who responded to the Census 2000 long form. Nationally, approximately one out of every six housing units was included in this sample. As a result, the sample estimates may differ somewhat from the 100-percent figures that would have been obtained if all housing units, people within those housing units, and people living in group quarters had been enumerated using the same questionnaires, instructions, enumerators, and so forth. The sample estimates also differ from the values that would have been obtained from different samples of housing units, people within those housing units, and people living in group quarters. The deviation of a sample estimate from the average of all possible samples is called the sampling error.

In addition to the variability that arises from the sampling procedures, both sample data and 100-percent data are subject to nonsampling error. Nonsampling error may be introduced during any of the various complex operations used to collect and process data. Such errors may include: not enumerating every household or every person in the population, failing to obtain all required information from the respondents, obtaining incorrect or inconsistent information, and recording information incorrectly. In addition, errors can occur during the field review of the enumerators' work, during clerical handling of the census questionnaires, or during the electronic processing of the questionnaires.

Nonsampling error may affect the data in two ways: first, errors that are introduced randomly will increase the variability of the data and, therefore, should be reflected in the standard errors; and second, errors that tend to be consistent in one direction will bias both sample and 100-percent data in that direction. For example, if respondents consistently tend to underreport their incomes, then the resulting estimates of households or families by income category will tend to be understated for the higher-income categories and overstated for the lower-income categories. Such biases are not reflected in the standard errors.

While it is impossible to completely eliminate error from an operation as large and complex as the decennial census, the Census Bureau attempts to control the sources of such error during the data collection and processing operations. The primary sources of error and the programs instituted to control error in Census 2000 are described in detail in *Summary File 3 Technical Documentation* under Chapter 8, "Accuracy of the Data," located at <www.census.gov /prod/cen2000/doc/sf3.pdf>.

All statements in this report have undergone statistical testing and all comparative statements are significant at the 90-percent confidence level unless otherwise noted. The estimates in tables, maps, and other figures may vary from actual values due to sampling and nonsampling errors. As a result, estimates for one category may not be significantly different from estimates for a different category. Further information on the accuracy of the data is located at <www.census.gov/prod/cen2000 /doc/sf3.pdf>. For further information on the computation and use of standard errors, contact the Decennial Statistical Studies Division at 301-763-4242.

Table 3.
Distribution of People, Families, and Households by Poverty Level of Census Tracts and Other Selected Characteristics: 1999

(Percent distribution within specific poverty category)

Characteristics	Number/percent*				
	Poverty levels of census tracts				
	Category I [0.00–12.39%]	Category II [12.40–19.99%]	Category III [20.00–39.99%]	Category IV [40.00% or more]	All census tracts
People					
United States	**62.4%**	**19.1%**	**15.6%**	**2.8%**	**281,283,909**
Region					
Total	**175,600,466**	**53,822,590**	**43,908,593**	**7,952,260**	**281,283,909**
Northest	21.1	13.9	16.4	22.9	19.0
Midwest	27.0	16.9	14.7	17.3	22.9
South	30.7	44.7	43.6	38.7	35.6
West	21.2	24.5	25.3	21.0	22.5
Age					
Total	**175,600,466**	**53,822,590**	**43,908,593**	**7,952,260**	**281,283,909**
Under 18 years	24.9	25.3	28.2	29.4	25.6
18 to 64 years	62.2	61.8	60.9	62.6	61.9
65 years and older	12.9	12.9	10.9	8.0	12.4
Race and Hispanic Origin					
Total	**175,600,466**	**53,822,590**	**43,908,593**	**7,952,260**	**281,283,909**
White alone	84.4	71.2	49.5	36.9	75.1
White alone, not Hispanic	80.7	63.9	37.6	24.1	69.1
Black alone	6.2	14.2	28.7	39.9	12.2
American Indian and Alaska Native alone	0.5	1.1	1.7	3.0	0.9
Asian alone	3.8	3.2	3.4	3.5	3.6
Native Hawaiian and Other Pacific Islander alone	0.1	0.2	0.2	0.2	0.1
Some Other Race alone	2.7	7.2	13.1	13.3	5.5
Two or More Races	2.2	3.0	3.5	3.2	2.6
Hispanic origin (of any race)	7.1	15.8	27.1	28.9	12.5
Educational Attainment (18 years or older)					
Total	**131,816,015**	**40,199,882**	**31,513,569**	**5,614,017**	**209,143,483**
Less than high school, no diploma	14.3	25.9	35.5	37.9	20.3
High school graduate or associate degree	58.2	58.7	53.0	53.4	57.4
College graduate or more	27.5	15.4	11.6	8.6	22.3
Mobility Status (5 years or older)					
Total	**164,340,131**	**50,141,407**	**40,465,246**	**7,290,403**	**262,237,187**
Yes, same house	55.6	52.9	51.1	46.1	54.1
No (includes inside & outside US)	44.4	47.1	48.9	53.9	45.9
Marital Status (15 years or older)					
Total	**139,174,271**	**42,430,210**	**33,443,864**	**5,962,633**	**221,010,978**
Now Married	59.2	51.1	42.8	30.3	54.4
Widowed	6.3	7.3	7.4	6.5	6.6
Divorced	9.3	11.0	10.5	8.3	9.8
Separated	1.5	2.6	3.8	4.7	2.2
Never Married	23.8	28.1	35.5	50.2	27.1
Employment Status (Civilian labor force, 16 years or older)					
Total	**90,808,050**	**25,406,548**	**18,507,110**	**2,925,882**	**137,647,590**
Employed, at work or not at work	96.0	93.2	89.1	81.4	94.2
Unemployed	4.0	6.8	10.9	18.6	5.8

See footnotes at end of table.

Table 3.
Distribution of People, Families, and Households by Poverty Level of Census Tracts and Other Selected Characteristics: 1999—Con.

(Percent distribution within specific poverty category)

Characteristics	Number/percent*				
	Poverty levels of census tracts				
	Category I [0.00–12.39%]	Category II [12.40–19.99%]	Category III [20.00–39.99%]	Category IV [40.00% or more]	All census tracts
Number of People in Family					
Total	**147,640,757**	**43,503,959**	**35,128,005**	**5,602,213**	**231,874,934**
Less than five	77.4	73.7	65.9	59.2	74.5
Five and six	19.5	20.4	24.3	27.0	20.6
Seven or more	3.1	5.9	9.8	13.7	4.9
Families					
Type of Families					
Total	**47,211,034**	**13,500,152**	**10,049,268**	**1,501,326**	**72,261,780**
Married couple	82.4	72.7	60.5	43.8	76.7
Male-householder with no wife present	4.9	7.2	8.9	9.2	6.0
Female-householder with no husband present	12.7	20.1	30.7	47.0	17.3
Family Income					
Total	**47,211,034**	**13,500,152**	**10,049,268**	**1,501,326**	**72,261,780**
No income	0.5	1.2	2.2	4.3	1.0
$1 to $9.999	2.2	6.3	11.9	24.2	4.8
$10,000 to $29,999	15.1	28.5	35.7	39.9	21.0
$30,000 to $49,999	22.0	27.4	24.4	17.3	23.2
$50,000 to $99,999	40.0	29.3	21.0	11.6	34.8
$100,000 or more	20.2	7.3	4.8	2.7	15.3
Households					
Tenure					
Total	**66,932,648**	**20,501,789**	**15,520,169**	**2,525,495**	**105,480,101**
Own home	73.9	60.6	46.8	27.2	66.2
Rent	26.1	39.4	53.2	72.8	33.8

*The numbers and percentages in this table cover all people living in the nation's 65,004 census tracts with at least one household within its boundaries. These tracts comprised 99.95 percent of the total population of the United States counted during Census 2000. Details may not sum to totals due to rounding.

Source: U.S. Census Bureau, Census 2000.

For More Information

The Census 2000 Summary File 3 data used in this report are available from the American Factfinder on the Internet <factfinder.census.gov>. For information on confidentiality protection, nonsampling error, sampling error, and definitions, also see <www.census.gov/prod/cen2000/doc/sf3.pdf> or contact the Customer Services Center at 301-763-INFO (4636), or e-mail <webmaster@census.gov>.

For additional information on poverty, including reports and survey data, visit the Census Bureau's Internet site at <www.census.gov/hhes/www/poverty.html>. To find information about the availability of data products, including reports, CD-ROMs, and DVDs, call the Customer Services Center at 301-763-INFO (4636) or e-mail <webmaster@census.gov>.

DCN:11697

Buckley Airway CO

DCN:11697

Facts and Assumptions

- **FACILITIES ACREAGE, BUILDING OCCUPANCY AND SQUARE FOOTAGE**
  - Acreage: approximately 38 acres
  - Building was constructed in 1976
  - Total inside walls measurement 599,430 sq ft (includes entire building) (Source: Geo-base Office, Buckley AFB)
  - DFAS 78% (467,555 sq ft)
  - ARPC 21% (125,880 sq ft)
  - All other listed on next slide occupy one percent (5,994 sq ft)

DCN:11697

Buckley Annex, Colorado

Facts and Assumptions

- **TEN OTHER AGENCIES ON SITE**
  1. DSCA – Defense Security Cooperative Agency
  2. DISA – Defense Information System Agency
  3. U.S. Public Health Service – Federal Occupational Health – The Health and Wellness Center
  4. Space Age Credit Union
  5. DFEB – Denver Federal Executive Board
  6. State of Colorado – Business Enterprise
  7. DoD Inspector General
  8. GAO – Government Accountability Office
  9. AAFES – Cafeteria
  10. AFAFO – Air Force Accounting Finance Office

DCN:11697

An Economic Critique of the Privatization Assumptions Contained in the AMWTP Draft EIS

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GRACE

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August 20, 1998

Introduction

My name is William J. Weida. I was born and raised in Idaho Falls, Idaho and currently maintain a residence in McCall, Idaho. I am employed as a Professor in the Economics and Business Department of The Colorado College where I specialize in regional economics, statistics, and econometric modeling. I received a BS in engineering from the US Air Force Academy, an MBA from UCLA, and a Doctorate in Econometrics and Operations Research from the University of Colorado. I was a member of the Economics Department at the US Air Force Academy for 11 years, the last two of which I was chair. I was an economist in the Office of the Secretary of Defense for three years, and I retired from the Air Force as a Colonel in 1985.

While serving in the Air Force, I was a combat pilot in Vietnam with 200 combat missions. Later, working as an economist, I developed a method of modeling research and development costs that I successfully applied to a variety of projects ranging from the B-1 bomber to nuclear warheads. This model provided the first forecast of overruns on the B-1 bomber, and it is now used to forecast and monitor development costs for laser projects associated with the SDI. I also served as the director of the in-house Air Force team that reviewed the Environmental Impact Statement for the racetrack deployment of the MX missile in Utah. I have authored four books on defense economic issues and have contributed chapters to numerous other books on the same topic.

Omission of Privatization Alternatives in the AMWTP DEIS

The Advanced Mixed Waste Treatment Project Draft Environmental Impact Statement (DEIS) states that "the Preferred Alternative is the alternative that DOE believes would best fulfill its statutory mission, giving consideration to environmental, economic, technical and other factors." [1] However, even though the 'economic factors' associated with the AMWTP are based on the use of a privatization contract with full private financing, the DEIS addresses neither privatization's impact on financing costs nor its effect on project costs. This omission appears to be due to several causes:
(1) DOE has embraced this particular privatization concept without being fully aware of the costs involved,
(2) the team that constructed the EIS contains no person capable of addressing the economic issues associated with privatization, and
(3) the unfortunate record of similar large privatized cleanup projects in DOE is not conducive to open discussions about the costs and benefits of this kind of privatization.

The failure to discuss the effects of privatization is a fatal flaw in the AMWTP DEIS. It is made more critical by two additional issues: first, the Preferred Action alternative in the DEIS is based on privatization while the No Action alternative is based on an older M&O contracting philosophy, and second, as the recent performance of the Pit 9 privatized cleanup contract demonstrates, there is a substantial probability that privatization contracts for large cleanup projects will result in termination and failure, and that no real cleanup will be accomplished. The Pit 9 experience clearly demonstrated that a privatization failure affects the ability to perform cleanup.

For these reasons, privatization is a major part of the AMWTP program and it should have been fully discussed in the AMWTP DEIS. Further, even though they are not mentioned in the DEIS, there are three additional options for privatization financing as well as the option of total government financing. These options are well known. They were the subject of a GAO report that was published and reviewed by DOE well before the AMWTP DEIS was issued--a report that specifically dealt with the funding of the AMWTP project. This report demonstrated that among the four viable privatization options, all offered cheaper financing options than the Preferred Action alternative chosen by the DOE. None of these options is mentioned as a possible alternative in DEIS.

In similar situations, the courts have held that the

> "Purposes of NEPA (42 USCS §§ 4321 et seq.) are frustrated when considerations of alternatives and collateral effect are unreasonable constricted, and agency is required to consider full implications of each decision in light of other potential developments in the area." [2]

The AMWTP DEIS clearly fails in this respect and hence, it does not comply with the intent of the NEPA

DOE's Privatization Record

The GAO has conducted an intensive review of DOE's first two privatization budgets. In this review, the GAO found similar problems to those represented by the omissions already noted in this DEIS. The GAO found that "(1) some projects were not needed, (2) the cost estimates for other projects were not complete or reliable, and (3) some projects were not required by compliance agreements and could be postponed."[3] In addition, a 1996 study funded by DOE's Office of Environmental Management found that cost overruns since 1993 on environmental management projects continued to exceed original estimates by 30 percent to 50 percent.[4]

One reason for DOE's fixation on a single kind of privatization and for the poor performance of large privatized cleanup contracts is that DOE is not currently capable of providing the expertise necessary to achieve privatization. DOE itself admitted in 1997 that

> very few Departmental personnel have expertise in business finance, strategic business planning, and general corporate transactional work as they relate to privatization...The Department [must] retain needed expertise in various fields to ensure successful privatization outcomes. [5]

Another reason for DOE's failure to consider other privatization methods or to carefully evaluate the total costs of full contractor financing apparently rests in DOE's expectations for privatization. According to DOE, "mortgage reduction...is the prime driver [for privatization]..."[6] "Mortgage reduction" is clearly a misnomer for a DOE effort to defer the cost of cleanup activities to later years. Under a privatization contract with full private financing, money is not initially allocated from the federal budget so costs seem lower. However, these costs are merely deferred, and will likely be greater in the long run. The GAO has found that "when decisions on capital asset acquisition are driven by budget scoring constraints, the government may pay more for the asset in the long run than necessary."[7]

Privatization of the Advanced Mixed Waste Treatment Project

Prior to the issuance of this DEIS, the Advanced Mixed Waste Treatment Project had been ongoing for two years; the AMWTP contract was awarded to BNFL in December, 1996. The project was funded for $70 million in FY 1997, $0 in FY 1998, and it appears it will be funded for $87.25 million in the FY1999 budget even though Congress roughly halved the privatization budget for FY1999, partially because of its displeasure with DOE's concept of privatization.

Currently OMB regards DOE's privately financed privatization projects as service contracts. According to the GAO, while the impact on outlays in the budget is minimized in the early years of the privatization program under this option, privatization

will increase outlays dramatically in later years as these projects come on-line.[8] However, DOE claims in this DEIS that

> "In 1992 and 1993, DOE...studies concluded that cost savings could be achieved and the schedule shortened by 7 years from that proposed by the Management and Operations (M&O) contractor if treatment of the 65,000 cubic meters of waste were privatized."[9]

Since cost is listed as a primary rationale for privatization of the AMWTP, the cost of financing privatization should have been fully discussed in this DEIS. In fact, if lower costs are truly a primary objective of the privatization effort, one would expect DOE to prefer the cheapest privatization financing method. Privatization comes with a range of options and, since each changes the project costs, one would expect the DEIS to fully evaluate each option to achieve a true cost/benefit approach. Instead, the GAO has determined that in the Advanced Mixed Waste Treatment Project, "total private financing represents the highest financing cost--$137.9 million--for construction financing."[10] Table 1 shows that savings with a present value of $33 million to $90 million could have been realized if DOE had chosen a more reasonable financing option for the AMWTP.

Present Value ($1998)	Contractor construction costs	Private financing option	Government debt guarantee option	Performance-based partial-payment option	Progress payment option	Total government financing option
Financing(PV)	N/A	137.9	104.1	62.7	47.1	0.0
Construction(PV)	244.6	244.6	244.6	244.6	244.6	244.6
Actual dollars by year						
1998	13.7	0	0	10.9	10.9	13.7
1999	109.0	0	0	87.2	87.2	109.0
2000	96.8	0	0	77.4	77.4	96.8
2001	41.0	0	0	32.8	32.8	41.0
2002	9.5	0	0	7.6	7.6	9.5
2003	0	100.8	91.9	29.4	128.5	0
2004	0	134.5	122.6	39.3	0	0
2005	0	134.6	122.7	39.3	0	0
2006	0	134.6	122.7	39.3	0	0
2007	0	64.9	59.2	18.9	0	0
Total actual dollars						
Financing	N/A	299.4	249.1	112.1	74.4	0
Construction	270.0	270.0	270.0	270.0	270.0	270.0

Source: Alternative Financing of Contracting Strategies for Cleanup Projects, United States General Accounting Office (GAO), GAO/RCED-98-169, May, 1998, p. 51.

Table 1
Advanced Mixed Waste Treatment Project
Alternative Construction and Financing Costs

Other alternatives considered but not analyzed by the DEIS simply looked at a similarly privatized AMWTP project at a different site or at a different location at the INEEL. The DEIS claims that "socioeconomic impacts from the construction of the

AMWTP facility would be the same for all "action" alternatives."[11] This is only true in a regional sense and only if one disregards the other privatization alternatives that would dramatically cut financing costs and thus, free up funds for other projects where additional socioeconomic effects would be generated.

General Problems With Privatization

Privatization can be a good idea when conditions are right and when something of value exists to sell or turn over to private industry. However, this is not the case for the design, development, permitting, construction and eventual operation of large, complex nuclear cleanup facilities. The assumptions on which the DOE privatization program is built contain five fatal errors. These errors create such a serious threat to the existing cleanup program that unless DOE's Environmental Management Privatization program is corrected, DOE's cleanup program will be irreparably damaged.

Error #1: Failure of DOE to Properly Assess the Effect of Program Risk on Required Contractor Rate of Return:

Risks associated with DOE's privatization model (fixed price contracts with no payments until processing is successful) create a significant probability the contractor will not get paid regardless of who is at fault--the regulators, DOE, or the contractor. Each privatized facility is custom designed, complex, and costly. Unique wastes are processed at each location. There is no guarantee any facility will work until it begins to operate.

Nuclear waste cleanup is a public good. Risk should be borne by the government until contractors and all stake holders are comfortable with the operation of the facilities. DOE's insistence that this risk be assumed by private contractors requires very large rates of return to cover potential financial disasters.

Error #2: Failure of DOE to Use a Realistic Cost of Capital:

DOE erroneously assumes contractors will bid an 8% -10% rate of return on high risk privatization projects because corporations can currently issue debt at about 8%. However, most of a corporation's balance sheet is financed by high cost equity which drives the weighted average cost of capital well into the double digits. In addition, if private corporations attempt to finance large remediation projects on their own it will affect their debt ratings and increase their cost of capital. This would raise prices to DOE and all other customers of the corporation.

Contractor bids must cover not only the low cost debt, but also this weighted average cost of capital and a large risk premium. These finance charges are taxable income and approximately 40% of them are paid out as taxes. As a result, the IRS receives a significant portion of DOE's privatization budget.

Error #3: Failure of DOE to Recognize It Has Created a New 'Privatization Mortgage':

DOE claims privatization reduces the cleanup "mortgage." In actuality, privatization creates new, larger mortgages by not accounting for risks to the contractor, by using costly private financing, and by delaying payments five or more years into the

future. This privatization mortgage is likely to be so large Congress will have to dramatically increase annual outlays at privatized sites to pay the accumulated privatization mortgages.

Error #4: Failure of DOE To Adequately Substantiate Cost Savings Claimed From Privatization:

Cost savings have been assumed by DOE under privatization without rigorous financial analysis. For example, as Table 1 shows, DOE only compares EM privatization with prior M&O contracts and it ignores all other contractual vehicles between these two extremes. DOE also ignores the fact that shifting risks to the contractor and adding large private finance charges must result in higher contract costs because private corporations must increase price to cover risk. The more risk a contractor takes, the higher the cost will be. Under a fixed price contract, contractors must raise prices to cover all foreseeable risks and unknowns--whether or not these risks actually materialize. These risks are paid for by the government whether or not they materialize.

Error #5: Failure of DOE to Control the Creation of a Foreign Monopoly in Nuclear Waste Cleanup:

One bidder on most DOE privatization contracts is not a typical US company. British Nuclear Fuels, Inc., (BNFL) is the US-based arm of England's BNFL PLC. BNFL is 100% owned by the British government. Because of this, BNFL's cost of capital is somewhere between 4% and 6%. This government-backed company can use a 10% rate of return in their bids and still make approximately 100% more than their cost of capital. BNFL was able to bid a 10% after-tax rate of return on the AMWTP facility at the INEEL--and this bid included their financing charges and profit.

Based on this bid by a contractor whose borrowing is backed by the British government, DOE awarded the AMWTP contract to the one company that can live within the financing assumptions in the DOE privatization model. While DOE may claim the AMWTP contract proves that 10% is a realistic cost of private financing, it has actually put a foreign corporation--BNFL--in a position to establish a monopoly in privatized cleanup contracts. Given their low capital cost, BNFL can drive competitors out of the market and then re-negotiate their contracts at more favorable rates after they have established a monopoly position in the industry. BNFL's risk in this process is minimal since it has few assets in this country.

Conclusion:

By embarking on a privatization program based on faulty assumptions, and by failing to understand either the nature or the implications of real privatization, DOE is creating a massive future mortgage on the nuclear waste cleanup program. The costs of the mortgage have not been discussed in the AMWTP even though they will affect the ability of the contract to be successfully concluded. To avoid consuming a large portion of the cleanup program's assets simply to cover cost of capital and rate of return expenses, DOE has turned the 'privatized' cleanup program over to a foreign government corporation with a poor environmental record. This option only succeeds in the short run because it uses foreign capital to subsidize the US cleanup program long enough to drive

US contractors out of the market. After this happens, BNFL will be able to establish a monopoly in cleanup area and raise its prices accordingly. It is time to recognize the AMWTP for what it is--a poorly conceived idea whose only goal is to delay capital payments for plant construction.

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[1] Advanced Mixed Waste Treatment Project Draft Environmental Impact Statement, DOE/EIS-0290-D, US Department of Energy, Office of Environmental Management, Idaho Operations Office, July, 1998, p. S-6.
[2] Greene County Planning Board v Federal Power Com. (1976, CA2) 559 F2d 1227, 7 ELR 20101 cert den 434 US 1086, 55 L Ed 2d 791, 98 S Ct 1280.
[3] Alternative Financing of Contracting Strategies for Cleanup Projects, United States General Accounting Office (GAO), GAO/RCED-98-169, May, 1998, p.2.
[4] Department of Energy, Office of Environmental Restoration and Waste Management, Project Performance Study Update, Independent Project Analysis, Inc., Reston, VA, April, 1996.
[5] DOE Privatization Study, Department of Energy, http://www.doe.gov/privatization /report. (March 12, 1997).
[6] I Information Paper on the Waste Water and Sludge Treatment Privatization Project, Rocky Flats Field Office, Rocky Flats, Colorado, March 10, 1997, pp. 7.
[7] Budget Issues: Budgeting for Federal Capital, United States General Accounting Office (GAO), GAO/aimd-97-5, November 12, 1996.
[8] Alternative Financing of Contracting Strategies for Cleanup Projects, Op. Cit., pp. 37, 38.
[9] Advanced Mixed Waste Treatment Project Draft Environmental Impact Statement,Op. Cit., p. S-2.
[10] Alternative Financing of Contracting Strategies for Cleanup Projects, Op. Cit., p.29.
[11] Advanced Mixed Waste Treatment Project Draft Environmental Impact Statement, Op. Cit., p. S-9.

DCN:11697

United States General Accounting Office

GAO

Testimony

Before the Subcommittee on Government Efficiency, Financial Management, and Intergovernmental Relations, Committee on Government Reform, House of Representatives

For Release on Delivery
Expected at 10 a.m., Tuesday
August 28, 2001

MILITARY BASE CLOSURES

Overview of Economic Recovery, Property Transfer, and Environmental Cleanup

Statement of Barry W. Holman, Director, Defense Capabilities and Management

GAO
Accountability * Integrity * Reliability

GAO-01-1054T

Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to present our observations on the Department of Defense's (DOD) four rounds of base realignments and closures (BRAC) in 1988, 1991, 1993, and 1995. My comments today are based on work we have done in recent years tracking DOD's implementation of the BRAC Commissions' recommendations and on the preliminary results of our ongoing work on the status of prior BRAC rounds to include estimated costs and savings, economic impacts, property transfers, and environmental cleanup. We recently issued an update on DOD's estimated costs and savings from the former BRAC rounds.[1] Attachment I lists selected reports we and others have completed on the status and implementation of DOD's base realignments and closures. Today I want to address (1) the economic recovery of communities affected by base closures, (2) progress in implementing the recommendations of the BRAC Commissions and transferring unneeded BRAC property to other users, and (3) progress in accomplishing environmental cleanup at base closure sites.

Results in Brief

While some communities surrounding closed bases are faring better than others, most are recovering from the initial economic impact of base closures. The short-term impact can be very traumatic for BRAC-affected communities, but the long-term economic recovery of communities depends on several factors, such as the strength of the national and regional economies and successful redevelopment of base property. Some key economic indicators show that the majority of communities surrounding closed bases are faring well economically in relation to the U.S. rates and show some improvement since the time closures began in 1988. According to the latest annual data, of the 62 communities surrounding major base closures, 43 (or 69 percent) had unemployment rates equal to or lower than the U.S. rate for 2000, as reported by the Department of Labor's Bureau of Labor Statistics. Furthermore, 33 (or 53 percent) of the affected communities had equal or higher average annual per capita income growth rates than the U.S. average rate for 1996-99. Another 7 communities (11 percent) had average annual per capita income growth rates that were in close proximity to the U.S. average rate.

[1] In July 2001, we reported that DOD will realize significant recurring savings from its realignment and closure actions. See *Military Base Closures: DOD's Updated Net Savings Estimate Remains Substantial* (GAO-01-971, July 31, 2001), pp. 1-3.

Implementation of BRAC recommendations is essentially completed, but title to only 41 percent of unneeded base property has been transferred. As of August 20, 2001, DOD reported that it has essentially implemented all of the BRAC Commissions' 451 recommendations.[2] In acting on the recommendations, the military services and components designated about 518,300 acres of base property as unneeded. DOD data indicate that 44 percent (or 229,800 acres) of the unneeded property is to be retained by the federal government, and 55 percent (or 285,900 acres) is slated for nonfederal users such as state and local authorities or private parties. Of these amounts, 46 percent of the property slated for federal use has been transferred, and 37 percent of the property slated for nonfederal use has been transferred. The disposition of the remaining 1 percent (or 2,600 acres) of the unneeded property has not yet been decided. Of the 305,900 acres for which title transfer has not occurred, about 48,200 acres (or 16 percent) have been leased to local communities and other users.

While DOD has made progress and established numerous initiatives to expedite cleanup, many cleanup activities remain. Cleaning up environmental contamination on BRAC-affected installations has proven to be costly and challenging for DOD and can delay the transfer of the title of property to other users. DOD expects to continue its environmental efforts well beyond fiscal year 2001, the final year of base closure implementation authority. Of the $22 billion estimated cost for the entire BRAC program through fiscal year 2001, about $7 billion (or 32 percent) is associated with environmental cleanup efforts. Furthermore, DOD estimates that $3.4 billion will be required after fiscal year 2001 for cleanup activities.

Background

To enable DOD to close unneeded bases and realign others, Congress enacted BRAC legislation that instituted base closure rounds in 1988, 1991,

[2] The four BRAC commissions generated 499 recommendations; however, only 451 of these required action because 48 were changed in some manner by recommendations of a later commission. We recently identified two recommendations for which the original plans changed due to circumstances. With respect to the decision from the 1995 BRAC round to close family housing units on Fort Buchanan, Puerto Rico, the DOD Appropriations Act, 1999 (P.L. 105-262, sec. 8142) authorized the Secretary of Defense to retain all or a portion of the units in support of the U.S. Army South's relocation from Panama to Fort Buchanan. Consequently, the recommendation was never implemented. With respect to another decision from the same BRAC round to disestablish the Naval Management Systems Support Office in Chesapeake, Virginia, the Navy disestablished the office but delayed the recommended relocation of personnel and equipment to government-owned space until January 2002 because modifications to the required space are not yet complete.

1993, and 1995.[3] For the 1991, 1993, and 1995 rounds, special BRAC Commissions were established to recommend specific base realignments and closures to the President, who in turn sent the Commissions' recommendations and his approval to Congress. A special Commission established for the 1988 round made recommendations to the Senate and House Committees on Armed Services. The four commissions generated 499 recommendations—97 major closures and hundreds of smaller base realignments and closures. For the 1988 round, the legislation required DOD to complete its realignment and closure actions by September 30, 1995. For the 1991, 1993, and 1995 rounds, the 1990 act required DOD to complete all closures and realignments within 6 years from the date the President forwarded the recommended actions to Congress. However, property disposal and environmental cleanup actions may continue beyond the 6-year period.

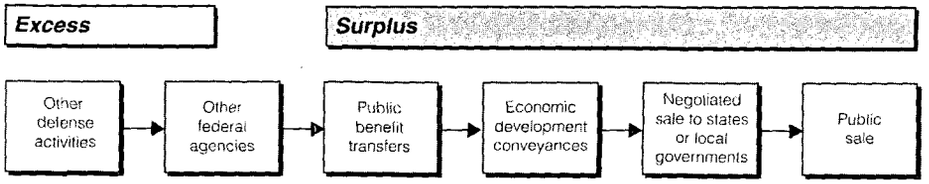
The economic impact on communities near base realignments and closures has been a long-standing source of public anxiety. Because of this concern, DOD included economic impact as one of eight criteria that it used for making BRAC recommendations in the last three rounds. While economic impact did not play as large a role in initial BRAC deliberations as did other criteria and was not a key decision factor, its importance was such that DOD components were required to estimate the economic impact of their recommendations.

Generally, BRAC property no longer needed by DOD is offered first to other federal agencies. Any property remaining is then disposed of through a variety of means that initially include transfers to states and local governments for public benefit purposes and thereafter is disposed of by negotiated or public sales. Under public benefit conveyances, local redevelopment authorities can obtain property for such purposes as schools, parks, and airports for no or little cost. In 1993, the BRAC act was amended to provide local redevelopment authorities with BRAC property by sale or lease at or below fair market value or without cost for rural communities to promote the economic recovery of areas affected by closures. Later, these provisions were replaced with others that also allowed the transfer of real property at no cost to local redevelopment authorities for job generation purposes or for lease back to the federal

[3] The 1988 round was completed under the Defense Authorization Amendments and Base Closure and Realignment Act (P.L. 100-526, title XXIX, as amended). The last three rounds were completed under the Defense Base Closure and Realignment Act of 1990 (P.L. 101-510, title II, as amended).

government. Consequently, local redevelopment authorities usually first sought to obtain property at no cost since, failing that, property could still be obtained through negotiated sales. Figure 1 shows the general process used to screen real property under BRAC.

Figure 1: DOD's Screening Process for BRAC Real Property



Source: Our analysis.

Many BRAC properties require environmental cleanup. The 1990 BRAC act requires compliance with a provision of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, in transferring contaminated federal property.[4] Under this provision, DOD has a continuing responsibility for cleanup but may, by way of so-called "early transfers," transfer BRAC property before all cleanups on the property have been completed.[5] Under the early transfer process, either the receiving communities or DOD perform environmental cleanup. In both cases, DOD funds the costs of cleanup.

Most Communities Are Recovering From the Economic Impacts of Base Closures

While the loss of jobs for DOD civilians and other adverse effects are in the short term inescapable byproducts of base closures, such effects can continue for some time. However, our prior studies and the studies of others indicate that over time many communities have absorbed the economic losses. Several factors affect the economic recovery of communities near base realignments and closures. Local officials have cited the strong national or regional economy as one explanation of why their communities have avoided economic harm and found new areas for growth. In addition, federal programs are available to assist communities in adjusting to base closures. Economic data related to unemployment

[4] 42 U.S.C. 9620(h)(3).

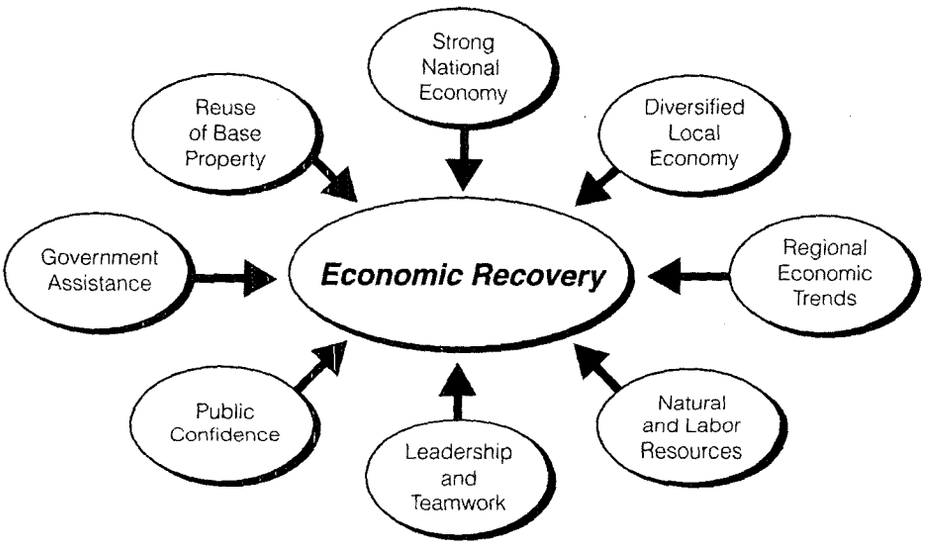
[5] Up until 1996, property was generally transferred to a purchaser only after cleanup action had begun. With the passage of section 334 of National Defense Authorization Act for Fiscal Year 1997 (P.L. 104-201), Congress provided the Secretary of Defense the authority to transfer property prior to environmental cleanup if the state's governor agrees.

rates and average annual real per capita income growth suggest that the majority of communities surrounding closed bases are faring well economically in relation to the U.S. rates and show some improvement since base realignments and closures began with the 1988 BRAC round. In addition, while two communities we recently revisited have progressed in recovering economically, they still face problems.

Several Factors Help Communities Recover From Base Realignments and Closures

Figure 2 shows several factors that play a role in determining the fate of communities affected by base realignments and closures.

Figure 2: Factors Affecting Economic Recovery From Base Realignments and Closures



Source: Our analysis.

Officials from BRAC communities have stressed the importance of having a strong national economy and local industries that could soften the impact of job losses from a base closure. Following the 1991 recession until the recent slowdown, the economic performance of the United States has been robust. In a January 1998 report, we examined defense-related spending trends in New Mexico and the relationship between those trends and New Mexico's economy.[6] We reported that while defense-related

[6] *Defense Spending and Employment: Information Limitations Impede Thorough Assessments* (GAO/NSIAD-98-57, Jan. 14, 1998).

spending had declined in the state, the state's gross product and total per capita income had increased and that this economic growth might be due to efforts to diversify the economy to counter the loss of defense jobs.

Officials also pointed to regional economic trends at the time of a closure, during the transition period, and at the present. For example, officials from the communities surrounding Fort Devens, Massachusetts, said that at the time of the closure, the area was suffering from the downsizing and restructuring of the computer industry. Those same communities are now benefiting from the economic growth in the larger Boston metropolitan area. Beeville, Texas, where Chase Field Naval Air Station closed, has a long history of farming and ranching but has recently benefited from an expanding state prison industry.

An area's natural resources also can help economic recovery. In Blytheville, Arkansas, for example, where Eaker Air Force Base closed, the steel industry found a foothold in the late 1980s before the announcement of the base closure and has been a growing presence ever since. The Blytheville area is attractive to the steel companies because of its access to the Mississippi River and a major interstate as well as an available labor pool.

Officials from communities surrounding closed bases said that publicizing redevelopment goals and efforts for former bases is key for attracting industry and helping the community gain confidence. Leadership and teamwork among participants at the federal, state, and local levels are essential to reaching agreement on key issues such as property transfer, base reuse, and environmental cleanup. To help communities to successfully transform closing bases into new opportunities, federal agencies have provided over $1.2 billion in direct financial assistance to areas affected by base closures. This assistance was in numerous forms—planning assistance to help communities determine how they could best develop the property, training grants to provide the workforce with new skills, and grants to improve the infrastructure on bases.

Finally, the redevelopment of base property is widely viewed as a key component of economic recovery for communities experiencing economic dislocation due to jobs lost from a base closure. The closure of a base makes buildings and land available for use that can generate new economic activity in the local community.

Most Communities' Economic Indicators Compare Favorably to U.S. Rates

Our analysis of selected indicators shows that the economies of many BRAC-affected communities compare favorably to the overall U.S. economy. We used unemployment rates and real per capita income growth rates as broad indicators of the economic health of those communities where base closures occurred during the BRAC rounds.[7] We identified 62 communities surrounding base realignments and closures from all four BRAC rounds for which government and contractor civilian job losses for each were estimated to be 300 or more.[8]

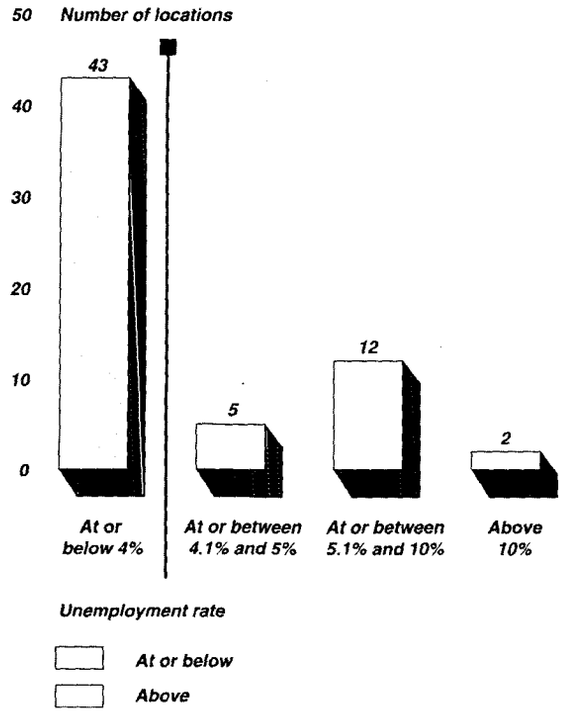
Unemployment Rates Compare Favorably

Our analysis of calendar year 2000 unemployment rates indicates that the rates for 62 BRAC-affected communities compare favorably with the U.S. rate. Forty-three (or 69 percent) of the 62 communities affected by the recent base closures had unemployment rates at or below the U.S. rate of 4 percent (see fig. 3).

[7] Ideally, to assess how the local communities fared after each BRAC round, economic information is needed on how those communities would have fared without each BRAC round compared to how they have fared since the BRAC program began. Because we did not have this baseline data, we used the national averages for unemployment and real per capita income as a benchmark to compare how well the communities have fared. This comparison does not isolate economic effects of a base closure from the effects of other economic events occurring in a particular region.

[8] One of the limitations of our approach to selecting communities is that some areas may have also been the receiving location for DOD realignments and may have gained jobs. For example, St. Mary's County, Maryland, is included because of the closure of Navy facilities at St. Inigoes, Maryland, in the 1993 BRAC round. However, in the 1995 round, the area gained jobs at the Patuxent River facilities due to the relocation of Navy activities from the Washington, D.C., metropolitan area. Despite these gains, the communities we selected for our analysis lost a significant number of DOD jobs.

Figure 3: Unemployment Rates of 62 BRAC-Affected Communities Compared to U.S. Rate in 2000



Note: Each of these 62 communities, from all four BRAC rounds, lost an estimated 300 or more government and contractor civilian jobs.

Source: Our analysis of Department of Labor data.

Attachment II compares the 2000 unemployment rate for each of the BRAC-affected locations, grouped by east and west of the Mississippi River for ease of presentation, to the U.S. rate.

The unemployment situation is about the same as we reported in 1998.[9] At that time, 42 (68 percent) of the 62 communities had unemployment rates at or below the then U.S. rate of 5.1 percent. For example, the 2000 unemployment rate for the Salinas area surrounding the former Fort Ord, California, dropped to 9.7 percent from 10.3 percent in 1997. Similarly, the

[9] *Military Bases: Status of Prior Base Realignment and Closure Rounds* (GAO/NSIAD-99-36, Dec. 11, 1998).

rate for the communities near the former Naval Station and Shipyard, Charleston, South Carolina, decreased to 3 percent from 4 percent in 1997.

For all BRAC-affected communities we examined with a higher average 2000 unemployment rate, only two—the Merced area surrounding the former Castle Air Force Base, California, and the Blytheville area surrounding the former Eaker Air Force Base, Arkansas—have had double-digit unemployment rates: 14.1 percent and 10.1 percent, respectively. The Merced area also had double-digit unemployment when we reported on this issue in December 1998. Local officials told us that these locations have historically had high unemployment rates, partly because of the large seasonal employment associated with the local agriculture.

In a 1996 RAND National Defense Research Institute report on the effects of military base closures on three local communities, RAND concluded that "while some of the communities did indeed suffer, the effects were not catastrophic (and) not nearly as severe as forecasted."[10] RAND's analysis showed that the burden of defense cutbacks such as base closures tended to fall more on individuals and companies rather than on the community. For example, a base with a large civilian employment might displace many workers, but the overall employment rate of the community might remain relatively stable. Finally, RAND demonstrated that economies of all types of communities can also be affected by longer term patterns of population and economic growth; the redirection of military retirees' retail and medical expenditures from the base to the local community; and the withdrawal of working spouses from the local labor market, which frees up jobs for other local citizens.

In a 2000 Massachusetts Institute of Technology report for the Department of Commerce, the Institute noted that military-base employment losses did not necessarily translate into employment losses in counties where bases were closed.[11] In its analysis of 51 counties containing 52 closed bases, 21 counties (or 41 percent) in 1997 had greater post-closure job growth rates relative to the national average, and in 6 of those counties the job growth was more than twice the national average. In the remaining 30 counties,

[10] *The Effects of Military Base Closures on Local Communities: A Short-Term Perspective*, RAND National Defense Research Institute, 1996.

[11] *From Barracks to Business: The M.I.T. Report on Base Redevelopment*, Economic Development Administration, Department of Commerce, March 2000, pp. 131 and 132.

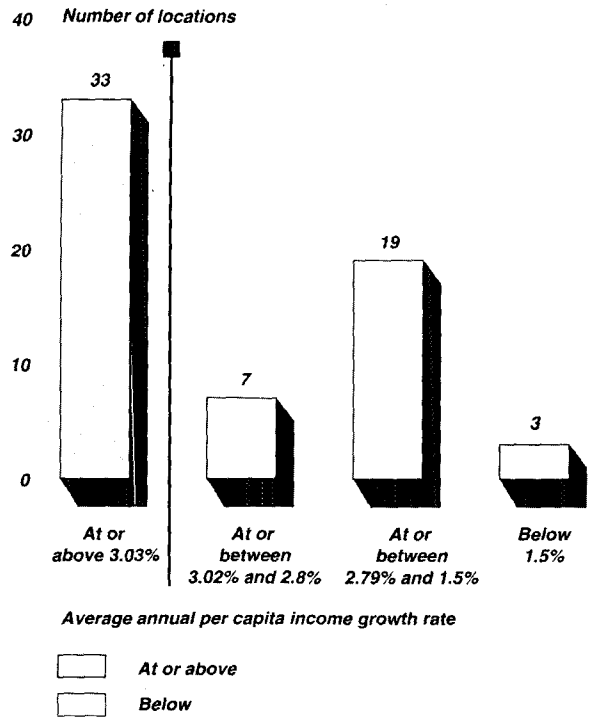
job growth was lower than the national average, of which 7 counties had job losses. The Institute concluded that redevelopment of closed bases will take at least 20 years or more and that time is needed to identify promising companies, persuade them to locate on the closed base, find a suitable site, negotiate an acceptable lease or sale, recruit qualified workers, and find jobs that match worker skills and expectations.

Average Annual Real Per Capita Income Growth Rates Compare Favorably

As with unemployment rates, our analysis indicates that average annual real per capita income growth rates for 62 BRAC-affected communities compare favorably with the U.S. average rate. During 1996-99, 33 communities (or 53 percent) had average annual per capita income growth rates that were at or above the U.S. average rate of 3.03 percent (see fig. 4).[12] Another seven communities (or 11 percent) had average annual per capita income growth rates that were in close proximity to the U.S. average rate of 3.03.

[12] As of August 10, 2001, average annual real per capita income rates for 2000 were not available for analysis.

Figure 4: Average Annual Per Capita Income Growth Rates of 62 BRAC-Affected Communities Compared to U.S. Average Rate During 1996-99



Note: Each of these 62 communities, from all four BRAC rounds, lost an estimated 300 or more government and contractor civilian jobs.

Source: Our analysis of Department of Commerce data.

Attachment III compares the 1996-99 average annual real per capita income growth rate for each of the BRAC-affected locations, grouped by east and west of the Mississippi River for ease of presentation, to the U.S. average rate.

During the same period, the rate for communities near the former Fort Ord, California, increased 6.4 percent from the $27,620 rate in 1997 to $29,393.[13] In addition, the rate for communities near the former Naval Station and Shipyard, Charleston, South Carolina, increased 9 percent from the $21,092 rate in 1997 to $22,944. Currently, all of the 29

[13] Adjusted to 1999 dollars.

communities below the U.S. average rate had positive average annual per capita income growth rates.

In an analysis of 51 counties containing 52 closed bases, the Massachusetts Institute of Technology reported that 31 counties (or 61 percent) had per capita income greater in 1997 relative to the national rate than it was at the time of the BRAC closing announcement.[14] However, the counties containing the four closed naval shipyards—Mare Island and Long Beach Naval Shipyards, California; Philadelphia Naval Shipyard, Pennsylvania; and Charleston Naval Shipyard, South Carolina—did not fare well. In addition, 10 of the 20 counties that lost income relative to the national rate were in California and most of the other counties that lost income were rural, such as Aroostook County, Maine; Clinton County, New York; Bee County, Texas; and Tooele County, Utah.

Economic Recovery Is Continuing at Communities Surrounding Former Bases We Visited

In our 1998 report, we augmented our use of broad economic indicators with visits to selected communities to learn firsthand how they had fared economically after base closures.[15] We reported that in general, the communities surrounding the six major base closure sites we visited suffered initial economic disruption, including decreased retail sales; declining residential real estate values; and social losses felt in local schools, churches, and organizations. However, we also reported that these initial losses were followed by recovery. We are currently updating this information and plan to visit several of the communities we visited previously and additional communities to obtain more in-depth information on their economic recovery. We recently revisited communities surrounding two of the major base closures—Beeville, Texas, near the former Chase Field Naval Air Station, and Merced and Atwater, California, near the former Castle Air Force Base—that we reported on in 1998. As attachment IV discusses in more detail, we found that each community has continued its economic recovery from the base closures, but some problems still exist.

[14] *From Barracks to Business*, Department of Commerce, March 2000, p. 132.

[15] *Military Bases* (GAO/NSIAD-99-36, Dec. 11, 1998).

BRAC Actions Are Essentially Completed, but Transfer of Unneeded Base Property Is Only Partially Complete

As of August 20, 2001, DOD reported that it has essentially implemented all of the BRAC Commissions' 451 recommendations. Despite timely completion of actions on the recommendations, transfer of unneeded base property is only partially complete.

DOD has decided how to dispose of about 99 percent of the 518,300 acres that the military services and components reported they do not need. DOD data as of June 2001 indicate that 229,800 acres (or 44 percent) will be retained by the federal government, 285,900 acres (or 55 percent) of the unneeded BRAC property will be transferred to nonfederal entities, and the disposition of 2,600 acres (less than 1 percent) has not yet been determined.

About 206,800 acres (or 90 percent) of the federally retained property are being transferred to the Departments of the Interior and Justice for uses such as wildlife habitats and detention centers. DOD intends to retain about 14,500 acres (or 6 percent) for, among other things, administrative space for the Defense Finance and Accounting Service. DOD is actually retaining more property than this because, in many cases, during the BRAC process the property of an active military base was turned over to a reserve component without being declared excess. In our 1998 report, we noted that DOD data indicated that over 330,000 acres of BRAC property were being retained for use by the reserve components.[16]

While DOD has plans to transfer most of its unneeded property, fewer actual transfers than planned have taken place. In our December 1998 report, we noted that progress in transferring the title of BRAC properties to users had been affected by many factors. These factors included the iterative process of preparing site-specific reuse plans, preparing conveyance documentation, and environmental cleanups. As of June 2001, DOD data indicate that title to 212,400 acres (or 41 percent) of the 518,300 acres of unneeded property had been transferred to federal and nonfederal entities. Specifically, title to about 106,600 acres had been transferred to federal agencies and title to about 105,800 acres had been transferred to nonfederal entities. According to DOD officials, the transfer of the remainder of the property for federal agencies and nonfederal entities will

[16] About 324,000 acres of this amount are attributable to five Army BRAC 1995 round bases—Fort Hunter Ligget, California; Fort Chafee, Arkansas; Fort Pickett, Virginia; Fort Dix, New Jersey; and Fort McClellan, Alabama.

be completed by 2007 and 2029, respectively.[17] As discussed previously, the disposition of 2,600 acres has not yet been determined.

While awaiting property transfers, communities and others can sometimes begin using base property through leasing. Of the 305,900 acres for which title has not been transferred, about 48,200 acres (or 16 percent) have been leased. According to community representatives, leasing is a useful interim measure to promote reuse and job creation.

As noted earlier, Congress authorized the transfer of property prior to the completion of environmental cleanup, but the authority has been used in a limited number of instances and its implementation is still evolving. Program officials believe this approach is a powerful tool to help local communities obtain early ownership and control of property, thereby allowing for earlier reuse than otherwise possible. At the end of fiscal year 2000, DOD had transferred 10 properties at 8 BRAC-affected installations using the early transfer authority. The properties range from 12 acres to about 1,800 acres. In most of the transfers, DOD has continued the cleanup activities, but in some cases the new property owner is cleaning up the property.[18] The advantage to the recipient in performing the cleanup is the ability to integrate cleanup and redevelopment activities, thus saving time and costs and gaining greater control for both activities.

Environmental Cleanup Is Progressing but Will Require Many Years to Fully Complete

While DOD has made progress and has established numerous initiatives to expedite environmental cleanups, many cleanup activities remain. As of September 30, 2000, 99 of 204 BRAC installations requiring cleanup had cleanups under way or completed. DOD estimates that 80 additional installations will have cleanups under way or completed by fiscal year 2003, and the remaining 25 installations will have cleanups under way or completed during fiscal years 2004 through 2015. However, DOD projects that long-term monitoring will be required at some sites well after 2015 to ensure those cleanup actions are effective.

[17] Army officials were reluctant to provide estimates of land transfers beyond 2007 primarily because of uncertainties related to environmental restoration activities so far in the future.

[18] The Port of Oakland is doing the cleanup of the Fleet & Industrial Supply Center, Oakland, California, transferred in 1999, and the Government of Guam is cleaning up Agana Naval Air Station, Guam, transferred in 2000.

Several factors have affected the progress of DOD's environmental cleanup activities. According to DOD officials, changes in the anticipated use of an installation have occasionally created stricter cleanup requirements that have increased the cost and time needed to put remedies in place. For example, a site on Fort Ord, California, which was originally planned to have limited reuse, is now slated to become a residential area, necessitating more extensive environmental and unexploded ordnance inspection and cleanup. DOD also continues to complete investigations and conduct long-term monitoring at contaminated sites, which can reveal additional previously unknown contamination. For example, at a site on McClellan Air Force Base, California, the Air Force discovered traces of plutonium mixed in with radium-contaminated rags and brushes. The intensive procedures needed to deal with plutonium have increased the estimated cost from less than $10 million to $54 million and extended scheduled completion to 2034.

Of the $22 billion estimated cost for implementing the BRAC program through fiscal year 2001,[19] about $7 billion, or 32 percent, is associated with base closure environmental activities. Furthermore, DOD estimates that $3.4 billion will be required after fiscal year 2001 for environmental activities (see fig. 5).[20] This is a $1 billion increase over the $2.4 billion environmental cost estimate DOD reported in fiscal year 1999. DOD officials attributed this increase primarily to the inclusion of cleanup costs for unexploded ordnance, delays in the program, the refinement of cleanup requirements and DOD's cost estimates, and the use of more stringent cleanup standards due to changes in how closed installations will be used. As noted in our July 2001 report, DOD has reported that the vast majority of its BRAC environmental cleanup costs would have been

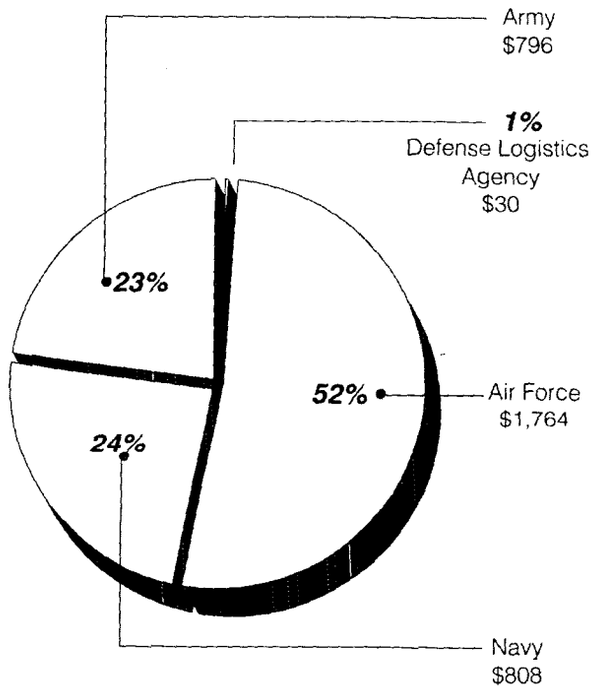
[19] While cost estimates are routinely updated and tracked in financial accounting systems, they are based on DOD obligations and not actual outlays, thereby adding a degree of imprecision to the actual costs and the basis for savings projections. The results of our most recent financial audit at DOD show that the Department does not have the systems and processes in place to capture required cost information. See *DOD Financial Management: Integrated Approach, Accountability, and Incentives Are Keys to Effective Reform* (GAO-01-681T, May 8, 2001), p. 5.

[20] At the same time, uncertainties exist regarding the full cost of environmental restoration beyond fiscal year 2001 because DOD does not have complete and accurate data needed to estimate cleanup costs of unexploded ordnance, such as bombs and ammunition, and other constituent contamination, such as propellants and explosives, on closed training ranges. See *Environmental Liabilities: DOD Training Range Cleanup Cost Estimates Are Likely Understated* (GAO-01-479, Apr. 11, 2001), pp. 4-6.

incurred whether or not an installation is impacted by BRAC.[21] DOD acknowledges, however, that environmental costs under the BRAC process may have accelerated in the shorter term. Others suggest that in some instances BRAC-related environmental cleanups may be done more stringently than would have been the case had the installation remained open. However, the marginal difference is not easily quantified and depends largely on the final use of the closed installation.

Figure 5: DOD's Estimated Environmental Cleanup Cost at Base Closure Sites after Fiscal Year 2001

(Dollars in millions)



Total: $3,398

Source: Our analysis of DOD data as of July 2001.

[21] *Environmental Liabilities* (GAO-01-971, July 31, 2001).

The Air Force's base closure environmental activities account for 52 percent of the total estimated costs after fiscal year 2001. About $417 million of the Air Force's approximated costs of $1.8 billion is for the cleanup of the former McClellan Air Force Base.

Navy officials indicated that they were revising the $808 million cost estimate for base closure environmental activities and believe that the estimate could increase by $142 million. Continuing negotiations with federal and state regulators is the major cost driver, as regulators have requested the Navy to apply more stringent standards for cleanups than originally planned. For example, during the closure of Dallas Naval Air Station, Texas, the state and local regulators asked the Navy to clean former industrial sites to residential levels, which required more extensive cleanup and increased cost.

Army officials are also revising their $796 million cost estimate for base closure environmental activities due to better estimates for restoration of land with unexploded ordnance. They estimate that removal of unexploded ordnance may account for $308 million of the Army's revised estimate, of which $254 million is estimated to remove unexploded ordnance from two locations—the former Fort Ord, California, and the former Camp Bonneville, Washington. Still, Army officials said that their cost estimates for base closure environmental activities beyond fiscal year 2001 could change based on the proposed land use. For example, the Army estimates that it will cost about $77 million to remove unexploded ordnance from the former Camp Bonneville so that it can be used as a park. However, officials said that if two-thirds of the land, which is heavily wooded, became a conservation area with institutional controls that limit public access, cleanup costs could be reduced significantly.

DOD has implemented a Fast-Track Cleanup Program to speed the recovery of communities affected by the BRAC program. A key element of the cleanup program is the cooperative relationship between state and federal regulators and the installation environmental program manager. This team approach is intended to reduce the time to establish and execute cleanup plans. The program also seeks better integration of cleanup efforts with the community's plan for using the properties, and it may also help to contain some environmental cleanup costs.

The Congressional Budget Office reported in 1996 that DOD could reduce costs by delaying expensive cleanup projects if contamination poses no imminent threat and it lacks cost-effective cleanup technologies.[22] The Office also stated that in the long run, new cleanup technologies represented the best hope of addressing environmental problems with available DOD funds.

We have also reported that there are various options for reducing these costs. In 1996, we noted that cleanup costs at closing bases could be reduced by deferring or extending certain cleanup actions, adopting more cost-effective cleanup technologies, and sharing costs with the ultimate user of the property.[23] We also reported that these options might adversely affect programmatic goals, thereby presenting decisionmakers with difficult choices in developing a cost-effective environmental program.

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This concludes my statement. I would be pleased to answer any questions you or other members of the Subcommittee may have at this time.

Contacts and Acknowledgments

For further contacts regarding this statement, please contact Barry W. Holman at (202) 512-8412 or Mark Little at (202) 512-4673. Individuals making key contributions to this statement include Michael Kennedy, James Reifsnyder, Charles Perdue, Robert Poetta, Arnett Sanders, John Lee, Tom Mahalek, and John Buehler.

[22] *Closing Military Bases: An Interim Assessment*, Congressional Budget Office, December 1996.

[23] *Military Base Closures: Reducing the High Costs of Environmental Cleanup Requires Difficult Choices* (GAO/NSIAD-96-172, Sept. 5, 1996).

Attachment I: Key Reports on the Status and Implementation of DOD's Base Realignments and Closures

Military Base Closures: DOD's Updated Net Savings Estimate Remains Substantial (GAO-01-971, July 31, 2001).

Environmental Liabilities: DOD Training Range Cleanup Cost Estimates Are Likely Understated (GAO-01-479, Apr. 11, 2001).

Military Base Closures: Unexpended Funds Raise Questions About Fiscal Year 2001 Funding Needs (GAO/NSIAD-00-170, July 7, 2000).

From Barracks to Business: The M.I.T. Report on Base Redevelopment, Economic Development Administration, Department of Commerce, March 2000.

Military Base Closures: Potential to Offset Fiscal Year 2000 Budget Request (GAO/NSIAD-99-149, July 23, 1999).

Military Bases: Status of Prior Base Realignment and Closure Rounds (GAO/NSIAD-99-36, Dec. 11, 1998).

Military Bases: Review of DOD's 1998 Report on Base Realignment and Closure (GAO/NSIAD-99-17, Nov. 13, 1998).

Review of the Report of the Department of Defense on Base Realignment and Closure, Congressional Budget Office, July 1, 1998.

Audit Report: Cost and Savings for 1993 Defense Base Realignments and Closures, Department of Defense Office of the Inspector General (Report No. 98-130, May 6, 1998).

The Report of the Department of Defense on Base Realignment and Closure, Department of Defense, April 1998.

Defense Infrastructure: Challenges Facing DOD in Implementing Reform Initiatives (GAO/T-NSIAD-98-115, Mar. 18, 1998).

Base Realignment and Closure 1995 Savings Estimates, U.S. Army Audit Agency (Audit Report AA97-225, July 31, 1997).

Military Bases: Lessons Learned From Prior Base Closure Rounds (GAO/NSIAD-97-151, July 25, 1997).

The Effects of Military Base Closures on Local Communities: A Short-Term Perspective, RAND National Defense Institute, 1996.

Closing Military Bases: An Interim Assessment, Congressional Budget Office, December 1996.

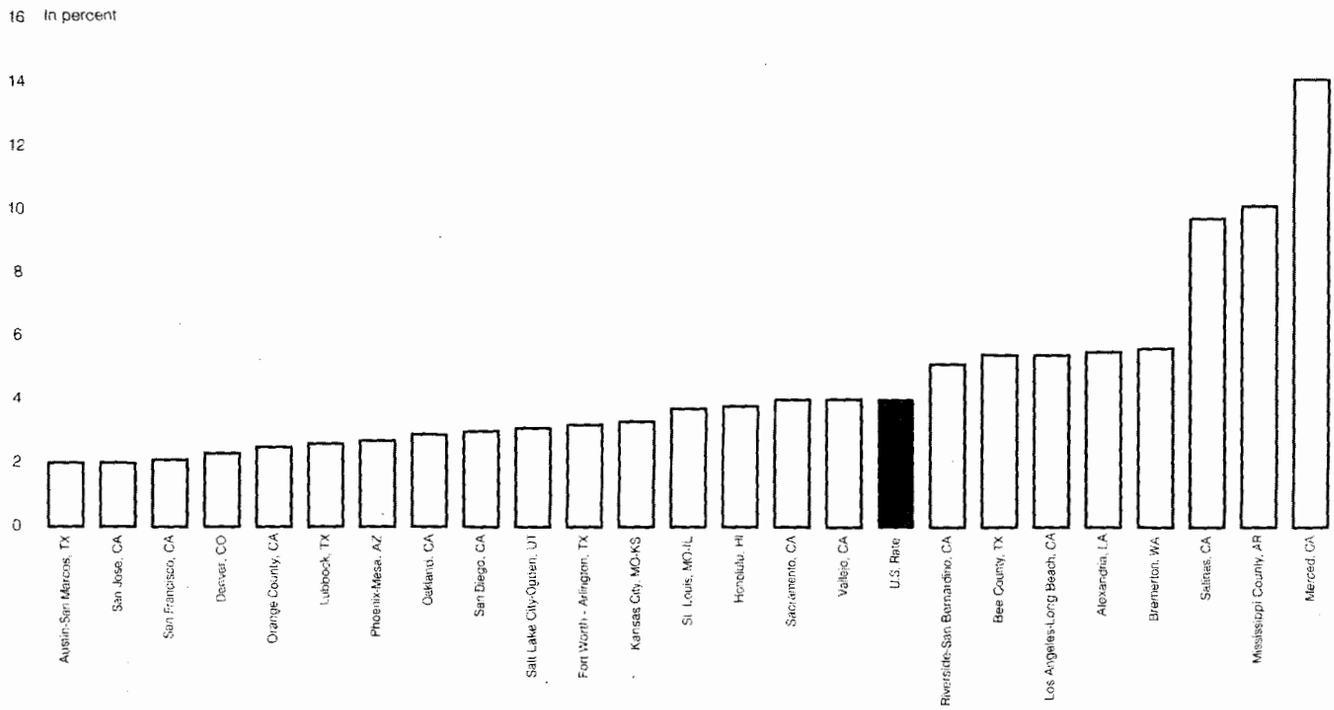
Military Base Closures: Reducing High Costs of Environmental Cleanup Requires Difficult Choices (GAO/NSIAD-96-172, Sept. 5, 1996).

Military Bases: Closure and Realignment Savings Are Significant, but Not Easily Quantified (GAO/NSIAD-96-67, Apr. 8, 1996).

Attachment II: Unemployment Rates of BRAC-Affected Areas Compared to the U.S. Rate

As shown in figure 6, 16 (67 percent) of the 24 BRAC-affected local locations west of the Mississippi River had unemployment rates less than or equal to the U.S. rate of 4 percent in 2000. The other eight locations had unemployment rates greater than the U.S. rate.

Figure 6: Unemployment Rates of 24 BRAC-Affected Locations West of the Mississippi River Compared to the U.S. Rate in 2000

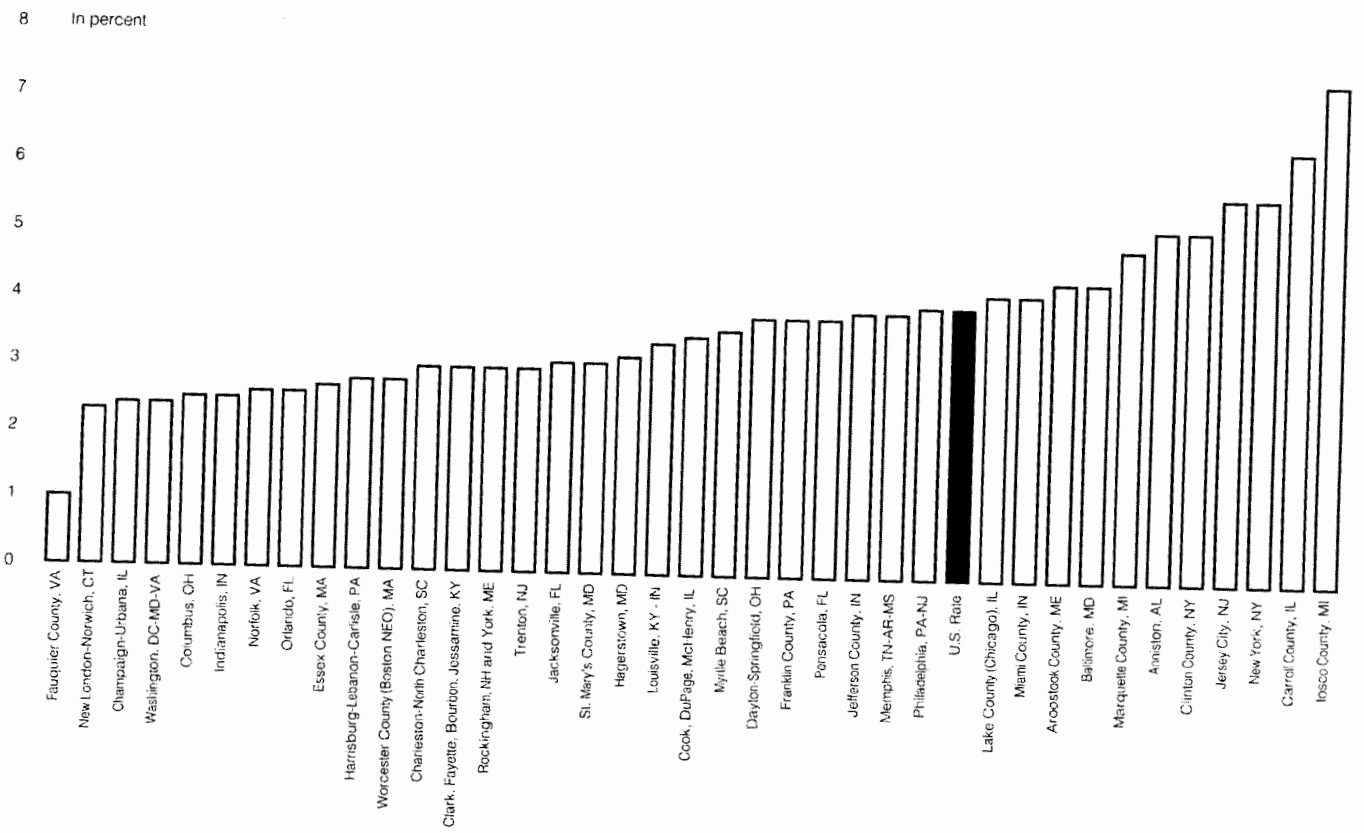


Note: Each of these communities, from all four BRAC rounds, lost an estimated 300 or more government and contractor civilian jobs.

Source: Our analysis of Department of Labor data.

As shown in figure 7, 27 (or 71 percent) of the 38 BRAC-affected local locations east of the Mississippi River had unemployment rates less than or equal to the U.S. rate of 4 percent in 2000. The other 11 locations had unemployment rates greater than the U.S. rate.

Figure 7: Unemployment Rates of 38 BRAC-Affected Locations East of the Mississippi River Compared to the U.S. Rate in 2000



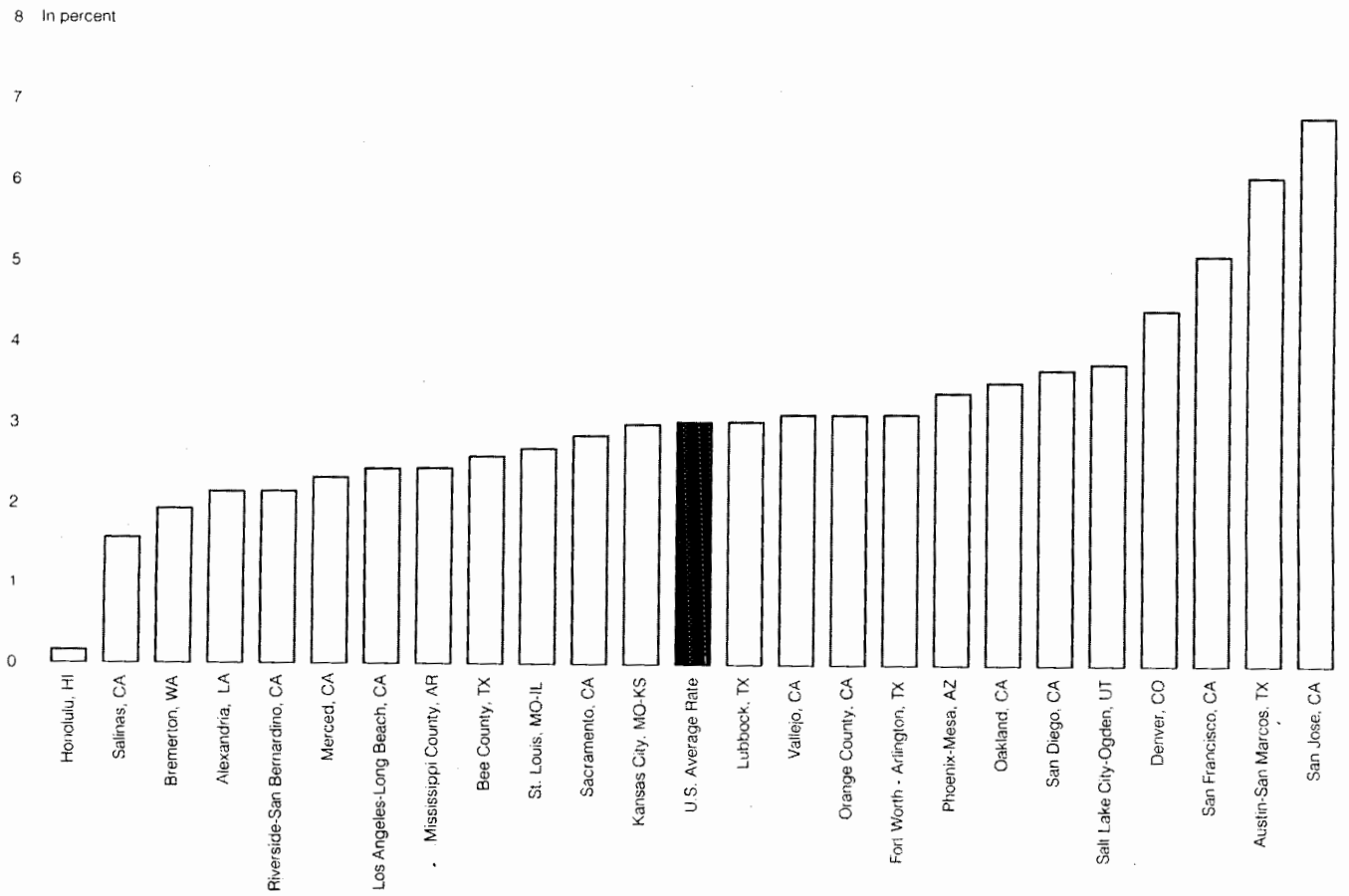
Note: Each of these communities, from all four BRAC rounds, lost an estimated 300 or more government and contractor civilian jobs.

Source: Our analysis of Department of Labor data.

Attachment III: Average Per Capita Income Growth Rates of BRAC-Affected Areas Compared to the U.S Average Rate

As shown in figure 8, 12 (or half) of the 24 BRAC-affected local locations west of the Mississippi River had average annual per capita income growth rates that were greater than the U.S. average growth rate of 3.03 percent during 1996-99. The other 12 locations had rates below the U.S. average rate.

Figure 8: Average Annual Real Per Capita Income Growth Rates of 24 BRAC-Affected Locations West of the Mississippi River Compared to the U.S. Average Rate During 1996-99

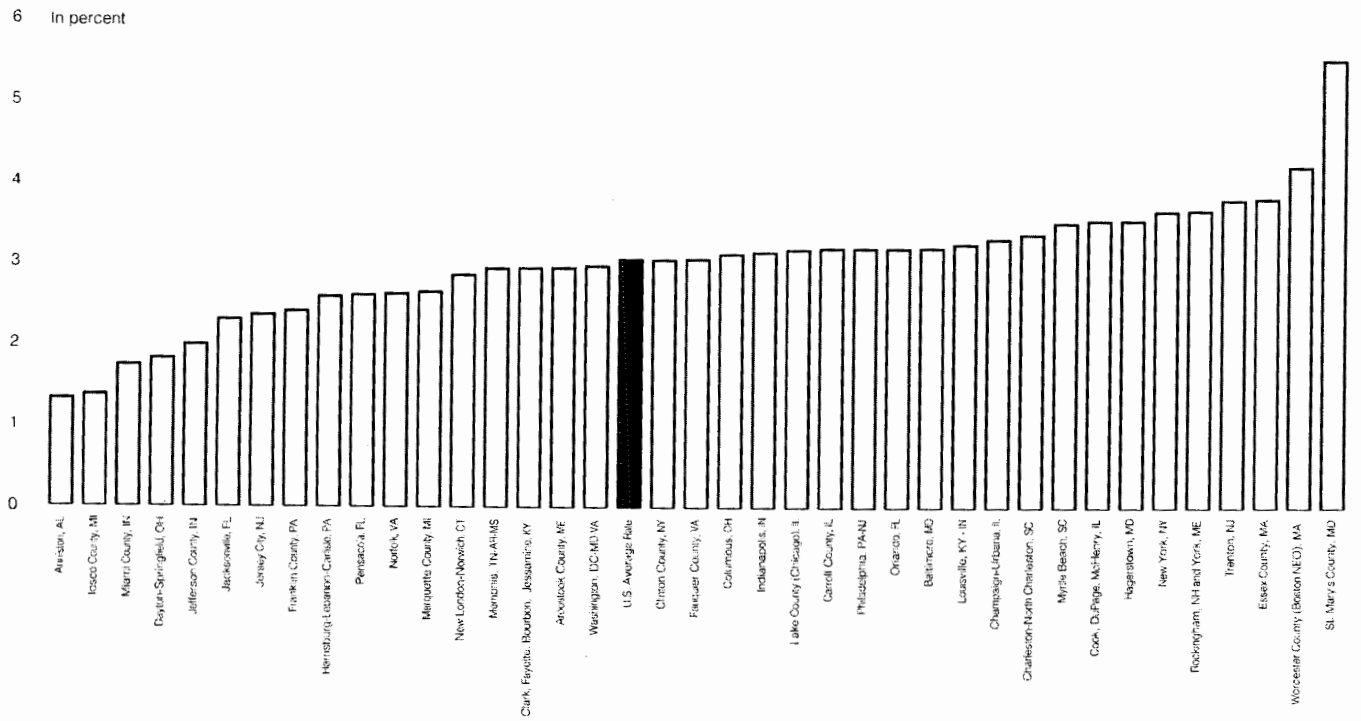


Note: Each of these communities, from all four BRAC rounds, lost an estimated 300 or more government and contractor civilian jobs.

Source: Our analysis of Department of Commerce data.

As shown in figure 9, 21 (or 55 percent) of the 38 BRAC-affected local locations east of the Mississippi River had average annual per capita income growth rates that were greater than or equal to the U.S. average growth rate of 3.03 percent during 1996-99. The other 17 locations had rates below the U.S. average rate.

Figure 9: Average Annual Real Per Capita Income Growth Rates of 38 BRAC-Affected Locations East of the Mississippi River Compared to the U.S. Average Rate During 1996-99



Note: Each of these communities, from all four BRAC rounds, lost an estimated 300 or more government and contractor civilian jobs.

Source: Our analysis of Department of Commerce data.

Attachment IV: Economic Recovery Is Continuing at Communities Surrounding the Former Chase Field Naval Air Station and Castle Air Force Base

In 1998, we reported that in general, the communities surrounding the six major base closure sites we visited suffered initial economic disruption, including decreased retail sales; declining residential real estate values; and social losses felt in local schools, churches, and organizations.[1] However, we also reported that this initial period was followed by recovery. We recently revisited communities surrounding two of the major base closures—Beeville, Texas (Chase Field Naval Air Station), and Merced and Atwater, California (Castle Air Force Base), and found that both have continued their economic recovery from the base closures but still have some problems.

Table 1 shows how the closure of Chase Field Naval Air Station in February 1993 affected the surrounding communities and activities, as indicated by local officials during our visits in 1998 and 2001.

Table 1: Community Impacts Resulting From the Closure of Chase Field Naval Air Station, as Reported in 1998 and 2001

Overview	
Bee County and the surrounding counties are generally rural and agriculture and ranching are industries in the area. The largest economic sectors in Bee County are now state and local government, trade, and services.	
As we reported in 1998	**As we found during our recent visit in 2001**
1997 unemployment rate of 5.9 percent.	2000 unemployment rate of 5.4 percent.
Average real per capita income growth (1991-95) 0.5 percent.	Average real per capita income growth (1996-99) 2.59 percent.
Sales of expensive items, such as automobiles, dropped.	Sales of new automobiles remain low, while used automobile sales have increased.
Automobile dealerships had to reduce staff, and some businesses closed, including high-end clothing stores, a discount department store, an automobile dealership, a local janitorial service, a tortilla factory, and about four convenience stores.	New motel, theater, and water treatment plant built, and one of two large grocery stores closed. New hospital wing added to accommodate a significant increase in hospital patients treated. County sales tax revenues increased slightly.
Real estate values in the residential market declined, and housing in the $75,000-plus range remained stagnant.	Real estate values in the residential market increased, with new home building growth for homes in the $100,000-plus range.
Many military families that had brought a range of life experiences to the community moved.	Evening enrollment at community college is about 75 percent lower without the military presence.
Skilled workers commuted long distances to other bases, or were retired, unemployed, underemployed, or no longer residing in the area.	Skilled workers continue to commute long distances to other bases.

[1] *Military Bases* (GAO/NSIAD-99-36, Dec. 11, 1998).

In March 1998, DOD's Office of Economic Adjustment reported that 1,290 new jobs had been created from the community's reuse of the former naval air station. However, by October 2000, the reported number of jobs created dropped to 1,169. At the time of our 2001 visit, the former air station had only one tenant, who maintains the facility instead of paying rent under a negotiated 10-year lease agreement.

According to local officials, the most important factor contributing to economic recovery was the decision of the Texas Department of Criminal Justice to locate a prison complex on the former air base. The medium-security prison, completed in 1994, occupies less than a third of the former base and employs about 1,200 people. Without this prison and another prison complex built earlier adjacent to the former base, local officials believe Beeville would not have survived as a community.

Table 2 shows how the closure of Castle Air Force Base in September 1995 affected the surrounding communities and activities, as indicated by local officials during our visits in 1998 and 2001.

Table 2: Community Impacts Resulting From the Closure of Castle Air Force Base, as Reported in 1998 and 2001

Overview

Merced County is a rural area largely dedicated to agriculture and related industries, with much of its labor force seasonally employed in farming and canning. The county is ranked third of California's 58 counties in the percentage of population living in poverty. Even during seasons referred to as full employment, the unemployment rate remains high, around 14 percent; during the off season, the rate can rise to between 19 and 22 percent. The area is home to large Hmong and Punjabi populations, many of whom are first-generation immigrants that cannot speak English.[a]

As we reported in 1998	As we found during our recent visit in 2001
1997 unemployment rate of 15.4 percent.	2000 unemployment rate of 14.1 percent.
Average real per capita income growth (1991-95)—0.8 percent.	Average real per capita income growth (1996-99)—2.32 percent.
Real estate values in Atwater dropped 25 to 30 percent, partly because the government purchased departing military personnel's houses and placed them on the market. New housing construction stopped.	Housing starts have increased significantly over the last 2 years partly because Bay Area families have taken advantage of affordable residential housing. A new university campus is expected to open in 2004 causing an increase in real estate sales. Average home prices increased from $114,000 to $140,000.
Atwater schools lost enrollment and their tax base. The elementary school district had to reduce budget and staff, canceling some programs.	Atwater population increased 9.6 percent from 1996 to 2000. Merced population increased by 4.5 percent over the same period.
Local businesses had to reduce staff; some closed, and some changed ownership. Several small businesses closed, including restaurants, insurance vendors, and dry cleaners.	Many closed businesses, such as restaurants and other services, have not been replaced. There are vacant buildings throughout Atwater.
The community lost the military families, who contributed to local organizations such as churches and hospitals.	Former air base skilled workers continue to commute over 4 hours a day to the Bay Area, while others no longer reside in the area.

[a]Many Hmong immigrants from Laos, recruited and trained by the United States to conduct rescue missions and guerilla activity during the Vietnam war, migrated to the United States after the war to escape persecution. India's Punjabi began immigrating to California after World War II and settled largely in rural areas.

DOD's Office of Economic Adjustment reported an increase of 325 new jobs as a result of the redevelopment of Castle Air Force Base from 1998 to 2000. At the time of our 2001 visit, Cingular Wireless—the largest tenant on the former air base—employed 1,200 people at its call center. However, on July 25, 2001, Cingular announced that it was cutting 400 jobs at its Castle site because the number of calls and the size of the workforce had outgrown the center's space. In addition, 42 other tenants on the former air base employed about 310 individuals.

According to local officials, the closure of Castle had an immediate adverse effect on the unemployment rate, housing costs, and per capita income, but within several years these negative aspects were overcome. The strong national economy helped in this recovery, but Merced County's continuing growth is primarily a result of three factors. First, a new federal

prison now occupies a portion of the former air base and employs 200 individuals. Second, because a new University of California campus is expected to open in the fall of 2004 and to eventually serve 25,000 students, real estate sales have begun to increase. Third, many Bay Area residents are purchasing more affordable homes in Merced County and commuting to their jobs in the Bay Area.

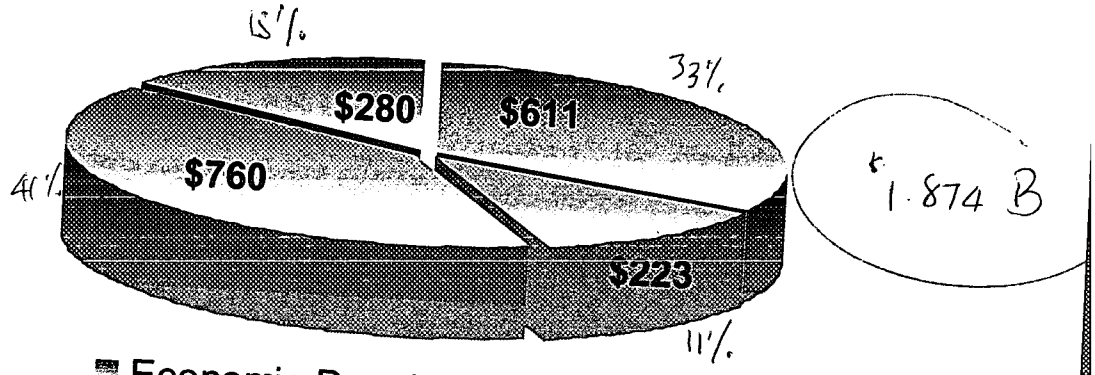
OEA Federally Coordinated BRAC Assistance
1989-Present

DCN-14697

Property Transferred/Conveyed

- Federal Aviation Administration *(airports)*
  - ✓ ***38,262 acres at 24 installations***
- Interior *(parks, historic monuments, conservation)*
  - ✓ ***147,608 acres at 46 installations***
- Education *(primary, secondary, graduate)*
  - ✓ ***3,203 acres at 27 installations***
- Justice *(prisons, law enforcement facilities)*
  - ✓ ***6,452 acres at 14 installations***
- Health and Human Services
  - ✓ ***307 acres at 14 installations***
- Transportation *(highways, intermodal)*
  - ✓ ***773 acres at 6 installations***
- Maritime Administration *(seaports)*
  - ✓ ***1,939 acres at 14 installations***

Federal Grants 1988-2004* (mil)



- Economic Development Administration
- Department of Labor
- Federal Aviation Administration
- Office of Economic Adjustment

* Source: GAO 2004

www.oea.gov

A Review of Privatization Definitions, Options, and Capabilities

for the Business, Labor, and Agriculture Interim Committee
By Gordy Higgins, Research Analyst, Legislative Services Division

Introduction

The primary study assignment of the Business, Labor, and Agriculture Committee (Committee) is to make a connection between the incidences of governments that compete unfairly with private sector service providers and the findings and conclusions regarding the implementation of privatization efforts. It has been demonstrated, at least generally by the survey responses, that besides a handful of industries, the concern may not be unfair competition stemming from the government's intrusion into the private market, but rather the lack of opportunity for private vendors, regardless of the industry segment, to challenge the service delivery infrastructure that is in place. If the previous assumption is correct, the question becomes one of whether privatization options would eliminate situations of unfair competition and offer private sector providers a framework that would ensure that the most efficient and effective provider delivers the service.

The following sections will offer Committee members a preliminary view into the various definitions of privatization, the arguments for and against implementing a privatization effort, a number of options that can be used to determine which services should be candidates for privatization, and options for implementing a privatization plan to increase the effectiveness of overall service delivery.

Definitions of Privatization

While the term "privatization" generally conjures up a consistent theme, it is important to outline the continuum on which the term can and has been used by policymakers. This section offers several definitions for discussion as they relate to the Committee's competitive business environment theme. The Florida House of Representatives Committee on Governmental Operations conducted a review of the literature on privatization and offered the following spectrum of definitions:

- Engaging the private sector to provide services or facilities that are usually regarded as public sector responsibilities.
- Shifting from publicly to privately produced goods and services.
- Transferring government functions or assets, or shifting government management and service delivery, to the private sector.
- Attempting to alleviate the disincentives toward efficiency in public organizations by subjecting them to the incentives of the private market.
- Using the private sector in government management and delivery of public services.

Any of these definitions would be applicable under the policy umbrella being developed by the Committee. The Committee has attempted to gather information regarding competition between public and private service providers with an eye toward determining whether or not the competitive inequities identified could be remedied by incorporating a sensible privatization approach.

Arguments For and Against Privatization

It should come as no surprise that the issue of privatization has vocal supporters and opponents. Proponents contend that privatization should be used for cost savings and administrative expediency. At a minimum, privatization is a tool that should be explored when a government service provider does not have the necessary expertise or personnel or when the service provider needs to complete projects quickly. In general, these justifications refer to the belief that private sector organizations are less bureaucratic than government agencies and can make decisions more rapidly to assign the necessary resources where the greatest need occurs.

Opponents of privatization efforts suggest that cost savings, the primary reason for pursuing a privatization policy, is never a guarantee. Detractors of privatization also claim that service quality suffers because private providers focus their attention on profit margins rather than on providing a valuable service. The foes suggest that if cost savings is the goal, existing institutional structure should be strengthened to allow government to restructure itself into a more efficient and effective service delivery agent.

Arguments in favor of privatization:

- Helps governments save money in management and delivery of public services.
- Allows for speedy implementation of certain programs.
- Provides high-quality services in some areas.
- Becomes necessary when government lacks the expertise or personnel to carry out certain programs.
- Uses more innovative approaches and technology.
- Helps dissolve unnecessary government service monopolies.
- Offers services more effectively due to flexibility and reduced red tape.
- Slows the growth of government or downsizes government.
- Introduces competition between government employees and private providers.
- Provides an alternative to traditional ways of improving government productivity.

The arguments against privatization include:

- Does not save taxpayers' money.
- Does not guarantee market competition and can result in private monopolies.
- Leads to corruption.
- Causes policymakers and managers to lose control over privatized services.
- Diminishes accountability of government.
- Private gain and public good do not always correspond.
- Is unnecessary given other productivity approaches available to public service providers.
- Comprises quality because of private vendor profit motive.
- Lowers state employee morale and contributes to fear of displacement.
- Destabilizes economically marginal communities.

Methods of Privatization

The following table represents a variety of ways that the principle reason for privatization (established by the definitions) may be put into practice.

Methods of Privatization
Asset Sale The state sells or cashes out its assets to private providers to enlarge the tax base.
Contracting Out The state enters into agreements with private vendors to provide services. The state pays contractors to provide the services.
Deregulation The state removes its regulations from the service previously monopolized by government in favor of private provision of the service and competition against government agencies.
Franchise The state gives monopoly privileges to a private vendor to provide a service in a specific geographical area.

Grants and Subsidies The state makes monetary contributions to help private vendors deliver a public service.
Private Donation The state relies on private sector resources for assistance in providing public services. Private firms may loan personnel, facilities, or equipment to state agencies.
Public-Private Partnerships The state conducts projects in cooperation with private vendors, relying on private resources instead of tax revenue.
Service Shedding The state drastically reduces the level of a service or stops providing a service so that the private sector can assume the function with private sources.
Volunteerism The state uses volunteers to provide public services.
Vouchers The state allows eligible clients to purchase services available in the open market from private providers. As with contracting, the government pays for the services.

Source: Practices: A Review of Privatization in State Government, CSG

Outlining the Options

If the Committee determines that privatizing services is an approach to addressing public-private competitive inequities, it must first investigate what services the government should provide. Once the government services are established, the Committee should focus on deciding how best to provide those services. In essence, the government can directly provide goods and services or it can limit its involvement to making policy, regulating, managing, and protecting the public's interest. The Florida House of Representatives Committee on Governmental Operations reviewed the work of Keon S. Chi, a nationally known expert on privatization, and proposed five options for providing public programs and services:

- state management improvement without privatization;
- privatization of professional and support services;
- privatization of public works and infrastructure;
- privatization of service delivery to the public; and
- competition between public and private providers.

Briefly, each of the option's specifics are as follows:

Option 1: State management improvement without privatization

With this option, state agencies attempt to improve cost efficiency and productivity through in-house management techniques (e.g., civil service reform, innovation, improving internal efficiencies, incentives for improved performance). Chi continues by

suggesting that policymakers should not automatically assume that privatization is an answer to dissatisfaction of government service delivery methods.

Option 2: Privatization of professional and support services

State agencies may privatize professional and support services that do not directly involve state service delivery to the public (e.g., architectural, engineering, legal services, custodial and maintenance, printing, security, information technology, telecommunications). Chi recommends that savings, if that is the goal of the policymakers, come only through well-planned and well-managed initiatives.

Option 3: Privatization of public works and infrastructure

State agencies may privatize selected public works and infrastructure projects (e.g., construction and maintenance of highways and buildings). Privatization efforts across the country have focused on this option.

Option 4: Privatization of service delivery to the public

Agencies may privatize selected state programs and services that are provided to specific clients and constituents. These include mental health services, health care, Medicaid, social services, corrections, and education. Chi suggests that agencies most commonly cite lack of resources and personnel and cost savings as the rationale for adopting this option.

Option 5: Competition between public and private sectors

Commonly referred to as "managed competition", this option allows state agencies to compete directly with private sector vendors for the administration and delivery of certain services. According to Chi, competition is the breaking up of governmental monopolies by injecting a competitive process into the decisionmaking methodology.

Privatization Checklist

The 1997 Council of State Governments Privatization Survey found that nearly 75% of the responding state government agencies and state officials did not use a formal or standard decisionmaking process to decide whether privatization of a particular service was in the best interest of the public service recipient. Most of the respondents did agree that a standardized approach would be an important tool for policymakers to decide not only to move forward with alternative service delivery options but also to monitor and evaluate the success of the efforts.

The following list represents a collection of questions that policymakers with privatization experience suggest should be answered before moving forward with any new initiative. The Committee may wish to consider answers to each of these questions as one method of creating a privatization process recommendation for review by the 57th Legislature. The answers may also generate a clear connection between the issue of unfair government competition and the policy framework regarding the creation of a competitive business

environment. (Note: the competitive business environment framework is discussed in a separate paper.)

Privatization Decisionmaking
Initiation of the Privatization Project Who will begin the process; Governor, individual agencies, Legislative Branch, etc.?
Legal Barriers What, if any, are the legal issues associated with privatizing public service delivery systems?
Functions to be Privatized. What kind of formal and consistent identification process should be established to review current in-house operations?
Goals and Criteria for Privatization What are the goals and who should be involved in establishing the goals and evaluation criteria?
Methods of Privatization Is the method of privatization static or dynamic?
Benefits of Privatization Are the benefits of privatization consistent for each chosen program or service?
Availability of Private Vendors Are willing and reliable vendors available to provide a service?
Risk and Cost Overruns What risks are present in a privatization effort? Are those risks contained in every effort? What policies and procedures are needed to address cost overruns?
State Employees How will state employees be affected by privatization efforts?
Request for Proposals Do the existing RFPs contain the necessary factors to effectively evaluate alternative providers?
Awarding of the Contract Are the existing laws adequate to address the awarding of contracts?
Cost Analysis Who should conduct the cost analysis?
Monitoring Who should monitor the private vendor? Is a monitoring program regularly conducted or is monitoring done on a case-by-case basis?

Performance Measurement
How should the performance of a private vendor be measured? What provisions are needed to ensure contractor performance?

Source: Practices: A Review of Privatization in State Government, CSG

Potential Recommendations for Success

According to the Council of State Governments, most states have been able to implement privatization options under their existing constitutional and statutory provisions. The Committee's legal staff is preparing a legal memo that reviews the existing law to determine whether any obvious impediments exist to moving forward with a proposal to privatize certain services.

The Council of State Governments, along with other entities that have reviewed privatization efforts in state and local governments, states that the arguments for and against privatization give a good indication of what groups are typically included in any discussion of reviewing the current methods of providing public services. A basic suggestion may be to include all of the affected interests during the development stage to ensure that any resources spent on determining whether a movement toward expanding the role of private vendors in the process of delivering public services results in a successful outcome.

Given the complexity of implementing a unified privatization effort, it is recommended that a thorough analysis be conducted to determine what conditions are present in Montana that could result in a less-than-efficient process. The following table highlights a number of recommendations collected from the experiences of other states and generally mirrors the privatization checklist necessary for making informed decisions.

Process Recommendations
Political Leadership and Support Strong support from policymakers along with appropriate enabling legislation will offer greater guarantees that any widespread privatization effort is successful.
Clear and Measurable Goals Establishing goals with accompanying performance measurements before engaging in privatization efforts helps success rates.
Delegation of Authority Depending on what privatization method is used, decisionmakers must establish a clear description of the role of government agency employees (i.e., overseers v. doers).
Data Collection Decide what entity will gather data for decisionmakers to address. This includes but is not limited to cost data, performance evaluation data, and preliminary cost-benefit analysis data.

Monitoring A monitoring methodology must be developed and circulated to alternative providers to ensure that the expectations of decisionmakers are well-known and understood.
Evaluation Establish a regular and consistent evaluation process based on the predetermined goals and objectives. Third party evaluators may be used.
Safeguards Consider a pilot program before moving to fully implement a privatization effort. Develop transition plans in the event that a private provider is unable or unwilling to continue the delivery of services.
Competition in Management and Delivery of Services Analyze the conditions present in the current service delivery methodology and decide whether a managed competition process between private and public sector service providers would yield positive results.
Employee Participation Involve and inform employee organizations in the planning process. Consider any appropriate employee protection measures that may ease the transition to a private provider.
Cost Overruns Include cost adjustment provisions in any contract.

Source: Practices: A Review of Privatization in State Government, CSG

Conclusion

The topic of privatization invokes a number of responses from everyone affected by its implementation. Although this Committee is not the first to debate the merits and faults of creating conditions for alternative service delivery, it may be among the first to address the problem of unfair government competition using principles found in privatization efforts.

However, if the Committee chooses to consider the experiences of other state and local governments and develop an overarching privatization methodology that weighs each service against some stated criteria, the concerns of some private members that the government is competing unfairly may be mitigated. A privatization policy, if well-considered and implemented appropriately, will most certainly address the issues raised by the vendors who are seeking a more open opportunity to demonstrate the advantages of choosing a private provider.

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1988, 1991, 1993 and 1995 BRAC ACTIONS - BASE REUTILIZATION STATUS

(Major Base Closures and Realignments as of October 31, 2004)

Military Base	Area of Economic Impact	BRAC Year	Closure Date	Civilian Positions Lost (1)	Reuse Activity	
					Number of Major Tenants (leases)	New Jobs on Base (2)
Alameda Naval Air Station/ Naval Aviation Depot/FISC Facility/Annex	Oakland, CA PMSA	1993	Apr-97	3,228	27	1,448
Army Materials Technology Laboratory	Boston, MA-NH NECMA	1988	Sep-95	540	28	1,167
Barbers Point Naval Air Station	Honolulu, HI MSA	1993	Jul-99	618	12	100
Bayonne Military Ocean Terminal	Bayonne, NJ-NY MSA	1995	Sep-99	2,015	19	995
Bergstrom Air Force Base	Austin-San Marcus, TX MSA	1991	Sep-93	927	61	4,359
Carswell Air Force Base	Ft Worth-Arlington, TX PMSA	1991	Sep-93	869	8	271
Castle Air Force Base	Merced, CA MSA	1991	Sep-95	1,149	64	2,326
Cecil Field Naval Air Station	Jacksonville, FL MSA	1993	Sep-99	995	35	1,615
Chanute Air Force Base	Champaign-Urbana, IL MSA	1988	Sep-93	1,035	61	1,869
Charleston Naval Base Complex	Charleston-North Charleston, SC MSA	1993	Apr-96	6,272	50	2,797
Chase Field Naval Air Station	Bee County, TX	1991	Feb-93	956	7	1,018
Eaker Air Force Base	Mississippi County, AR	1991	Dec-92	777	58	509
El Toro Marine Corps Air Station	Orange County, CA PMSA	1993	Jul-99	979	4	123
England Air Force Base	Alexandria, LA MSA	1991	Dec-92	682	54	1,963
Fitzsimons Army Medical Center	Denver, CO PMSA	1995	Jun-99	1,612	13	1,116
Fort Benjamin Harrison	Indianapolis, IN MSA	1991	Sep-95	1,050	113	1,171
Fort Devens	Boston, MA-NH NECMA	1991	Mar-96	2,178	69	4,180
Fort McClellan	Calhoun County, AL	1995	Sep-99	2,156	36	2,028
Fort Ord	Salinas, CA MSA	1991	Sep-94	2,835	34	2,020
Fort Pickett	Nottoway County, VA	1995	Sep-97	245	41	272
Fort Ritchie	Washington County, MD	1995	Sep-98	1,373	5	42
Fort Sheridan*	Chicago, IL PMSA	1988	May-93	1,681	1	0
Gentile Air Force Station (Defense Electronics Supply Ctr)	Dayton-Springfield, OH MSA	1993	Dec-96	2,804	4	1,800
George Air Force Base	Riverside-San Bernardino, CA PMSA	1988	Dec-92	506	62	1,631
Glenview Naval Air Station	Chicago, IL PMSA	1993	Sep-95	389	29	4,098
Griffiss Air Force Base	Utica-Rome, NY MSA	1993	Sep-95	1,341	59	1,297
Grissom Air Force Base	Miami County, IN	1991	Sep-94	792	40	1,036
Guam Military Complex	N/A	1993	Sep-97	2,193	10	552
Homestead Air Force Base	Miami-Hialeah, FL PMSA	1993	Mar-94	136	10	423
Hunters Point Naval Shipyard	San Francisco, CA PMSA	1991	Apr-94	93	7	1,150
Indianapolis Naval Air Warfare Center-Aircraft Division	Indianapolis, IN MSA	1995	Sep-97	2,196	4	1,776
Jefferson Proving Ground	Jefferson County, IN	1988	Sep-95	387	27	179
K. I. Sawyer Air Force Base	Marquette County, MI	1993	Sep-95	788	71	1,202
Kelly Air Force Base	San Antonio, TX MSA	1995	Jul-01	10,912	54	5,296
Letterkenny Army Depot	Franklin County, PA	1995	Jun-01	2,512	44	916
Lexington Army Depot	Lexington, KY MSA	1988	Nov-94	1,131	48	1,316
Long Beach Naval Complex	Los Angeles-Long Beach, CA PMSA	1991	Sep-97	4,487	8	3,975
Loring Air Force Base	Aroostook County, ME	1991	Sep-94	1,311	22	1,161
Louisville Naval Ordnance Station	Louisville, KY-IN MSA	1995	Sep-97	1,435	12	822
Lowry Air Force Base	Denver, CO PMSA	1991	Sep-94	2,275	56	5,666
March Air Force Base	Riverside County, CA	1993	Mar-96	997	20	678
Mare Island Naval Shipyard	Vallejo-Fairfield-Napa, CA PMSA	1993	Mar-96	7,567	75	1,363
Mather Air Force Base	Sacramento, CA PMSA	1988	Sep-93	1,012	60	4,498
McClellan Air Force Base	Sacramento, CA PMSA	1995	Jul-01	8,828	137	3,469
Memphis Defense Distribution Depot	Memphis, TN-AR-MS MSA	1995	Sep-97	1,289	25	1,045
Memphis Naval Air Station	Memphis, TN-AR-MS MSA	1993	Sep-97	250	19	148
Myrtle Beach Air Force Base	Myrtle Beach, SC MSA	1991	Mar-93	784	43	1,571
New York (Staten Island) NS*	New York, NY PMSA	1993	Aug-94	1,001	0	0
Newark Air Force Base	Columbus, OH MSA	1993	Sep-96	1,760	12	944
Norton Air Force Base	Riverside-San Bernardino, CA PMSA	1988	Mar-94	2,133	52	4,551
Oakland Military Complex (Naval Medical Center/FISC/AB)	Oakland, CA PMSA	1993	Sep-99	2,834	47	487
Ogden Defense Distribution Depot	Salt Lake City-Ogden, UT MSA	1995	Sep-97	1,105	53	2,468
Orlando Naval Training Center and Naval Hospital	Orlando, FL MSA	1993	Apr-99	1,105	10	412
Pease Air Force Base	Portsmouth-Rochester, NH PMSA	1988	Mar-91	400	176	5,124
Philadelphia Defense Personnel Support Ctr (Clothing Factory)	Philadelphia, PA-NJ PMSA	1993	Sep-99	1,485	5	1,270

DCN:11697

Philadelphia Naval Base Complex	Philadelphia, PA-NJ PMSA	1991	Sep-96	8,119	55	2,775
Plattsburgh Air Force Base	Clinton County, NY	1993	Sep-95	352	75	1,096
Presidio of San Francisco	San Francisco, CA PMSA	1988	Sep-94	3,150	98	1,087
Red River Army Depot	Texarkana, TX PMSA	1995	Sep-98	386	12	183
Reese Air Force Base	Lubbock, TX MSA	1995	Sep-97	1,238	20	468
Sacramento Army Depot	Sacramento, CA PMSA	1991	Sep-94	3,164	2	1,900
San Diego Naval Training Center	San Diego, CA MSA	1993	Apr-97	402	18	120
Savanna Army Depot	Carroll and Jo-Daviess Counties, IL	1995	Apr-00	436	8	103
Seneca Army Depot	Seneca County, NY	1995	Sep-00	273	8	1,205
Sierra AD	Lassen County, CA	1995	Jun-00	374	,9	7
Stratford Army Engine Plant	Stratford, CT PMSA	1995	Dec-97	1,400		0
Tooele Army Depot	Tooele County, UT	1993	Sep-95	1,942	58	907
Treasure Island Naval Station	San Francisco, CA PMSA	1993	Sep-97	454	8	282
Tustin Marine Corps Air Station	Orange County, CA PMSA	1991	Jul-99	348	10	16
Vint Hill Farms Station	Washington, DC-MD-VA-WV PMSA	1993	Sep-97	1,472	51	901
Warminster Naval Air Warfare Center-Aircraft Division	Bucks County, PA	1991	Mar-97	2,311	30	789
Williams Air Force Base	Phoenix-Mesa, AZ MSA	1991	Sep-93	728	37	3,704
Wurtsmith Air Force Base	Iosco County, MI	1991	Jun-93	690	42	830
73			Totals:	129,649	2642	110,086

Footnotes:

(1) Civilian Positions Lost include DoD and Contractor

(2) New Jobs do not include Active Military, Reserves, National Guard or Job Transfers with the same MSA/PMSA/County

® denotes Realignmen

* Current as of October 2003

Highlighted bases were included in the 2004 survey, but are not represented in the tally.

DCN 11697

IMPLAN generates higher economic impacts of tourism than RIMS II by 17% on output effects, and about 41% and 32% for income and employment effects.

Table 3. Sample economic impacts of tourism spending estimated from RIMS II and IMPLAN multipliers for Michigan

	Final	Output Effects[1]		Income Effects[1]		Employment[2]	
Sector	Demand[1]	IMPLAN	RIMS II	IMPLAN	RIMS II	IMPLAN	RIMS II
Hotels and lodging places and amusements	0.39	0.93	0.72	0.35	0.22	22.84	14.90
Eating and drinking places	0.26	0.64	0.51	0.23	0.15	16.89	13.21
Retail trade	0.16	0.36	0.32	0.16	0.13	9.44	7.87
Wholesale trade	0.04	0.07	0.08	0.04	0.03	1.16	1.06
Food and kindred products and tobacco	0.04	0.06	0.07	0.01	0.01	0.57	0.61
Other	0.10	0.17	0.20	0.06	0.06	2.55	2.77
Total impacts estimated	1.00	2.22	1.90	0.85	0.60	53.45	40.43

1. In million dollars
2. Number of jobs

This study suggests that the IMPLAN Type III multipliers tend to be higher for those industries that have lower income such as services sectors, and lower for industries that have higher income such as manufacturing sectors. This characteristic would have significant influence on economic impact analysis of tourism spending using IMPLAN DOS version. Since most of the tourism spending flows into those industries with lower paying, part-time or seasonal jobs, the resulting impacts for reduced effects tend to be overestimated.

From a practitioner's perspective, especially for people that use economic impact analysis of tourism spending, it is important to know the tendency of overestimation in IMPLAN Type III multipliers when most of the initial money flows into low wage and salary sectors. As suggested by Stynes, Chang and Propst (1998), people who use IMPLAN Type III multipliers for economic impact of tourism spending should take only half of the induced effect into account when estimating economic impacts of tourism spending on a multi-county region. This adjustment should be higher (take 60% to 70%) when the impact analysis is taken place in the State level. As the IMPLAN Pro Windows version generates Type II multipliers that are more comparable to RIMS II Type II multipliers, readers should take cautions when comparing economic impact analysis from different version of IMPLAN systems.

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DCN:11697

Migration and Geographic Mobility in Metropolitan and Nonmetropolitan America: 1995 to 2000

Issued August 2003

Census 2000 Special Reports

CENSR-9

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Geographic mobility has long been an important aspect of American life, directly affecting both people and geographic areas. At an individual level, moving has a number of potential impacts, such as the potential for expanding economic opportunity or raising residential satisfaction. Given the relative stability of current birth and death rates in the United States, the critical demographic factor for any area's population growth or decline is the movement of people. From the national to the local level, residential mobility, domestic migration, and international migration are paramount to explaining population growth and decline. Finally, federal, state and local governments, as well as the private sector, need to understand where people move when planning needed services, facilities, and businesses.

This report looks at 5-year mobility data from Census 2000 and focuses on migration and mobility patterns for metropolitan areas and territory outside metropolitan areas (hereafter referred to as nonmetropolitan territory) in the United States.[1] The first section addresses general

[1] All mobility and migration data in this report are for the population 5 years old and over. Movers are defined as those who did not live in their current house or apartment 5 years previously; thus, previous residence is measured 5 years prior to the Census and does not track any other moves made within that 5-year period. Similarly, the residence five years ago question does not measure those who moved away from a place of residence and later returned to that same residence during that 5-year period.

The estimates in this report are based on responses from a sample of the population. As with all surveys, estimates may vary from the actual values because of sampling variation or other factors. All comparisons made in this report have undergone statistical testing and are significant at the 90-percent confidence level unless otherwise noted.

Common Migration Terms

Movers can be classified by type of move and are categorized as to whether they moved within the same county, to a different county within the same state, to a different county from a different state or region, or were movers from abroad. *Migration* is commonly defined as moves that cross jurisdictional boundaries (counties in particular), while moves within a jurisdiction are referred to as *residential mobility*. Moves between counties are often referred to as *intercounty* moves, while moves within the same county are often referred to as *intracounty* moves. Further, migration can be differentiated as movement within the United States (*domestic, or internal*, migration) and movement into and out of the United States (*international* migration). *Inmigration* is the number of migrants who moved into an area during a given period, while *outmigration* is the number of migrants who moved out of an area during a given period. *Net migration* is the difference between inmigration and outmigration during a given time. A positive net, or *net inmigration*, indicates that more migrants entered an area than left during that time. A negative net, or *net outmigration*, means that more migrants left an area than entered it.

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United States Census 2000

Table 1.
Type of Move by Area of Residence in 2000: 1995 to 2000

(Data based on a sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www.census.gov/prod/cen2000/doc/sf3.pdf)*

Residence in 2000	Total, 5 years and over	Same residence (non-movers)	Movers				
			Total	Same county	Different county, same state	Different state	From abroad[1]
NUMBER							
United States	**262,375,152**	**142,027,478**	**120,347,674**	**65,435,013**	**25,327,355**	**22,089,460**	**7,495,846**
Metropolitan	210,418,424	111,658,605	98,759,819	54,506,465	19,393,335	17,984,001	6,876,018
Central city	79,368,285	39,187,934	40,180,351	23,257,702	6,353,320	7,095,376	3,473,953
Suburbs	131,050,139	72,470,671	58,579,468	31,248,763	13,040,015	10,888,625	3,402,065
Nonmetropolitan	51,956,728	30,368,873	21,587,855	10,928,548	5,934,020	4,105,459	619,828
PERCENT							
Total	**100.0**	**54.1**	**45.9**	**24.9**	**9.7**	**8.4**	**2.9**
Metropolitan	100.0	53.1	46.9	25.9	9.2	8.5	3.3
Central city	100.0	49.4	50.6	29.3	8.0	8.9	4.4
Suburbs	100.0	55.3	44.7	23.8	10.0	8.3	2.6
Nonmetropolitan	100.0	58.5	41.5	21.0	11.4	7.9	1.2

[1]This category includes movers from foreign countries, as well as movers from Puerto Rico, U.S. Island Areas, and U.S. minor outlying islands.

Source: U.S. Census Bureau, Census 2000.

mobility patterns for those living in metropolitan areas within central cities, those living in metropolitan areas outside central cities, and those living in nonmetropolitan territory. Section two examines migration patterns for nonmetropolitan residents, and the third section looks at migration patterns to and from metropolitan areas by size, and for the twenty largest metropolitan areas (metropolitan statistical areas [MSAs] and consolidated metropolitan statistical areas [CMSAs]).[2]

This report uses metropolitan areas as defined by the Office of Management and Budget (OMB) as of June 30, 1999. Census 2000 data releases use metropolitan area definitions in existence at the time of the census. This approach ensures that data tabulations and publications associated with Census 2000 use consistent definitions. New definitions, based on Census 2000 population and commuting data were announced by OMB in 2003. The metropolitan status of some counties changed when new metropolitan area definitions were announced.

GEOGRAPHIC MOBILITY BY METROPOLITAN STATUS

Residents of central cities of metropolitan areas were more mobile than suburban residents and those living in nonmetropolitan territory.

Over 120 million (45.9 percent) people 5 years old and older changed residence between 1995 and 2000 (see Table 1).[3] Over half (54.4 percent) of these moves were within counties, followed by moves to different counties in the same state (21.0 percent), moves between states (18.4 percent), and moves from abroad or Puerto Rico (6.2 percent).

People currently living in central cities were most likely to have moved, with 50.6 percent having changed residence within the past 5 years. Suburban residents (those living in metropolitan areas but outside central cities) were somewhat less mobile (44.7 percent), and those living in nonmetropolitan territory were the least mobile, with 41.5 percent reporting having moved within the past 5 years. That central city residents were more mobile than other metropolitan types could be attributable to the population in central cities having a younger age structure and lower homeownership rates than suburban and nonmetropolitan residents (both age and tenure are

[2]More detailed Census 2000 mobility and migration data are available on the Census Bureau's Web site *www.census.gov/population/www/cen2000/migration.html.*

[3]To ease the flow of the text, numbers have been rounded. Complete numbers are presented in the tables.

Table 2.
Migration Between Nonmetropolitan Territory and Metropolitan Areas: 1975 to 1980, 1985 to 1990, and 1995 to 2000[1]

(Data based on a sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www.census.gov/prod/cen2000/doc/sf3.pdf)*

Flow	1975 to 1980	1985 to 1990	1995 to 2000
Metropolitan to Nonmetropolitan	6,618,149	6,020,438	6,166,532
Nonmetropolitan to Metropolitan	5,622,077	5,969,024	5,656,044
Net Migration to Nonmetropolitan territory	996,072	51,414	510,488

[1]The metropolitan status of some counties changed between censuses, as new metropolitan areas were recognized, and some metropolitan areas expanded their boundaries.

Source: U.S. Census Bureau, Decennial censuses of 1980, 1990, and 2000.

strongly correlated with the likelihood of moving).[4]

Suburban areas had the highest number of people who migrated across county borders and from abroad (27.3 million), followed by central city (16.9 million) and nonmetropolitan residents (10.7 million). However, central city residents were more likely to have made an intracounty move (29.3 percent), while nonmetropolitan residents were more likely to have moved to a different county within the state of current residence (11.4 percent). Residents of central cities were more likely to have been movers from abroad or Puerto Rico (4.4 percent) than residents in suburbs (2.6 percent) or in nonmetropolitan counties (1.2 percent).

MIGRATION PATTERNS FOR NONMETROPOLITAN AMERICA

Between 1995 and 2000, more people moved into nonmetropolitan territory from metropolitan areas than vice versa.

Nonmetropolitan-to-metropolitan migration patterns have long interested analysts, particularly during the so-called nonmetropolitan "turnaround" of the 1970s, when inflows to nonmetropolitan territory were greater than outflows for the first time since migration data had been available. The "turnaround" abated in the 1980s, as growth in nonmetropolitan territory slowed dramatically due to modest net outmigration flows. During the 1990s this trend fluctuated, but for the period 1995 to 2000, nonmetropolitan territory showed substantial net migration gain from metropolitan areas.

Table 2 shows migration exchanges between metropolitan and nonmetropolitan territory, as recorded in the censuses of 1980, 1990, and 2000. Between 1995 and 2000, about 6.2 million people moved to nonmetropolitan territory, and about 5.7 million moved in the opposite direction (from nonmetropolitan to metropolitan areas). As a result, nonmetropolitan territory experienced net inmigration of about 500,000 people between 1995 and 2000. Between 1985 and 1990, nonmetropolitan territory experienced a net gain of only about 50,000 people in the exchange of migrants with metropolitan areas. Between 1975 and 1980, nonmetropolitan territory's gain was nearly 1 million. In addition to migration, these numbers reflect changing boundaries, as new metropolitan areas are recognized and as metropolitan areas expand their boundaries.

Recent migration gains to nonmetropolitan territory, however, were not evenly distributed across all nonmetropolitan counties (see Figure 1). While Figure 1 shows that nonmetropolitan counties in a wide variety of settings showed net inmigration between 1995 and 2000, nonmetropolitan counties with high rates of net domestic migration gain were especially prominent near metropolitan areas that experienced relatively high growth rates. Examples include Dawson County, GA (adjacent to the Atlanta MSA); Elbert County, CO (southeast of the Denver CMSA); and Sumter County, FL (northeast of the Tampa-St. Petersburg MSA).[5] The nonmetropolitan county with the greatest net domestic inmigration was Yavapai County, AZ (near Phoenix), while Humboldt County, CA; Geary County, KS; and Cortland County, NY were among nonmetropolitan counties with the greatest net outmigration.[6]

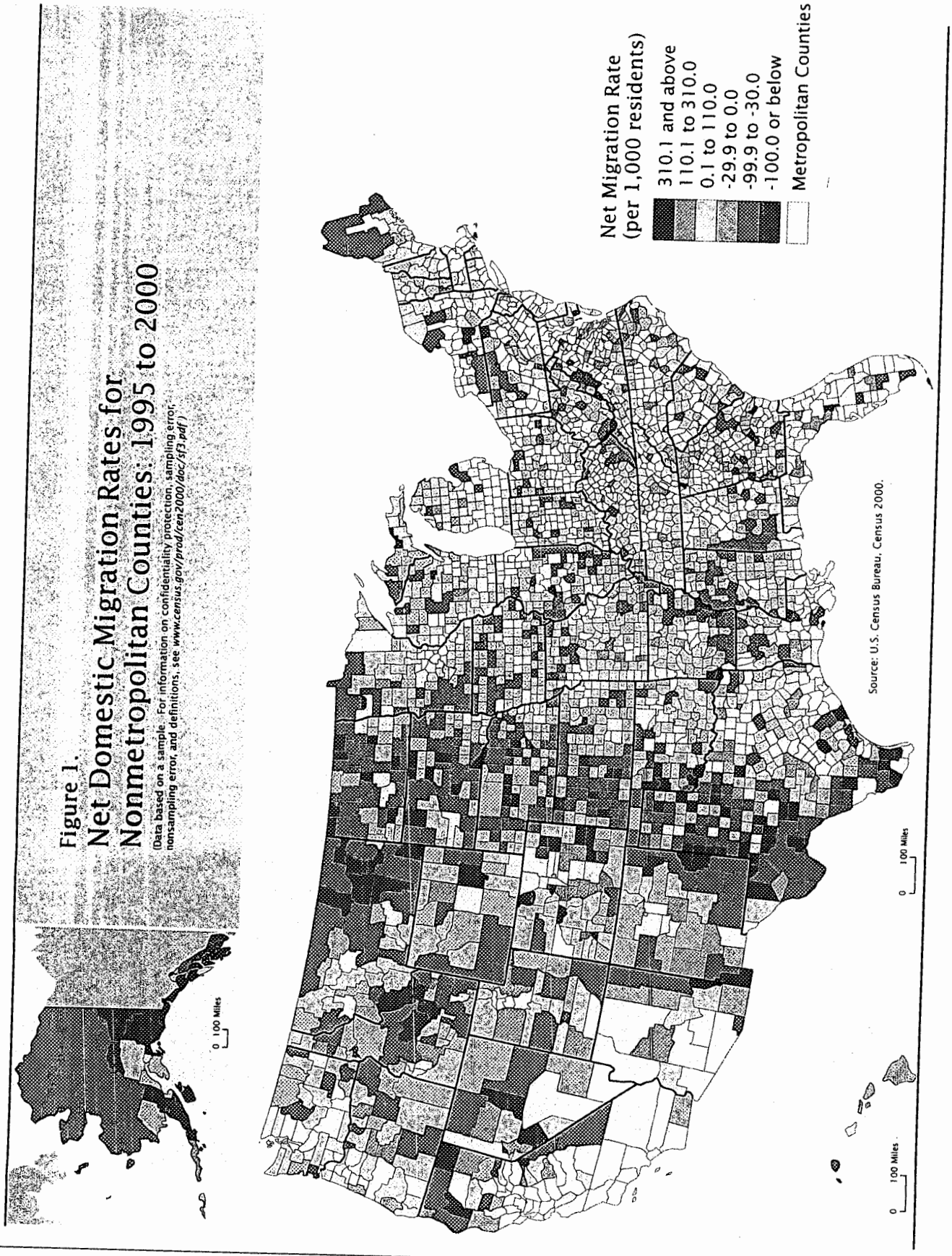
[4]For examples of moving rates by age, see U.S. Census Bureau, 2001, *Geographical Mobility: March 1999 to March 2000*, by Jason Schachter, Current Population Report P20-538, Washington, DC: Government Printing Office.

[5]Abbreviated titles of metropolitan areas are used in the text of this report. See Table 4 for the full names of the twenty largest metropolitan areas.

[6]Detailed tables with mobility data for all regions, states, counties (and minor civil divisions in New England), and metropolitan areas are available on the Census Bureau's Web site at *www.census.gov/population /www/cen2000/migration.html.*

Figure 1.
Net Domestic Migration Rates for Nonmetropolitan Counties: 1995 to 2000

(Data based on a sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www.census.gov/prod/cen2000/doc/sf3.pdf*.)



Source: U.S. Census Bureau, Census 2000.

Table 3.
Net Domestic Migration and Movers From Abroad by Size Category of Metropolitan Area: 1995 to 2000

(Data based on a sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www.census.gov/prod/cen2000/doc/sf3.pdf)*

Size of area	Net domestic migration		Movers from abroad[2]
	Number	Rate[1]	
Total for all metropolitan areas	**–510,488**	**–2.5**	**6,876,018**
Less than 250,000	141,551	8.0	317,739
250,000 to 999,999	217,771	5.3	880,525
1,000,000 to 1,999,999	714,246	21.7	897,506
2,000,000 to 4,999,999	526,968	14.8	1,437,974
5,000,000 or more	–2,111,024	–27.4	3,342,274

[1]The net migration rate is based on an approximated 1995 population, which is the sum of people who reported living in the area in both 1995 and 2000, and those who reported living in that area in 1995 but now live elsewhere. The net migration rate divides net migration, inmigration minus outmigration, by the approximated 1995 population and multiplies the result by 1000.
[2]This category includes movers from foreign countries, as well as movers from Puerto Rico, U.S. Island Areas, and U.S. minor outlying islands.

Note: A negative value for net migration or the net migration rate is indicative of net outmigration, meaning that more migrants left an area than entered it. Positive numbers reflect net inmigration to an area.

Source: U.S. Census Bureau, Census 2000.

MIGRATION TO METROPOLITAN AREAS

The highest levels of net inmigration were found in mid-sized metropolitan areas of 1 to 2 million people.

Although Census 2000 showed renewed gains in net migration for many nonmetropolitan counties, the sheer numbers of migrants into metropolitan areas remained high. Between 1995 and 2000, nearly 25.8 million individuals were inmigrants to metropolitan areas. This flow was counteracted, however, by outmigration of 26.3 million people. The result was net outmigration of around 500,000 people, or a net migration rate of –2.5 (see Table 3).[7]

When all metropolitan areas are classified by size category, a more varied picture emerges, as can be seen for five categories of metropolitan areas shown in Table 3. Net migration from other parts of the United States was positive for all size categories except the largest, which covers all areas with a total population greater than 5 million in 2000. For the largest metropolitan area category, the net migration rate was –27.4, meaning there was a net loss of 27 people from those metropolitan areas for every 1,000 residents in 1995. Metropolitan areas in all other size categories experienced net migration gains during this period, although some saw more net inmigration than others. The two size classes under 1 million, for example, gained 8.0 and 5.3 migrants for every 1,000 residents, respectively, in 1995. In comparison, the net migration rate for the 2 to 5 million class was 14.8, much higher than the size classes under 1 million. Metropolitan areas with populations between 1 and 2 million experienced the greatest net inmigration; net migration to these areas was about 700,000, or a net migration rate of 21.7. Examples in this category were Las Vegas, NV; Orlando, FL; Austin, TX; and Charlotte, NC.

Movers from abroad are an increasingly large and important component of migration, particularly for the largest metropolitan areas. Of the 6.9 million people who moved to metropolitan areas from abroad, most went to the largest metropolitan areas (Table 3). The number of movers from abroad tended to decrease as size of the metropolitan areas decreased. Thus, metropolitan areas of 5 million or more received almost half of all people who moved from abroad to metropolitan areas. The smallest category, metropolitan areas with 250,000 or fewer residents, received over 300,000 migrants from abroad.

The net effect of domestic migration and movers from abroad varied even among the largest metropolitan areas. Migration figures for the 20 largest metropolitan areas, shown in Table 4, provide insight into migration patterns of the United States' largest metropolitan areas, the majority of which experienced net domestic outmigration

[7]The net migration rate in this report is based on an approximated 1995 population, which is the sum of people who reported living in the area in both 1995 and 2000, and those who reported living in that area in 1995 but now live elsewhere. The net migration rate divides net migration, inmigration minus outmigration, by the approximated 1995 population and multiplies the result by 1000.

Table 4.
Net Domestic Migration and Movers From Abroad for the 20 Largest Metropolitan Areas: 1995 to 2000

(Data based on a sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www.census.gov/prod/cen2000/doc/sf3.pdf*)

Rank	Metropolitan area	Total population in 2000	Net domestic migration		Movers from abroad[1]	
			Number	Rate[2]	To central city (cities)	To suburbs
1	New York-Northern New Jersey-Long Island, NY-NJ-CT-PA CMSA	21,199,865	–874,028	–44.4	614,057	369,602
2	Los Angeles-Riverside-Orange County, CA CMSA	16,373,645	–549,951	–36.8	324,013	375,560
3	Chicago-Gary-Kenosha, IL-IN-WI CMSA	9,157,540	–318,649	–37.6	172,597	150,422
4	Washington-Baltimore, DC-MD-VA-WV CMSA	7,608,070	–58,849	–8.6	65,837	234,429
5	San Francisco-Oakland-San Jose, CA CMSA	7,039,362	–206,670	–32.2	194,220	179,649
6	Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD CMSA	6,188,463	–83,539	–14.5	58,131	69,790
7	Boston-Worcester-Lawrence, MA-NH-ME-CT CMSA	5,819,100	–44,973	–8.5	99,790	93,708
8	Detroit-Ann Arbor-Flint, MI CMSA	5,456,428	–123,009	–24.2	36,179	72,796
9	Dallas-Fort Worth, TX CMSA	5,221,801	148,644	33.6	151,679	79,815
10	Houston-Galveston-Brazoria, TX CMSA	4,669,571	–14,377	–3.5	138,826	75,442
11	Atlanta, GA MSA	4,112,198	233,303	68.4	15,975	146,997
12	Miami-Fort Lauderdale, FL CMSA	3,876,380	–93,774	–27.4	60,493	239,412
13	Seattle-Tacoma-Bremerton, WA CMSA	3,554,760	39,945	12.6	47,001	75,765
14	Phoenix-Mesa, AZ MSA	3,251,876	245,159	93.6	104,609	30,408
15	Minneapolis-St. Paul, MN-WI MSA	2,968,806	34,207	12.9	31,145	34,975
16	Cleveland-Akron, OH CMSA	2,945,831	–65,914	–23.7	13,969	22,288
17	San Diego, CA MSA	2,813,833	–6,108	–2.4	63,695	45,127
18	St. Louis, MO-IL MSA	2,603,607	–43,614	–17.9	13,915	21,432
19	Denver-Boulder-Greeley, CO CMSA	2,581,506	93,586	42.3	44,472	49,498
20	Tampa-St. Petersburg-Clearwater, FL MSA	2,395,997	103,375	49.5	24,728	42,936

[1]This category includes movers from foreign countries, as well as movers from Puerto Rico, U.S. Island Areas, and U.S. minor outlying islands.

[2]The net migration rate is based on an approximated 1995 population, which is the sum of people who reported living in the area in both 1995 and 2000, and those who reported living in that area in 1995 but now live elsewhere. The net migration rate divides net migration, inmigration minus outmigration, by the approximated 1995 population and multiplies the result by 1000.

Note: A negative value for net migration or the net migration rate is indicative of net outmigration, meaning that more migrants left an area than entered it. Positive numbers reflect net inmigration to an area.

Source: U.S. Census Bureau, Census 2000.

between 1995 and 2000. In fact, the sole exception among the ten largest metropolitan areas was Dallas-Fort Worth, which had a net domestic migration rate of 33.6. The net migration rates for the remaining top 10 metropolitan areas varied from –3.5 in Houston to –44.4 for New York, the largest metropolitan area in the country. Among the second tier of top 20 metropolitan areas, most had positive net migration, and only four experienced negative net migration during this period: Miami (-27.4), Cleveland (-23.7), St. Louis (-17.9), and San Diego (-2.4). The net migration rate for the Phoenix metropolitan area, the 14th largest metropolitan area in the country, was 93.6, the highest net inmigration rate found in the top 20 metropolitan areas, while the second highest was for Atlanta at 68.4.

The number of movers from abroad was positively correlated with the size of the metropolitan area. As a result, of the top 20 metropolitan areas, the New York CMSA received the largest number of movers from abroad, close to 1 million (see Table 4). Movers from abroad to metropolitan areas are subdivided in Table 4 into those who moved to the central city and those who moved to the suburbs (the part of metropolitan areas outside central cities). The traditional concept about the destinations of movers from abroad, particularly those immigrating to the United States, has been that they first settle in the central city, and then move elsewhere. In 12 of the top 20 metropolitan areas, however, more movers from abroad went to the suburbs than went to the central city between 1995 and 2000. Although this imbalance tended to be concentrated in the lower half of the top 20, several of the largest metropolitan areas, including Los Angeles (ranked 2nd) and Washington-Baltimore (ranked 4th), experienced higher numbers of movers from abroad to their suburbs than to their central cities.

SUMMARY

Although nonmetropolitan residents were less likely to change residence than metropolitan residents, nonmetropolitan counties showed substantial net migration gain from metropolitan counties. Nonmetropolitan net migration gain was particularly high in counties near metropolitan areas, while the largest metropolitan areas (over 5 million) lost population, and medium-sized metropolitan areas gained population, due to domestic migration. Movers from abroad helped offset this domestic migration loss in the largest metropolitan areas, while also contributing to the growth of other metropolitan areas. Whether movers from abroad went to central cities or suburbs varied by specific MSA/CMSA.

ACCURACY OF THE ESTIMATES

The data contained in this report are based on the sample of households who responded to the Census 2000 long form. Nationally, approximately 1 out of every 6 housing units was included in this sample. As a result, the sample estimates may differ somewhat from the 100-percent figures that would have been obtained if all housing units, people within those housing units, and people living in group quarters had been enumerated using the same questionnaires, instructions, enumerators, and so forth. The sample estimates also differ from the values that would have been obtained from different samples of housing units, people within those housing units, and people living in group quarters. The deviation of a sample estimate from the average of all possible samples is called the sampling error.

In addition to the variability that arises from the sampling procedures, both sample data and 100-percent data are subject to nonsampling error. Nonsampling error may be introduced during any of the various complex operations used to collect and process data. Such errors may include: not enumerating every household or every person in the population, failing to obtain all required information from the respondents, obtaining incorrect or inconsistent information, and recording information incorrectly. In addition, errors can occur during the field review of the enumerators' work, during clerical handling of the census questionnaires, or during the electronic processing of the questionnaires.

Nonsampling error may affect the data in two ways: (1) errors that are introduced randomly will increase the variability of the data and, therefore, should be reflected in the standard errors; and (2) errors that tend to be consistent in one direction will bias both sample and 100-percent data in that direction. For example, if respondents consistently tend to underreport their incomes, then the resulting estimates of households or families by income category will tend to be understated for the higher income categories and overstated for the lower income categories. Such biases are not reflected in the standard errors.

While it is impossible to completely eliminate error from an operation as large and complex as the decennial census, the Census Bureau attempts to control the sources of such error during the data collection and processing operations. The primary sources of error and the programs instituted to control error in Census 2000 are described in detail in Summary File 3 Technical Documentation under Chapter 8, "Accuracy of the Data," located at *www.census.gov/prod/cen2000/doc/sf3.pdf.*

All statements in this Census 2000 report have undergone statistical testing and all comparisons are significant at the 90-percent confidence level, unless otherwise noted. The estimates in tables, maps, and other figures may vary from actual values due to sampling and nonsampling errors. As a result, estimates in one category may not be significantly different from estimates assigned to a different category. The estimates in tables, maps, and other figures may vary from actual values due to sampling and nonsampling errors. As a result, estimates in one category may not be significantly different from estimates assigned to a different category. Further information on the accuracy of the data is located at *www.census.gov/prod/cen2000/doc/sf3.pdf.* For further information on the computation and use of standard errors, contact the Decennial Statistical Studies Division at 301-763-4242.

FOR MORE INFORMATION

More detailed information on decennial migration products, including additional tables and other product announcements, is available on the Internet and can be accessed via the Census Bureau's decennial migration Web page at *www.census.gov/population/www/cen2000/migration.html.*

The decennial migration Web page contains additional detailed migration tables not included in this report, a schedule of upcoming migration data releases, and migration-related Census 2000 Special Reports.

DCN:11697

For more information on decennial migration products, please contact:

Population Distribution Branch
Population Division
U.S. Census Bureau
301-763-2419

or send e-mail to *pop@census.gov.*

Information on other population and housing topics is presented in the Census 2000 Brief and Special Reports Series, located on the U.S. Census Bureau's Web site at *www.census.gov/population/www/cen2000/briefs.html.* These series present information about race, Hispanic origin, age, sex, household type, housing tenure, and other social, economic, and housing characteristics.

Census 2000 information and data can also be accessed via the Census 2000 Gateway Web page at *www.census.gov/main/www/cen2000.html.*

For more information about Census 2000, including data products, call our Customer Services Center at 301-763-INFO (4636) or e-mail *webmaster@census.gov.*

DCN:11697

Educational Attainment: 2000

Census 2000 Brief

Issued August 2003

C2KBR-24

By
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and
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The education levels of the United States population reached an all-time high, according to Census 2000.[1] Of the 182.2 million people aged 25 and over on April 1, 2000, 80 percent had a high school diploma or more, and 24 percent had completed at least a bachelor's degree.

Education has been included in the United States census questionnaire since 1840, when information was collected on literacy of the population 20 years and over. Since that time, questions on education have become more complex. From 1940 to 1980, the census inquired about the number of years of school each person had completed. In 1990 and 2000, the question was updated to reflect current interest in both level of school completed and the types of degrees (if any) people had received. The Census 2000 question allowed respondents to choose from a list of 16 educational levels, ranging from no schooling completed to professional or doctoral degrees (see Figure 1).

This report, part of a series that presents population and housing data collected by

Figure 1.
Reproduction of the Question on Educational Attainment From Census 2000

9 What is the highest degree or level of school this person has COMPLETED? *Mark* [X] *ONE box. If currently enrolled, mark the previous grade or highest degree received.*

- ☐ No schooling completed
- ☐ Nursery school to 4th grade
- ☐ 5th grade or 6th grade
- ☐ 7th grade or 8th grade
- ☐ 9th grade
- ☐ 10th grade
- ☐ 11th grade
- ☐ 12th grade, **NO DIPLOMA**
- ☐ **HIGH SCHOOL GRADUATE** — high school DIPLOMA or the equivalent *(for example: GED)*
- ☐ Some college credit, but less than 1 year
- ☐ 1 or more years of college, no degree
- ☐ Associate degree *(for example: AA, AS)*
- ☐ Bachelor's degree *(for example: BA, AB, BS)*
- ☐ Master's degree *(for example: MA, MS, MEng, MEd, MSW, MBA)*
- ☐ Professional degree *(for example: MD, DDS, DVM, LLB, JD)*
- ☐ Doctorate degree *(for example: PhD, EdD)*

Source: U.S. Census Bureau, Census 2000 questionnaire.

[1] Comparison with the 1990 census shows a significantly higher proportion of the population 25 and over in 2000 completing each of the following thresholds or more: 5th, 9th, 10th, 11th, and 12th grade without a diploma, high school diploma, some college, associate degree, bachelor's degree, master's degree, professional degree, and doctoral degree. Censuses from 1940 through 1980 showed even lower levels of education at the high school and bachelor's degree level (see Figure 3). The text of this report discusses data for the United States, including the 50 states and the District of Columbia. Data for the Commonwealth of Puerto Rico are shown in Table 1 and Figure 4.

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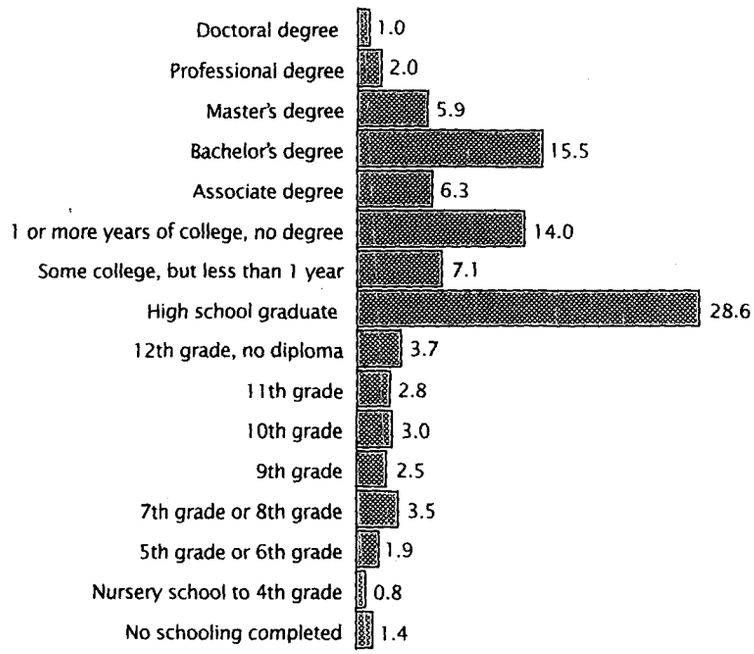
U.S. CENSUS BUREAU

United States Census 2000

Census 2000, presents data on the educational attainment of people 25 years and over in the United States. This report describes education distributions for the United States, including regions, states, counties, and places with populations of 100,000 or more.

Figure 2.
Highest Educational Attainment Level of the Population 25 Years and Over: 2000
(In percent. Data based on sample. For more information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www.census.gov/prod/cen2000/doc/sf3.pdf*)



Source: U.S. Census Bureau, Census 2000 Summary File 3.

Education levels in the United States were high and rising.

In 2000, most people 25 years and over in the United States had earned a high school diploma or higher degree (Figure 2).[2] The three most commonly achieved education levels were high school graduate (29 percent), bachelor's degree (16 percent), and 1 or more years of college, but no degree (14 percent). More than 1 in 20 people had obtained a master's degree (6 percent), an associate degree (6 percent), or completed some college, but less than 1 year (7 percent). Professional and doctoral degrees were relatively rare, as were the categories of education below high school. No one of these education levels accounted for as much as 4 percent of the population 25 and over.

More than half the U.S. population 25 and over in 2000 (52 percent) had completed at least some college education (Table 1). Just under one quarter (24 percent) had a bachelor's degree or more. Nine percent had an advanced degree (master's degree, professional degree, or doctoral degree).

Growth in the population 25 and over contributed to an increase in the number of people with high school or more education: 146.5 million in 2000, an increase of 27.0 million over 1990. The number with a bachelor's degree or more increased by 12.2 million to 44.5 million, while the population with less than a high school diploma actually decreased during the decade from 1990 to 2000, falling by 3.6 million to 35.7 million.

The high levels of education observed in 2000 reflect a steady increase in educational attainment that took place over much of the preceding century. Figure 3 shows the levels of high school and college completion for the 25-and-over population from the censuses of 1940 to 2000.[3] In 1940, only 24 percent of the population 25 and over had completed high school. During a span of 60 years, high school has gone from being the mark of the educated minority of the population to the minimum education level for 4 out of 5 adults.

College completion rates also increased from 1940 to 2000. While just under 1 adult in 20 held a bachelor's degree in 1940, almost 1 adult in 4 had attained this educational level in 2000. For both levels of schooling recorded here (high school or more, and

[2] The estimates in this report are based on responses from a sample of the population. As with all surveys, estimates may vary from the actual values because of sampling variation or other factors. All statements made in this report have undergone statistical testing and are significant at the 90-percent confidence level unless otherwise noted.

[3] From 1940 to 1980, the census question on educational attainment asked about years of school completed, rather than about completion of degrees. For the purposes of this comparison, people with 12 or more years of education were considered high school graduates, while those with 16 or more years of education were considered college graduates. For further discussion of the difference between asking about years and about degrees see Robert Kominski and Paul Siegel, "Measuring Education in the Current Population Survey," *Monthly Labor Review*, September 1993, pp. 34-38.

DCN:11697

Table 1.
Educational Attainment of the Population 25 Years and Over for the United States, Regions, and States, and for Puerto Rico: 1990 and 2000

(Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www.census.gov/prod/cen2000/doc/sf3.pdf*)

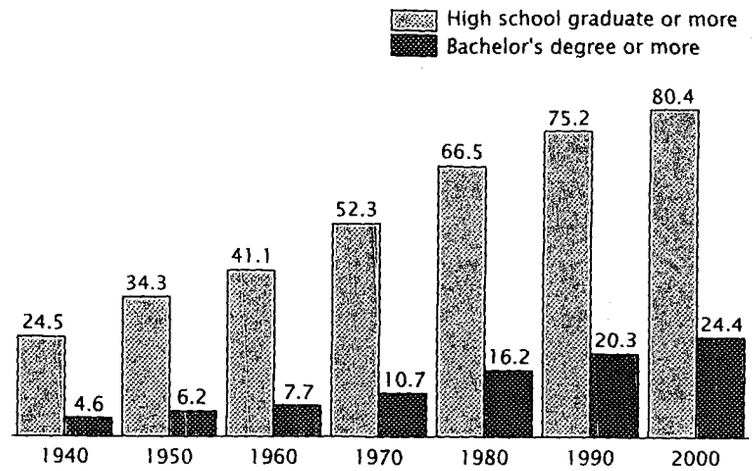
Area	1990					2000				
		Percent					Percent			
	Population 25 and over	High school graduate or more	Some college or more	Bachelor's degree or more	Advanced degree	Population 25 and over	High school graduate or more	Some college or more	Bachelor's degree or more	Advanced degree
United States	**158,868,436**	**75.2**	**45.2**	**20.3**	**7.2**	**182,211,639**	**80.4**	**51.8**	**24.4**	**8.9**
Region										
Northeast	33,544,628	76.2	44.0	22.8	9.0	35,828,187	81.6	50.9	27.5	11.0
Midwest	37,873,006	77.1	43.1	18.4	6.3	41,537,007	83.5	51.1	22.9	7.9
South	54,335,585	71.3	42.3	18.7	6.5	64,921,533	77.7	49.0	22.5	8.1
West	33,115,217	78.6	53.7	22.7	7.7	39,924,912	80.5	57.7	26.2	9.2
State										
Alabama	2,545,969	66.9	37.4	15.7	5.5	2,887,400	75.3	44.9	19.0	6.9
Alaska	323,429	86.6	57.9	23.0	8.0	379,556	88.3	60.5	24.7	8.6
Arizona	2,301,177	78.7	52.5	20.3	7.0	3,256,184	81.0	56.7	23.5	8.4
Arkansas	1,496,150	66.3	33.6	13.3	4.5	1,731,200	75.3	41.2	16.7	5.7
California	18,695,499	76.2	53.9	23.4	8.1	21,298,900	76.8	56.7	26.6	9.5
Colorado	2,107,072	84.4	57.9	27.0	9.0	2,776,632	86.9	63.7	32.7	11.1
Connecticut	2,198,963	79.2	49.7	27.2	11.0	2,295,617	84.0	55.5	31.4	13.3
Delaware	428,499	77.5	44.8	21.4	7.7	514,658	82.6	51.2	25.0	9.4
District of Columbia	409,131	73.1	51.9	33.3	17.2	384,535	77.8	57.2	39.1	21.0
Florida	8,887,168	74.4	44.3	18.3	6.3	11,024,645	79.9	51.1	22.3	8.1
Georgia	4,023,420	70.9	41.3	19.3	6.4	5,185,965	78.6	49.9	24.3	8.3
Hawaii	709,820	80.1	51.3	22.9	7.1	802,477	84.6	56.1	26.2	8.4
Idaho	601,292	79.7	49.3	17.7	5.3	787,505	84.7	56.2	21.7	6.8
Illinois	7,293,930	76.2	46.2	21.0	7.5	7,973,671	81.4	53.7	26.1	9.5
Indiana	3,489,470	75.6	37.4	15.6	6.4	3,893,278	82.1	44.9	19.4	7.2
Iowa	1,776,798	80.1	41.6	16.9	5.2	1,895,856	86.1	50.0	21.2	6.5
Kansas	1,565,936	81.3	48.4	21.1	7.0	1,701,207	86.0	56.2	25.8	8.7
Kentucky	2,333,833	64.6	32.9	13.6	5.5	2,646,397	74.1	40.6	17.1	6.9
Louisiana	2,536,994	68.3	36.6	16.1	5.6	2,775,468	74.8	42.4	18.7	6.5
Maine	795,613	78.8	41.7	18.8	6.1	869,893	85.4	49.2	22.9	7.9
Maryland	3,122,665	78.4	50.3	26.5	10.9	3,495,595	83.8	57.1	31.4	13.4
Massachusetts	3,962,223	80.0	50.3	27.2	10.6	4,273,275	84.8	57.5	33.2	13.7
Michigan	5,842,642	76.8	44.5	17.4	6.4	6,415,941	83.4	52.1	21.8	8.1
Minnesota	2,770,562	82.4	49.4	21.8	6.3	3,164,345	87.9	59.1	27.4	8.3
Mississippi	1,538,997	64.3	36.8	14.7	5.1	1,757,517	72.9	43.5	16.9	5.8
Missouri	3,291,579	73.9	40.8	17.8	6.1	3,634,906	81.3	48.6	21.6	7.6
Montana	507,851	81.0	47.5	19.8	5.7	586,621	87.2	55.9	24.4	7.2
Nebraska	996,049	81.8	47.1	18.9	5.9	1,087,241	86.6	55.3	23.7	7.3
Nevada	789,638	78.8	47.2	15.3	5.2	1,310,176	80.7	51.3	18.2	6.1
New Hampshire	713,894	82.2	50.5	24.4	7.9	823,987	87.4	57.3	28.7	10.0
New Jersey	5,166,233	76.7	45.6	24.9	8.8	5,657,799	82.1	52.7	29.8	11.0
New Mexico	922,590	75.1	46.4	20.4	8.3	1,134,801	78.9	52.3	23.5	9.8
New York	11,818,569	74.8	45.3	23.1	9.9	12,542,536	79.1	51.3	27.4	11.8
North Carolina	4,253,494	70.0	41.0	17.4	5.4	5,282,994	78.1	49.7	22.5	7.2
North Dakota	396,550	76.7	48.6	18.1	4.5	408,585	83.9	56.0	22.0	5.5
Ohio	6,924,764	75.7	39.3	17.0	5.9	7,411,740	83.0	46.9	21.1	7.4
Oklahoma	1,995,424	74.6	44.1	17.8	6.0	2,203,173	80.6	49.1	20.3	6.8
Oregon	1,855,369	81.5	52.6	20.6	7.0	2,250,998	85.1	58.9	25.1	8.7
Pennsylvania	7,872,932	74.7	36.1	17.9	6.6	8,266,284	81.9	43.8	22.4	8.4
Rhode Island	658,956	72.0	42.6	21.3	7.8	694,573	78.0	50.2	25.6	9.7
South Carolina	2,167,590	68.3	38.8	16.6	5.4	2,596,010	76.3	46.4	20.4	6.9
South Dakota	430,500	77.1	43.4	17.2	4.9	474,359	84.6	51.7	21.5	6.0
Tennessee	3,139,066	67.1	37.0	16.0	5.4	3,744,928	75.9	44.3	19.6	6.8
Texas	10,310,605	72.1	46.5	20.3	6.5	12,790,893	75.7	50.8	23.2	7.6
Utah	897,321	85.1	57.9	22.3	6.8	1,197,892	87.7	63.1	26.1	8.3
Vermont	357,245	80.8	46.2	24.3	8.9	404,223	86.4	54.1	29.4	11.1
Virginia	3,974,814	75.2	48.5	24.5	9.1	4,666,574	81.5	55.5	29.5	11.6
Washington	3,126,390	83.8	55.9	22.9	7.0	3,827,507	87.1	62.2	27.7	9.3
West Virginia	1,171,766	66.0	29.4	12.3	4.8	1,233,581	75.2	35.8	14.8	5.9
Wisconsin	3,094,226	78.6	41.5	17.7	5.6	3,475,878	85.1	50.5	22.4	7.2
Wyoming	277,769	83.0	49.9	18.8	5.7	315,663	87.9	56.9	21.9	7.0
Puerto Rico	**1,952,297**	**49.7**	**28.7**	**14.3**	**3.6**	**2,288,326**	**60.0**	**37.7**	**18.3**	**4.7**

Source: U.S. Census Bureau, Census 2000 Summary File 3; 1990 Census of Population.

college or more), the largest rate of growth was in the period 1960 to 1980. From 1990 to 2000, the increase in the percentage of people completing a bachelor's or higher degree was about the same as the percentage-point increase for the previous decade, and only slightly below the rate from 1970 to 1980.

Figure 3.
Population 25 Years and Over Who Have Completed High School or College: 1940 to 2000

(In percent. Data based on sample. For information on confidentiality protection, nonsampling error, sampling error, and definitions, see *www.census.gov/prod/cen2000/doc/sf3.pdf*)



Note: Prior to 1990, educational attainment was measured by years of completed schooling.
Source: U.S. Census Bureau, Census 2000 Summary File 3; previous censuses.

Age differences in educational attainment were large.

In 2000, the middle-aged population had the highest levels of education—45- to 49-year-olds were highest in high school graduation and some college or more; 50- to 54-year-olds were highest at bachelor's and advanced degree attainment (Table 2). People 75 years and older had lower education levels (among those measured here) than any other age group. The differences between the highest and lowest age groups were often quite substantial. Among the 45- to 49-year-old group, 86 percent had a high school or greater education, compared with only 61 percent of people 75 and over. In these two age groups, completion of some college or more was reported by 59 percent and 30 percent, respectively. The 50- to 54-year-old group recorded a 29 percent rate of bachelor's or higher degree attainment, while only 13 percent of the population 75 years or older had that level of education. Advanced degrees were obtained by 13 percent of the 50- to 54-year-old population, but only 5 percent of the population 75 and older.

The youngest age group (25 to 29 years) had rates of educational attainment slightly lower than people aged 45 to 54. For example, 86 percent of people aged 45 to 49 had completed high school, compared with 84 percent of those aged 25 to 29. The largest gap was at the advanced degree level, where 13 percent of 50- to 54-year-olds had received an advanced degree, compared with only 6 percent of 25- to 29-year-olds. However, if 25- to 29-year-olds in 2000 were like those observed in previous censuses, many had not yet completed advanced education.[4]

The 25- to 29-year-old population was more likely to have completed some college or more, and was more likely to have earned a bachelor's degree than people 10 to 15 years their senior. The rate of completion of some college was 58 percent among those in the 25- to 29-year age group, while it was 56 percent among those in the 35- to 39-year age group, and 57 percent among those in the 40- to 44-year age group. Similarly, 27 percent of 25- to 29-year-olds had completed a bachelor's degree or more, while 26 percent of those in the older groups (35 to 39 and 40 to 44) had reached this educational level.

Women's educational levels were close to those of men.

Sex differences in educational attainment were not as large as the range of disparities by age.[5] Men and women had nearly equal rates of high school completion in 2000, with women having the slight edge, 81 percent compared with 80 percent. At higher levels of education, men had higher completion rates. For example, among people 25 years or older in 2000, 26 percent of men had bachelor's degrees or more, compared with 23 percent of women. Men also led women in holding advanced degrees, 10 percent to 8 percent.

[4] In 1990, for example, 4.1 percent of the 25- to 29-year-old population held advanced degrees. Ten years later, 8.4 percent of the 35- to 39-year-old population held advanced degrees.

[5] The gap in educational attainment between people aged 50 to 54 and those aged 75 or older was significantly greater than the gap between men and women at each level of education.

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Table 2.
Educational Attainment of the Population 25 Years and Over by Age, Sex, Race, and Hispanic or Latino Origin: 2000

(Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www.census.gov/prod/cen2000/doc/sf3.pdf*)

Characteristic	Population 25 and over	Percent			
		High school graduate or more	Some college or more	Bachelor's degree or more	Advanced degree
Total	**182,211,639**	**80.4**	**51.8**	**24.4**	**8.9**
Age					
25 to 29 years	19,212,244	83.6	58.3	27.2	5.9
30 to 34 years	20,365,113	84.2	57.9	27.9	8.4
35 to 39 years	23,083,337	84.7	56.5	25.9	8.4
40 to 44 years	22,822,134	85.4	56.7	25.9	9.1
45 to 49 years	20,181,127	86.4	59.5	28.5	11.3
50 to 54 years	17,397,482	85.4	58.5	29.1	12.7
55 to 59 years	13,383,251	81.1	50.6	24.6	11.5
60 to 64 years	10,787,979	76.1	43.5	20.3	9.3
65 to 69 years	9,569,199	72.1	38.9	18.3	8.0
70 to 74 years	8,931,950	67.3	34.9	16.2	6.7
75 years and over	16,477,823	60.7	29.6	13.3	5.4
Sex					
Men	87,077,686	80.1	52.5	26.1	10.0
Women	95,133,953	80.7	51.1	22.8	7.8
Race and Hispanic or Latino Origin					
White alone	143,085,659	83.6	54.1	26.1	9.5
Black or African American alone	19,858,095	72.3	42.5	14.3	4.8
American Indian and Alaska Native alone	1,350,998	70.9	41.7	11.5	3.9
Asian alone	6,640,671	80.4	64.6	44.1	17.4
Native Hawaiian and Other Pacific Islander alone	206,675	78.3	44.6	13.8	4.1
Some other race alone	7,611,121	46.8	25.0	7.3	2.3
Two or more races	3,458,420	73.3	48.1	19.6	7.0
Hispanic or Latino (of any race)	18,270,377	52.4	30.3	10.4	3.8
White alone, not Hispanic or Latino	133,786,263	85.5	55.4	27.0	9.8

Source: U.S. Census Bureau, Census 2000 Summary File 3.

The "Asian alone" race group led in attaining bachelor's and advanced degrees.

Census 2000 allowed respondents to choose more than one race. With the exception of the Two or more races group, all race groups discussed in this report refer to people who indicated *only one* racial identity among the six major categories: White, Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, and Some other race.[6] The use of the single-race population in this report does not imply that it is the preferred method of presenting or analyzing data. The Census Bureau uses a variety of approaches.[7]

Large differences among races existed at all levels of education. In 2000, the proportion of people aged 25 and over who had completed high school or more education ranged from 84 percent of those who reported they were White (and no other race), to 47 percent of people who reported Some other race only.[8] People who reported they were Asian (and no other race) were most likely to report having completed higher

[6] For further information on each of the six major race groups and the Two or more races population, see reports from the Census 2000 Brief series (C2KBR/01), available on the Census 2000 Web site at *www.census.gov/population/www/cen2000/briefs.html*.

[7] This report draws heavily on Summary File 3, a Census 2000 product that can be accessed through American FactFinder, available from the Census Bureau's Web site, *www.census.gov*. Information on people who reported more than one race, such as "White ***and*** American Indian and Alaska Native" or "Asian ***and*** Black or African American," is available in Summary File 4, also available through American FactFinder. About 2.6 percent of people reported more than one race.

[8] Hereafter this report uses the term Black to refer to people who are Black or African American, the term Pacific Islander to refer to people who are Native Hawaiian and Other Pacific Islander, and the term Hispanic to refer to people who are Hispanic or Latino.

Because Hispanics may be of any race, data in this report for Hispanics overlap with data for racial groups. Based on Census 2000 sample data, the proportion Hispanic was 8.0 percent for Whites, 1.9 percent for Blacks, 14.6 percent for American Indians and Alaska Natives, 1.0 percent for Asians, 9.5 percent for Pacific Islanders, 97.1 percent for those reporting Some other race, and 31.1 percent for those reporting Two or more races.

levels of education (some college, bachelor's or advanced degrees). Among the Asian population, 44 percent had a bachelor's degree, compared with 26 percent of the White population, 20 percent of people who reported two or more races, 14 percent of the Black population, 14 percent of the Pacific Islander population, 11 percent of the American Indian and Alaska Native population, and 7 percent of the Some other race population.

The percentage of Hispanics completing high school or more was 52 percent, compared with 85 percent of non-Hispanic Whites (single race). A large gap between the Hispanic population and the non-Hispanic White population is also seen at other levels of education. While 27 percent of non-Hispanic Whites had a bachelor's degree or more, only 10 percent of Hispanics had reached this education level.

GEOGRAPHIC DISTRIBUTION OF PEOPLE BY EDUCATIONAL ATTAINMENT

Regional education differentials shifted during the 1990s.

No one region can lay claim to having the best-educated population.[9] The rank depended on the level of education being examined (Table 1). The Midwest had the largest percentage of its population 25 and over holding a high school diploma or more (83 percent), while the West had the largest percentage having completed at least some college (58 percent). The population in the Northeast had the highest bachelor's degree and advanced degree levels, 27 percent and 11 percent, respectively. The South had the lowest completion rates from high school through college, but the Midwest had the lowest advanced degree completion rate, at 8 percent.[10]

Growth in educational attainment from 1990 to 2000 occurred in all four United States regions. In the West, which started the decade as one of the leaders at every level of education, growth was slower than in other regions.

The South and the Midwest jointly had the largest growth in the percentage with high school or more education, both growing by 6 percentage points between 1990 and 2000. The lowest growth was in the West, which saw only a 2 percentage-point increase over the decade. The percentage with some college or more education grew by 8 percentage points in the Midwest, but 4 percentage points in the West.

The net effect of these changes was to narrow differences across regions in the percentage holding high school diplomas or higher degrees. In 1990 the West led this category, with 79 percent, and the South trailed with 71 percent, a difference of 7 percentage points. In 2000, the difference between the leading region, the Midwest, and the lowest region, the South, was only 6 percentage points.

A different pattern was observed at the high end of the educational range, due to growth in the percentage with bachelor's and advanced degrees in the Northeast, which was already the leading region on these measures. The percentage with bachelor's or higher degrees increased by 5 points in the Northeast, compared with 4 points in the West. In 1990, a gap of 2.6 points in the percentage with advanced degrees existed between the Northeast (which was highest in both censuses) and the Midwest (the lowest in both censuses). In 2000, the gap between these two regions had grown to 3.1 percentage points.

States with low high school completion rates were catching up.

Alaska, Minnesota, Wyoming, Utah, New Hampshire, Montana, Washington, and Colorado were among the highest in percentage of people 25 and over with high school or more education, while Mississippi had the lowest percentage, 73 percent.[11] As with the regions, however, differences among states narrowed from 1990 to 2000. The six states with the lowest percentage having high school or more education in 1990 (Mississippi, Kentucky, West Virginia, Arkansas, Alabama, and Tennessee) were among the states with the largest growth over the next decade. Mississippi's rate of high school completion grew by

[9] The Northeast region includes the states of Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. The Midwest region includes the states of Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. The South region includes the states of Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia, a state equivalent. The West region includes the states of Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[10] The percentage with advanced degrees in the Midwest was 7.9 percent, the percentage in the South was 8.1 percent. This difference is small, but statistically significant.

[11] While any of Alaska, Minnesota or Wyoming could have ranked number 1, given the margin of measurement error, they could have ranked as low as number 3, number 4 or number 5, respectively. That means that Utah or New Hampshire might rank in the top three states. All five states had high school graduation rates that might have fallen at 88 percent or above, given statistical error and rounding.

8.6 percentage points.[12] Kentucky had a more than 9 percentage-point increase in high school completion from 1990 to 2000 (West Virginia's growth was not statistically different).

The state with the highest proportion of people 25 and over having at least some college education was Colorado, at 64 percent. The largest growth in the percentage at this education level occurred in Minnesota.

The District of Columbia had the highest percentage of its population holding bachelors or higher degrees and also had the highest percentage with advanced degrees. In 2000, 39 percent of District residents had a bachelor's degree or more, and 21 percent had advanced degrees. Unlike the 50 states, Washington, DC, is entirely urban, and this urban population had high percentages at both ends of the educational scale. In contrast to its high ranking in bachelor's and advanced degrees, the District of Columbia ranked in the bottom third in the percentage with a high school diploma or more.

The state with the second highest percentage of its 25-and-over population holding bachelors and advanced degrees was Massachusetts. In 2000, 33 percent of Massachusetts' residents 25 and over had at least a bachelor's degree, and 14 percent had advanced degrees. Massachusetts also had the highest growth in percentage with bachelor's degrees from 1990 to 2000. Although Massachusetts' growth in percentage with advanced degrees trailed the District of Columbia's growth, it was a strong second place, allowing it to bypass Connecticut and Maryland in the ranking of advanced degrees.

College graduates lived in suburban counties and counties with colleges.

The geographic distribution of college completion rates by United States county can be seen in Figure 4. High percentages of college graduates were found in metropolitan counties on the East and West coasts. A large concentration of high education counties formed a band from Albemarle County, Virginia, to Middlesex County, Massachusetts. Other counties included part of the San Francisco area, and King County, Washington, containing the city of Seattle.

Counties with high percentages of college graduates were also scattered across much of the central part of the country, around metropolitan areas and in college towns. For example, a cluster of high-education counties was found near Atlanta, Georgia, complemented by Clarke and Oconee counties, east of Atlanta, which contain a major university. Similar patterns of suburban and college-town concentrations of college graduates can be seen in states such as Colorado, Illinois, Indiana, Iowa, Kansas, Massachusetts, New York, North Carolina, Pennsylvania, Texas, Virginia, Washington, and Wisconsin. The metropolitan counties with high college education levels often exclude the county with a central city. For example, 49 percent of the 25-and-over population of Hamilton County, Indiana, had bachelor's degrees. This county is just north of Marion county, which contains the city of Indianapolis. The proportion with bachelor's degrees in Marion County was only 25 percent, significantly lower than Hamilton County but above the national average.

The Western states have many counties with large geographic size but sparse populations. Areas with highly college-educated populations in Colorado and nearby mountain states included three types of counties: suburban counties around Denver, several counties with large universities, and a number of counties with resort and vacation areas.

Places with universities attracted the greatest concentration of people with doctoral degrees.

The places most likely to have people with doctoral degrees are university towns like Cambridge, Massachusetts, Ann Arbor, Michigan, and Berkeley, California (Table 3).[13] In Cambridge, Massachusetts, nearly 1 in 10 residents 25 and over had a doctorate. All the other places with the highest percentage holding doctoral degrees were cities with universities enrolling at least 20,000 students, with the exception of Durham, North Carolina.[14] Durham, however, has a major university nearby, along with a large concentration of companies performing scientific research and related activities.

[12] Kentucky, West Virginia, Arkansas, Tennessee, Mississippi, Alabama, North Carolina, and South Carolina all experienced growth in high school completion of 8 percentage points or more.

[13] Census 2000 showed 245 places in the United States with 100,000 or more population. They included 238 incorporated places (including 4 city-county consolidations) and 7 census designated places that were not legally incorporated. For a list of these places by state, see *www.census.gov /population/www/cen2000/phc-t6.html.*

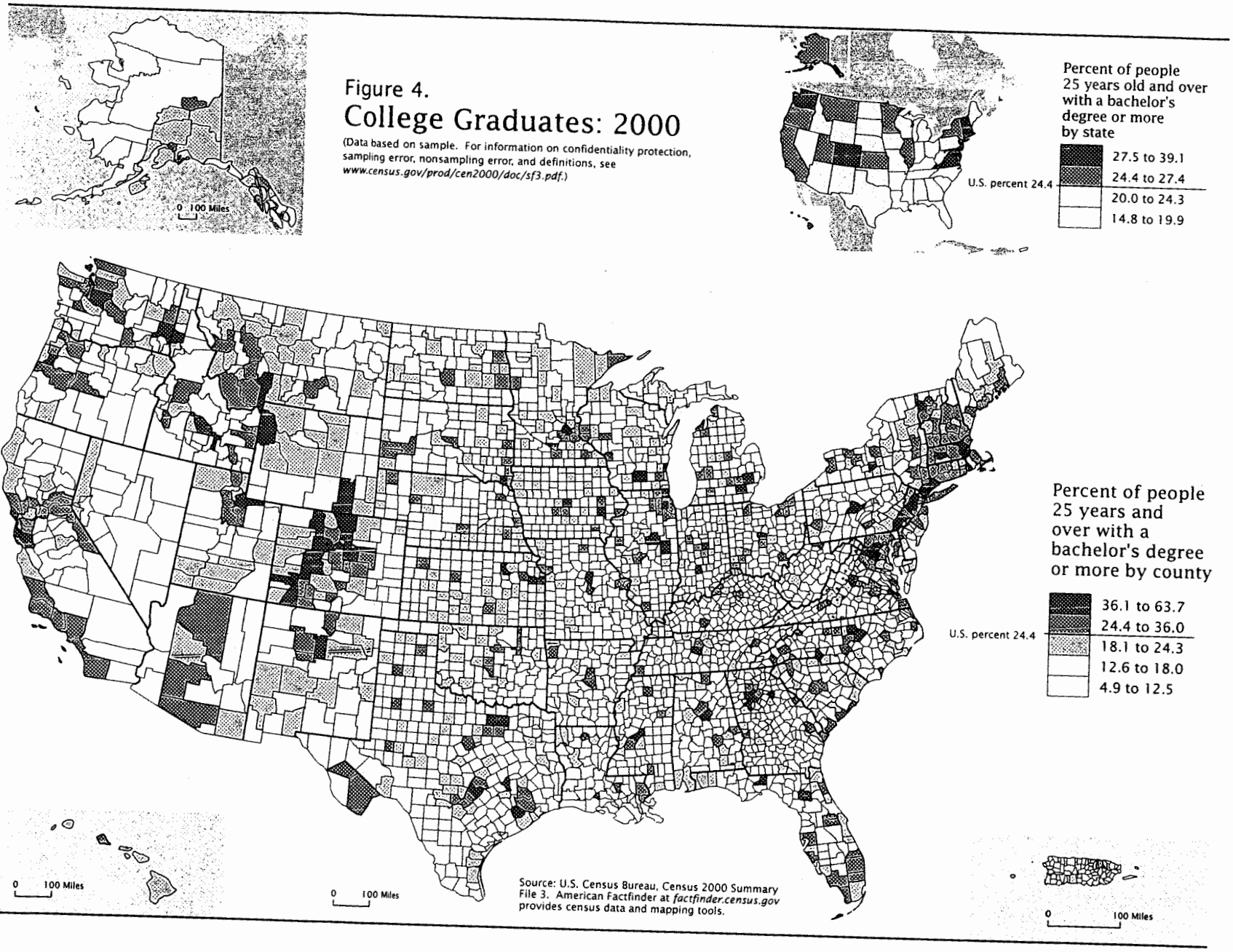
The percentage with doctorates in Cambridge is not significantly higher than that in Ann Arbor but is significantly higher than Berkeley. Ann Arbor and Berkeley are not significantly different. Cambridge, Ann Arbor, and Berkeley are all significantly higher than the other places listed in Table 3.

[14] Enrollment statistics for individual universities were obtained from the National Center for Education Statistics "College Opportunities On-Line" database, *http://nces.ed.gov/ipeds/cool/.*

Figure 4.

College Graduates: 2000

(Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www.census.gov/prod/cen2000/doc/sf3.pdf.*)



Source: U.S. Census Bureau, Census 2000 Summary File 3. American Factfinder at *factfinder.census.gov* provides census data and mapping tools.

Table 3.
Ten Places of 100,000 or More Population With the Highest Percentage of People 25 and Over With Doctoral Degrees: 2000

(Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www.census.gov/prod/cen2000/doc/sf3.pdf)*

Place	People with doctoral degrees		
	Number	Percent of population 25 and over	90-percent confidence interval
Cambridge, MA	6,370	9.6	9.1 - 10.1
Ann Arbor, MI	6,045	9.3	8.8 - 9.9
Berkeley, CA	5,347	8.1	7.6 - 8.6
Athens-Clarke County, GA*	3,015	5.8	5.3 - 6.3
Madison, WI	5,386	4.2	4.0 - 4.5
Durham, NC	4,784	4.1	3.8 - 4.3
Irvine, CA	3,589	4.0	3.7 - 4.4
Tallahassee, FL	3,002	3.8	3.4 - 4.1
Fort Collins, CO	2,506	3.7	3.4 - 4.1
New Haven, CT	2,473	3.4	3.1 - 3.7

*Athens-Clarke County, Georgia, is a census designated place (CDP). CDPs comprise densely settled concentrations of population that are identifiable by name but are not legally incorporated places.

Note: Doctoral degrees include PhD and EdD degrees. Because of sampling error, the estimates in this table may not be significantly different from one another or from rates for other geographic areas not listed in this table.

Source: U.S. Census Bureau, Census 2000 Summary File 3.

Table 4.
Ten Places of 100,000 or More Population With the Highest Percentage of People 25 and Over With Less Than a High School Diploma: 2000

(Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www.census.gov/prod/cen2000/doc/sf3.pdf)*

Place	People with less than a high school diploma		
	Number	Percent of population 25 and over	90-percent confidence interval
East Los Angeles, CA*	43,452	66.3	65.5 - 67.2
Santa Ana, CA	101,475	56.8	56.2 - 57.3
El Monte, CA	34,813	55.8	54.8 - 56.7
Hialeah, FL	78,059	50.2	49.6 - 50.8
Brownsville, TX	36,762	48.3	47.5 - 49.1
Miami, FL	119,435	47.3	46.8 - 47.8
Laredo, TX	42,426	45.2	44.5 - 45.9
Pomona, CA	35,529	45.1	44.2 - 45.9
Salinas, CA	37,185	44.0	43.2 - 44.8
Newark, NJ	69,135	42.1	41.5 - 42.6

* East Los Angeles, California, is a census designated place (CDP) and is not legally incorporated.

Note: Because of sampling error, the estimates in this table may not be significantly different from one another or from rates for other geographic areas not listed in this table.

Source: U.S. Census Bureau, Census 2000 Summary File 3.

California, Texas, Florida, and New Jersey were home to places with a large percentage of people with less than a high school diploma.

The ten places of 100,000 or more with the highest percentages of people aged 25 and over who had not completed high school were certain urban areas in California, Texas, Florida, and New Jersey (Table 4). One characteristic shared by many of these places was a high percentage of Hispanics in the population. However, Newark's Hispanic population was relatively small. Five of the ten had a large percentage of foreign born (East Los Angeles, Santa Ana, and El Monte in California; Hialeah and Miami in Florida). Six of the places were high poverty areas, with over 20 percent of families in poverty (East Los Angeles and El Monte, California; Brownsville and Laredo, Texas; Miami, Florida; and Newark, New Jersey).

ADDITIONAL FINDINGS

Do younger and older men and women have the same educational differences?

According to results of Census 2000 discussed earlier, women were more likely to have a high school diploma, while men were more likely to have a bachelor's or higher degree. However, sex differences in education varied along the age spectrum (Figure 5). Completion of high school became increasingly common moving from the over-75 age group, in which women and men had graduation rates of 60 percent and 61 percent, respectively, to the 50- to 54-age group, in which 86 percent of women and 85 percent of men completed high school. For each age group 50 years and over, the percentages of men and women completing high school were close, with the difference never reaching more than 2 percentage points.

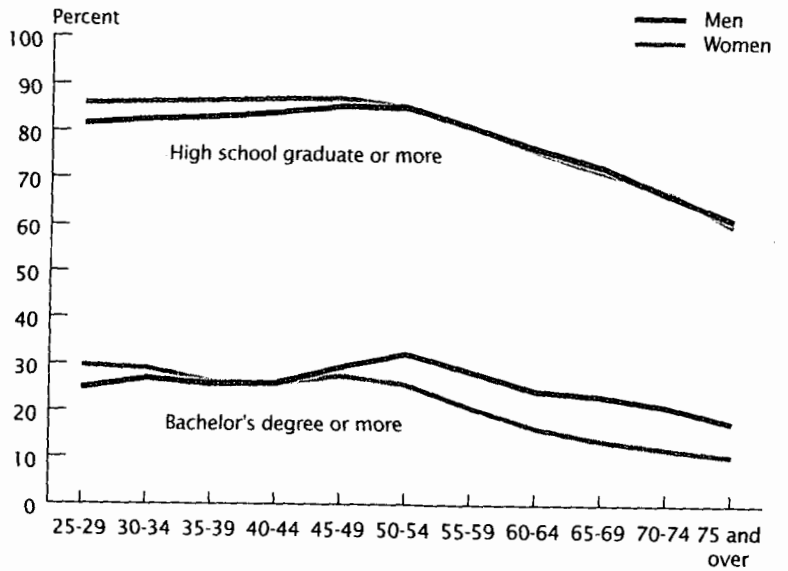
Among younger men and women, under the age of 50, high school graduation rates diverged. Younger men aged 25 to 29 were less likely to complete high school than men aged 50 to 54, while younger women were slightly more likely to complete high school than 50- to 54-year-old women. Women below the age of 50 were also more likely than men of the same age to graduate from high school.

As with high school graduation, bachelor's degree completion showed a change between those above and below the age of 50. Both men and women aged 75 and over (born in 1925 or earlier), had low rates of college completion, while those aged 50 to 54 (born between 1945 and 1950) had much higher rates. However, across all age groups from 50 on up, men maintained a fairly stable 7 to 10 percentage point advantage over women in college completion.

Those younger than 50 (born since 1950) showed a much different pattern. College graduation rates were lower among younger men (age 25 to 44) born later in the twentieth century than they were for men born just after 1950 (age 45 to 49). By contrast, younger women aged 25 to 34 increased their rate of college completion above and beyond the level of their elders in the 45- to 49-year-old age group. In the 25- to 39-age ranges, women surpassed men in college completion as well.

Figure 5.
Differences in Educational Attainment by Sex and Age: 2000

(Data based on sample. For information on confidentiality protection, nonsampling error, sampling error, and definitions, see *www.census.gov/prod/cen2000/doc/sf3.pdf*)



Source: U.S. Census Bureau, Census 2000 Summary File 3.

ABOUT CENSUS 2000

Why Census 2000 asked about educational attainment.

Government agencies require data on educational attainment for funding allocations and program planning and implementation. The Voting Rights Act requires information on education to determine the extent of illiteracy among language minorities. In addition, funding for school districts that provide classes to adults who have not completed high school is based on these data. Other federal applications include: the Community Development Block Grant (CDBG) Evaluation, the Americans With Disabilities Act, the National Science Foundation Biennial Report, the Bilingual Education Act, and the Older Americans Act. Local governments use information on educational attainment to attract potential employers to their areas.

ACCURACY OF THE ESTIMATES

The data contained in this report are based on the sample of households who responded to the Census 2000 long form. Nationally, approximately 1 out of every 6 housing units was included in this sample. As a result, the sample estimates may differ somewhat from the100-percent figures that would have been obtained if all housing units, people within those housing units, and people living in group quarters had been enumerated using the same questionnaires, instructions, enumerators, and so forth. The sample estimates also differ from the values that would have been obtained from different samples of housing units, people within those housing units, and people living in group quarters. The deviation of a sample estimate from the average of all possible samples is called the sampling error.

In addition to the variability that arises from the sampling procedures, both sample data and 100-percent data are subject to nonsampling error. Nonsampling error may be introduced during any of the various complex operations used to collect and process data. Such errors may include: not enumerating every household or every person in the population, failing to obtain all required information from the respondents, obtaining incorrect or inconsistent information, and recording information incorrectly. In addition, errors can occur during the field review of the enumerators' work, during clerical handling of the

census questionnaires, or during the electronic processing of the questionnaires.

Nonsampling error may affect the data in two ways: (1) errors that are introduced randomly will increase the variability of the data and, therefore, should be reflected in the standard errors; and (2) errors that tend to be consistent in one direction will bias both sample and 100-percent data in that direction. For example, if respondents consistently tend to underreport their incomes, then the resulting estimates of households or families by income category will tend to be understated for the higher income categories and overstated for the lower income categories. Such biases are not reflected in the standard errors.

While it is impossible to completely eliminate error from an operation as large and complex as the decennial census, the Census Bureau attempts to control the sources of such error during the data collection and processing operations. The primary sources of error and the programs instituted to control error in Census 2000 are described in detail in *Summary File 3 Technical Documentation* under Chapter 8, "Accuracy of the Data," located at *www.census.gov/prod/cen2000/doc/sf3.pdf.*

All statements in this Census 2000 Brief have undergone statistical testing and all comparisons are significant at the 90-percent confidence level, unless otherwise noted. The estimates in tables, maps, and other figures may vary from actual values due to sampling and nonsampling errors. As a result, estimates in one category may not be significantly different from estimates assigned to a different category. Further information on the accuracy of the data is located at *www.census.gov/prod/cen2000/doc/sf3.pdf.* For further information on the computation and use of standard errors, contact the Decennial Statistical Studies Division at 301-763-4242.

FOR MORE INFORMATION

The Census 2000 Summary File 3 data are available from the American Factfinder on the Internet (*factfinder.census.gov*). They were released on a state-by-state basis during 2002. For information on confidentiality protection, nonsampling error, sampling error, and definitions, also see *www.census.gov/prod/cen2000/doc/sf3.pdf* or contact the Customer Services Center at 301-763-INFO (4636).

Information on population and housing topics is presented in the Census 2000 Brief series, located on the Census Bureau's Web site at *www.census.gov/population/www/cen2000/briefs.html.* This series presents information on race, Hispanic origin, age, sex, household type, housing tenure, and social, economic, and housing characteristics, such as ancestry, income, and housing costs.

For additional information on educational attainment in the United States, including reports and survey data, visit the Census Bureau's Internet site at *www.census.gov/population/www/socdemo/educ-attn.html.* To find information about the availability of data products, including reports, CD-ROMs, and DVDs, call the Customer Services Center at 301-763-INFO (4636), or e-mail *webmaster@census.gov.*

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To Andrews Air Force Base

· *Air Force Judge Advocate General* from 1501 Wilson Blvd., Arlington.

· *Secretary of the Air Force-Acquisition* from 1560 Wilson Blvd., Arlington.

· *Secretary of the Air Force-Auditor General* from Arlington Plaza and 1815 N. Fort Myer Dr., Arlington.

· *Air Force-Operations* from 1401 Wilson Blvd., 1919 S. Eads St., 1815 N. Fort Myer Dr., Crystal Gateway I and Crystal Plaza 5, Arlington.

· *Secretary of the Air Force-Administrative Assistant* from 1815 N. Fort Myer Dr., Crystal Park 5 and 6, Arlington.

· *Secretary of the Air Force-Public Affairs* from Ballston Metro Center, Arlington.

· *Secretary of the Air Force-Small Business* from Ballston Metro Center, Arlington.

· *Air Force-Personnel* from Crystal Gateway I, Crystal Square II and Webb Building, Arlington.

· *Air Force-Installation and Logistics* from Crystal Gateway I and II, Crystal Gateway North and Jefferson Plaza II, Arlington.

· *Secretary of the Air Force-Financial Management* from Crystal Gateway North, Arlington.

· *Air Force-Chief Information Officer* from Crystal Park 5, Arlington.

To Fort Belvoir

· *Army Legal Agency* from Ballston Metro Center, Arlington.

· *Army Audit Agency* from Park Center Office I, Alexandria.

· *Secretary of the Army-Administrative Assistant* from Skyline VI, Falls Church; Zachary Taylor Building, Jefferson Plaza 1 and 2 and Rosslyn Metro Center, Arlington; and Hoffman Buildings 1 and 2, Alexandria.

· *Army G6/DISC4, G8/Force Development, G1/Army Research Institute and Army Network Enterprise Technology Command* from Zachary Taylor Building, Arlington.

· *Army NISAP, Army Environmental Policy Institute and Senior Executive Public Affairs Training* from Crystal Square 2, Arlington.

· *Deputy Undersecretary of the Army-Operations Research* from Crystal Gateway 2, Arlington.

· *Army G1/Civilian Personnel Office, G1/Personnel Transformation, Communications and Electronics Command,* Hoffman Buildings 1 and 2, Alexandria.

· *Office of the Chief, Army Reserve, Assistant Secretary of the Army Financial Management and Comptroller/CEAC and Chief of Chaplains* from Jefferson Plaza 1 and 2, Arlington.

· *Army G3/Army Simulations* from Crystal Gateway North, Arlington.

· *Army Safety Office and OSAA* from Crystal Plaza 5, Arlington.

· *Assistant Secretary of the Army Manpower and Reserve Affairs, Army Review Board and Equal Opportunity Office* from Crystal Mall 4, Arlington.

· *Army Office of Environmental Technology* from Crystal Gateway I, Arlington.

· *Secretary of Defense offices* from 1010 N. Glebe Rd. and 1515 Wilson Blvd., Arlington; the Crown Ridge Building, Fairfax; and 4850 Mark Center Dr. and 1901 N. Beauregard St., Alexandria.

· *DoD Inspector General* from 2800 Crystal Dr., Arlington.

· *Defense Human Resources Activity* from 1600 Wilson Blvd., Arlington.

· *Pentagon Renovation offices* from 1500 Wilson Blvd., Arlington.

· *Office of the Secretary of Defense, Washington Headquarters Services, and the Department of Defense Inspector General* from 400 Army Navy Dr., Arlington.

· *Department of Defense Education Activity and the Defense Human Resources Activity* from the Webb Building, Arlington.

· *Pentagon Renovation temporary space* from Rosslyn Plaza North, Arlington.

· *Office of the Secretary of Defense, Washington Headquarters Services, and the Department of Defense Inspector General* from Crystal Gateway North, Arlington.

· *Office of the Secretary of Defense* from 621 N. Payne St., Alexandria; Ballston Metro Center, Crystal Square 4, 5 and 6 and 4015 Wilson Blvd., Arlington; and Skyline 5 and 6, Falls Church.

· *Office of the Secretary of Defense and the Defense Finance and Accounting Service* from Crystal Mall 3, Arlington.

· *Office of the Secretary of Defense and Washington Headquarters Services* from Hoffman 1, Alexandria; and Crystal Gateway 1, 2 and 3, and the James K. Polk Building, Arlington.

· *Defense Human Resources Activity* from Nash Street Building, Arlington.

· *Defense Technology Security Administration* from Alexandria Tech Center IV.

· *DoD Inspector General* from 1400-1450 S. Eads St., Arlington.

· *Office of the Secretary of Defense, Washington Headquarters Services, and Defense Human Resources Activity* from 1401 Wilson Blvd., Arlington.

· *S/A:* 1555 Wilson Blvd., Arlington.

· *Washington Headquarters Services* from Crystal Mall 2, 3 and 4, Arlington; and Skyline 4, Falls Church.

· *Headquarters Command Center for the Missile Defense Agency* from Federal Office Building 2, Arlington.

To Marine Corps Base Quantico

· *Counterintelligence Field Activity and Defense Security Service* from 1919 S. Eads St., 1801 S. Bell St., Crystal Square 2 and 4, 251 S. 18th St., Arlington; 1340 Braddock Pl., Alexandria; 938 Elkridge Landing, Linthicum; and Deerpath Road, Elkridge.

· *Naval Criminal Investigative Service* from Washington Navy Yard.

· *Air Force Office of Special Investigations* from Andrews Air Force Base.

· *Army Criminal Investigation Command* from Fort Belvoir.

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To Fort Meade

· *Washington Headquarters Service Central Adjudication Facility* from 1777 N. Kent St., Arlington.

· *Defense Office of Hearings and Appeals Headquarters* from 875 N. Randolph St., Arlington.

· *Navy Central Adjudication Facility* from Washington Navy Yard.

· *Air Force Central Adjudication Facility* from Bolling Air Force Base.

· *Defense Intelligence Agency Central Adjudication Facility* from Bolling Air Force Base.

· *Joint Staff Central Adjudication Facility* from the Pentagon.

· *Defense Information Systems Agency* from 5600 Columbia Pike and Skyline Place (Skyline VII), Falls Church.

· *Joint Task Force-Global Network Operation* from Logicon Building, Arlington.

· *Defense Information Systems Agency* from Skyline IV and V, Falls Church.

· *Defense Information Systems Agency and Joint Task Force-Global Network Operation* from Arlington Service Center.

· *Joint Tactical Radio System Program Office* from Rosslyn Plaza North, Arlington.

· *Army Broadcasting-Soldier Radio/TV* from 2320 Mill Rd., Alexandria.

· *American Forces Information Service and Army Broadcasting-Soldier Radio/TV* from 601 N. Fairfax St., Alexandria.

· *Defense Information Systems Agency* from 5600 Columbia Pike and Skyline Place (Skyline VII), Falls Church.

· *Joint Task Force-Global Network Operation* from Logicon Building, Arlington.

· *Defense Information Systems Agency* from Skyline IV and V, Falls Church; and GSA Franconia Warehouse Depot, Springfield.

· *Defense Information Systems Agency and Joint Task Force-Global Network Operation* from Arlington Service Center.

· *Joint Tactical Radio System* from Rosslyn Plaza North, Arlington.

· *Soldier Magazine* from Fort Belvoir.

· *Naval Media Center* from Anacostia Annex, Washington.

· *Army Broadcasting-Soldier Radio/TV* from 2320 Mill Rd., Alexandria.

· *American Forces Information Service and Army Broadcasting-Soldier Radio/TV* from 601 N. Fairfax St., Alexandria.

· *Army HR XXI* from Crystal Square 2, Arlington.

· *Army Center for Substance Abuse* from Park Center IV Building, Falls Church.

· *Washington Headquarters Service Central Adjudication Facility* from 1777 N. Kent St., Arlington.

· *Defense Office of Hearings and Appeals Headquarters* from 875 N. Randolph St., Arlington.

· *Navy Central Adjudication Facility* from Washington Navy Yard.

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· *Air Force Central Adjudication Facility* from Bolling Air Force Base.

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· *Army Center for Substance Abuse* from Park Center IV Building, Falls Church.

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Recommendation Checklist ***Closures and Realignments only

Item	Recommendation	AF	Comments	Lead Commis. & Analyst

Art Beauchamp

109 Air Force - 43 Ellsworth Air Force Base, SD and Dyess Air Force Base, TX — Art Beauchamp

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Ellsworth Air Force Base	C, S, B	☐ No ☐ Yes
Gainer	Peterson Air Force Base		☐ No ☐ Yes
Gainer	Dyess Air Force Base		☐ No ☐ Yes
Gainer	Elmendorf Air Force Base	P, Ha, C	☐ No ☐ Yes
Gainer	Little Rock Air Force Base		☐ No ☐ Yes

114 Air Force - 49 Langley Air Force Base, VA — Art Beauchamp

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Tyndall Air Force Base		☐ No ☐ Yes
Realign	Langley Air Force Base		☐ No ☐ Yes

118 Air Force - 53 Air Force Logistics Support Centers — Art Beauchamp

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Scott Air Force Base		☐ No ☐ Yes
Gainer	Langley Air Force Base		☐ No ☐ Yes
Realign	Altus Air Force Base		☐ No ☐ Yes
Realign	Hickam Air Force Base		☐ No ☐ Yes
Realign	Hurlburt Field		☐ No ☐ Yes
Realign	Little Rock Air Force Base		☐ No ☐ Yes
Realign	Luke Air Force Base		☐ No ☐ Yes

119 Air Force - 55 F-100 Engine Centralized Intermediate Repair Facilities — Art Beauchamp

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Seymore Johnson Air Force Base		☐ No ☐ Yes
Gainer	Naval Air Station New Orleans Air Reserve Station		☐ No ☐ Yes
Realign	Langley Air Force Base		☐ No ☐ Yes
Realign	Tyndall Air Force Base		☐ No ☐ Yes
Realign	Jacksonville International Airport Air Guard Station		☐ No ☐ Yes

Art Beauchamp, Colleen Turner

92 Air Force - 23 Andrews Air Force Base, MD, Will Rogers Air Guard Station, OK, Tinker Air Force Base, OK, Randolph Air Force Base, TX — Art Beauchamp, Col

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Carswell ARS, Naval Air Station Fort Worth		☐ No ☐ Yes
Gainer	Rosecrans Memorial Airport Air Guard Station		☐ No ☐ Yes
Realign	Will Rogers World Airport Air Guard Station		☐ No ☐ Yes
Realign	Tinker Air Force Base		☐ No ☐ Yes
Realign	Andrews Air Force Base		☐ No ☐ Yes
Realign	Randolph Air Force Base		☐ No ☐ Yes

Art Beauchamp, David Combs, Tanya Cruz

112 Air Force - 46 Lackland Air Force Base, TX — Art Beauchamp, Da

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	McConnell Air Force Base		☐ No ☐ Yes
Realign	Lackland Air Force Base	Hi	☐ No ☐ Yes

113 Air Force - 47 Hill Air Force Base, UT, Edwards Air Force Base, CA, Mountain Home Air Force, Base, ID, Luke Air Force Base, AZ, Nellis Air Force Base, NV — Art Beauchamp, Da

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Homestead Air Reserve Station		☐ No ☐ Yes
Gainer	Langley Air Force Base		☐ No ☐ Yes
Gainer	Carswell ARS, Naval Air Station Fort Worth		☐ No ☐ Yes
Gainer	Shaw Air Force Base		☐ No ☐ Yes
Realign	Edwards Air Force Base		☐ No ☐ Yes
Realign	Nellis Air Force Base		☐ No ☐ Yes
Realign	Mountain Home Air Force Base	Ha	☐ No ☐ Yes
Realign	Luke Air Force Base		☐ No ☐ Yes

Item	Recommendation	AF	Comments	Lead Commis. & Analyst
Realign	Hill Air Force Base	Ha, C, N	☐ No ☐ Yes	

Craig Hall

79 Air Force - 6 Eielson Air Force Base, AK, Moody Air Force Base, GA, and Shaw Airforce Base, SC — Craig Hall

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Gainer	Barksdale Air Force Base		☐ No ☐ Yes
Gainer	Langley Air Force Base		☐ No ☐ Yes
Gainer	Moody Air Force Base		☐ No ☐ Yes
Gainer	Nellis Air Force Base		☐ No ☐ Yes
Realign	Eielson Air Force Base	P, Ha, C	☐ No ☐ Yes
Realign	Shaw Air Force Base		☐ No ☐ Yes

80 Air Force - 7 Kulis Air Guard Station, AK, and Elmendorf Air Force Base, AK — Craig Hall

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Closure	Kulis Air Guard Station	P, Ha, C	☐ No ☐ Yes
Gainer	Langley Air Force Base		☐ No ☐ Yes
Realign	Elmendorf Air Force Base	P, Ha, C	☐ No ☐ Yes

84 Air Force - 12 Onizuka Air Force Station, CA — Craig Hall

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Closure	Onizuka Air Force Station		☐ No ☐ Yes
Gainer	Vandenburg Air Force Base		☐ No ☐ Yes
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes

195 Add 5 Close or Further Realign Galena Airport FOL, AK — Craig Hall

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Closure	Galena Airport Forward Operating Location	C, B	☐ No ☐ Yes

David Combs

100 Air Force - 32 Cannon Air Force Base, NM — David Combs

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Closure	Cannon Air Force Base	T, Hi, Ha, P	☐ No ☐ Yes
Gainer	Hill Air Force Base	Ha, C, N	☐ No ☐ Yes
Gainer	Kirtland Air Force Base		☐ No ☐ Yes
Gainer	Nellis Air Force Base		☐ No ☐ Yes
Gainer	Andrews Air Force Base		☐ No ☐ Yes
Gainer	Dane County Airport		☐ No ☐ Yes
Gainer	Joe Foss Field Air Guard Station		☐ No ☐ Yes
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes

108 Air Force - 41 Portland International Airport Air Guard Station, OR — David Combs

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Gainer	Naval Air Station New Orleans Air Reserve Station		☐ No ☐ Yes
Gainer	Tinker Air Force Base		☐ No ☐ Yes
Gainer	Forbes Field Air Guard Station		☐ No ☐ Yes
Gainer	McChord Air Force Base	C, B	☐ No ☐ Yes
Gainer	Atlantic City International Airport Air Guard Station		☐ No ☐ Yes
Gainer	Vandenburg Air Force Base		☐ No ☐ Yes
Realign	Portland International Airport Air Guard Station	C, B	☐ No ☐ Yes

Justin Breitschopf

83 Air Force - 11 March Air Force Base, CA — Justin Breitschopf

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Gainer	Armed Forces Reserve Center Pease Air Force Base		☐ No ☐ Yes
Gainer	McConnell Air Force Base		☐ No ☐ Yes
Gainer	McGee Tyson APT Air Guard Station		☐ No ☐ Yes
Realign	March Air Reserve Base		☐ No ☐ Yes

Ken Small

95 Air Force - 27 W.K. Kellogg Airport Air Guard Station, MI — Ken Small

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Closure	W. K. Kellogg Airport Air Guard Station	S	☐ No ☐ Yes
Gainer	Selfridge Air National Guard Base		☐ No ☐ Yes

Item	Recommendation	AF	Comments	Lead Commis. & Analyst

Mike Flinn

101 Air Force - 33 Niagra Falls Air Reserve Station, NY — Mike Flinn

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Niagara Falls International Airport Air Guard Station	P, N, T, B	☐ No ☐ Yes
Gainer	Schriever Air Force Base		☐ No ☐ Yes
Gainer	Bangor International Airport Air Guard Station		☐ No ☐ Yes
Gainer	Lackland Air Force Base	Hi	☐ No ☐ Yes
Gainer	Langley Air Force Base		☐ No ☐ Yes
Gainer	Little Rock Air Force Base		☐ No ☐ Yes

102 Air Force - 34 Schenectedy County Airport Air Guard Station — Mike Flinn

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Little Rock Air Force Base		☐ No ☐ Yes
Realign	Schenectady County Air Guard Station		☐ No ☐ Yes

194 Add 4 Close or Further Realign Pope AFB, NC — Mike Flinn

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Pope Air Force Base	G, Hi	☐ No ☐ Yes

Mike Flinn, Brad McRee

103 Air Force - 35 Pope Air Force Base, NC, Pittsburgh International Airport Air Reserve Station, PA, Yeager Air Guard Station, WV — Mike Flinn, Brad M

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Pittsburgh International Airport Air Reserve Station	N	☐ No ☐ Yes
Gainer	Offutt Air Force Base		☐ No ☐ Yes
Gainer	Channel Islands Air Guard Station		☐ No ☐ Yes
Gainer	Columbus Air Force Base		☐ No ☐ Yes
Gainer	Eastern West Virginia Regional Airport Sheppard Air Guar		☐ No ☐ Yes
Gainer	Fort Bragg		☐ No ☐ Yes
Gainer	Laughlin Air Force Base		☐ No ☐ Yes
Gainer	Moody Air Force Base		☐ No ☐ Yes
Gainer	Quonset State Airport Air Guard Station		☐ No ☐ Yes
Gainer	Randolph Air Force Base		☐ No ☐ Yes
Gainer	Vance Air Force Base		☐ No ☐ Yes
Gainer	Youngstown-Warren Regional Airport		☐ No ☐ Yes
Gainer	Little Rock Air Force Base		☐ No ☐ Yes
Realign	Sheppard Air Force Base	T	☐ No ☐ Yes
Realign	Pope Air Force Base	G, Hi	☐ No ☐ Yes
Realign	Yeager Airport Air Guard Station	P	☐ No ☐ Yes

Nat Sillin

82 Air Force - 10 Beale Air Force Base, CA and Selfridge Air National Guard Base, MI — Nat Sillin

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	MacDill Air Force Base		☐ No ☐ Yes
Gainer	McGee Tyson APT Air Guard Station		☐ No ☐ Yes
Realign	Beale Air Force Base		☐ No ☐ Yes
Realign	Selfridge Air National Guard Base		☐ No ☐ Yes

Tanya Cruz

89 Air Force - 18 Mountain Home Air Force, ID, Nellis Air Force Base, NV, and Elmendorf Air Force Base — Tanya Cruz

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Nellis Air Force Base		☐ No ☐ Yes
Gainer	Fresno Air Terminal		☐ No ☐ Yes
Gainer	McEntire Air Guard Station		☐ No ☐ Yes
Gainer	Shaw Air Force Base		☐ No ☐ Yes
Gainer	Tulsa International Airport Air Guard Station		☐ No ☐ Yes
Gainer	Jacksonville International Airport Air Guard Station		☐ No ☐ Yes
Realign	Elmendorf Air Force Base	P, Ha, C	☐ No ☐ Yes
Realign	Mountain Home Air Force Base	Ha	☐ No ☐ Yes

91 Air Force - 22 New Orleans Air Reserve Station, LA — Tanya Cruz

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?

Item	Recommendation	AF	Comments	Lead Commis. & Analyst
Gainer	Barksdale Air Force Base		☐ No ☐ Yes	
Gainer	Buckley Air Force Base		☐ No ☐ Yes	
Gainer	Nellis Air Force Base		☐ No ☐ Yes	
Gainer	Whiteman Air Force Base		☐ No ☐ Yes	
Realign	Naval Air Station New Orleans Air Reserve Station		☐ No ☐ Yes	
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes	

117 Air Force - 52 General Mitchell Air Reserve Station, WI — Tanya Cruz

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Closure	Gen Mitchell International Airport ARS	S	☐ No ☐ Yes
Gainer	Dobbins Air Reserve Base		☐ No ☐ Yes
Gainer	Little Rock Air Force Base		☐ No ☐ Yes
Gainer	Pope Air Force Base	G, Hi	☐ No ☐ Yes

Tim MacGregor

78 Air Force - 5 Birmingham International Airport Air Guard Station, AL — Tim MacGregor

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Gainer	Phoenix Sky Harbor International Airport		☐ No ☐ Yes
Gainer	Bangor International Airport Air Guard Station		☐ No ☐ Yes
Gainer	McGee Tyson APT Air Guard Station		☐ No ☐ Yes
Gainer	Dannelly Field Air Guard Station		☐ No ☐ Yes
Realign	Birmingham International Airport Air Guard Station		☐ No ☐ Yes

87 Air Force - 16 Robins Air Force Base, GA — Tim MacGregor

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Gainer	McConnell Air Force Base		☐ No ☐ Yes
Realign	Robins Air Force Base		☐ No ☐ Yes

97 Air Force - 28 Key Field Air Guard Station, MS — Tim MacGregor

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Gainer	Bangor International Airport Air Guard Station		☐ No ☐ Yes
Gainer	McGee Tyson APT Air Guard Station		☐ No ☐ Yes
Gainer	Gen Mitchell International Airport ARS	S	☐ No ☐ Yes
Gainer	Jackson International Airport Air Guard Station		☐ No ☐ Yes
Realign	Key Field Air Guard Station		☐ No ☐ Yes

104 Air Force - 37 Grand Forks Air Force Base, ND — Tim MacGregor

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Gainer	Forbes Field Air Guard Station		☐ No ☐ Yes
Gainer	Hickam Air Force Base		☐ No ☐ Yes
Gainer	Seymore Johnson Air Force Base		☐ No ☐ Yes
Gainer	MacDill Air Force Base		☐ No ☐ Yes
Gainer	McConnell Air Force Base		☐ No ☐ Yes
Gainer	Scott Air Force Base		☐ No ☐ Yes
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes
Realign	Grand Forks Air Force Base	C, S, B	☐ No ☐ Yes

105 Air Force - 38 Hector International Airport Air Guard Station, ND — Tim MacGregor

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes
Realign	McGee Tyson APT Air Guard Station		☐ No ☐ Yes
Realign	Joe Foss Field Air Guard Station		☐ No ☐ Yes
Realign	Construction Battalion Center Gulfport		☐ No ☐ Yes
Realign	Hector International Airport Air Guard Station		☐ No ☐ Yes

116 Air Force - 51 Fairchild Air Force Base, WA — Tim MacGregor

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Gainer	Sioux Gateway Airport Air Guard		☐ No ☐ Yes
Realign	Fairchild Air Force Base		☐ No ☐ Yes

Item	Recommendation	Army	Comments	Lead Commis. & Analyst

Dean Rhody

1	Army - 5	Fort Wainwright, AK		Dean Rhody
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Realign	Fort Wainwright		☐ No ☐ Yes	
Realign	Fort Greely		☐ No ☐ Yes	

50	Army - 105	Single Drill Sergeant		Dean Rhody
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Gainer	Fort Jackson		☐ No ☐ Yes	
Realign	Fort Benning		☐ No ☐ Yes	
Realign	Fort Leonard Wood		☐ No ☐ Yes	

120	E&T - 5	Aviation Logistics School		Dean Rhody
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Gainer	Fort Rucker		☐ No ☐ Yes	
Realign	Fort Eustis	P, N	☐ No ☐ Yes	

121	E&T - 6	Combat Service Support Center		Dean Rhody
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Gainer	Fort Lee		☐ No ☐ Yes	
Realign	Redstone Arsenal		☐ No ☐ Yes	
Realign	Aberdeen Proving Ground		☐ No ☐ Yes	
Realign	Fort Eustis	P, N	☐ No ☐ Yes	

127	E&T - 13	Prime Power to Fort Leonard Wood, Mo		Dean Rhody
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Gainer	Fort Leonard Wood		☐ No ☐ Yes	
Realign	Fort Belvoir	C	☐ No ☐ Yes	

Don Manuel

2	Army - 6	Fort Gillem, GA		Don Manuel
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Fort Gillem	B	☐ No ☐ Yes	
Gainer	Pope Air Force Base	G, Hi	☐ No ☐ Yes	
Gainer	Rock Island Arsenal	S	☐ No ☐ Yes	
Gainer	Fort Benning		☐ No ☐ Yes	
Gainer	Fort Campbell		☐ No ☐ Yes	
Gainer	Shaw Air Force Base		☐ No ☐ Yes	
Gainer	Redstone Arsenal		☐ No ☐ Yes	
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes	

3	Army - 8	Fort McPherson, GA		Don Manuel
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Peachtree Leases Atlanta		☐ No ☐ Yes	
Closure	Fort McPherson	Hi	☐ No ☐ Yes	
Gainer	Fort Sam Houston		☐ No ☐ Yes	
Gainer	Pope Air Force Base	G, Hi	☐ No ☐ Yes	
Gainer	Shaw Air Force Base		☐ No ☐ Yes	
Gainer	Fort Eustis	P, N	☐ No ☐ Yes	
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes	

8	Army - 19	Fort Monroe, VA		Don Manuel
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Fort Monroe	P, N	☐ No ☐ Yes	
Gainer	Fort Knox	T, S	☐ No ☐ Yes	
Gainer	Fort Eustis	P, N	☐ No ☐ Yes	
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes	

Kevin Felix

4	Army - 10	Fort Bragg, NC		Kevin Felix
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Gainer	Eglin Air Force Base		☐ No ☐ Yes	
Gainer	Fort Bragg		☐ No ☐ Yes	

Item	Recommendation	Army	Comments	Lead Commis. & Analyst
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes	

6 Army - 15 Fort Hood, TX — Kevin Felix

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Fort Hood	Hi, T	☐ No ☐ Yes
Gainer	Fort Carson		☐ No ☐ Yes
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes

10 Army - 22 Operational Army (IGPBS) — Kevin Felix

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Fort Riley		☐ No ☐ Yes
Gainer	Fort Bliss		☐ No ☐ Yes
Gainer	Fort Sill		☐ No ☐ Yes
Realign	Fort Hood	Hi, T	☐ No ☐ Yes
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes
Realign	Fort Campbell		☐ No ☐ Yes

Liz Bieri

7 Army - 16 Red River Army Depot — Liz Bieri

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Red River Army Depot	Hi, T, P	☐ No ☐ Yes
Gainer	Anniston Army Depot		☐ No ☐ Yes
Gainer	Letterkenny Army Depot		☐ No ☐ Yes
Gainer	Marine Corps Logistics Base Albany		☐ No ☐ Yes
Gainer	Tinker Air Force Base		☐ No ☐ Yes
Gainer	Tobyhanna Army Depot		☐ No ☐ Yes
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes

Mike Avenick

9 Army - 20 Manuever Training — Mike Avenick

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Fort Benning		☐ No ☐ Yes
Realign	Fort McCoy		☐ No ☐ Yes
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes
Realign	Fort Knox	T, S	☐ No ☐ Yes

126 E&T - 12 Net Fires Center — Mike Avenick

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Fort Sill		☐ No ☐ Yes
Realign	Fort Bliss		☐ No ☐ Yes

Wes Hood

5 Army - 11 Fort Monmouth, NJ — Wes Hood

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Fort Monmouth	P, N	☐ No ☐ Yes
Gainer	Fort Meade		☐ No ☐ Yes
Gainer	United States Military Academy		☐ No ☐ Yes
Gainer	Aberdeen Proving Ground		☐ No ☐ Yes
Gainer	Defense Supply Center Columbus	S, N	☐ No ☐ Yes
Realign	Fort Belvoir	C	☐ No ☐ Yes
Realign	CRYSTAL CITY LEASE, VA		☐ No ☐ Yes
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes
Realign	Redstone Arsenal		☐ No ☐ Yes
Realign	Fort Knox	T, S	☐ No ☐ Yes

51 Army - 106 U.S. Army Garrison, MI — Wes Hood

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Selfridge Army Activity		☐ No ☐ Yes
Gainer	Detroit Arsenal	S	☐ No ☐ Yes
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes

148 H&SA - 46 Relocate Army Headquarters and Field Operating Agencies — Wes Hood

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?

Item	Recommendation	Army	Comments	Lead Commis. & Analyst
Gainer	Redstone Arsenal		☐ No ☐ Yes	
Gainer	Fort Sam Houston		☐ No ☐ Yes	
Gainer	Fort Knox	T, S	☐ No ☐ Yes	
Realign	BAILEY'S CROSSROADS, VA	P, T	☐ No ☐ Yes	
Realign	CRYSTAL CITY LEASE, VA		☐ No ☐ Yes	
Realign	Fort Belvoir	C	☐ No ☐ Yes	
Realign	ROSSLYN LEASE, VA		☐ No ☐ Yes	
Realign	Rock Island Arsenal	S	☐ No ☐ Yes	
Realign	Fort Buchanan		☐ No ☐ Yes	
Realign	HOFFMAN LEASE, VA		☐ No ☐ Yes	
Realign	Aberdeen Proving Ground		☐ No ☐ Yes	

Ethan Saxon

140 H&SA - 27 Consolidate Defense Information Systems Agency and Establish Joint C4ISR Capability — Ethan Saxon

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Gainer	Fort Meade		☐ No ☐ Yes
Realign	Arlington Service Center	P	☐ No ☐ Yes
Realign	Leased Space - Slidell		☐ No ☐ Yes
Realign	Leased Space - VA		☐ No ☐ Yes
Realign	Naval Support Activity Panama City		☐ No ☐ Yes

198 Add 8 Close or Realign Joint Medical Command HQs — Ethan Saxon

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Closure	Potomac Annex	P, T	☐ No ☐ Yes
Closure	BAILEY'S CROSSROADS, VA	P, T	☐ No ☐ Yes
Realign	Bolling Air Force Base	P, T	☐ No ☐ Yes

Marilyn Wasleski

145 H&SA - 37 Defense Finance and Accounting Service — Marilyn Wasleski

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Closure	Defense Finance and Accounting Service, Limestone	N	☐ No ☐ Yes
Closure	Defense Finance and Accounting Service, Dayton		☐ No ☐ Yes
Closure	Defense Finance and Accounting Service, Charleston	Hi	☐ No ☐ Yes
Closure	Defense Finance and Accounting Service, Lexington		☐ No ☐ Yes
Closure	Defense Finance and Accounting Service, Rome	N	☐ No ☐ Yes
Closure	Defense Finance and Accounting Service, Oakland		☐ No ☐ Yes
Closure	Defense Finance and Accounting Service, Orlando		☐ No ☐ Yes
Closure	Defense Finance and Accounting Service, St. Louis	T	☐ No ☐ Yes
Closure	Defense Finance and Accounting Service, Seaside		☐ No ☐ Yes
Closure	Defense Finance and Accounting Service, San Diego		☐ No ☐ Yes
Closure	Defense Finance and Accounting Service, San Bernardino		☐ No ☐ Yes
Closure	Defense Finance and Accounting Service, Patuxent River		☐ No ☐ Yes
Closure	Defense Finance and Accounting Service, San Antonio	Hi	☐ No ☐ Yes
Closure	Defense Finance and Accounting Service, Kansas City	T	☐ No ☐ Yes
Gainer	Defense Supply Center Columbus	S, N	☐ No ☐ Yes
Gainer	Air Reserve Personnel Center	N, C	☐ No ☐ Yes
Gainer	Defense Finance and Accounting Service, Indianapolis	N, T,	☐ No ☐ Yes
Realign	Offutt Air Force Base		☐ No ☐ Yes
Realign	Naval Station Pearl Harbor		☐ No ☐ Yes
Realign	Naval Station Norfolk	P, N	☐ No ☐ Yes
Realign	Naval Air Station Pensacola	G	☐ No ☐ Yes
Realign	Fort Sill		☐ No ☐ Yes
Realign	Defense Finance and Accounting Service, Cleveland	N	☐ No ☐ Yes
Realign	Rock Island Arsenal	S	☐ No ☐ Yes
Realign	Air Reserve Personnel Center	N, C	☐ No ☐ Yes
Realign	Defense Finance and Accounting Service, Arlington	P	☐ No ☐ Yes

Item	Recommendation	JC-S	Comments	Lead Commis. & Analyst

Ashley Buzzell

178 Tech - 5 Co-locate Extramural Research Program Managers — Ashley Buzzell

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	National Naval Medical Center Bethesda		☐ No ☐ Yes
Realign	BALSTON LEASE, VA		☐ No ☐ Yes
Realign	Army Research Office, Durham		☐ No ☐ Yes
Realign	Center for Naval Research		☐ No ☐ Yes
Realign	Leased Space - VA		☐ No ☐ Yes
Realign	Fort Belvoir	C	☐ No ☐ Yes

Brad McRee

81 Air Force - 8 Fort Smith Air Guard Station, AR, and Luke Air Force Base, AZ — Brad McRee

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Tulsa International Airport Air Guard Station		☐ No ☐ Yes
Gainer	Savannah International Airport Air Guard Station		☐ No ☐ Yes
Gainer	Fresno Air Terminal		☐ No ☐ Yes
Realign	Fort Smith Regional	P	☐ No ☐ Yes
Realign	Luke Air Force Base		☐ No ☐ Yes

85 Air Force - 14 Bradley International Airport Air Guard Station, CT, Barnes Air Guard Station, MA, Selfridge Air National Guard Base, MI, Shaw Airforce Base, SC, and Martine State Air Guard Station, MD — Brad McRee

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Barnes Municipal Airport Air Guard Station		☐ No ☐ Yes
Realign	Martin State Airport Air Guard Station		☐ No ☐ Yes
Realign	Selfridge Air National Guard Base		☐ No ☐ Yes
Realign	Shaw Air Force Base		☐ No ☐ Yes
Realign	Bradley International Airport Air Guard Station		☐ No ☐ Yes

88 Air Force - 17 Boise Air Terminal Air Guard Station, ID — Brad McRee

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Cheyenne Airport Air Guard Station		☐ No ☐ Yes
Realign	Boise Air Terminal Air Guard Station		☐ No ☐ Yes

90 Air Force - 20 Capital Air Guard Station, IL, and Hulman Regional Airport Air Guard Station, IN — Brad McRee

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Fort Wayne International Airport Air Guard Station		☐ No ☐ Yes
Realign	Des Moines International Airport Air Guard Station		☐ No ☐ Yes
Realign	Joe Foss Field Air Guard Station		☐ No ☐ Yes
Realign	Lackland Air Force Base	Hi	☐ No ☐ Yes
Realign	Dane County Airport		☐ No ☐ Yes
Realign	Hulman Regional Airport Air Guard Station		☐ No ☐ Yes
Realign	Capital Airport Air Guard Station	S	☐ No ☐ Yes

94 Air Force - 25 Otis Air National Guard Base, MA, Lambert St. Louis International Airport Air Guard Station, MO, Atlantic City Air Guard Station, NJ — Brad McRee

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Otis Air Guard Base	N	☐ No ☐ Yes
Gainer	Burlington International Airport Air Guard Station		☐ No ☐ Yes
Gainer	Bradley International Airport Air Guard Station		☐ No ☐ Yes
Gainer	Jacksonville International Airport Air Guard Station		☐ No ☐ Yes
Gainer	Barnes Municipal Airport Air Guard Station		☐ No ☐ Yes
Gainer	Atlantic City International Airport Air Guard Station		☐ No ☐ Yes
Gainer	Nellis Air Force Base		☐ No ☐ Yes
Realign	Lambert International Airport- St Louis		☐ No ☐ Yes

96 Air Force - 28 Duluth International Airport Air Guard Station — Brad McRee

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Realign	Duluth International Airport Air Guard Station		☐ No ☐ Yes

98 Air Force - 30 Great Falls International Airport Air Guard Station — Brad McRee

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Boise Air Terminal Air Guard Station		☐ No ☐ Yes

Item	Recommendation	JC-S	Comments	Lead Commis. & Analyst
Gainer	Des Moines International Airport Air Guard Station		☐ No ☐ Yes	
Gainer	Dannelly Field Air Guard Station		☐ No ☐ Yes	
Realign	Great Falls International Airport Air Guard Station		☐ No ☐ Yes	
106	**Air Force - 39 Mansfield-Lahm Municipal Airport Air Guard Station, OH**			Brad McRee
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Mansfield Lahm Municipal Airport Air Guard Station		☐ No ☐ Yes	
Gainer	Little Rock Air Force Base		☐ No ☐ Yes	
Gainer	Louisville International Airport Air Guard Station		☐ No ☐ Yes	
Gainer	Maxwell Air Force Base	G	☐ No ☐ Yes	
Gainer	Toledo Express Airport Air Guard Station		☐ No ☐ Yes	
107	**Air Force - 40 Springfield-Beckley Municipal Airport Air Guard Station, OH**			Brad McRee
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Gainer	Lackland Air Force Base	Hi	☐ No ☐ Yes	
Gainer	Des Moines International Airport Air Guard Station		☐ No ☐ Yes	
Gainer	Rickenbacker International Airport Air Guard Station		☐ No ☐ Yes	
Gainer	Buckley Air Force Base		☐ No ☐ Yes	
Realign	Springfield-Beckley Municipal Airport Air Guard Station		☐ No ☐ Yes	
110	**Air Force - 44 Nashville International Airport Air Guard Station,TN**			Brad McRee
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Gainer	Memphis International Airport Air Guard Station		☐ No ☐ Yes	
Gainer	Louisville International Airport Air Guard Station		☐ No ☐ Yes	
Gainer	Greater Peoria Regional Airport		☐ No ☐ Yes	
Realign	Nashville International Airport Air Guard Station	B	☐ No ☐ Yes	
111	**Air Force - 45 Ellington Air Guard Station, TX**			Brad McRee
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Realign	Ellington Field Air Guard Station	Ha	☐ No ☐ Yes	
115	**Air Force - 50 Richmond Air Guard Station, VA, Des Moines International Airport Air Guard Station, IA**			Brad McRee
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Gainer	Toledo Express Airport Air Guard Station		☐ No ☐ Yes	
Gainer	Tulsa International Airport Air Guard Station		☐ No ☐ Yes	
Gainer	Homestead Air Reserve Station		☐ No ☐ Yes	
Realign	Des Moines International Airport Air Guard Station		☐ No ☐ Yes	
Realign	Richmond International Airport Air Guard Station		☐ No ☐ Yes	
Carol Schmidt				
130	**H&SA - 5 Co-locate Defense Military Department Adjudication Activities**			Carol Schmidt
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Leased Space - CA		☐ No ☐ Yes	
Closure	Leased Space - MD		☐ No ☐ Yes	
Closure	Leased Space - OH		☐ No ☐ Yes	
Closure	Leased Space - VA		☐ No ☐ Yes	
Closure	Leased Space - AZ		☐ No ☐ Yes	
Gainer	Fort Meade		☐ No ☐ Yes	
Realign	Naval District Washington		☐ No ☐ Yes	
Realign	Bolling Air Force Base	P, T	☐ No ☐ Yes	
Realign	Natick Soldier Systems Center		☐ No ☐ Yes	
133	**H&SA - 12 Co-locate Miscellaneous OSD, Defense Agency, and Field Activity Leased Locations**			Carol Schmidt
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Gainer	Fort Lee		☐ No ☐ Yes	
Gainer	Fort Belvoir	C	☐ No ☐ Yes	
Realign	Leased Space - VA		☐ No ☐ Yes	
135	**H&SA - 17 Co-locate Navy Education and Training Command and Navy Education and Training Professional Development & Technology Center**			Carol Schmidt
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Gainer	Naval Support Activity Mid South		☐ No ☐ Yes	
Realign	Naval Air Station Pensacola	G	☐ No ☐ Yes	

Item	Recommendation	JC-S	Comments	Lead Commis. & Analyst

137 H&SA - 19 Consolidate Civilian Personnel Offices within each Military Department and the Defense Agencies — Carol Schmidt

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Fort Huachuca		☐ No ☐ Yes
Gainer	Fort Riley		☐ No ☐ Yes
Gainer	Naval Base Coronado	P	☐ No ☐ Yes
Gainer	Defense Supply Center Columbus	S, N	☐ No ☐ Yes
Gainer	Defense Finance and Accounting Service, Indianapolis	N, T,	☐ No ☐ Yes
Gainer	Aberdeen Proving Ground		☐ No ☐ Yes
Gainer	Randolph Air Force Base		☐ No ☐ Yes
Gainer	Naval Support Activity Philadelphia		☐ No ☐ Yes
Gainer	Human Resources Support Center Northwest		☐ No ☐ Yes
Realign	Robins Air Force Base		☐ No ☐ Yes
Realign	Human Resources Support Center Southeast		☐ No ☐ Yes
Realign	Human Resources Support Center Southwest		☐ No ☐ Yes
Realign	Leased Space - VA		☐ No ☐ Yes
Realign	Naval Station Pearl Harbor		☐ No ☐ Yes
Realign	Rock Island Arsenal	S	☐ No ☐ Yes
Realign	Tinker Air Force Base		☐ No ☐ Yes
Realign	Hill Air Force Base	Ha, C, N	☐ No ☐ Yes
Realign	Human Resources Support Center Northeast		☐ No ☐ Yes
Realign	Bolling Air Force Base	P, T	☐ No ☐ Yes
Realign	Wright Patterson Air Force Base	N, S	☐ No ☐ Yes
Realign	Fort Richardson		☐ No ☐ Yes

138 H&SA - 22 Consolidate Correctional Facilities into Joint Regional Correctional Facilities — Carol Schmidt

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Marine Corps Base Miramar		☐ No ☐ Yes
Gainer	Naval Support Activity Norfolk		☐ No ☐ Yes
Gainer	Naval Weapons Station Charleston		☐ No ☐ Yes
Gainer	Fort Leavenworth		☐ No ☐ Yes
Realign	Submarine Base Bangor		☐ No ☐ Yes
Realign	Marine Corps Base Camp Pendleton		☐ No ☐ Yes
Realign	Fort Knox	T, S	☐ No ☐ Yes
Realign	Fort Lewis		☐ No ☐ Yes
Realign	Fort Sill		☐ No ☐ Yes
Realign	Kirtland Air Force Base		☐ No ☐ Yes
Realign	Lackland Air Force Base	Hi	☐ No ☐ Yes
Realign	Marine Corps Base Camp Lejeune		☐ No ☐ Yes
Realign	Marine Corps Base Quantico		☐ No ☐ Yes
Realign	Naval Air Station Pensacola	G	☐ No ☐ Yes
Realign	Naval Air Station Jacksonville		☐ No ☐ Yes
Realign	Edwards Air Force Base		☐ No ☐ Yes
Realign	Naval Station Norfolk	P, N	☐ No ☐ Yes

146 H&SA - 41 Joint Basing — Carol Schmidt

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Realign	Headquarters Battalion, Headquarters Marine Corps, Hende		☐ No ☐ Yes
Realign	Hickam Air Force Base		☐ No ☐ Yes
Realign	Fort Eustis	P, N	☐ No ☐ Yes
Realign	Fort Sam Houston		☐ No ☐ Yes
Realign	McChord Air Force Base	C, B	☐ No ☐ Yes
Realign	Naval Air Facility Washington		☐ No ☐ Yes
Realign	Fort Dix		☐ No ☐ Yes
Realign	Naval Weapons Station Charleston		☐ No ☐ Yes
Realign	Randolph Air Force Base		☐ No ☐ Yes
Realign	Naval Air Engineering Station Lakehurst		☐ No ☐ Yes
Realign	Andersen Air Force Base		☐ No ☐ Yes
Realign	Bolling Air Force Base	P, T	☐ No ☐ Yes

Item	Recommendation	JC-S	Comments	Lead Commis. & Analyst
Realign	Fort Richardson		☐ No ☐ Yes	

147 H&SA - 44 Relocate Air Force Real Property Agency (AFRPA) — Carol Schmidt

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Lackland Air Force Base	Hi	☐ No ☐ Yes
Realign	Bolling Air Force Base	P, T	☐ No ☐ Yes

149 H&SA - 49 Relocate Miscellaneous Department of Navy Leased Locations — Carol Schmidt

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Arlington Service Center	P	☐ No ☐ Yes
Gainer	Leased Space - DC		☐ No ☐ Yes
Gainer	Naval Air Station Patuxent River		☐ No ☐ Yes
Gainer	Naval District Washington		☐ No ☐ Yes
Realign	Leased Space - MD		☐ No ☐ Yes
Realign	Leased Space - VA		☐ No ☐ Yes

Colleen Turner

76 DoN - 37 Navy Reserve Centers (Roll up)** — Colleen Turner

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Navy Reserve Center Cape Girardeau		☐ No ☐ Yes
Closure	Navy Reserve Center Cedar Rapids		☐ No ☐ Yes
Closure	Navy Reserve Center Central Point		☐ No ☐ Yes
Closure	Navy Reserve Center Duluth		☐ No ☐ Yes
Closure	Navy Reserve Center Adelphi		☐ No ☐ Yes
Closure	Navy Reserve Center Lubbock, TX		☐ No ☐ Yes
Closure	Navy Reserve Center Lincoln		☐ No ☐ Yes
Closure	Navy Reserve Center Lexington		☐ No ☐ Yes
Closure	Navy Reserve Center Horsehead		☐ No ☐ Yes
Closure	Navy Reserve Center Glenn Falls		☐ No ☐ Yes
Closure	Navy Reserve Center Forest Park		☐ No ☐ Yes
Closure	Navy Reserve Center Evansville		☐ No ☐ Yes
Closure	Navy Marine Corps Reserve Center Grissom Air Reserve B		☐ No ☐ Yes
Closure	Navy Reserve Center Asheville		☐ No ☐ Yes
Closure	Naval Reserve Center, Bangor		☐ No ☐ Yes
Closure	Navy Reserve Center Marquette		☐ No ☐ Yes
Closure	Navy Reserve Center Sioux City		☐ No ☐ Yes
Closure	Navy-Marine Corps Reserve Center Tacoma		☐ No ☐ Yes
Closure	Navy Reserve Center Watertown		☐ No ☐ Yes
Closure	Navy Reserve Center ST Petersburg		☐ No ☐ Yes
Closure	Navy Reserve Center Orange,TX		☐ No ☐ Yes
Closure	Navy Reserve Center Tuscaloosa AL		☐ No ☐ Yes
Closure	Navy Reserve Center Pocatello		☐ No ☐ Yes
Gainer	Undistributed or Overseas Reductions		☐ No ☐ Yes
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes

99 Air Force - 31 Reno-Tahoe International Airport Air Guard Station, NV — Colleen Turner

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Little Rock Air Force Base		☐ No ☐ Yes
Gainer	Channel Islands Air Guard Station		☐ No ☐ Yes
Gainer	Fresno Air Terminal		☐ No ☐ Yes
Realign	Reno-Tahoe International Airport Air Guard Station		☐ No ☐ Yes

143 H&SA - 33 Consolidate/Co-locate Active and Reserve Personnel & Recruiting Centers for Army and Air Force — Colleen Turner

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Fort Knox	T, S	☐ No ☐ Yes
Gainer	Robins Air Force Base		☐ No ☐ Yes
Gainer	Randolph Air Force Base		☐ No ☐ Yes
Realign	Leased Space - IN		☐ No ☐ Yes
Realign	Leased Space - MO	T	☐ No ☐ Yes
Realign	Air Reserve Personnel Center	N, C	☐ No ☐ Yes

Item	Recommendation	JC-S	Comments	Lead Commis. & Analyst
Realign	HOFFMAN LEASE, VA		☐ No ☐ Yes	
144	**H&SA - 35 Create Joint Mobilization Sites**			Colleen Turner
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Gainer	Fort Dix		☐ No ☐ Yes	
Realign	Submarine Base New London	P, N, C, B, T	☐ No ☐ Yes	
Realign	Fort Jackson		☐ No ☐ Yes	
Realign	Fort Eustis	P, N	☐ No ☐ Yes	
George Delgado				
151	**Ind - 5 Riverbank Army Ammunition Plant, CA**			George Delgado
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Riverbank Army Ammunition Plant		☐ No ☐ Yes	
152	**Ind - 6 Sierra Army Depot, CA**			George Delgado
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Realign	Crane Army Ammunition Plant		☐ No ☐ Yes	
Realign	Tooele Army Depot		☐ No ☐ Yes	
Realign	Sierra Army Depot		☐ No ☐ Yes	
Realign	McAlester Army Ammunition Plant		☐ No ☐ Yes	
154	**Ind - 8 Newport Chemical Depot, IN**			George Delgado
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Newport Chemical Depot	S	☐ No ☐ Yes	
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes	
155	**Ind - 9 Kansas Army Ammunition Plant, KS**			George Delgado
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Kansas Army Ammunition Plant		☐ No ☐ Yes	
156	**Ind - 10 Lima Tank Plant, OH**			George Delgado
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Realign	Fort Lewis		☐ No ☐ Yes	
157	**Ind - 11 Mississippi Army Ammunition Plant, MS**			George Delgado
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Mississippi Army Ammunition Plant		☐ No ☐ Yes	
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes	
158	**Ind - 12 Hawthorne Army Depot, NV**			George Delgado
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
	Tooele Army Depot		☐ No ☐ Yes	
Closure	Hawthorne Army Depot	C, P	☐ No ☐ Yes	
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes	
159	**Ind - 13 Watervliet Arsenal, NY**			George Delgado
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Realign	Watervliet Arsenal		☐ No ☐ Yes	
160	**Ind - 14 Umatilla Chemical Depot, OR**			George Delgado
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Umatilla Army Depot	C, B	☐ No ☐ Yes	
162	**Ind - 16 Lone Star Army Ammunition Plant**			George Delgado
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Lone Star Army Ammunition Plant		☐ No ☐ Yes	
163	**Ind - 17 Desert Chemical Depot, UT**			George Delgado
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Deseret Chemical Depot		☐ No ☐ Yes	
Jim Durso				
131	**H&SA - 8 Co-locate Military Department Investigation Agencies with DoD Counterintelligence and Security Agency**			Jim Durso
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Leased Space - CA		☐ No ☐ Yes	
Closure	Leased Space - CO		☐ No ☐ Yes	

Item	Recommendation	JC-S	Comments	Lead Commis. & Analyst
Closure	Leased Space - GA		☐ No ☐ Yes	
Closure	Leased Space - MD		☐ No ☐ Yes	
Closure	Leased Space - OH		☐ No ☐ Yes	
Closure	Leased Space - VA		☐ No ☐ Yes	
Gainer	Peterson Air Force Base		☐ No ☐ Yes	
Gainer	Marine Corps Base Quantico		☐ No ☐ Yes	
Realign	Fort Belvoir	C	☐ No ☐ Yes	
Realign	Andrews Air Force Base		☐ No ☐ Yes	
Realign	Naval District Washington		☐ No ☐ Yes	

134 H&SA - 15 Co-locate Missile and Space Defense Agencies — Jim Durso

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Gainer	Fort Belvoir	C	☐ No ☐ Yes
Gainer	Redstone Arsenal		☐ No ☐ Yes
Realign	Leased Space - VA		☐ No ☐ Yes

142 H&SA - 31 Consolidate Transportation Command Components — Jim Durso

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Gainer	Scott Air Force Base		☐ No ☐ Yes
Realign	Naval Station Norfolk	P, N	☐ No ☐ Yes
Realign	Leased Space - VA		☐ No ☐ Yes
Realign	Fort Eustis	P, N	☐ No ☐ Yes

174 Med - 15 Joint Centers of Excellence for Chemical, Biologist, and Medical Research and Development and Acquisitions — Jim Durso

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Gainer	Wright Patterson Air Force Base	N, S	☐ No ☐ Yes
Gainer	Walter Reed Army Medical Center	N	☐ No ☐ Yes
Gainer	Aberdeen Proving Ground		☐ No ☐ Yes
Gainer	Fort Sam Houston		☐ No ☐ Yes
Gainer	Fort Detrick		☐ No ☐ Yes
Realign	Bethesda/Chevy Chase		☐ No ☐ Yes
Realign	Tyndall Air Force Base		☐ No ☐ Yes
Realign	Potomac Annex	P, T	☐ No ☐ Yes
Realign	Naval Surface Warfare Center Dahlgren	P	☐ No ☐ Yes
Realign	BAILEY'S CROSSROADS, VA	P, T	☐ No ☐ Yes
Realign	Fort Belvoir	C	☐ No ☐ Yes
Realign	Leased Space - MD		☐ No ☐ Yes
Realign	Naval Station Great Lakes	S	☐ No ☐ Yes
Realign	Naval Air Station Pensacola	G	☐ No ☐ Yes
Realign	Naval Support Activity Crane	S	☐ No ☐ Yes

175 S&S - 5 Commodity Management Privatization — Jim Durso

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
	Hill Air Force Base	Ha, C, N	☐ No ☐ Yes
Gainer	Defense Supply Center Columbus	S, N	☐ No ☐ Yes
Realign	Naval Station Norfolk	P, N	☐ No ☐ Yes
Realign	Naval Station Pearl Harbor		☐ No ☐ Yes
Realign	Naval Support Activity Mechanicsburg		☐ No ☐ Yes
Realign	Tinker Air Force Base		☐ No ☐ Yes
Realign	Naval Station Bremerton		☐ No ☐ Yes
Realign	Detroit Arsenal	S	☐ No ☐ Yes
Realign	Defense Supply Center Richmond		☐ No ☐ Yes
Realign	Defense Distribution Depot Susquehanna		☐ No ☐ Yes
Realign	Anniston Army Depot		☐ No ☐ Yes
Realign	Defense Distribution Depot San Joaquin		☐ No ☐ Yes

Les Farrington

179 Tech - 6 Consolidate Air and Space C4ISR Research, Development, Acquisition, Test & Evaluation — Les Farrington

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Gainer	Edwards Air Force Base		☐ No ☐ Yes

Item	Recommendation	JC-S	Comments	Lead Commis. & Analyst
Gainer	Hanscom Air Force Base		☐ No ☐ Yes	
Realign	Wright Patterson Air Force Base	N, S	☐ No ☐ Yes	
Realign	Maxwell Air Force Base	G	☐ No ☐ Yes	
Realign	Lackland Air Force Base	Hi	☐ No ☐ Yes	
Realign	Eglin Air Force Base		☐ No ☐ Yes	

180 Tech - 7 Consolidate Ground Vehicle Development & Acquisition in a Joint Center — Les Farrington

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Detroit Arsenal	S	☐ No ☐ Yes
Realign	U.S. Marine Corps Direct Reporting Program Manager Ad		☐ No ☐ Yes
Realign	Redstone Arsenal		☐ No ☐ Yes

182 Tech - 12 Consolidate Navy Strategic Test and Evaluation — Les Farrington

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Submarine Base Kings Bay		☐ No ☐ Yes
Realign	Patrick Air Force Base	B	☐ No ☐ Yes

183 Tech - 13 Consolidate Sea Vehicle Development & Acquisition — Les Farrington

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Naval District Washington		☐ No ☐ Yes
Gainer	Naval Surface Weapons Station Carderock		☐ No ☐ Yes
Realign	Detroit Arsenal	S	☐ No ☐ Yes

185 Tech - 18 Create an Air Integrated Weapons & Armaments Research, Development & Acquisition, Test & Evaluation Center — Les Farrington

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Eglin Air Force Base		☐ No ☐ Yes
Realign	Fort Belvoir	C	☐ No ☐ Yes
Realign	Hill Air Force Base	Ha, C, N	☐ No ☐ Yes

187 Tech - 22 Defense Research Service Led Laboratories — Les Farrington

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Air Force Research Lab, Mesa City		☐ No ☐ Yes
Gainer	Wright Patterson Air Force Base	N, S	☐ No ☐ Yes
Gainer	Kirtland Air Force Base		☐ No ☐ Yes
Gainer	Aberdeen Proving Ground		☐ No ☐ Yes
Realign	Langley Air Force Base		☐ No ☐ Yes
Realign	White Sands Missile Range		☐ No ☐ Yes
Realign	Rome Laboratory		☐ No ☐ Yes
Realign	Glenn Research Center		☐ No ☐ Yes
Realign	Hanscom Air Force Base		☐ No ☐ Yes

188 Tech - 24 Establish Centers for Fixed Wing Air Platform Research, Development & Acquisition, Test & Evaluation — Les Farrington

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Wright Patterson Air Force Base	N, S	☐ No ☐ Yes
Realign	Tinker Air Force Base		☐ No ☐ Yes
Realign	Robins Air Force Base		☐ No ☐ Yes
Realign	Hill Air Force Base	Ha, C, N	☐ No ☐ Yes

189 Tech - 26 Establish Centers for Rotary Wing Air Platform Development & Acquisition, Test & Evaluation — Les Farrington

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Redstone Arsenal		☐ No ☐ Yes
Gainer	Naval Air Station Patuxent River		☐ No ☐ Yes
Realign	Fort Rucker		☐ No ☐ Yes
Realign	Naval Air Engineering Station Lakehurst		☐ No ☐ Yes
Realign	Robins Air Force Base		☐ No ☐ Yes
Realign	Wright Patterson Air Force Base	N, S	☐ No ☐ Yes

190 Tech - 28 Navy Sensors, Electronic Warfare, and Electornics Research, Development & Acquistion, Test & Evaluation — Les Farrington

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Naval Air Weapons Station China Lake		☐ No ☐ Yes

Item	Recommendation	JC-S	Comments	Lead Commis. & Analyst
Realign	Naval Base Ventura County	B, C	No Yes	

Lesia Mandzia

169 Med - 4 Walter Reed National Military Medical Center, Bethesda, MD — Lesia Mandzia

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Fort Detrick		No Yes
Gainer	Dover Air Force Base		No Yes
Gainer	Fort Sam Houston		No Yes
Gainer	Fort Belvoir	C	No Yes
Gainer	Aberdeen Proving Ground		No Yes
Gainer	National Naval Medical Center Bethesda		No Yes
Realign	Undistributed or Overseas Reductions		No Yes
Realign	Walter Reed Army Medical Center	N	No Yes

170 Med - 6 Brooks City Base, TX — Lesia Mandzia

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Brooks City-Base	Hi	No Yes
Gainer	Lackland Air Force Base	Hi	No Yes
Gainer	Fort Sam Houston		No Yes
Gainer	Aberdeen Proving Ground		No Yes
Gainer	Wright Patterson Air Force Base	N, S	No Yes
Gainer	Randolph Air Force Base		No Yes
Realign	Holloman Air Force Base		No Yes

171 Med - 9 McChord Air Force Base, WA — Lesia Mandzia

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Fort Lewis		No Yes
Realign	McChord Air Force Base	C, B	No Yes

172 Med - 10 San Antonio Regional Medical Center, TX — Lesia Mandzia

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Fort Sam Houston		No Yes
Realign	Sheppard Air Force Base	T	No Yes
Realign	Naval Station Great Lakes	S	No Yes
Realign	Lackland Air Force Base	Hi	No Yes
Realign	Naval Medical Center Portsmouth	P	No Yes
Realign	Naval Medical Center San Diego	P	No Yes

173 Med - 12 Convert Inpatient Services to Clinics — Lesia Mandzia

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Fort Carson		No Yes
Realign	Keesler Air Force Base	G	No Yes
Realign	Naval Station Great Lakes	S	No Yes
Realign	Fort Eustis	P, N	No Yes
Realign	Fort Knox	T, S	No Yes
Realign	Scott Air Force Base		No Yes
Realign	Marine Corps Air Station Cherry Point		No Yes
Realign	United States Air Force Academy		No Yes
Realign	MacDill Air Force Base		No Yes
Realign	Andrews Air Force Base		No Yes

Marilyn Wasleski

196 Add 6 Close or Realign Defense Fianance and Accounting Service — Marilyn Wasleski

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Realign	Defense Supply Center Columbus	S, N	No Yes
Realign	Defense Finance and Accounting Service, Indianapolis	N, T,	No Yes
Realign	Air Reserve Personnel Center	N, C	No Yes

Michael Delaney

73 DoN - 29 Navy and Marine Corps Reserve Centers **(RollUp) — Michael Delaney

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Navy-Marine Corps Reserve Center Cleveland		No Yes

Item	Recommendation	JC-S	Comments	Lead Commis. & Analyst
Closure	Inspector/Instructor Center West Trenton		☐ No ☐ Yes	
Closure	Navy Reserve Center La Crosse		☐ No ☐ Yes	
Closure	Navy-Marine Corps Reserve Center Akron		☐ No ☐ Yes	
Closure	Navy-Marine Corps Reserve Center, Mobile AL		☐ No ☐ Yes	
Closure	Navy-Marine Corps Reserve Center, Los Angeles		☐ No ☐ Yes	
Closure	Navy-Marine Corps Reserve Center, Encino		☐ No ☐ Yes	
Closure	Navy-Marine Corps Reserve Center Tulsa		☐ No ☐ Yes	
Closure	Navy-Marine Corps Reserve Center Reading		☐ No ☐ Yes	
Closure	Navy-Marine Corps Reserve Center Moundsville		☐ No ☐ Yes	
Closure	Navy-Marine Corps Reserve Center Baton Rouge		☐ No ☐ Yes	
Closure	Navy-Marine Corps Reserve Center Dubuque		☐ No ☐ Yes	
Closure	Navy-Marine Corps Reserve Center Madison		☐ No ☐ Yes	
Closure	Inspector/Instructor Rome GA		☐ No ☐ Yes	
Gainer	Armed Forces Reserve Center Broken Arrow		☐ No ☐ Yes	
Gainer	Navy-Marine Corps Reserve Center Pittsburgh		☐ No ☐ Yes	
Gainer	Armed Forces Reserve Center Mobile		☐ No ☐ Yes	
Gainer	Marine Corps Reserve Center Pasadena CA		☐ No ☐ Yes	
Gainer	Armed Forces Reserve Center Bell		☐ No ☐ Yes	
Gainer	Fort Dix		☐ No ☐ Yes	
Gainer	Dobbins Air Reserve Base		☐ No ☐ Yes	
Gainer	Baton Rouge Army National Guard Reserve Center		☐ No ☐ Yes	
Gainer	Armed Forces Reserve Center Akron		☐ No ☐ Yes	
Gainer	Armed Forces Reserve Center Madison		☐ No ☐ Yes	
Gainer	Navy-Marine Corps Reserve Center Lehigh		☐ No ☐ Yes	
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes	

77 DoN - 44 Navy Reserve Readiness Comands — Michael Delaney

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Gainer	Naval Station Great Lakes	S	☐ No ☐ Yes
Gainer	Naval Station Norfolk	P, N	☐ No ☐ Yes
Realign	Naval Station Newport		☐ No ☐ Yes
Realign	Naval District Washington		☐ No ☐ Yes
Realign	Naval Air Station Joint Reserve Base Ft. Worth		☐ No ☐ Yes

141 H&SA - 30 Consolidate Media Organizations into a New Agency for Media and Publications — Michael Delaney

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Gainer	Fort Meade		☐ No ☐ Yes
Realign	Leased Space - VA		☐ No ☐ Yes
Realign	Leased Space - TX		☐ No ☐ Yes
Realign	Fort Belvoir	C	☐ No ☐ Yes
Realign	Leased Space - DC		☐ No ☐ Yes

167 Int - 3 Defense intelligence Agency — Michael Delaney

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Realign	CRYSTAL CITY LEASE, VA		☐ No ☐ Yes
Realign	Bolling Air Force Base	P, T	☐ No ☐ Yes

168 Int - 4 National Geospatial Intelligence Agency — Michael Delaney

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Closure	Leased Space - VA		☐ No ☐ Yes
Closure	Leased Space - DC		☐ No ☐ Yes
Closure	Leased Space - MD		☐ No ☐ Yes
Gainer	Fort Belvoir	C	☐ No ☐ Yes

Syd Carroll

122 E&T - 7 Joint Center for Consolidated Transportation Management Training — Syd Carroll

Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*
Gainer	Fort Lee		☐ No ☐ Yes
Realign	Lackland Air Force Base	Hi	☐ No ☐ Yes

Item	Recommendation	JC-S	Comments	Lead Commis. & Analyst

123 E&T - 8 Joint Center of Excellence for Culinary Training — Syd Carroll

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Fort Lee		☐ No ☐ Yes
Realign	Lackland Air Force Base	Hi	☐ No ☐ Yes

124 E&T - 9 Joint Center of Excellence for Religious Training and Education — Syd Carroll

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Fort Jackson		☐ No ☐ Yes
Realign	Naval Station Newport		☐ No ☐ Yes
Realign	Maxwell Air Force Base	G	☐ No ☐ Yes
Realign	Naval Air Station Meridian		☐ No ☐ Yes

125 E&T - 10 Joint Strike Fighter Initial Joint Training Site — Syd Carroll

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Eglin Air Force Base		☐ No ☐ Yes
Realign	Marine Corps Base Miramar		☐ No ☐ Yes
Realign	Naval Air Station Oceana	P, G, Hi, S	☐ No ☐ Yes
Realign	Naval Air Station Pensacola	G	☐ No ☐ Yes
Realign	Sheppard Air Force Base	T	☐ No ☐ Yes
Realign	Luke Air Force Base		☐ No ☐ Yes

128 E&T - 14 Undergraduate Pilot and Navigator Training — Syd Carroll

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Columbus Air Force Base		☐ No ☐ Yes
Gainer	Laughlin Air Force Base		☐ No ☐ Yes
Gainer	Naval Air Station Pensacola	G	☐ No ☐ Yes
Gainer	Sheppard Air Force Base	T	☐ No ☐ Yes
Gainer	Vance Air Force Base		☐ No ☐ Yes
Realign	Moody Air Force Base		☐ No ☐ Yes
Realign	Randolph Air Force Base		☐ No ☐ Yes

197 Add 7 Close or Realign Professional Development Education — Syd Carroll

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Realign	NAVPGSCOL MONTEREY, CA	P, Ha, G	☐ No ☐ Yes
Realign	Wright Patterson Air Force Base	N, S	☐ No ☐ Yes

Tim Abrell

11 Army - 25 RC Transformation, AL — Tim Abrell

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Fort Ganey Army National Guard Reserve Center Mobile		☐ No ☐ Yes
Closure	Anderson U.S. Army Reserve Center Troy		☐ No ☐ Yes
Closure	BG William P. Screws U.S. Army Reserve Center Montgo		☐ No ☐ Yes
Closure	Wright U.S. Army Reserve Center		☐ No ☐ Yes
Closure	Abbott U.S. Army Reserve Center Tuskegee		☐ No ☐ Yes
Closure	The Adjutant General Bldg, AL Army National Guard Mon		☐ No ☐ Yes
Closure	U.S. Army Reserve Center Vicksburg		☐ No ☐ Yes
Closure	Fort Hanna Army National Guard Reserve Center Birming		☐ No ☐ Yes
Closure	Gary U.S. Army Reserve Center Enterprize		☐ No ☐ Yes

12 Army - 28 RC Transformation, AZ — Tim Abrell

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Allen Hall Armed Forces Reserve Center, Tucson		☐ No ☐ Yes

13 Army - 30 RC Transformation, AR — Tim Abrell

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	El Dorado Armed Forces Reserve Center		☐ No ☐ Yes
Closure	Stone U.S. Army Reserve Center, Pine Bluff		☐ No ☐ Yes

14 Army - 33 RC Transformation, CA — Tim Abrell

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	U.S. Army Reserve Center, Moffett Field		☐ No ☐ Yes
Closure	Army National Guard Reserve Center Bell		☐ No ☐ Yes

Item	Recommendation	JC-S	Comments	Lead Commis. & Analyst
15	**Army - 35 RC Transformation, CT**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Turner U.S. Army Reserve Center, Fairfield		☐ No ☐ Yes	
Closure	U.S. Army Reserve Center Area Maintenance Support Faci		☐ No ☐ Yes	
Closure	SGT Libby U.S. Army Reserve Center, New Haven		☐ No ☐ Yes	
16	**Army - 37 Rc Transformation, DE**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Kirkwood U.S. Army Reserve Center, Newark		☐ No ☐ Yes	
17	**Army - 39 RC Transformation, GA**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Fort Benning Bldg 15		☐ No ☐ Yes	
Closure	U.S. Army Reserve Center Columbus		☐ No ☐ Yes	
18	**Army - 40 RC Transformation, HI**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Army National Guard Reserve Center Honokaa		☐ No ☐ Yes	
19	**Army - 42 RC Transformation, IL**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Army National Guard Reserve Center Carbondale		☐ No ☐ Yes	
20	**Army - 44 RC Transformation, IN**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	U.S. Army Reserve Center Seston		☐ No ☐ Yes	
Closure	U.S. Army Reserve Center Lafeyette		☐ No ☐ Yes	
21	**Army - 46 RC Transformation, IA**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Realign	Army National Guard Reserve Center Camp Dodge		☐ No ☐ Yes	
22	**Army - 48 RC Transformation, KY**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	U.S. Army Reserve Center Maysville		☐ No ☐ Yes	
Closure	Army National Guard Reserve Center Paducah		☐ No ☐ Yes	
23	**Army - 50 RC Transformation, LA**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Baton Rouge Army National Guard Reserve Center		☐ No ☐ Yes	
Closure	Roberts U.S. Army Reserve Center, Baton Rouge		☐ No ☐ Yes	
24	**Army - 52 RC Transformation, MD**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	PFC Flair U.S. Army Reserve Center, Frederick		☐ No ☐ Yes	
25	**Army - 54 RC Transformation, MA**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Fort Devens, 323d Maintenance Facility		☐ No ☐ Yes	
Closure	Regional Training Site Maintenance (98), U.S. Army Reser		☐ No ☐ Yes	
Closure	U.S. Army Reserve Ayer Area 3713		☐ No ☐ Yes	
Closure	U.S. Army Reserve ECS 65 Ayers		☐ No ☐ Yes	
Closure	Army National Guard Reserve Center Ayer		☐ No ☐ Yes	
Closure	Army National Guard Combined Support Maintenance Sho		☐ No ☐ Yes	
Realign	Armed Forces Reserve Center Ayers		☐ No ☐ Yes	
26	**Army - 55 RC Transformation, MI**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Parisan U.S. Army Reserve Center, Lansing		☐ No ☐ Yes	
27	**Army - 57 RC Transformation, MN**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	U.S. Army Reserve Faribault		☐ No ☐ Yes	
Closure	U.S. Army Reserve Cambridge		☐ No ☐ Yes	
Closure	Army National Guard Cambridge		☐ No ☐ Yes	
Closure	Army National Guard Faribault		☐ No ☐ Yes	

Item	Recommendation	JC-S	Comments	Lead Commis. & Analyst
Realign	Armed Forces Reserve Center New Cambridge		☐ No ☐ Yes	
Realign	Armed Forces Reserve Center New Faribault		☐ No ☐ Yes	
28	**Army - 58 RC Transformation, MO**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Army National Guard Reserve Center Jefferson Barracks		☐ No ☐ Yes	
29	**Army - 60 RC Transformation, MT**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Galt Hall U.S. Army Reserve Center, Great Falls		☐ No ☐ Yes	
30	**Army - 62 RC Transformation, NE**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Army National Guard Reserve Center Columbus		☐ No ☐ Yes	
Closure	Army National Guard Reserve Center Kearny		☐ No ☐ Yes	
Closure	Army National Guard Reserve Center Grand Island		☐ No ☐ Yes	
31	**Army - 65 RC Transformation, NH**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Doble U.S. Army Reserve Center Portsmouth		☐ No ☐ Yes	
32	**Army - 66 RC Transformation, NJ**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	SFC Nelson V. Brittin U.S. Army Reserve Center		☐ No ☐ Yes	
33	**Army - 68 RC Transformation, NM**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Jenkins Armed Forces Reserve Center Albuquerque		☐ No ☐ Yes	
34	**Army - 69 RC Transformation, NY**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Armed Forces Reserve Center Amityville		☐ No ☐ Yes	
Closure	Army National Guard Reserve Center Niagara Falls		☐ No ☐ Yes	
35	**Army - 72 RC Transformation, NC**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Niven U.S. Army Reserve Center, Albermarle		☐ No ☐ Yes	
36	**Army - 73 RC Transformation, ND**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Johnson U.S. Army Reserve Center, Fargo		☐ No ☐ Yes	
Realign	Fargo, ND Armed Forces Reserve Center		☐ No ☐ Yes	
37	**Army - 75 RC Transformation, OH**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	U.S. Army Reserve Center Whitehall		☐ No ☐ Yes	
Closure	Army National Guard Reserve Center Mansfield		☐ No ☐ Yes	
Closure	Army National Guard Reserve Center Westerville		☐ No ☐ Yes	
Closure	Scouten U.S. Army Reserve Center Mansfield		☐ No ☐ Yes	
Closure	Parrott U.S. Army Reserve Center Kenton		☐ No ☐ Yes	
Realign	Rickenbacker Army National Guard Bldg 943 Columbus		☐ No ☐ Yes	
38	**Army - 77 RC Transformation, OK**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Army National Guard Reserve Center Broken Arrow RC		☐ No ☐ Yes	
Closure	Army National Guard Reserve Center Tishomingo		☐ No ☐ Yes	
Closure	Ashworth U.S. Army Reserve Center Muskogee		☐ No ☐ Yes	
Closure	Krowse U.S. Army Reserve Center Oklahoma City		☐ No ☐ Yes	
39	**Army - 80 RC Transformation, OR**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Army National Guard Reserve Center Jackson Band		☐ No ☐ Yes	
Closure	Army National Guard Reserve Center Lake Oswego		☐ No ☐ Yes	
Closure	Sears U.S. Army Reserve Center, Portland		☐ No ☐ Yes	
Closure	Sharff U.S. Army Reserve Center, Portland		☐ No ☐ Yes	
Realign	Army National Guard Reserve Center Camp Withycombe		☐ No ☐ Yes	

Item	Recommendation	JC-S	Comments	Lead Commis. & Analyst
Realign	Armed Forces Reserve Center Camp With (New)		No Yes	
Realign	Army National Guard Reserve Center Maison		No Yes	
40	**Army - 82 RC Transformation, PA**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	North Penn U.S. Army Reserve Center, Norristown		No Yes	
Closure	Bristol U.S. Army Reserve Center, Philadelphia		No Yes	
Closure	W. Reese U.S. Army Reserve Center/OMS, Chester		No Yes	
Closure	U.S. Army Reserve Williamsport		No Yes	
Closure	U.S. Army Reserve Center Lewisburg		No Yes	
Closure	Serrenti U.S. Army Reserve Center, Scranton		No Yes	
Closure	U.S. Army Reserve Center Bloomsburg		No Yes	
41	**Army - 85 RC Transformation, PR**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Army National Guard Reserve Center Humacao		No Yes	
Closure	Lavergne U.S. Army Reserve Center Bayamon		No Yes	
Realign	Camp Euripedes Rubio, Puerto Nuevo		No Yes	
Realign	Aguadillla-Ramey U.S. Army Reserve Center/BMA-126		No Yes	
42	**Army - 87 RC Transformation, RI**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Bristol U.S. Army Reserve Center		No Yes	
Closure	Harwood U.S. Army Reserve Center, Providence		No Yes	
43	**Army - 89 RC Transformation, TN**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	U.S. Army Reserve Area Maintenance Support Facility Kir		No Yes	
44	**Army - 91 RC Transformation, TX**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	U.S. Army Reserve Center Lufkin		No Yes	
Closure	U.S. Army Reserve Center # 2 Houston		No Yes	
Closure	Army National Guard Reserve Center New Braunfels		No Yes	
Closure	Army National Guard Reserve Center # 2 Dallas		No Yes	
Closure	Army National Guard Reserve Center (Hondo Pass) El Pas		No Yes	
Closure	Army National Guard Reserve Center California Crossing		No Yes	
Closure	Army National Guard Reserve Center Marshall		No Yes	
Closure	Army National Guard Reserve Center Ellington		No Yes	
45	**Army - 95 RC Transformation, VT**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Army National Guard Reserve Center Ludlow		No Yes	
Closure	U.S. Army Reserve Center Chester		No Yes	
Closure	Army National Guard Reserve Center North Springfield		No Yes	
Closure	U.S. Army Reserve Center Berlin		No Yes	
Closure	Army National Guard Reserve Center Rutland		No Yes	
Closure	U.S. Army Reserve Area Maintenance Support Facility #16		No Yes	
Closure	Courcelle Brothers U.S. Army Reserve Center, Rutland		No Yes	
Closure	Army National Guard Reserve Center Windsor		No Yes	
Realign	Armed Forces Reserve Center New Rutland		No Yes	
Realign	Armed Forces Reserve Center White River Jct		No Yes	
46	**Army - 97 RC Transformation, WA**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Army National Guard Reserve Center Everett		No Yes	
Closure	1LT Richard H. Walker U.S. Army Reserve Center		No Yes	
47	**Army - 99 RC Transformation, WV**			Tim Abrell
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Bias U.S. Army Reserve Center, Huntington		No Yes	
Closure	Fairmont U.S. Army National Guard Reserve Center		No Yes	

Item	Recommendation	JC-S	Comments	Lead Commis. & Analyst

48 Army - 102 RC Transformation, WI — Tim Abrell

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Olson U.S. Army Reserve Center, Madison		☐ No ☐ Yes
Closure	U.S. Army Reserve Center O'Connell		☐ No ☐ Yes

49 Army - 103 RC Transformation, WY — Tim Abrell

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Army National Guard Reserve Center Thermopolis		☐ No ☐ Yes
Closure	Army Aviation Support Facility Cheyenne		☐ No ☐ Yes

52 Army - 107 USAR Command and Control New England — Tim Abrell

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Malony U.S. Army Reserve Center		☐ No ☐ Yes
Closure	Westover U.S. Army Reserve Center, Cicopee		☐ No ☐ Yes
Gainer	Armed Forces Reserve Center Westover (new)		☐ No ☐ Yes

53 Army - 109 USAR Command and Control Northeast — Tim Abrell

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Carpenter U.S. Army Reserve Center,Poughkeepie		☐ No ☐ Yes
Closure	Kelly Support Center		☐ No ☐ Yes
Closure	Kilmer U.S. Army Reserve Center, Edison		☐ No ☐ Yes
Gainer	Fort Dix		☐ No ☐ Yes
Realign	Fort Totten / Pyle		☐ No ☐ Yes
Realign	Fort Sheridan		☐ No ☐ Yes
Realign	Pitt U.S. Army Reserve Center, Corapolis		☐ No ☐ Yes

54 Army - 112 USAR Command and Control Northwest — Tim Abrell

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	U.S. Army Reserve Center Fort Lawton		☐ No ☐ Yes
Closure	Vancover Barracks		☐ No ☐ Yes
Gainer	Fort McCoy		☐ No ☐ Yes
Gainer	Fort Lewis		☐ No ☐ Yes
Realign	U.S. Army Reserve Center Wichita		☐ No ☐ Yes
Realign	Fort Douglas		☐ No ☐ Yes
Realign	Fort Snelling		☐ No ☐ Yes

55 Army - 115 USAR Command and Control Southeast — Tim Abrell

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	U.S. Army Reserve Center Louisville		☐ No ☐ Yes
Gainer	Fort Jackson		☐ No ☐ Yes
Gainer	Fort Knox	T, S	☐ No ☐ Yes
Realign	Birmingham Armed Forces Reserve Center		☐ No ☐ Yes

56 Army - 117 USAR Command and Control Southwest — Tim Abrell

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Oklahoma City (95th)		☐ No ☐ Yes
Gainer	Armed Forces Reserve Center Moffett Field		☐ No ☐ Yes
Gainer	Fort Sill		☐ No ☐ Yes
Gainer	Fort Hunter Liggett		☐ No ☐ Yes
Realign	Los Alamitos (63rd)		☐ No ☐ Yes
Realign	Camp Pike (90th)		☐ No ☐ Yes
Realign	Camp Parks (91st)		☐ No ☐ Yes

129 H&SA - 3 Co-locate Miscellaneous Air Force Leased Locations and National Guard Headquarters Leased Locations — Tim Abrell

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Andrews Air Force Base		☐ No ☐ Yes
Gainer	Headquarters Battalion, Headquarters Marine Corps, Hende		☐ No ☐ Yes
Realign	Leased Space - VA		☐ No ☐ Yes
Realign	CRYSTAL CITY LEASE, VA		☐ No ☐ Yes

132 H&SA - 10 Co-locate Miscellaneous Army Leased Locations — Tim Abrell

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?

Item	Recommendation	JC-S	Comments	Lead Commis. & Analyst
Gainer	Fort Belvoir	C	☐ No ☐ Yes	
Realign	ROSSLYN LEASE, VA		☐ No ☐ Yes	
Realign	HOFFMAN LEASE, VA		☐ No ☐ Yes	
Realign	CRYSTAL CITY LEASE, VA		☐ No ☐ Yes	
Realign	BALSTON LEASE, VA		☐ No ☐ Yes	
Realign	BAILEY'S CROSSROADS, VA	P, T	☐ No ☐ Yes	

136 H&SA - 18 Consolidate Army Test and Evaluation Command Headquarters — Tim Abrell

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	ATEC LEASE, VA		☐ No ☐ Yes
Gainer	Aberdeen Proving Ground		☐ No ☐ Yes

Tom Pantelides

139 H&SA - 26 Consolidate Defense Commisary Agency Eastern, Midwestern Regional, and Hopewell Offices — Tom Pantelides

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Leased Space - TX		☐ No ☐ Yes
Closure	Leased Space - VA		☐ No ☐ Yes
Gainer	Fort Lee		☐ No ☐ Yes
Realign	Naval Station Norfolk	P, N	☐ No ☐ Yes

161 Ind - 15 Lackland Air Force Base, TX — Tom Pantelides

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Tobyhanna Army Depot		☐ No ☐ Yes
Realign	Lackland Air Force Base	Hi	☐ No ☐ Yes

165 Ind - 19 Fleet Readiness Centers **(Roll up) — Tom Pantelides

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Marine Corps Base Camp Pendleton		☐ No ☐ Yes
Gainer	Marine Corps Air Station Yuma		☐ No ☐ Yes
Gainer	Marine Corps Base Camp Lejeune		☐ No ☐ Yes
Gainer	Marine Corps Air Station Beaufort		☐ No ☐ Yes
Gainer	Naval Air Station Lemoore		☐ No ☐ Yes
Gainer	Naval Air Station New Orleans		☐ No ☐ Yes
Gainer	Naval Air Station Whidbey Island		☐ No ☐ Yes
Gainer	Naval Station Mayport		☐ No ☐ Yes
Gainer	Marine Corps Base Miramar		☐ No ☐ Yes
Gainer	Naval Air Station Joint Reserve Base Ft. Worth		☐ No ☐ Yes
Realign	Naval Air Station Willow Grove	P	☐ No ☐ Yes
Realign	Marine Corps Air Station Cherry Point		☐ No ☐ Yes
Realign	Naval Air Station Fallon		☐ No ☐ Yes
Realign	Naval Air Station Jacksonville		☐ No ☐ Yes
Realign	Naval Air Station Patuxent River		☐ No ☐ Yes
Realign	Naval Air Weapons Station China Lake		☐ No ☐ Yes
Realign	Naval Base Coronado	P	☐ No ☐ Yes
Realign	Naval Base Ventura County	B, C	☐ No ☐ Yes
Realign	Naval Station Norfolk	P, N	☐ No ☐ Yes
Realign	Naval Support Activity Crane	S	☐ No ☐ Yes
Realign	Naval Air Station Oceana	P, G, Hi, S	☐ No ☐ Yes

Valerie Mills

57 DoN - 6 Marine Corps Logistics Base, Barstow, CA — Valerie Mills

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Marine Corps Logistics Base Albany		☐ No ☐ Yes
Gainer	Letterkenny Army Depot		☐ No ☐ Yes
Gainer	Tobyhanna Army Depot		☐ No ☐ Yes
Gainer	Anniston Army Depot		☐ No ☐ Yes
Realign	Marine Corps Logistics Base Barstow	B	☐ No ☐ Yes

153 Ind - 7 Rock Island Arsenal, IL — Valerie Mills

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Letterkenny Army Depot		☐ No ☐ Yes

Item	Recommendation	JC-S	Comments	Lead Commis. & Analyst
Gainer	Anniston Army Depot		☐ No ☐ Yes	
Realign	Rock Island Arsenal	S	☐ No ☐ Yes	

176	S&S - 7	Depot level Reparable Procurement Management Consolidation		Valerie Mills
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Gainer	Robins Air Force Base		☐ No ☐ Yes	
Gainer	Fort Belvoir	C	☐ No ☐ Yes	
Gainer	Defense Supply Center Richmond		☐ No ☐ Yes	
Gainer	Defense Supply Center Columbus	S, N	☐ No ☐ Yes	
Gainer	Aberdeen Proving Ground		☐ No ☐ Yes	
Gainer	Detroit Arsenal	S	☐ No ☐ Yes	
Realign	Natick Soldier Systems Center		☐ No ☐ Yes	
Realign	Marine Corps Logistics Base Albany		☐ No ☐ Yes	
Realign	Tinker Air Force Base		☐ No ☐ Yes	
Realign	Rock Island Arsenal	S	☐ No ☐ Yes	
Realign	Naval Support Activity Mechanicsburg		☐ No ☐ Yes	
Realign	Lackland Air Force Base	Hi	☐ No ☐ Yes	
Realign	Fort Huachuca		☐ No ☐ Yes	
Realign	Hill Air Force Base	Ha, C, N	☐ No ☐ Yes	
Realign	Redstone Arsenal		☐ No ☐ Yes	

177	S&S - 13	Supply, Storage, and Distribution Management Reconfiguration		Valerie Mills
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Gainer	Tinker Air Force Base		☐ No ☐ Yes	
Realign	Corpus Christi Army Depot		☐ No ☐ Yes	
Realign	Hill Air Force Base	Ha, C, N	☐ No ☐ Yes	
Realign	Marine Corps Air Station Cherry Point		☐ No ☐ Yes	
Realign	Marine Corps Logistics Base Albany		☐ No ☐ Yes	
Realign	Marine Corps Logistics Base Barstow	B	☐ No ☐ Yes	
Realign	Naval Air Station Jacksonville		☐ No ☐ Yes	
Realign	Anniston Army Depot		☐ No ☐ Yes	
Realign	Defense Supply Center Columbus	S, N	☐ No ☐ Yes	
Realign	Defense Supply Center Richmond		☐ No ☐ Yes	
Realign	Naval Station Bremerton		☐ No ☐ Yes	
Realign	Tobyhanna Army Depot		☐ No ☐ Yes	
Realign	Robins Air Force Base		☐ No ☐ Yes	
Realign	Naval Station San Diego		☐ No ☐ Yes	
Realign	Naval Station Norfolk	P, N	☐ No ☐ Yes	

Item	Recommendation	Navy	Comments	Lead Commis. & Analyst

Bill Fetzer

62 DoN - 13 Naval Air Station Atlanta, GA — Bill Fetzer

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Naval Air Station Atlanta	G	☐ No ☐ Yes
Gainer	Dobbins Air Reserve Base		☐ No ☐ Yes
Gainer	Fort Gillem	B	☐ No ☐ Yes
Gainer	Naval Air Station New Orleans		☐ No ☐ Yes
Gainer	Robins Air Force Base		☐ No ☐ Yes
Gainer	Naval Air Station Joint Reserve Base Ft. Worth		☐ No ☒ Yes

71 DoN - 26 Naval Station Ingleside, Texas and Naval Air Station Corpus Christi, TX — Bill Fetzer

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Naval Station Ingleside	Hi, P	☐ No ☐ Yes
Gainer	Naval Base Point Loma		☐ No ☐ Yes
Gainer	Naval Station San Diego		☐ No ☐ Yes
Gainer	Naval Station Norfolk	P, N	☐ No ☐ Yes
Realign	Naval Air Station Corpus Christi	Hi	☒ No ☐ Yes

193 Add 3 Close or Further Realign Master Jet Base Oceana, VA — Bill Fetzer

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Naval Air Station Oceana	P, G, Hi, S	☐ No ☒ Yes

Brian McDaniel

67 DoN - 20 Naval Station Pascagoula, MS — Brian McDaniel

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Naval Station Pascagoula	G	☐ No ☐ Yes
Gainer	Naval Station Mayport		☐ No ☐ Yes
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes

192 Add 2 Close or Realign Broadway Complex San Diego, CA — Brian McDaniel

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Broadway Complex San Diego	Ha, P, C, B	☐ No ☐ Yes

C.W. Furlow

69 DoN - 23 Naval Shipyard Portsmouth, Kittery, ME — C.W. Furlow

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Naval Shipyard Portsmouth	P, N, C, B, T, S	☐ No ☐ Yes
Gainer	Naval Station Bremerton		☐ No ☐ Yes
Gainer	Naval Station Pearl Harbor		☐ No ☐ Yes
Gainer	Naval Shipyard Norfolk		☐ No ☐ Yes

72 DoN - 28 Engineering Field Division/Activity — C.W. Furlow

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Navy Crane Center Lester		☐ No ☐ Yes
Closure	Engineering Field Activity Northeast		☐ No ☐ Yes
Closure	South Naval Facilities Engineering Command	Hi	☐ No ☐ Yes
Gainer	Naval Air Station Jacksonville		☐ No ☐ Yes
Gainer	Naval Shipyard Norfolk		☐ No ☐ Yes
Gainer	Naval Station Great Lakes	S	☐ No ☐ Yes
Gainer	Naval Support Activity Norfolk		☐ No ☐ Yes
Gainer	Naval Station Norfolk	P, N	☐ No ☐ Yes

75 DoN - 35 Navy Regions — C.W. Furlow

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Naval Station Great Lakes	S	☐ No ☐ Yes
Gainer	Naval Air Station Jacksonville		☐ No ☐ Yes
Realign	Naval Air Station Corpus Christi	Hi	☐ No ☐ Yes
Realign	Naval Air Station Pensacola	G	☐ No ☐ Yes

164 Ind - 18 Ship Intermediate Maintenance Activity Norfolk, VA — C.W. Furlow

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Naval Shipyard Norfolk		☐ No ☐ Yes
Realign	Naval Station Norfolk	P, N	☐ No ☐ Yes

Item	Recommendation	Navy	Comments	Lead Commis. & Analyst

166 **Ind - 26** **Naval Shipyard Detachments** — C.W. Furlow

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Naval Shipyard Norfolk		☐ No ☐ Yes
Gainer	Naval Station Bremerton		☐ No ☐ Yes
Realign	Naval Station Annapolis		☐ No ☐ Yes
Realign	Naval Shipyard Puget Sound-Boston Detachment		☐ No ☐ Yes
Realign	Navy Philadelphia Business Center		☐ No ☐ Yes

David Epstein

58 **DoN - 7** **Naval Support Activity Corona, CA** — David Epstein

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Naval Support Activity Corona	B, C	☐ No ☐ Yes
Gainer	Naval Base Ventura County	B, C	☐ No ☐ Yes

59 **DoN - 9** **Naval Weapons Station Seal Beach Detachment,Concord, CA** — David Epstein

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Naval Weapons Station Seal Beach Det Concord		☐ No ☐ Yes

63 **DoN - 14** **Navy Supply Corps School Athens, GA** — David Epstein

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Naval Supply Corps School Athens	G	☐ No ☐ Yes
Gainer	Naval Station Newport		☐ No ☐ Yes
Realign	Undistributed or Overseas Reductions		☐ No ☐ Yes

70 **DoN - 25** **Naval Station Newport, RI** — David Epstein

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Naval Station Norfolk	P, N	☐ No ☐ Yes
Realign	Naval Station Newport		☐ No ☐ Yes

150 **Ind - 4** **Naval Weapons Station Seal beach, CA** — David Epstein

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Letterkenny Army Depot		☐ No ☐ Yes
Gainer	Tobyhanna Army Depot		☐ No ☐ Yes
Gainer	Marine Corps Logistics Base Albany		☐ No ☐ Yes
Gainer	Anniston Army Depot		☐ No ☐ Yes
Realign	Naval Weapons Station Seal Beach		☐ No ☐ Yes

181 **Tech - 9** **Consolidate Maritime C4ISR Research, Development & Acquisition, Test & Evaluation** — David Epstein

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Naval Surface Warfare Center Dahlgren	P	☐ No ☐ Yes
Gainer	Naval Station Newport		☐ No ☐ Yes
Gainer	Naval Base Point Loma		☐ No ☐ Yes
Gainer	Naval Station Norfolk	P, N	☐ No ☐ Yes
Gainer	Naval Amphibious Base Little Creek		☐ No ☐ Yes
Realign	Naval Air Station Pensacola	G	☐ No ☐ Yes
Realign	Naval Air Station Jacksonville		☐ No ☐ Yes
Realign	Naval District Washington		☐ No ☐ Yes
Realign	Naval Air Station Patuxent River		☐ No ☐ Yes
Realign	Naval Weapons Station Charleston		☐ No ☐ Yes
Realign	Naval Weapons Station Yorktown		☐ No ☐ Yes
Realign	Naval Base Ventura County	B, C	☐ No ☐ Yes

184 **Tech - 15** **Create a Naval Integrated Weapons & Armaments Research, Development & Acqusition, Test and Evaluation Center** — David Epstein

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Naval Air Weapons Station China Lake		☐ No ☐ Yes
Realign	Naval Support Activity Crane	S	☐ No ☐ Yes
Realign	Naval Air Station Patuxent River		☐ No ☐ Yes
Realign	Naval Base Ventura County	B, C	☐ No ☐ Yes
Realign	Naval Surface Warfare Center Dahlgren	P	☐ No ☐ Yes
Realign	Naval Surface Warfare Center Indian Head		☐ No ☐ Yes
Realign	Naval Weapons Station Seal Beach		☐ No ☐ Yes

Item	Recommendation	Navy	Comments	Lead Commis. & Analyst
Realign	Naval Weapons Station Yorktown		☐ No ☐ Yes	
Realign	Naval Base Point Loma		☐ No ☐ Yes	

186 Tech - 19 Create an Integrated Weapons & Armaments Specialty Site for Guns and Ammunition — David Epstein

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Picatinny Arsenal		☐ No ☐ Yes
Realign	Naval Support Activity Crane	S	☐ No ☐ Yes
Realign	Army Research Laboratory, Adelphi		☐ No ☐ Yes
Realign	Naval Surface Warfare Center Dahlgren	P	☐ No ☐ Yes
Realign	Naval Surface Warfare Center Indian Head		☐ No ☐ Yes
Realign	Navy Recruiting Command Louisville		☐ No ☐ Yes
Realign	Naval Weapons Station Earle		☐ No ☐ Yes
Realign	Naval Weapons Station Fallbrook		☐ No ☐ Yes
Realign	Naval Air Weapons Station China Lake		☐ No ☐ Yes

Hal Tickle

60 DoN - 10 Submarine Base New London, CT — Hal Tickle

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Submarine Base New London	P, N, C, B, T	☐ No ☐ Yes
Gainer	Naval Air Station Pensacola	G	☐ No ☐ Yes
Gainer	Naval Station Newport		☐ No ☐ Yes
Gainer	Naval Station Norfolk	P, N	☐ No ☐ Yes
Gainer	Naval Weapons Station Earle		☐ No ☐ Yes
Gainer	Submarine Base Kings Bay		☐ No ☐ Yes
Gainer	Walter Reed Army Medical Center	N	☐ No ☐ Yes
Gainer	Naval Medical Center Portsmouth	P	☐ No ☐ Yes
Gainer	Fort Sam Houston		☐ No ☐ Yes
Gainer	Westover Air Force Base		☐ No ☐ Yes
Gainer	Naval Shipyard Norfolk		☐ No ☐ Yes

65 DoN - 18 Naval Air Station Brunswick, ME — Hal Tickle

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Naval Air Station Jacksonville		☐ No ☐ Yes
Realign	Naval Air Station Brunswick	P, N, C, B, T, S	☐ No ☐ Yes

191 Add 1 Close or Further Realign Naval Air Station Brunswick, ME — Hal Tickle

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Closure	Naval Air Station Brunswick	P, N, C, B, T, S	☐ No ☐ Yes

Jim Hanna

86 Air Force - 15 New Castle Airport Air Guard Station, DE — Jim Hanna

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Savannah International Airport Air Guard Station		☐ No ☐ Yes
Gainer	McGuire Air Force Base		☐ No ☐ Yes
Gainer	Charlotte/Douglas International Airport		☐ No ☐ Yes
Gainer	Dover Air Force Base		☐ No ☐ Yes
Realign	New Castle County Airport Air Guard Station		☐ No ☐ Yes

93 Air Force - 24 Martin State Air Guard Station, MD — Jim Hanna

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
	Channel Islands Air Guard Station		☐ No ☐ Yes
Gainer	Quonset State Airport Air Guard Station		☐ No ☐ Yes
Gainer	Andrews Air Force Base		☐ No ☐ Yes
Realign	Martin State Airport Air Guard Station		☐ No ☐ Yes

Joe Barrett

61 DoN - 12 Officer Training Command, Pensacola, FL — Joe Barrett

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?
Gainer	Naval Station Newport		☐ No ☐ Yes
Realign	Naval Air Station Pensacola	G	☐ No ☐ Yes

64 DoN - 15 Naval Support Activity New Orleans, LA — Joe Barrett

Action	Affected Base	(Visiting Commissioners)	Do you have any Comments?

Item	Recommendation	Navy	Comments	Lead Commis. & Analyst
Closure	Naval Support Activity New Orleans	T	☐ No ☐ Yes	
Gainer	Naval Air Station New Orleans		☐ No ☐ Yes	
Gainer	Naval Support Activity Norfolk		☐ No ☐ Yes	
Gainer	Naval Air Station Joint Reserve Base Ft. Worth		☐ No ☐ Yes	
Gainer	Naval Support Activity Mid South		☐ No ☐ Yes	
66	**DoN - 19**	**Marine Corps Support Activity Kansas City, MO**		Joe Barrett
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Marine Corps Support Center Kansas City		☐ No ☐ Yes	
Gainer	Naval Air Station New Orleans		☐ No ☐ Yes	
74	**DoN - 34**	**Navy Recruiting Districts**		Joe Barrett
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Navy Recruiting District Headquarters Montgomery		☐ No ☐ Yes	
Closure	Navy Recruiting District Headquarters Kansas		☐ No ☐ Yes	
Closure	Naval Recruiting District Headquarters Omaha		☐ No ☐ Yes	
Closure	Navy Recruiting District Headquarters Buffalo		☐ No ☐ Yes	
Closure	Navy Recruiting District Headquarters Indianapolis		☐ No ☐ Yes	
Michael Delaney, Brad McRee, Tim MacGregor				
68	**DoN - 21**	**Naval Air Station Joint Reserve Base Willow Grove, PA, and Cambria Regional Airport, Johnston, PA**		Michael Delaney, Br
Action	*Affected Base*	*(Visiting Commissioners)*	*Do you have any Comments?*	
Closure	Naval Air Station Willow Grove	P	☐ No ☐ Yes	
Gainer	Marine Corps Air Station Cherry Point		☐ No ☐ Yes	
Gainer	McGuire Air Force Base		☐ No ☐ Yes	
Gainer	Fort Dix		☐ No ☐ Yes	
Realign	Marine Corps Reserve Center Johnstown		☐ No ☐ Yes	

DCN:11697

Recommendations by Lead Commissione

Summary of Commissioners and Lead Assignments

Bilbray	44
Coyle	27
Gehman	40
Hansen	21
Hill	18
Newton	17
Skinner	21
Turner	10

Lead Commis.	Lead Team	Lead Analyst	Item	Recommendation Title
Bilbray				**Items Assigned** 44
	JC-S			
		Tim Abrell	11 Army-25	RC Transformation in Alabama
		Tim Abrell	12 Army-28	RC Transformation in Arizona
		Tim Abrell	13 Army-30	RC Transformation in Arkansas
		Tim Abrell	14 Army-33	RC Transformation in California
		Tim Abrell	15 Amry-35	RC Transformation in Connecticut
		Tim Abrell	16 Army-37	RC Transformation in Delaware
		Tim Abrell	17 Army-39	RC Transformation in Georgia
		Tim Abrell	18 Army-40	RC Transformation in Hawaii
		Tim Abrell	19 Army-42	RC Transformation in Illinois
		Tim Abrell	20 Army-44	RC Transformation in Indiana
		Tim Abrell	21 Army-46	RC Transformation in Iowa
		Tim Abrell	22 Army-48	RC Transformation in Kentucky
		Tim Abrell	23 Army-50	RC Transformation in Louisiana
		Tim Abrell	24 Army-52	RC Transformation in Maryland
		Tim Abrell	25 Army-54	RC Transformation in Massachusetts
		Tim Abrell	26 Army-55	RC Transformation in Michigan
		Tim Abrell	27 Army-57	RC Transformation in Minnesota
		Tim Abrell	28 Army-58	RC Transformation in Missouri
		Tim Abrell	29 Army-60	RC Transformation in Montana
		Tim Abrell	30 Army-62	RC Transformation in Nebraska
		Tim Abrell	31 Army-65	RC Transformation in New Hampshire
		Tim Abrell	32 Army-66	RC Transformation in New Jersey
		Tim Abrell	33 Army-68	RC Transformation in New Mexico
		Tim Abrell	34 Army-69	RC Transformation in New York
		Tim Abrell	35 Army-72	RC Transformation in North Carolina
		Tim Abrell	36 Army-73	RC Transformation in North Dakota
		Tim Abrell	37 Army-75	RC Transformation in Ohio
		Tim Abrell	38 Army-77	RC Transformation in Oklahoma
		Tim Abrell	39 Army-80	RC Transformation in Oregon
		Tim Abrell	40 Army-82	RC Transformation in Pennsylvania
		Tim Abrell	41 Army-85	RC Transformation in Puerto Rico
		Tim Abrell	42 Army-87	RC Transformation in Rhode Island
		Tim Abrell	43 Army-89	RC Transformation in Tennessee

DCN:11697

Lead Commis.	Lead Team	Lead Analyst	Item		Recommendation Title
		Tim Abrell	44	Army-91	RC Transformation in Texas
		Tim Abrell	45	Army-95	RC Transformation in Vermont
		Tim Abrell	46	Amry-97	RC Transformation in Washington
		Tim Abrell	47	Army-99	RC Transformation in West Virginia
		Tim Abrell	48	Army-102	RC Transformation in Wisconsin
		Tim Abrell	49	Army-103	RC Transformation in Wyoming
		Tim Abrell	52	Army-107	USAR Command and Control New England
		Tim Abrell	53	Army-109	USAR Command and Control – Northeast
		Tim Abrell	54	Army-112	USAR Command and Control – Northwest
		Tim Abrell	55	Army-115	USAR Command and Control – Southeast
		Tim Abrell	56	Army-117	USAR Command and Control – Southwest
Coyle					**Items Assigned** 27
	JC-S				
		Ashley Buzzell	178	Tech-5	Co-locate Extramural Research Program Managers
		Brad McRee	81	Air Force-8	Fort Smith Air Guard Station, AR and Luke Air Force Base, AZ
		Brad McRee	85	Air Force-14	Bradley International Airport Air Guard Station, CT, Barnes Air Guard Station, MA, Selfridge Air National Guard Base, MI, Shaw Air Force Base, SC, and Martin State Air Guard Station, MD
		Brad McRee	88	Air Force-17	Boise Air Terminal Air Guard Station, ID
		Brad McRee	90	Air Force-20	Capital Air Guard Station, IL and Hulman Regional Airport Air Guard Station, IN
		Brad McRee	94	Air Force-25	Otis Air National Guard Base, MA, Lambert St. Louis International Airport, Air Guard Station, MO, and Atlantic City Air Guard Station, NJ
		Brad McRee	96	Air Force-28	Duluth International Airport Air Guard Station, MN
		Brad McRee	98	Air Force-30	Great Falls International Airport Air Guard Station, MT
		Brad McRee	99	Air Force-31	Reno-Tahoe International Airport Air Guard Station, NV
		Brad McRee	106	Air Force-39	Mansfield-Lahm Municipal Airport Air Guard Station, OH
		Brad McRee	107	Air Force-40	Springfield-Beckley Municipal Airport Air Guard Station, OH,
		Brad McRee	110	Air Force-44	Nashville International Airport Air Guard Station, TN
		Brad McRee	111	Air Force-45	Ellington Air Guard Station, TX
		Brad McRee	115	Air Force-50	Richmond Air Guard Station, VA, and Des Moines International Airport Air Guard Station, IA
		Colleen Turner	76	DoN-37	Navy Reserve Centers
		Les Farrington	179	Tech-6	Consolidate Air and Space C4ISR Research, Development and Acquisition, Test and Evaluation
		Les Farrington	180	Tech-7	Consolidate Ground Vehicle Development & Acquisition in a Joint Center
		Les Farrington	182	Tech-12	Consolidate Navy Strategic Test & Evaluation
		Les Farrington	183	Tech-13	Consolidate Sea Vehicle Development & Acquisition
		Les Farrington	187	Tech-22	Defense Research Service Led Laboratories
		Les Farrington	189	Tech-26	Establish Centers for Rotary Wing Air Platform Development and Acquisition, Test and Evaluation

DCN:11697

Lead Commis.	Lead Team	Lead Analyst	Item	Recommendation Title	
		Les Farrington	190	Tech-28	Navy Sensors, Electronic Warfare, and Electronics Research, Development and Acquisition, Test and Evaluation
		Tim Abrell	136	H&SA-18	Consolidate Army Test and Evaluation Command (ATEC) Headquarters
		Tom Pantelides	161	Ind-15	Lackland Air Force Base, TX
	Navy				
		David Epstein	181	Tech-9	Consolidate Maritime C4ISR Research, Development and Acquisition, Test and Evaluation
		David Epstein	184	Tech-15	Create a Naval Integrated Weapons & Armaments Research, Development and Acquisition, Test and Evaluation Center
		David Epstein	186	Tech-19	Create an Integrated Weapons & Armaments Specialty Site for Guns and Ammunition
Gehman					**Items Assigned** 40
	AF				
		Art Beauchamp, Colleen Turner	92	Air Force-23	Andrews Air Force Base, MD, Will Rogers Air Guard Station, OK, Tinker Air Force Base, OK, and Randolph Air Force Base, TX
		Craig Hall	80	Air Force-7	Kulis Air Guard Station and Elmendorf Air Force Base, AK
		David Combs	100	Air Force-32	Cannon Air Force Base, NM
		David Combs	108	Air Force-41	Portland International Airport Air Guard Station, OR
		Justin Breitschopf	83	Air Force-11	March Air Reserve Base, CA
		Ken Small	95	Air Force-27	W.K. Kellogg Airport Air Guard Station, MI
		Mike Flinn	101	Air Force-33	Niagara Falls Air Reserve Station, NY
		Mike Flinn	102	Air Force-34	Schenectady County Airport Air Guard Station, NY
		Mike Flinn, Brad McRee	103	Air Force-35	Pope Air Force Base, NC, Pittsburgh International Airport Air Reserve Station, PA, and Yeager Air Guard Station, WV
		Nat Sillin	82	Air Force-10	Beale Air Force Base, CA and Selfridge Air National Guard Base, MI
		Tanya Cruz	89	Air Force-18	Mountain Home Air Force Base, ID, Nellis Air Force Base, NV, and Elmendorf Air Force Base, AK
		Tim MacGregor	78	Air Force-5	Birmingham International Airport Air Guard Station, AL
		Tim MacGregor	97	Air Force-28	Key Field Air Guard Station, MS
		Tim MacGregor	104	Air Force-37	Grand Forks Air Force Base, ND
		Tim MacGregor	105	Air Force-38	Hector International Airport Air Guard Station, ND
	Navy				
		Bill Fetzer	62	DoN-13	Naval Air Station Atlanta, GA
		Bill Fetzer	71	DoN-26	Naval Station Ingleside, TX, and Naval Air Station Corpus Christi, TX
		Bill Fetzer	193	Add	Close Master Jet Base Oceana, VA
		Brian McDaniel	67	DoN-20	Naval Station Pascagoula, MS
		Brian McDaniel	192	Add	Close Broadway Complex San Diego, CA
		C.W. Furlow	69	DoN-23	Naval Shipyard Portsmouth, Kittery, ME
		C.W. Furlow	72	DoN-28	Engineering Field Division/Activity
		C.W. Furlow	75	DoN-35	Navy Regions
		C.W. Furlow	164	Ind-18	Ship Intermediate Maintenance Activity Norfolk, VA

DCN:11697

Lead Commis.	Lead Team	Lead Analyst	Item		Recommendation Title
		C.W. Furlow	166	Ind-26	Naval Shipyard Detachments
		David Epstein	58	DoN-7	Naval Support Activity Corona, CA
		David Epstein	59	DoN-9	Naval Weapons Station Seal Beach Detachment, Concord, CA
		David Epstein	63	DoN-14	Navy Supply Corps School Athens, GA
		David Epstein	70	DoN-25	Naval Station Newport, RI
		David Epstein	150	Ind-4	Naval Weapons Station Seal Beach, CA
		Hal Tickle	60	DoN-10	Submarine Base New London, CT
		Hal Tickle	65	DoN-18	Naval Air Station Brunswick, ME
		Hal Tickle	191	Add	Close Naval Air Station Brunswick, ME
		Jim Hanna	86	Air Force-15	New Castle Airport Air Guard Station, DE
		Jim Hanna	93	Air Force-24	Martin State Air Guard Station, MD
		Joe Barrett	61	DoN-12	Officer Training Command, Pensacola, FL
		Joe Barrett	64	DoN-15	Naval Support Activity New Orleans, LA
		Joe Barrett	66	DoN-19	Marine Corps Support Activity Kansas City, MO
		Joe Barrett	74	DoN-34	Navy Recruiting Districts
		Michael Delaney, Brad McRee, Tim MacGregor	68	DoN-21	Naval Air Station Joint Reserve Base Willow Grove, PA, and Cambria Regional Airport, Johnstown, PA
Hansen					**Items Assigned** 21
	JC-S				
		Carol Schmidt	137	H&SA-19	Consolidate Civilian Personnel Offices (CPOs) within each Military Department and the Defense Agencies
		George Delgado	151	Ind-5	Riverbank Army Ammunition Plant, CA
		George Delgado	152	Ind-6	Sierra Army Depot, CA
		George Delgado	154	Ind-8	Newport Chemical Depot, IN
		George Delgado	155	Ind-9	Kansas Army Ammunition Plant, KS
		George Delgado	156	Ind-10	Lima Tank Plant, OH
		George Delgado	157	Ind-11	Mississippi Army Ammunition Plant, MS
		George Delgado	158	Ind-12	Hawthorne Army Depot, NV
		George Delgado	159	Ind-13	Watervliet Arsenal, NY
		George Delgado	160	Ind-14	Umatilla Chemical Depot, OR
		George Delgado	162	Ind-16	Lone Star Army Ammunition Plant, TX
		George Delgado	163	Ind-17	Deseret Chemical Depot, UT
		Jim Durso	175	S&S-5	Commodity Management Privatization
		Les Farrington	185	Tech-18	Create an Air Integrated Weapons & Armaments Research, Development and Acquisition, Test and Evaluation Center
		Les Farrington	188	Tech-24	Establish Centers for Fixed Wing Air Platform Research, Development and Acquisition, Test and Evaluation
		Michael Delaney	73	DoN-29	Navy and Marine Corps Reserve Centers
		Michael Delaney	77	DoN-44	Navy Reserve Readiness Commands
		Tom Pantelides	165	Ind-19	Fleet Readiness Centers
		Valerie Mills	57	DoN-6	Marine Corps Logistics Base, Barstow, CA
		Valerie Mills	153	Ind-7	Rock Island Arsenal, IL
		Valerie Mills	177	S&S-13	Supply, Storage, and Distribution Management Reconfiguration

DCN:11697

Lead Commis.	Lead Team / Lead Analyst	Item		Recommendation Title
Hill				**Items Assigned** 18
Army				
	Dean Rhody	1	Army-5	Fort Wainwright, AK
	Dean Rhody	50	Army-105	Single Drill Sergeant School
	Dean Rhody	120	E&T-5	Aviation Logistics School
	Dean Rhody	121	E&T-6	Combat Service Support Center
	Dean Rhody	127	E&T-13	Prime Power to Fort Leonard Wood, MO
	Don Manuel	2	Army-6	Fort Gillem, GA
	Don Manuel	3	Army-8	Fort McPherson, GA
	Don Manuel	8	Army-19	Fort Monroe, VA
	Kevin Felix	4	Army-10	Fort Bragg, NC
	Kevin Felix	6	Army-15	Fort Hood, TX
	Kevin Felix	10	Army-22	Operational Army (IGPBS)
	Liz Bieri	7	Army-16	Red River Army Depot, TX
	Mike Avenick	9	Army-20	Maneuver Training
	Mike Avenick	126	E&T-12	Net Fires Center
	Wes Hood	5	Army-11	Fort Monmouth, NJ
	Wes Hood	51	Army-106	U.S. Army Garrison Michigan (Selfridge)
	Wes Hood	148	H&SA-46	Relocate Army Headquarters and Field Operating Agencies
IA				
	Ethan Saxon	140	H&SA-27	Consolidate Defense Information Systems Agency and Establish Joint C4ISR D&A Capability
Newton				**Items Assigned** 17
AF				
	Art Beauchamp	109	Air Force-43	Ellsworth Air Force Base, SD, and Dyess Air Force Base, TX
	Art Beauchamp	114	Air Force-49	Langley Air Force Base, VA
	Art Beauchamp	118	Air Force-53	Air Force Logistics Support Centers
	Art Beauchamp	119	Air Force-55	F100 Engine Centralized Intermediate Repair Facilities
	Art Beauchamp, David Combs, Tanya Cruz	112	Air Force-46	Lackland Air Force Base, TX
	Art Beauchamp, David Combs, Tanya Cruz	113	Air Force-47	Hill Air Force Base, UT, Edwards Air Force Base, CA, Mountain Home Air Force Base, ID, Luke Air Force Base, AZ, and Nellis Air Force Base, NV
	Craig Hall	79	Air Force-6	Eielson Air Force Base, AK, Moody Air Force Base, GA, and Shaw Air Force Base, SC
	Craig Hall	84	Air Force-12	Onizuka Air Force Station, CA
	Craig Hall	195	Add	Close Galena Airport FOL, AK
	Mike Flinn	194	Add	Close Pope AFB, NC
	Tanya Cruz	91	Air Force-22	New Orleans Air Reserve Station, LA
	Tanya Cruz	117	Air Force-52	General Mitchell Air Reserve Station, WI
	Tim MacGregor	87	Air Force-16	Robins Air Force Base, GA
	Tim MacGregor	116	Air Force-51	Fairchild Air Force Base, WA
IA				
	Marilyn Wasleski	145	H&SA-37	Defense Finance and Accounting Service

DCN:11697

Lead Commis.	Lead Team	Lead Analyst	Item	Recommendation Title
	JC-S			
		Michael Delaney	167 Int-3	Defense Intelligence Agency
		Michael Delaney	168 Int-4	National Geospatial-Intelligence Agency Activities
Skinner				**Items Assigned** 21
	JC-S			
		Carol Schmidt	130 H&SA-5	Co-locate Defense/Military Department Adjudication Activities
		Carol Schmidt	133 H&SA-12	Co-locate Miscellaneous OSD, Defense Agency, and Field Activity Leased Locations
		Carol Schmidt	135 H&SA-17	Co-locate Navy Education and Training Command and Navy Education and Training Professional Development & Technology Center
		Carol Schmidt	138 H&SA-22	Consolidate Correctional Facilities into Joint Regional Correctional Facilities
		Carol Schmidt	146 H&SA-41	Joint Basing
		Carol Schmidt	147 H&SA-44	Relocate Air Force Real Property Agency (AFRPA)
		Carol Schmidt	149 H&SA-49	Relocate Miscellaneous Department of Navy Leased Locations
		Colleen Turner	143 H&SA-33	Consolidate/Co-locate Active and Reserve Personnel & Recruiting Centers for Army and Air Force
		Colleen Turner	144 H&SA-35	Create Joint Mobilization Sites
		Jim Durso	131 H&SA-8	Co-locate Military Department Investigation Agencies with DoD Counterintelligence and Security Agency
		Jim Durso	134 H&SA-15	Co-locate Missile and Space Defense Agencies
		Jim Durso	142 H&SA-31	Consolidate Transportation Command Components
		Marilyn Wasleski	196 Add	Realign Defense Fianance and Accounting Service
		Michael Delaney	141 H&SA-30	Consolidate Media Organizations into a New Agency for Media and Publications
		Syd Carroll	122 E&T-7	Joint Center for Consolidated Transportation Management Training
		Syd Carroll	123 E&T-8	Joint Center of Excellence for Culinary Training
		Syd Carroll	124 E&T-9	Joint Center of Excellence for Religious Training & Education
		Syd Carroll	125 E&T-10	Joint Strike Fighter Initial Joint Training Site
		Syd Carroll	128 E&T-14	Undergraduate Pilot and Navigator Training
		Tom Pantelides	139 H&SA-26	Consolidate Defense Commissary Agency Eastern, Midwestern Regional, and Hopewell, VA, Offices
		Valerie Mills	176 S&S-7	Depot Level Reparable Procurement Management Consolidation
Turner				**Items Assigned** 10
	IA			
		Ethan Saxon	198 Add	Realign Joint Medical Command HQs
	JC-S			
		Jim Durso	174 Med-15	Joint Centers of Excellence For Chemical, Biological, and Medical Research and Development and Acquisition
		Lesia Mandzia	169 Med-4	Walter Reed National Military Medical Center, Bethesda, MD
		Lesia Mandzia	170 Med-6	Brooks City Base, TX
		Lesia Mandzia	171 Med-9	McChord Air Force Base, WA

DCN:11697

Lead Commis.	Lead Team Lead Analyst	Item	Recommendation Title	
	Lesia Mandzia	172	Med-10	San Antonio Regional Medical Center, TX
	Lesia Mandzia	173	Med-12	Convert Inpatient Services to Clinics
	Syd Carroll	197	Add	Realign Professional Development Education
	Tim Abrell	129	H&SA-3	Co-locate Miscellaneous Air Force Leased Locations and National Guard Headquarters Leased Locations
	Tim Abrell	132	H&SA-10	Co-locate Miscellaneous Army Leased Locations

DCN:11697

DCN:11697

List of Motions by Recommendation - Amendments Only

Item (Sec.)	Page	Recommendation Title	
2	Army-6	Fort Gillem, GA	
	Motion	Sponsor (s)	Brief Description
	2-4A	Hill	Requires a contiguous enclave.
	2-4B	Newton	Requires a contiguous enclave on NAS Atlanta, GA.
	2-4C	Newton	Requires a contiguous enclave on either Fort Gillem, GA or NAS Atlanta, GA.
3	Army-8	Fort McPherson, GA	
	Motion	Sponsor (s)	Brief Description
	3-4A		Broadens definition of gaining location to include anticipated establishment of Fort Bragg-Pope Air Force Base, NC complex
4	Army-10	Fort Bragg, NC	
	Motion	Sponsor (s)	Brief Description
	G-4-1		Global motion to approve Army recommendations 10, 15 and 22, sections 4, 6 and 10 of the Bill.
5	Army-11	Fort Monmouth, NJ	
	Motion	Sponsor (s)	Brief Description
	5-3A	Coyle	Deletes realignment of Sensors, Electronics, and Electronic Warfare RDAT&E and Information Systems RDAT&E from Fort Belvoir, VA.
	5-4A	Coyle	Approves only the realignment of the USMA Preparatory School; deletes remainder of recommendation.
7	Army-16	Red River Army Depot, TX	
	Motion	Sponsor (s)	Brief Description
	7-3A	Turner	Deletes the realignment of depot level maintenance of a variety of items, including combat vehicles, powertrains, construction equipment, tactical vehicles and associated storage and distribution functions.
	7-3B	Turner	Deletes the realignment of tires, gases and POL, in addition to depot level maintenance of a variety of items, including combat vehicles, powertrains, construction equipment, tactical vehicles and associated storage and distribution functions.
64	DoN-15	Naval Support Activity New Orleans, LA	
	Motion	Sponsor (s)	Brief Description
	64-4A		Directs the relocation of Headquarters, Marine Forces Reserve to the Federal City project, if constructed on or before September 30, 2008.
66	DoN-19	Marine Corps Support Activity Kansas City, MO	
	Motion	Sponsor (s)	Brief Description
	66-4A		Directs the relocation of Marine Corps Reserve Support Command element of Mobilization Command to a facility in the Federal City project in New Orleans, LA, if the Federal City project is constructed on or before September 30, 2008.
79	Air Force-6	Eielson Air Force Base, AK, Moody Air Force Base, GA, and Shaw Air Force Base, SC	
	Motion	Sponsor (s)	Brief Description
	79-3A	Newton	Strikes distribution of F-16 aircraft from the 354th FW
80	Air Force-7	Kulis Air Guard Station and Elmendorf Air Force Base, AK	
	Motion	Sponsor (s)	Brief Description
	80-3A		Strikes closure of Kulis AGS, AK.
82	Air Force-10	Beale Air Force Base, CA and Selfridge Air National Guard Base, MI	
	Motion	Sponsor (s)	Brief Description
	82-3A	Newton	Deletes change to fighter mission at Selfridge ANGB, MI.
91	Air Force-22	New Orleans Air Reserve Station, LA	
	Motion	Sponsor (s)	Brief Description
	91-4A		Correct misidentification of unit.
105	Air Force-38	Hector International Airport Air Guard Station, ND	
	Motion	Sponsor (s)	Brief Description
	105-4A		CLARIFY
108	Air Force-41	Portland International Airport Air Guard Station, OR	
	Motion	Sponsor (s)	Brief Description
	108-3A		Rejects realignment of 142d FW (ANG).
128	E&T-14	Undergraduate Pilot and Navigator Training	
	Motion	Sponsor (s)	Brief Description

DCN:11697

Item (Sec.)	Page	Recommendation Title
128-4A	Newton	Relocates T-38 aircraft, with maintenance and support to Ft Smith MAP AGS, AR (AF Rec 8, Sec 81) and Dannelly Field AGS, AL (AF Rec 5 and 30, Sec 78 and 98) to establish CLARIFY.
129	**H&SA-3**	**Co-locate Miscellaneous Air Force Leased Locations and National Guard Headquarters Leased Locations**
Motion	*Sponsor (s)*	*Brief Description*
129-3A		Deletes all realignments contained in the recommendation except the National Guard headquarters in Jefferson Plaza 1, leased space in Arlington VA.
130	**H&SA-5**	**Co-locate Defense/Military Department Adjudication Activities**
Motion	*Sponsor (s)*	*Brief Description*
130-4A		Substitutes "realign" for "close" in subsection regarding Elkridge Landing Road in Linthicum, MD to account for remaining organizations and functions.
131	**H&SA-8**	**Co-locate Military Department Investigation Agencies with DoD Counterintelligence and Security Agency**
Motion	*Sponsor (s)*	*Brief Description*
131-4A		Conditions transfer of the Counterintelligence Field Activity and Defense Security Service to the Department of Defense Counterintelligence and Security Agency (DoD CSA), an organization that does not currently exist, on the establishment of DoD CSA.
134	**H&SA-15**	**Co-locate Missile and Space Defense Agencies**
Motion	*Sponsor (s)*	*Brief Description*
134-4A		Substitutes "realign" for "close" in subparagraph relating to leased space in Huntsville, AL to account for remaining DoD tenants.
137	**H&SA-19**	**Consolidate Civilian Personnel Offices (CPOs) within each Military Department and the Defense Agencies**
Motion	*Sponsor (s)*	*Brief Description*
137-4A	Skinner	Deletes realignment of Rock Island, IL CPOC and Stennis Space Center, MS HRSC-Southeast; limits realignment of Wright-Patterson AFB, OH CPO to transactional functions, and; retains capability to perform personnel management advisory services and non transactional functions at Wright Patterson AFB, OH, Robins AFB, GA, Hill AFB, UT, Tinker AFB, OK, and Bolling AFB, DC.
145	**H&SA-37**	**Defense Finance and Accounting Service**
Motion	*Sponsor (s)*	*Brief Description*
145-4A		Closes DFAS Denver; retains Rome, NY and Limestone, ME; directs DFAS assign functions tc provide for strategic redundancy
146	**H&SA-41**	**Joint Basing**
Motion	*Sponsor (s)*	*Brief Description*
146-3A		Deletes a reference apparently consolidating the Naval Research Laboratory, a Navy Working Capital Fund Activity, with dissimilar organizations.
154	**Ind-8**	**Newport Chemical Depot, IN**
Motion	*Sponsor (s)*	*Brief Description*
154-4A		Motion to retain a conventional demilitarization capability at Deseret CD, UT.
G-154-4A		Global motion to amend Ind 8, 14 and 17, Sections 154, 160 and 163 of the Bill, to condition closure on completion of chemical demilitarization mission and to retain a conventional demilitarization capability at Deseret CD, UT.
G-154-4B	Gehman	Global motion to amend Ind 8, 14 and 17, Sections 154, 160 and 163 of the Bill, to condition closure on completion of chemical demilitarization mission.
165	**Ind-19**	**Fleet Readiness Centers**
Motion	*Sponsor (s)*	*Brief Description*
165-4A		Deletes realignment of Naval Support Activity, Crane, Indiana.
170	**Med-6**	**Brooks City Base, TX**
Motion	*Sponsor (s)*	*Brief Description*
170-4A		Corrects an error in the name of an organization.
172	**Med-10**	**San Antonio Regional Medical Center, TX**
Motion	*Sponsor (s)*	*Brief Description*
172-3A		Deletes realignment of enlisted medical training at Naval Air Station Great Lakes, IL, Sheppard Air Force Base, TX, Naval Medical Center Portsmouth, Naval Medical Center San Diego, CA.
172-4A		Clarifies the reference to Portsmouth.
172-4B		Clarifies the reference to Portsmouth and directs consolidation.
172-4C		Clarifies the reference to Portsmouth and directs establishment of joint enlisted medical training.

DCN:11697

Item (Sec.)	Page	Recommendation Title
174	Med-15	Joint Centers of Excellence For Chemical, Biological, and Medical Research and Development and Acquisition

Motion	Sponsor (s)	Brief Description
174-3A		Deletes realignment of Non-medical Chemical Biological Defense Development and Acquisition at Tyndall AFB, FL, Naval Surface Warfare Center, Dahlgren Division, VA and the Naval Surface Warfare Center, Crane Division, IN.

176	S&S-7	Depot Level Reparable Procurement Management Consolidation

Motion	Sponsor (s)	Brief Description
176-3A		Deletes realignment of Lackland AFB, TX.

179	Tech-6	Consolidate Air and Space C4ISR Research, Development and Acquisition, Test and Evaluation

Motion	Sponsor (s)	Brief Description
179-4A	Gehman	Approves only the realignment of Air and Space C4ISR RDAT&E from Maxwell AFB, AL; strikes all other realignments.

187	Tech-22	Defense Research Service Led Laboratories

Motion	Sponsor (s)	Brief Description
187-4A	Newton	Changes Air Force Research Laboratory Information Systems Directorate gaining site to Rome Laboratory, NY, and rejects realignment of White Sands Missile Range, NM

188	Tech-24	Establish Centers for Fixed Wing Air Platform Research, Development and Acquisition, Test and Evaluation

Motion	Sponsor (s)	Brief Description
188-3A		Strikes realignment of Wright-Patterson AFB, OH fixed-wing related Live Fire Test and Evaluation functions.

191	Add	Close Naval Air Station Brunswick, ME

Motion	Sponsor (s)	Brief Description
191-4A		Closes Navy Broadway Complex, San Diego, CA

192	Add	Close Broadway Complex San Diego, CA

Motion	Sponsor (s)	Brief Description
191-4A	Principi	Closes Navy Broadway Complex, San Diego, CA.

193	Add	Close Master Jet Base Oceana, VA

Motion	Sponsor (s)	Brief Description
193-4A		

194	Add	Close Pope AFB, NC

Motion	Sponsor (s)	Brief Description
194-4A		To consolidate the OSD(HA), TCMA, and service Surgeons General

195	Add	Close Galena Airport FOL, AK

Motion	Sponsor (s)	Brief Description
195-4A		Closes Galena FOL, AK.

196	Add	Realign Defense Finance and Accounting Service

Motion	Sponsor (s)	Brief Description
196-4A		Additional recommendation; closes DFAS Denver, CO

197	Add	Realign Professional Development Education

Motion	Sponsor (s)	Brief Description
197-4A	Gehman	Establishes a single oversight board for NPGS and AFIT located in the NCR.

DCN:11697

DCN:11697
BUREAU OF ECONOMIC ANALYSIS

BEA NEWS

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EMBARGOED FOR RELEASE: 8:30 A.M. ET, Wednesday, April 27, 2005

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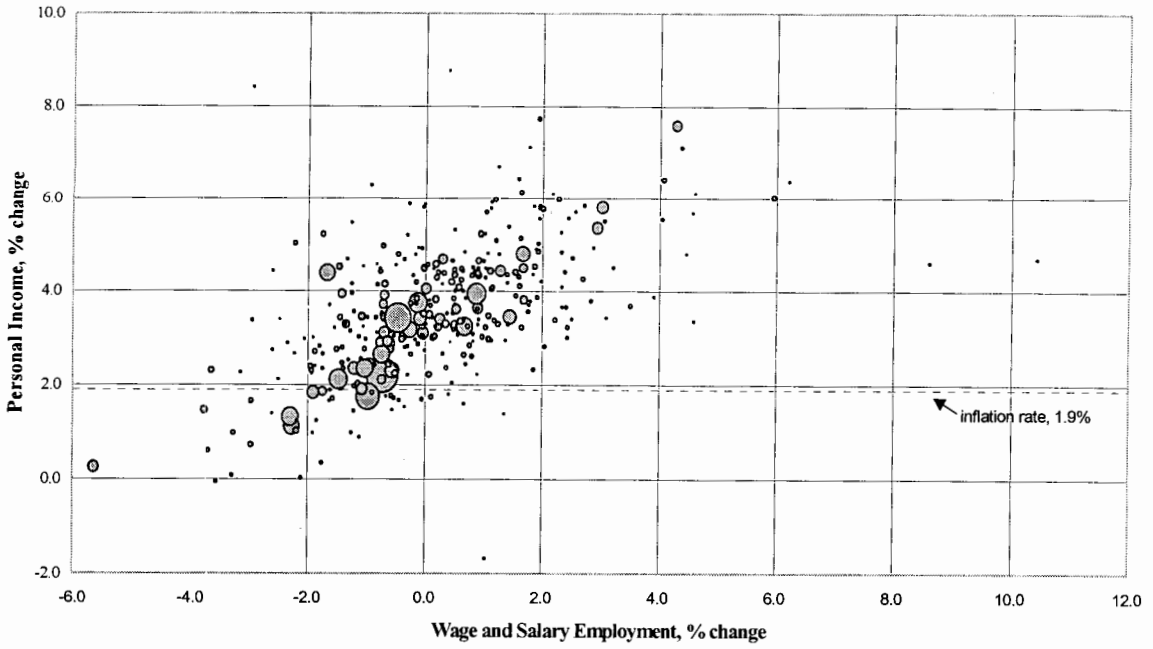
BEA-05-17

METROPOLITAN AREA PERSONAL AND PER CAPITA INCOME IN 2003

New Light on the Recovery

Personal income increased in all but two of the nation's metropolitan statistical areas (MSAs) from 2002 to 2003, according to newly available estimates released today by the U.S. Bureau of Economic Analysis. This is an improvement over the previous two years when more than twenty metropolitan areas saw their personal income decline. Per capita personal income increased in all but five MSAs from 2002 to 2003, in contrast to the previous two years when that income declined in as many as sixty MSAs.

MSA Income and Employment Growth (% change 2002-2003)
(Size of bubble is proportional to the number of jobs in MSA)



– more –

DCN:11697

The estimates shed new light on the nature of the recovery in its second year, showing that personal income growth generally strengthened in US cities in 2003, despite often weak or negative employment growth. The chart above illustrates this, plotting for MSAs the percent change in personal income against the percent change in wage and salary employment. Each MSA in the chart is represented by a bubble whose size is proportional to the number of jobs in the MSA. Despite job loss in 178, or nearly one-half, of the MSAs, personal income declined in only two—Yuma, Arizona and Santa Cruz-Watsonville, California. Even when account is taken of the 1.9 percent inflation rate as measured by the national price index for personal consumption expenditure (indicated by the dashed line in the chart), real personal income declined in only 39, or roughly one-tenth, of the MSAs.

While wages and salaries grew at 2.5 percent, several items contributed to strong income growth: personal current transfer receipts (which grew 4.1%), proprietors' income (8.5%), employer contributions for employee pension and insurance funds (10.7%), and military earnings (14.5%).

The bulk of transfer receipts—largely social security, Medicare, and Medicaid—grow with population and the cost of medical care. Most of the growth in military wages represents additional payments to activated reservists and active duty military forces as a consequence of the wars in Iraq and Afghanistan. Military employment rose only slightly. The double-digit increase in employer contributions was mostly due to an unusually large payment to reduce unfunded pension liabilities.

The relative performance of individual MSAs largely reflects their industrial specialization. The fastest growing MSAs tended to depend heavily on the military, motor vehicle manufacturing (the industry making the biggest contribution to pension funds), tourism, or real estate. The slowest growing MSAs tended to have a disproportionately large air transportation, securities, or computer manufacturing sector.

Per capita income rankings. The table below lists the MSAs with highest and lowest per capita incomes. Bridgeport-Stamford-Norwalk, Connecticut had the highest per capita income of all MSAs in 2003. The average income of $60,803 was nearly double the national average. All of the top ten MSAs in 2003 were in the top ten last year. McAllen-Edinburg-Mission, Texas had the lowest per capita income of all MSAs. Its average income of $15,184 was slightly less than half of the national average. Nine of the ten MSAs with the lowest per capita incomes in 2003 also had the lowest incomes in 2002. Provo-Orem, Utah is new to the bottom ten this year, displacing Las Cruces, New Mexico.

DCN:11697

Per Capita Personal Income for Metropolitan Statistical Areas

	Dollars		Percent of U.S.	
	2002	2003	2002	2003
United States	**30,804**	**31,472**	**100.0**	**100.0**
Highest per capita levels				
Bridgeport-Stamford-Norwalk, CT	60,098	60,803	195.1	193.2
San Francisco-Oakland-Fremont, CA	46,359	46,958	150.5	149.2
San Jose-Sunnyvale-Santa Clara, CA	46,003	46,072	149.3	146.4
Washington-Arlington-Alexandria, DC-VA-MD-WV	42,987	44,056	139.6	140.0
Boston-Cambridge-Quincy, MA-NH	42,546	43,135	138.1	137.1
Naples-Marco Island, FL	41,730	41,513	135.5	131.9
Trenton-Ewing, NJ	40,698	41,499	132.1	131.9
Boulder, CO	40,590	41,110	131.8	130.6
New York-Northern New Jersey-Long Island, NY-NJ-PA	40,186	40,899	130.5	130.0
Vero Beach, FL	38,925	39,953	126.4	126.9
Lowest per capita levels				
Provo-Orem, UT	20,101	20,462	65.3	65.0
Madera, CA	19,880	20,382	64.5	64.8
Logan, UT-ID	19,440	20,265	63.1	64.4
St. George, UT	19,856	20,084	64.5	63.8
Hanford-Corcoran, CA	18,918	19,390	61.4	61.6
Yuma, AZ	19,940	19,158	64.7	60.9
Hinesville-Fort Stewart, GA	17,612	18,723	57.2	59.5
Laredo, TX	16,640	17,060	54.0	54.2
Brownsville-Harlingen, TX	16,005	16,308	52.0	51.8
McAllen-Edinburg-Mission, TX	14,790	15,184	48.0	48.2

DCN:11697

Note about data on BEA Web site

The complete set of income and employment estimates for 1969-2003 for counties, metropolitan areas, micropolitan areas, and BEA Economic Areas is now available interactively on BEA's Web site. Detailed annual estimates of earnings and employment by industry, components of personal income, personal current transfer receipts, and farm gross income and expenses by major category for each of the geographic regions are available. These estimates are the only detailed, broadly inclusive, annual measure of economic activity available for local areas. Go to www.bea.gov/bea/regional/reis/ to access these estimates.

BEA Regional Facts (BEARFACTS), a narrative summary of personal income, per capita personal income, and components of income for metropolitan areas and counties, is available on BEA's Web site. Go to www.bea.gov/bea/regional/bearfacts/ to access these summaries.

Data on personal income and per capita personal income for BEA regions, states, and metropolitan areas, as well as data for counties, will be presented in the June issue of the *Survey of Current Business*, the monthly journal of the Bureau of Economic Analysis. See the end of this release for information on obtaining issues of the *Survey of Current Business* in printed form and on BEA's Web site. For further information, call (202) 606-5360.

Definitions

Personal income is the income received by all persons from all sources. Personal income is the sum of net earnings by place of residence, rental income of persons, personal dividend income, personal interest income, and personal current transfer receipts. **Net earnings** is earnings by place of work (the sum of wage and salary disbursements (payrolls), supplements to wages and salaries, and proprietors' income) less contributions for government social insurance, plus an adjustment to convert earnings by place of work to a place-of-residence basis. Personal income is measured before the deduction of personal income taxes and other personal taxes and is reported in current dollars (no adjustment is made for price changes).

The estimate of personal income in the United States is derived as the sum of the county estimates; it differs from the estimate of personal income in the national income and product accounts (NIPAs) because of differences in coverage, in the methodologies used to prepare the estimates, and in the timing of the availability of source data.

Per capita personal income is calculated as the personal income of residents of a given area divided by the resident population of the area. In computing per capita personal income, BEA uses the Census Bureau's annual midyear population estimates.

The **metropolitan area definitions** used by BEA for its entire series of personal income estimates are the county-based definitions developed by the Office of Management and Budget (OMB) for federal statistical purposes and last updated in February 2005. OMB's general concept of a metropolitan area is that of a geographic area consisting of a large population nucleus together with adjacent communities having a high degree of economic and social integration with the nucleus. The personal income and per capita personal income estimates for the 361 MSAs are shown in Table 1. Detailed personal income estimates for metropolitan statistical areas, micropolitan statistical areas, metropolitan divisions, and combined statistical areas are available on the BEA Web site at www.bea.gov.

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DCN:11697

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Table 1. Personal Income and Per Capita Personal Income by Metropolitan Area, 2001–2003—Continues

Area Name	Personal income: Millions of dollars 2001	2002	2003	Percent change[2] 2002–2003	Per capita personal income[1]: Dollars 2001	2002	2003	Rank in U.S. 2003
United States[3]	**8,716,992**	**8,869,809**	**9,151,694**	**3.2**	**30,575**	**30,804**	**31,472**	.....
Metropolitan portion	**7,601,665**	**7,736,050**	**7,973,539**	**3.1**	**32,198**	**32,404**	**33,038**	.....
Nonmetropolitan portion	**1,115,327**	**1,133,759**	**1,178,155**	**3.9**	**22,758**	**23,041**	**23,827**	.....
Metropolitan statistical areas[4]								
Abilene, TX	3,674	3,787	3,920	3.5	23,211	23,956	24,781	296
Akron, OH	20,572	20,945	21,645	3.3	29,466	29,942	30,878	95
Albany, GA	3,552	3,688	3,763	2.0	22,235	23,029	23,258	335
Albany-Schenectady-Troy, NY	26,252	26,224	27,075	3.2	31,655	31,439	32,208	68
Albuquerque, NM	20,693	21,006	21,863	4.1	27,979	27,874	28,519	156
Alexandria, LA	3,605	3,751	3,811	1.6	24,843	25,780	26,062	236
Allentown-Bethlehem-Easton, PA-NJ	22,695	23,599	24,393	3.4	30,280	31,124	31,707	78
Altoona, PA	3,048	3,150	3,248	3.1	23,711	24,674	25,478	266
Amarillo, TX	5,597	5,730	5,934	3.6	24,470	24,825	25,409	269
Ames, IA	2,121	2,178	2,257	3.6	26,653	26,981	28,119	167
Anchorage, AK	11,283	11,840	12,242	3.4	34,619	35,567	36,083	26
Anderson, IN	3,378	3,489	3,568	2.3	25,504	26,439	27,207	194
Anderson, SC	4,218	4,316	4,458	3.3	24,983	25,345	25,946	246
Ann Arbor, MI	11,774	12,232	12,869	5.2	35,867	36,794	38,323	16
Anniston-Oxford, AL	2,477	2,619	2,745	4.8	22,274	23,497	24,492	300
Appleton, WI	6,101	6,313	6,571	4.1	29,676	30,265	31,143	87
Asheville, NC	9,880	10,051	10,339	2.9	26,428	26,594	27,024	200
Athens-Clarke County, GA	3,958	4,034	4,195	4.0	23,555	23,820	24,420	303
Atlanta-Sandy Springs-Marietta, GA	148,043	149,854	153,379	2.4	33,626	33,270	33,308	51
Atlantic City, NJ	7,871	8,030	8,377	4.3	30,796	30,967	31,749	76
Auburn-Opelika, AL	2,416	2,526	2,648	4.8	20,745	21,484	22,227	341
Augusta-Richmond County, GA-SC	12,472	12,933	13,357	3.3	24,787	25,509	26,168	232
Austin-Round Rock, TX	42,489	41,648	42,864	2.9	32,208	30,927	31,135	88
Bakersfield, CA	14,705	15,684	16,371	4.4	21,757	22,630	22,947	338
Baltimore-Towson, MD	89,963	93,311	96,501	3.4	34,887	35,940	36,733	23
Bangor, ME	3,647	3,843	3,965	3.2	24,994	26,163	26,780	208
Barnstable Town, MA	8,542	8,649	8,851	2.3	37,898	37,997	38,638	13
Baton Rouge, LA	17,944	18,816	19,423	3.2	25,262	26,313	26,921	203
Battle Creek, MI	3,500	3,637	3,719	2.3	25,292	26,213	26,778	209
Bay City, MI	2,860	2,842	2,927	3.0	26,061	25,895	26,726	210
Beaumont-Port Arthur, TX	9,337	9,651	10,115	4.8	24,396	25,224	26,417	220
Bellingham, WA	4,336	4,440	4,699	5.8	25,412	25,504	26,617	211
Bend, OR	3,358	3,456	3,612	4.5	27,799	27,513	27,880	170
Billings, MT	3,974	3,992	4,172	4.5	28,331	28,173	29,154	141
Binghamton, NY	6,377	6,451	6,452	0.0	25,352	25,634	25,747	256
Birmingham-Hoover, AL	31,367	32,746	33,873	3.4	29,572	30,723	31,540	80
Bismarck, ND	2,604	2,683	2,874	7.1	27,336	27,890	29,635	130
Blacksburg-Christiansburg-Radford, VA	3,148	3,221	3,345	3.9	20,736	21,328	22,179	342
Bloomington, IN	4,036	4,119	4,301	4.4	23,003	23,462	24,320	308
Bloomington-Normal, IL	4,531	4,621	4,786	3.6	29,727	29,761	30,511	107
Boise City-Nampa, ID	14,078	14,677	15,124	3.0	29,007	29,415	29,562	132
Boston-Cambridge-Quincy, MA-NH	188,442	188,595	191,107	1.3	42,552	42,546	43,135	5
Boulder, CO	12,086	11,295	11,407	1.0	40,435	40,590	41,110	8
Bowling Green, KY	2,443	2,565	2,721	6.1	23,240	24,189	25,316	275
Bremerton-Silverdale, WA	7,172	7,493	7,706	2.8	30,588	31,425	32,140	71
Bridgeport-Stamford-Norwalk, CT	54,989	53,777	54,703	1.7	61,780	60,098	60,803	1
Brownsville-Harlingen, TX	5,347	5,651	5,910	4.6	15,532	16,005	16,308	360
Brunswick, GA	2,489	2,543	2,633	3.5	26,332	26,600	27,202	196
Buffalo-Niagara Falls, NY	32,306	32,725	33,751	3.1	27,756	28,212	29,145	143
Burlington, NC	3,458	3,512	3,556	1.2	25,878	25,895	26,030	240
Burlington-South Burlington, VT	6,323	6,563	6,806	3.7	31,446	32,416	33,446	47
Canton-Massillon, OH	10,766	11,008	11,191	1.7	26,404	26,925	27,274	189
Cape Coral-Fort Myers, FL	14,304	14,626	15,507	6.0	31,155	30,757	31,487	81
Carson City, NV	1,725	1,733	1,819	4.9	32,267	31,767	32,872	61
Casper, WY	2,239	2,297	2,429	5.8	33,464	34,014	35,599	29
Cedar Rapids, IA	7,170	7,273	7,444	2.4	29,903	30,098	30,676	102
Champaign-Urbana, IL	5,651	5,693	5,792	1.7	26,736	26,762	27,006	201
Charleston, WV	8,508	8,716	8,958	2.8	27,671	28,410	29,146	142
Charleston-North Charleston, SC	14,534	15,239	15,911	4.4	26,170	27,035	27,797	171
Charlotte-Gastonia-Concord, NC-SC	44,820	46,485	47,850	2.9	32,604	33,045	33,251	52
Charlottesville, VA	5,539	5,590	5,789	3.6	31,386	31,369	32,179	69
Chattanooga, TN-GA	13,069	13,500	14,018	3.8	27,215	27,932	28,814	151
Cheyenne, WY	2,443	2,608	2,745	5.3	29,672	31,353	32,529	64
Chicago-Naperville-Joliet, IL-IN-WI	323,493	325,145	330,867	1.8	35,157	35,085	35,464	31
Chico, CA	4,798	4,879	5,025	3.0	23,300	23,379	23,799	321
Cincinnati-Middletown, OH-KY-IN	63,114	65,470	67,508	3.1	31,137	32,159	32,979	57
Clarksville, TN-KY	5,493	5,790	6,165	6.5	23,541	24,723	26,095	235
Cleveland, TN	2,521	2,565	2,678	4.4	23,979	24,277	25,205	284
Cleveland-Elyria-Mentor, OH	68,208	69,022	71,051	2.9	31,799	32,219	33,196	54
Coeur d'Alene, ID	2,651	2,784	2,917	4.8	23,705	24,349	24,805	295
College Station-Bryan, TX	3,832	3,937	4,111	4.4	20,741	21,139	21,863	344
Colorado Springs, CO	16,742	17,088	17,505	2.4	30,153	30,329	30,736	100
Columbia, MO	3,960	4,058	4,155	2.4	26,908	27,290	27,680	174
Columbia, SC	17,866	18,472	19,178	3.8	27,255	27,879	28,577	154
Columbus, GA-AL	7,178	7,385	7,552	2.3	25,357	25,808	27,205	195
Columbus, IN	2,094	2,140	2,238	4.6	29,078	29,779	30,936	92
Columbus, OH	51,524	53,554	55,227	3.1	31,415	32,312	32,930	59
Corpus Christi, TX	9,706	10,014	10,439	4.2	24,141	24,763	25,696	260
Corvallis, OR	2,331	2,374	2,411	1.5	29,952	30,037	30,436	110
Cumberland, MD-WV	2,189	2,264	2,337	3.2	21,585	22,388	23,148	337
Dallas-Fort Worth-Arlington, TX	183,488	184,821	188,747	2.1	34,298	33,770	33,790	38
Dalton, GA	2,987	3,097	3,192	3.1	24,191	24,689	25,054	289
Danville, IL	1,836	1,853	1,930	4.2	21,970	22,255	23,283	333
Danville, VA	2,409	2,494	2,536	1.7	21,969	22,864	23,310	332
Davenport-Moline-Rock Island, IA-IL	10,394	10,551	10,824	2.6	27,700	28,134	28,869	149
Dayton, OH	24,658	25,168	26,000	3.3	29,150	29,780	30,748	99
Decatur, AL	3,626	3,716	3,881	4.4	24,747	25,371	26,333	224
Decatur, IL	3,153	3,073	3,132	1.9	27,735	27,294	28,131	166
Deltona-Daytona Beach-Ormond Beach, FL	10,950	11,394	11,880	4.3	24,246	24,797	25,403	270
Denver-Aurora, CO	87,646	88,602	90,239	1.8	39,432	38,923	39,203	11
Des Moines, IA	15,801	16,364	16,941	3.5	32,277	32,967	33,639	39
Detroit-Warren-Livonia, MI	154,130	154,629	161,421	4.4	34,454	34,526	35,972	27
Dothan, AL	3,232	3,370	3,515	4.3	24,592	25,534	26,306	226
Dover, DE	3,161	3,377	3,558	5.4	24,490	25,655	26,438	219
Dubuque, IA	2,346	2,394	2,465	3.0	26,309	26,760	27,241	192
Duluth, MN-WI	7,149	7,369	7,499	1.8	25,849	26,679	27,138	197
Durham, NC	13,506	13,737	14,017	2.0	31,093	31,160	31,466	82
Eau Claire, WI	3,877	3,966	4,072	2.7	25,935	26,375	26,914	204
El Centro, CA	2,742	2,979	3,079	3.4	19,079	20,443	20,674	351
Elizabethtown, KY	2,721	2,833	2,994	5.7	25,112	26,045	27,456	183
Elkhart-Goshen, IN	4,883	5,142	5,540	7.7	26,324	27,659	29,315	136
Elmira, NY	2,202	2,167	2,198	1.4	24,236	23,862	24,349	306
El Paso, TX	13,511	14,056	14,667	4.3	19,650	20,266	20,875	349
Erie, PA	6,902	7,079	7,219	2.0	24,504	25,068	25,505	263
Eugene-Springfield, OR	8,421	8,491	8,698	2.4	25,948	25,966	26,344	223
Evansville, IN-KY	9,611	9,978	10,423	4.5	27,983	28,961	30,073	117
Fairbanks, AK	2,408	2,526	2,606	3.2	28,737	29,795	30,583	104
Fargo, ND-MN	4,926	5,244	5,511	5.1	28,008	29,623	30,804	97
Farmington, NM	2,413	2,468	2,587	4.8	20,767	20,572	21,124	348
Fayetteville, NC	8,076	8,526	9,036	6.0	23,943	25,027	26,209	228
Fayetteville-Springdale-Rogers, AR-MO	8,623	9,152	9,597	4.9	24,090	24,941	25,359	271
Flagstaff, AZ	2,788	2,919	3,071	5.2	23,710	24,331	25,345	272
Flint, MI	11,428	11,601	12,183	5.0	26,034	26,311	27,521	179
Florence, SC	4,679	4,839	4,968	2.7	24,115	24,799	25,296	277
Florence-Muscle Shoals, AL	3,203	3,277	3,398	3.7	22,493	23,102	23,966	317
Fond du Lac, WI	2,753	2,849	2,940	3.2	28,151	29,121	29,951	121
Fort Collins-Loveland, CO	8,165	8,387	8,541	1.8	31,449	31,793	32,037	74
Fort Smith, AR-OK	6,278	6,404	6,628	3.5	22,756	23,023	23,684	323
Fort Walton Beach-Crestview-Destin, FL	4,758	5,053	5,413	7.1	27,708	28,835	30,440	109
Fort Wayne, IN	11,265	11,665	11,982	2.7	28,592	29,390	29,943	122
Fresno, CA	18,593	19,828	20,651	4.2	22,822	23,830	24,277	310
Gadsden, AL	2,278	2,368	2,448	3.4	22,119	22,997	23,744	322
Gainesville, FL	5,729	5,803	6,101	5.1	24,487	24,600	25,706	258
Gainesville, GA	3,668	3,775	3,930	4.1	24,973	24,866	25,132	286
Glens Falls, NY	3,049	3,089	3,206	3.8	24,409	24,586	25,275	278
Goldsboro, NC	2,555	2,619	2,674	2.1	22,564	23,139	23,584	325
Grand Forks, ND-MN	2,358	2,468	2,634	6.7	24,489	25,766	27,513	180
Grand Junction, CO	3,028	3,142	3,248	3.4	25,392	25,718	26,035	239
Grand Rapids-Wyoming, MI	21,581	21,518	22,262	3.5	28,761	28,429	29,188	139
Great Falls, MT	2,081	2,102	2,196	4.5	26,054	26,347	27,523	178
Greeley, CO	4,950	5,021	5,144	2.4	25,575	24,571	24,279	309
Green Bay, WI	8,369	8,666	8,960	3.4	29,275	29,972	30,697	101
Greensboro-High Point, NC	18,463	18,737	19,160	2.3	28,320	28,536	28,940	147
Greenville, NC	3,713	3,822	3,988	4.3	24,046	24,417	25,153	285
Greenville, SC	15,257	15,568	16,039	3.0	26,860	27,177	27,743	172
Gulfport-Biloxi, MS	5,927	6,202	6,472	4.4	23,920	24,897	25,922	248
Hagerstown-Martinsburg, MD-WV	5,840	6,104	6,388	4.7	25,732	26,359	26,848	207
Hanford-Corcoran, CA	2,358	2,545	2,690	5.7	17,873	18,918	19,390	356
Harrisburg-Carlisle, PA	15,662	16,299	16,831	3.3	30,669	31,698	32,541	63
Harrisonburg, VA	2,539	2,530	2,679	5.9	23,282	23,005	24,240	313
Hartford-West Hartford-East Hartford, CT	43,992	44,169	44,992	1.9	37,976	37,782	38,131	18
Hattiesburg, MS	2,758	2,933	3,028	3.3	21,973	23,123	23,598	324
Hickory-Lenoir-Morganton, NC	8,794	8,790	8,843	0.6	25,344	25,192	25,220	282
Hinesville-Fort Stewart, GA	1,232	1,260	1,321	4.8	17,525	17,612	18,723	358
Holland-Grand Haven, MI	6,763	6,859	7,130	4.0	27,769	27,830	28,570	155
Honolulu, HI	26,976	27,936	29,002	3.8	30,675	31,522	32,463	66
Hot Springs, AR	2,208	2,259	2,325	2.9	24,748	25,094	25,497	264
Houma-Bayou Cane-Thibodaux, LA	4,626	4,840	4,986	3.0	23,704	24,655	25,238	281
Houston-Sugar Land-Baytown, TX	171,952	170,887	175,431	2.7	35,489	34,401	34,578	36
Huntington-Ashland, WV-KY-OH	6,430	6,658	6,893	3.5	22,379	23,239	24,021	314
Huntsville, AL	9,797	10,306	10,939	6.1	28,157	29,203	30,591	103
Idaho Falls, ID	2,510	2,633	2,735	3.9	24,318	25,058	25,447	268
Indianapolis, IN	50,515	52,040	53,816	3.4	32,484	32,983	33,618	42
Iowa City, IA	3,935	4,057	4,192	3.3	29,388	30,065	30,796	98
Ithaca, NY	2,420	2,453	2,589	5.5	24,834	24,946	26,042	237
Jackson, MI	3,974	4,061	4,179	2.9	24,850	25,192	25,712	257
Jackson, MS	13,271	13,642	14,355	5.2	26,457	27,008	28,132	165
Jackson, TN	2,679	2,775	2,911	4.9	24,644	25,371	26,599	213
Jacksonville, FL	33,804	34,974	36,548	4.5	29,433	29,793	30,525	106
Jacksonville, NC	3,608	3,829	4,014	4.8	24,355	25,556	26,487	215
Janesville, WI	4,006	4,138	4,378	5.8	26,099	26,858	28,256	161
Jefferson City, MO	3,627	3,733	3,909	4.7	25,734	26,251	27,306	187
Johnson City, TN	4,055	4,203	4,332	3.1	22,270	22,872	23,260	334
Johnstown, PA	3,490	3,545	3,645	2.8	23,070	23,573	24,368	305
Jonesboro, AR	2,335	2,386	2,596	8.8	21,494	21,858	23,569	326
Joplin, MO	3,640	3,735	3,886	4.1	22,951	23,325	23,947	318
Kalamazoo-Portage, MI	8,552	8,819	9,257	5.0	27,070	27,741	28,947	146
Kankakee-Bradley, IL	2,634	2,683	2,709	1.0	25,165	25,480	25,497	264
Kansas City, MO-KS	60,067	62,020	63,540	2.5	32,224	32,863	33,335	50
Kennewick-Richland-Pasco, WA	5,172	5,463	5,738	5.0	26,290	26,859	27,295	188
Killeen-Temple-Fort Hood, TX	7,782	8,089	8,573	6.0	23,334	23,921	24,924	293
Kingsport-Bristol-Bristol, TN-VA	7,112	7,358	7,591	3.2	23,829	24,606	25,299	276
Kingston, NY	4,726	4,713	4,875	3.4	26,448	26,124	26,871	205
Knoxville, TN	17,139	17,883	18,658	4.3	27,425	28,284	29,124	144
Kokomo, IN	2,803	2,906	3,151	8.4	27,606	28,686	31,096	89
La Crosse, WI-MN	3,445	3,510	3,629	3.4	27,020	27,432	28,245	162
Lafayette, IN	4,458	4,551	4,705	3.4	24,862	25,348	25,990	243
Lafayette, LA	6,452	6,605	6,762	2.4	26,866	27,252	27,703	173
Lake Charles, LA	4,642	4,898	5,047	3.0	24,055	25,374	26,026	241
Lakeland, FL	12,212	12,398	12,936	4.3	24,815	24,786	25,323	274
Lancaster, PA	13,528	13,711	14,326	4.5	28,500	28,650	29,654	129
Lansing-East Lansing, MI	12,427	12,552	13,022	3.8	27,601	27,746	28,671	152
Laredo, TX	3,232	3,440	3,629	5.5	16,092	16,640	17,060	359
Las Cruces, NM	3,460	3,590	3,789	5.6	19,588	20,101	20,756	350
Las Vegas-Paradise, NV	43,180	45,325	48,776	7.6	29,651	29,901	30,961	91

See footnotes at the end of the table.

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Table 1. Personal Income and Per Capita Personal Income by Metropolitan Area, 2001–2003

Area Name	Personal income: Millions of dollars 2001	2002	2003	Percent change[2] 2002–2003	Per capita personal income[1]: Dollars 2001	2002	2003	Rank in U.S. 2003
Lawrence, KS	2,613	2,712	2,752	1.5	25,948	26,713	26,976	202
Lawton, OK	2,584	2,676	2,818	5.3	23,038	23,940	25,545	262
Lebanon, PA	3,258	3,355	3,484	3.9	26,924	27,581	28,315	159
Lewiston, ID-WA	1,475	1,498	1,542	2.9	25,652	25,945	26,463	217
Lewiston-Auburn, ME	2,688	2,858	2,989	4.6	25,770	27,164	28,166	164
Lexington-Fayette, KY	12,562	12,961	13,517	4.3	30,428	31,195	32,118	72
Lima, OH	2,704	2,819	2,936	4.2	24,992	26,071	27,411	184
Lincoln, NE	7,947	8,218	8,533	3.8	29,447	30,093	30,855	96
Little Rock-North Little Rock, AR	17,349	18,075	18,833	4.2	28,119	29,036	29,927	123
Logan, UT-ID	2,041	2,093	2,196	4.9	19,414	19,440	20,265	354
Longview, TX	4,974	5,022	5,210	3.7	25,511	25,472	26,204	230
Longview, WA	2,341	2,341	2,382	1.8	24,943	24,733	25,039	290
Los Angeles-Long Beach-Santa Ana, CA	403,519	413,328	427,523	3.4	32,147	32,567	33,347	49
Louisville, KY-IN	35,574	37,276	38,664	3.7	30,343	31,579	32,485	65
Lubbock, TX	6,076	6,265	6,441	2.8	24,050	24,651	25,085	288
Lynchburg, VA	5,839	5,907	6,059	2.6	25,462	25,671	26,193	231
Macon, GA	5,882	6,141	6,245	1.7	26,351	27,289	27,554	177
Madera, CA	2,409	2,561	2,725	6.4	19,135	19,880	20,382	353
Madison, WI	17,224	17,930	18,625	3.9	33,727	34,598	35,471	30
Manchester-Nashua, NH	13,873	14,188	14,564	2.6	35,695	36,168	36,858	22
Mansfield, OH	3,095	3,213	3,364	4.7	24,172	25,027	26,232	227
McAllen-Edinburg-Mission, TX	8,504	9,063	9,648	6.5	14,383	14,790	15,184	361
Medford, OR	4,781	4,888	5,067	3.7	25,983	26,146	26,617	211
Memphis, TN-MS-AR	36,241	37,767	39,244	3.9	29,790	30,787	31,677	79
Merced, CA	4,433	4,649	4,944	6.3	20,319	20,670	21,365	347
Miami-Fort Lauderdale-Miami Beach, FL	163,360	169,151	174,652	3.3	32,025	32,493	33,094	55
Michigan City-La Porte, IN	2,670	2,705	2,770	2.4	24,203	24,541	25,241	280
Midland, TX	4,038	3,858	3,991	3.4	34,788	32,853	33,578	43
Milwaukee-Waukesha-West Allis, WI	50,920	51,910	53,182	2.5	33,819	34,384	35,133	35
Minneapolis-St. Paul-Bloomington, MN-WI	113,012	115,401	119,080	3.2	37,370	37,773	38,601	14
Missoula, MT	2,561	2,643	2,758	4.4	26,489	27,015	27,997	169
Mobile, AL	8,811	9,070	9,264	2.1	21,999	22,695	23,164	336
Modesto, CA	10,917	11,419	11,920	4.4	23,462	23,778	24,276	311
Monroe, LA	4,042	4,326	4,389	1.5	23,871	25,452	25,705	259
Monroe, MI	4,240	4,281	4,514	5.4	28,651	28,674	29,914	124
Montgomery, AL	9,252	9,762	10,192	4.4	26,535	27,795	28,881	148
Morgantown, WV	2,704	2,816	2,943	4.5	24,224	25,062	25,927	247
Morristown, TN	2,760	2,863	2,979	4.0	22,104	22,815	23,378	330
Mount Vernon-Anacortes, WA	3,087	3,175	3,293	3.7	29,360	29,755	30,144	115
Muncie, IN	2,934	2,988	3,068	2.7	24,532	25,125	25,905	250
Muskegon-Norton Shores, MI	4,074	4,104	4,240	3.3	23,760	23,826	24,468	301
Myrtle Beach-Conway-North Myrtle Beach, SC	4,871	5,038	5,331	5.8	24,150	24,450	25,266	279
Napa, CA	4,806	4,908	5,054	3.0	37,623	37,759	38,364	15
Naples-Marco Island, FL	11,062	11,505	11,878	3.2	41,836	41,730	41,513	6
Nashville-Davidson-Murfreesboro, TN	42,024	43,734	45,785	4.7	31,433	32,326	33,368	48
New Haven-Milford, CT	29,243	29,757	30,399	2.2	35,250	35,643	36,127	25
New Orleans-Metairie-Kenner, LA	36,923	38,211	39,595	3.6	28,142	29,091	30,092	116
New York-Northern New Jersey-Long Island, NY-NJ-PA	751,761	747,054	763,575	2.2	40,649	40,186	40,899	9
Niles-Benton Harbor, MI	4,320	4,370	4,490	2.8	26,649	26,891	27,572	176
Norwich-New London, CT	8,922	9,160	9,320	1.7	34,211	34,868	35,147	34
Ocala, FL	6,158	6,264	6,611	5.5	23,229	22,986	23,512	327
Ocean City, NJ	3,339	3,453	3,501	1.4	33,200	33,924	34,386	37
Odessa, TX	2,651	2,689	2,789	3.7	21,930	21,962	22,665	339
Ogden-Clearfield, UT	11,256	11,660	12,038	3.2	24,915	25,347	25,681	261
Oklahoma City, OK	31,209	31,573	32,817	3.9	28,186	28,195	28,958	145
Olympia, WA	6,488	6,672	6,926	3.8	30,515	30,733	31,343	84
Omaha-Council Bluffs, NE-IA	25,180	25,678	26,578	3.5	32,455	32,793	33,537	44
Orlando-Kissimmee, FL	46,350	48,096	50,670	5.4	27,151	27,407	28,114	168
Oshkosh-Neenah, WI	4,571	4,703	4,813	2.4	28,957	29,676	30,359	111
Owensboro, KY	2,710	2,788	2,880	3.3	24,623	25,271	25,985	244
Oxnard-Thousand Oaks-Ventura, CA	25,964	26,677	27,860	4.4	33,761	34,163	35,241	32
Palm Bay-Melbourne-Titusville, FL	13,328	13,766	14,500	5.3	27,395	27,766	28,669	153
Panama City-Lynn Haven, FL	3,676	3,823	4,046	5.8	24,522	25,113	26,120	234
Parkersburg-Marietta-Vienna, WV-OH	3,904	4,078	4,118	1.0	23,810	24,917	25,220	282
Pascagoula, MS	3,453	3,546	3,754	5.9	22,646	23,169	24,336	307
Pensacola-Ferry Pass-Brent, FL	10,165	10,448	10,786	3.2	24,299	24,633	25,124	287
Peoria, IL	10,449	10,452	10,704	2.4	28,584	28,533	29,236	138
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	199,840	206,186	213,917	3.7	34,976	35,909	37,059	21
Phoenix-Mesa-Scottsdale, AZ	97,139	101,447	106,327	4.8	28,712	29,080	29,590	131
Pine Bluff, AR	2,122	2,181	2,308	5.9	19,872	20,488	21,728	345
Pittsburgh, PA	76,354	77,723	79,552	2.4	31,537	32,190	33,015	56
Pittsfield, MA	4,242	4,325	4,364	0.9	31,676	32,445	32,796	62
Pocatello, ID	1,822	1,895	1,937	2.2	21,845	22,771	23,385	329
Portland-South Portland-Biddeford, ME	15,455	15,975	16,719	4.7	31,185	31,850	32,952	58
Portland-Vancouver-Beaverton, OR-WA	63,933	64,395	65,629	1.9	32,345	31,988	32,152	70
Port St. Lucie-Fort Pierce, FL	10,192	10,258	10,637	3.7	31,124	30,424	30,476	108
Poughkeepsie-Newburgh-Middletown, NY	19,306	19,362	20,037	3.5	30,447	30,051	30,560	105
Prescott, AZ	3,702	3,884	4,075	4.9	21,306	21,681	22,075	343
Providence-New Bedford-Fall River, RI-MA	48,705	49,888	51,522	3.3	30,487	30,933	31,743	77
Provo-Orem, UT	7,838	8,045	8,306	3.3	20,048	20,101	20,462	352
Pueblo, CO	3,428	3,604	3,700	2.7	23,730	24,452	24,830	294
Punta Gorda, FL	3,795	3,865	4,046	4.7	25,952	25,781	26,479	216
Racine, WI	5,676	5,843	6,022	3.1	29,922	30,598	31,271	85
Raleigh-Cary, NC	28,448	28,887	29,844	3.3	34,107	33,546	33,627	40
Rapid City, SD	3,089	3,246	3,397	4.7	27,038	28,127	29,281	137
Reading, PA	10,903	11,259	11,519	2.3	28,858	29,484	29,790	127
Redding, CA	4,296	4,418	4,595	4.0	25,681	25,700	26,161	233
Reno-Sparks, NV	13,240	13,519	14,298	5.8	37,287	37,023	38,155	17
Richmond, VA	35,437	36,421	37,432	2.8	31,881	32,384	32,879	60
Riverside-San Bernardino-Ontario, CA	80,406	84,500	89,399	5.8	23,744	24,119	24,526	299
Roanoke, VA	8,226	8,501	8,647	1.7	28,480	29,392	29,795	126
Rochester, MN	5,505	5,805	6,065	4.5	33,010	34,210	35,191	33
Rochester, NY	31,287	31,374	32,329	3.0	30,132	30,184	31,057	90
Rockford, IL	8,624	8,754	8,970	2.5	26,640	26,782	27,075	199
Rocky Mount, NC	3,537	3,545	3,613	1.9	24,644	24,628	24,980	291
Rome, GA	2,244	2,325	2,367	1.8	24,561	25,102	25,337	273
Sacramento-Arden-Arcade-Roseville, CA	57,532	59,439	62,079	4.4	30,807	30,864	31,425	83
Saginaw-Saginaw Township North, MI	5,356	5,320	5,540	4.1	25,543	25,352	26,454	218
St. Cloud, MN	4,381	4,625	4,776	3.3	25,743	26,805	27,404	185
St. George, UT	1,903	1,978	2,099	6.1	20,120	19,856	20,084	355
St. Joseph, MO-KS	2,847	2,942	3,007	2.2	23,038	23,875	24,430	302
St. Louis, MO-IL	85,767	89,751	92,348	2.9	31,532	32,807	33,535	45
Salem, OR	8,737	8,878	9,110	2.6	24,732	24,682	24,978	292
Salinas, CA	12,541	12,609	13,179	4.5	30,718	30,635	31,801	75
Salisbury, MD	2,635	2,721	2,879	5.8	23,817	24,380	25,448	267
Salt Lake City, UT	28,619	29,316	29,935	2.1	29,055	29,456	29,768	128
San Angelo, TX	2,618	2,644	2,726	3.1	24,894	25,118	25,808	252
San Antonio, TX	47,218	47,797	49,733	4.1	27,044	26,832	27,381	186
San Diego-Carlsbad-San Marcos, CA	97,009	101,118	104,614	3.5	33,933	34,915	35,841	28
Sandusky, OH	2,343	2,418	2,528	4.5	29,501	30,637	32,050	73
San Francisco-Oakland-Fremont, CA	199,369	192,993	195,174	1.1	47,722	46,359	46,958	2
San Jose-Sunnyvale-Santa Clara, CA	85,418	79,599	79,801	0.3	48,948	46,003	46,072	3
San Luis Obispo-Paso Robles, CA	7,210	7,395	7,650	3.4	28,741	29,340	30,228	114
Santa Barbara-Santa Maria, CA	13,107	13,017	13,544	4.0	32,702	32,421	33,624	41
Santa Cruz-Watsonville, CA	9,714	9,602	9,597	0.0	38,044	37,899	38,126	19
Santa Fe, NM	4,219	4,280	4,426	3.4	32,141	31,892	32,378	67
Santa Rosa-Petaluma, CA	16,969	16,918	17,041	0.7	36,435	36,312	36,466	24
Sarasota-Bradenton-Venice, FL	22,408	23,014	23,547	2.3	36,992	37,102	37,113	20
Savannah, GA	8,180	8,436	8,800	4.3	27,550	27,994	28,844	150
Scranton-Wilkes-Barre, PA	14,903	15,242	15,581	2.2	26,785	27,521	28,189	163
Seattle-Tacoma-Bellevue, WA	117,001	119,799	122,568	2.3	37,805	38,374	39,008	12
Sheboygan, WI	3,361	3,451	3,549	2.8	29,733	30,460	31,251	86
Sherman-Denison, TX	2,602	2,622	2,694	2.7	23,114	23,064	23,424	328
Shreveport-Bossier City, LA	9,598	9,968	10,415	4.5	25,489	26,433	27,507	181
Sioux City, IA-NE-SD	3,765	3,823	3,931	2.8	26,360	26,758	27,471	182
Sioux Falls, SD	5,978	6,245	6,600	5.7	31,159	32,045	33,217	53
South Bend-Mishawaka, IN-MI	8,685	8,944	9,319	4.2	27,368	28,175	29,360	134
Spartanburg, SC	6,310	6,548	6,747	3.1	24,562	25,247	25,773	254
Spokane, WA	11,082	11,361	11,737	3.3	26,203	26,593	27,218	193
Springfield, IL	6,217	6,321	6,326	0.1	30,643	30,964	30,920	93
Springfield, MA	19,387	19,842	20,229	1.9	28,507	29,000	29,432	133
Springfield, MO	9,324	9,677	10,075	4.1	24,937	25,551	26,209	228
Springfield, OH	3,745	3,778	3,891	3.0	25,989	26,271	27,246	190
State College, PA	3,379	3,514	3,604	2.6	24,805	25,353	25,776	253
Stockton, CA	14,281	14,747	15,416	4.5	24,080	24,074	24,397	304
Sumter, SC	2,175	2,266	2,368	4.5	20,818	21,537	22,390	340
Syracuse, NY	17,723	18,033	18,572	3.0	27,240	27,688	28,429	158
Tallahassee, FL	8,255	8,370	8,624	3.0	25,599	25,812	26,333	224
Tampa-St. Petersburg-Clearwater, FL	71,713	73,620	75,634	2.7	29,342	29,596	29,881	125
Terre Haute, IN	3,805	3,897	4,060	4.2	22,393	22,979	23,946	319
Texarkana, TX-Texarkana, AR	3,006	3,095	3,193	3.2	23,086	23,640	24,246	312
Toledo, OH	18,388	18,904	19,759	4.5	27,870	28,673	29,963	120
Topeka, KS	6,254	6,399	6,421	0.3	27,755	28,347	28,306	160
Trenton-Ewing, NJ	14,341	14,554	14,989	3.0	40,428	40,698	41,499	7
Tucson, AZ	21,387	22,071	23,082	4.6	24,828	25,151	25,906	249
Tulsa, OK	27,243	26,800	27,196	1.5	31,372	30,587	30,908	94
Tuscaloosa, AL	4,700	4,931	5,162	4.7	24,263	25,451	26,554	214
Tyler, TX	4,949	5,046	5,229	3.6	27,872	27,914	28,441	157
Utica-Rome, NY	7,172	7,141	7,332	2.7	24,029	23,976	24,595	297
Valdosta, GA	2,612	2,740	2,855	4.2	21,851	22,642	23,375	331
Vallejo-Fairfield, CA	11,623	11,992	12,456	3.9	28,730	29,283	30,259	112
Vero Beach, FL	4,552	4,592	4,804	4.6	39,462	38,925	39,953	10
Victoria, TX	2,868	2,884	2,920	1.2	25,494	25,609	25,838	251
Vineland-Millville-Bridgeton, NJ	3,606	3,777	3,889	3.0	24,543	25,514	26,012	242
Virginia Beach-Norfolk-Newport News, VA-NC	44,071	45,999	47,675	3.6	27,774	28,659	29,337	135
Visalia-Porterville, CA	7,723	8,010	8,365	4.4	20,647	21,009	21,388	346
Waco, TX	4,983	5,123	5,271	2.9	23,120	23,584	24,007	316
Warner Robins, GA	2,861	3,055	3,167	3.7	25,277	26,235	26,379	221
Washington-Arlington-Alexandria, DC-VA-MD-WV	208,807	214,919	223,394	3.9	42,451	42,987	44,056	4
Waterloo-Cedar Falls, IA	4,199	4,396	4,470	1.7	25,724	27,119	27,644	175
Wausau, WI	3,564	3,695	3,817	3.3	28,177	29,115	29,992	119
Weirton-Steubenville, WV-OH	3,001	3,086	3,160	2.4	23,002	23,863	24,577	298
Wenatchee, WA	2,495	2,556	2,640	3.3	25,013	25,441	25,947	245
Wheeling, WV-OH	3,685	3,772	3,868	2.5	24,330	24,979	25,771	255
Wichita, KS	17,197	17,321	17,500	1.0	29,910	29,874	30,060	118
Wichita Falls, TX	3,839	3,915	4,050	3.4	25,708	26,279	27,243	191
Williamsport, PA	2,902	2,996	3,089	3.1	24,335	25,211	26,039	238
Wilmington, NC	7,464	7,598	7,894	3.9	26,523	26,423	26,871	205
Winchester, VA-WV	2,803	2,881	2,990	3.8	26,445	26,606	27,084	198
Winston-Salem, NC	12,546	12,866	13,222	2.8	29,266	29,688	30,243	113
Worcester, MA	25,410	25,401	25,972	2.2	33,345	33,008	33,479	46
Yakima, WA	5,152	5,258	5,426	3.2	23,062	23,416	23,916	320
York-Hanover, PA	10,877	11,128	11,544	3.7	28,195	28,546	29,181	140
Youngstown-Warren-Boardman, OH-PA	14,762	15,114	15,635	3.4	24,621	25,371	26,361	222
Yuba City, CA	3,258	3,385	3,561	5.2	23,020	23,409	24,018	315
Yuma, AZ	2,976	3,324	3,268	−1.7	18,207	19,940	19,158	357

1. Per capita personal income was computed using Census Bureau midyear population estimates.
2. Percent change calculated from unrounded data.
3. The personal income level shown for the United States is derived as the sum of the county estimates. It differs from the estimate of personal income in the national income and product accounts because of differences in coverage, in the methodologies used to prepare the estimates, and in the timing of the availability of source data.
4. The metropolitan area definitions used by BEA for its personal income estimates are the new county-based definitions issued by the Office of Management and Budget in June 2003 (with revisions released February 2004 and February 2005) for federal statistical purposes.

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X. EMPLOYMENT

Introduction

BEA's estimates of state and local employment, consist of the number of wage and salary jobs, sole proprietorships, and general partners. The employment estimates are available annually beginning with 1969.

The county employment estimates are a complement to the place-of-work earnings estimates. Earnings are estimated on both a place-of-work basis, by North American Industry Classification System (NAICS) three-digit subsector beginning in 2001 and by Standard Industrial Classification (SIC) two-digit industry up to 2000, and on a place-of-residence basis for the sum of all industries. The employment estimates are designed to conform conceptually and statistically with the place-of-work earnings estimates; the same source data—generally from administrative records—are used for both the earnings and employment estimates whenever possible. The earnings estimates reflect the scale and industrial structure of an area's economy rather than the income of the area's residents. Therefore, the employment estimates measure the number of jobs in a county, instead of the number of workers who perform the jobs. The characteristics of the county employment estimates follow from this concept and from the characteristics and limitations of the available source data.

The state and local area employment estimates are not fully consistent with the national estimates that are normally published in the August issue of the *Survey of Current Business*. The county estimates are prepared for only a full-time and part-time basis, while the national estimates are prepared both for a full-time and part-time basis and for a full-time equivalent basis. The county estimates exclude overseas jobs—mainly Federal civilian and military employment of U.S. citizens abroad—and border worker adjustments—the addition of U.S. persons commuting to work abroad and subtraction of foreign commuters and seasonal workers in the United States—that are included in the national estimates. Finally, the county estimates include all sole proprietorships and general partners—approximating a full-time and part-time basis, whereas the national estimates of the number of proprietors count only persons whose principal occupation is their self-employment—approximating a full-time equivalent basis of measurement.

Employment estimates measure the number of jobs.—Employment can be measured either as a count of workers or as a count of jobs. In the former case, an employed worker is counted only once; in the latter case, all jobs held by the worker are counted. The county employment estimates are a count of the number of jobs, so that, as with the earnings estimates, a worker's activity in each industry and location of employment is reflected in the measure.

Treatment of part-time jobs.—County employment estimates are estimated on a full-time and part-time basis because of the limitations of the available source data. County-level data that separate part-time jobs and wages

from full-time jobs and wages, which are needed to prepare full-time equivalent measures, are not available. The lack of a full-time equivalent measure limits the usefulness of the average earnings measure that can be calculated from the BEA county employment and earnings estimates. Average earnings reflects the extent of part-time employment in the given area and industry, as well as more basic factors such as hourly wage rates.

Geography.—County employment estimates, like wage and salary estimates, are measured by place-of-work—the job location—instead of by place of residence—where the worker lives. Thus the estimates are more representative of the county's industrial base than of the activities of the residents of the county. For nonfarm proprietors' employment, the only available annual data are classified by tax filing address, which is usually the filer's residence. BEA assumes that place-of-work and place-of-residence are identical for nonfarm proprietors.

Temporal dimension.—The estimates of wage and salary employment are annual averages of twelve monthly observations for the year. This gives a job which lasts only part of the year a lesser weight that a year-round job. In contrast, the estimates of nonfarm proprietors' employment, are counts of the number of proprietors active during any portion of the year. This is because the available source data do not indicate the portion of the year that the businesses are in operation.

Wage and Salary Employment

Wage and salary employment estimates measure the average annual number of full-time and part-time jobs in each area by place-of-work. All jobs for which wages and salaries are paid are counted. Although compensation paid to jurors, expert legal witnesses, prisoners, and justices of the peace (for marriage fees), is counted in wage and salary disbursements, these activities are not counted as jobs in wage and salary employment. Corporate directorships are counted as self-employment.

The following description of the sources and methods used in estimating wage and salary employment is divided into two sections: Employment in industries covered by unemployment insurance (UI) programs, and employment in industries not covered by UI.[1]

Employment in industries covered by the UI programs

[1] The relevant UI programs are state UI, which covers most private sector and state and local government employment, and unemployment compensation for Federal (civilian) employees. The agency administering the UI program for railroad employees compiles data differently from the state UI program, and there is no employment reporting under the UI program for persons leaving the military services; accordingly, railroads and the military services are treated as noncovered industries in the estimation of local area employment.

The estimates of about 95 percent of wage and salary employment are derived from tabulations of quarterly unemployment insurance (UI) contribution reports (form ES-202) filed with state employment security agencies. Employers subject to UI laws usually submit reports for each operating establishment, classified by county and industry. However, in some cases, an employer may group very small establishments into a single "statewide" report without county designation. Each quarter, the state employment security agencies submit the tabulations to the Bureau of Labor Statistics (BLS), which provides the data to BEA. The tabulated data (called the Quarterly Census of Employment and Wages, QCEW) consist of monthly employment and quarterly wages by county by NAICS six-digit detail (beginning in 2001) or by SIC four-digit detail (through 2000).[2]

BEA adds several million administrative records received from the states and the District of Columbia to its database annually. The records are checked for major errors by several computerized edit routines. One edit routine analyzes the current quarter county data for invalid industry codes, duplicate records, and records that contain no data. Another edit routine calculates expected county-level average employment and average wage estimates on a quarterly basis, based on percentage changes for that quarter in the previous two years. If the difference between the actual numbers and the estimated numbers exceeds established limits, the record is identified for further review. Anomalies that remain unreconciled after reviewing comments and other supporting data are referred back to BLS for further investigation.

The basic procedure for preparing the local area estimates of wage and salary employment for each UI-covered industry is to average the 12 monthly QCEW employment observations and to allocate the higher level geographic total in proportion to the averaged series. However, QCEW employment does not precisely meet the statistical and conceptual requirements for BEA's employment estimates. Consequently, the data must be adjusted to meet the requirements more closely. The necessary adjustments affect both the industrial and geographic patterns of county employment.

Adjustment for industry nonclassification.—The industry detail of the QCEW tabulations regularly shows minor amounts of employment that have not been assigned to an industry. The industrial classification scheme used by BEA for its estimates does not allow for a not-elsewhere-classified category. Therefore, for each county, the amount of QCEW employment in this category is distributed amongst the covered industries in proportion to the industry-classified employment. The amounts involved in this adjustment are quite small—about 0.2 percent of total employment nationally. No error is introduced into the total employment estimate for a county because the adjustment involves only an apportionment within an area of the amount reported for that area.

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[2] The monthly employment observations represent the number of employees receiving wages for the pay periods that include the 12th day of the month. The QCEW tabulations reflect the 1972 SIC for years up to 1987 and the 1987 SIC for 1988 through 2000. Beginning in 2001, QCEW tabulations reflect 2002 NAICS.

Misreporting adjustment.—An adjustment is made to the QCEW data to include estimates of employment subject to UI reporting that employers do not report for all private sector industries. At the national level, the estimate for each industry is made in two parts: One for the underreporting of employment on UI contribution returns filed by employers and one for the employment of employers that fail to file UI contribution returns. The source data necessary to replicate this methodology below the national level are not available. Instead, the national adjustment for each industry is allocated to the counties in proportion to QCEW employment.

Adjustment for statewide reporting.—Employment reported for statewide units is allocated to counties in proportion to the distribution of the employment reported by each county.

Adjustments for noncovered segments of UI-covered industries.—BEA makes adjustments to add the employment of several noncovered segments. If relevant source data are not available, the national adjustments are allocated to states in proportion to the QCEW employment of the affected industry or industries. In all cases, the state adjustments are allocated to counties in proportion to QCEW employment. Examples of BEA adjustments for noncovered segments of UI-covered industries are as follows:

- Some insurance solicitors and real estate agents are omitted from UI coverage because they are paid solely by commissions. The national estimates for these two segments are allocated to states in proportion to QCEW employment in each industry.
- Establishments of railroad carrier affiliates and railway labor organizations are covered by the Railroad Unemployment Insurance system rather than by state UI. The state adjustments are based on data provided by the Railroad Retirement Board.
- Corporate officers in Washington state are omitted from UI coverage. The Washington Employment Security Department provides BEA with estimates of the number of corporate officers by NAICS sector level by county.
- Some nonprofit organizations are exempt from UI coverage because they have fewer than four employees. The national estimates are allocated to states in proportion to the QCEW employment of each industry.
- Students and the spouses of students who are employed by the institutions of higher education in which the students are enrolled are generally omitted from UI coverage. State estimates of the noncovered student employment of private, state government, and local government institutions are based on the differences between the relevant QCEW employment data and alternative employment data that include student employment. The alternative data are reported annually by the Census Bureau in *County Business Patterns* for the private institutions and in

unpublished tabulations of public employment data for the government institutions.

- UI coverage of local government employees excludes elected officials and members of the judiciary. The national estimates are allocated to states in proportion to QCEW state and local government employment.

Geographic adjustments for government employment.—In several cases, BEA has determined that the QCEW reports attribute government employment to the wrong states or counties; the best available information is used to remedy these deficiencies. Examples of how BEA adjusts the government employment are as follows:

- The QCEW tabulations of Federal civilian employment assign all of the employment of the U.S. Congress and its staff to the District of Columbia, although members of Congress employ some of their staff in home district offices. BEA assumes that this home district employment accounts for 25 percent of total congressional employment and reassigns that portion of the total to the states in proportion to their congressional representation. No explicit adjustment is made at the county level; in effect, the home district employment is allocated to counties in proportion to QCEW Federal employment.
- For the Federal sector, detailed civilian employment data available from the Office of Personnel Management (OPM) is used to evaluate the county coding of the corresponding QCEW data and remedy the deficiencies. For New York, BEA allocates the QCEW state employment totals for the Postal Service to counties in proportion to the OPM series for that agency.
- For the noneducation component of state government, a comparison of the QCEW data with comparable data from the Census of Population indicated that an excessively large proportion of the QCEW employment was reported in the county of the state capital for seven states. For these states—Arizona, Illinois, Michigan, New Jersey, Rhode Island, Tennessee, and Wisconsin—the state totals of state government noneducation employment for 1990 and later years are allocated to counties in proportion to an unpublished tabulation of the place-of-work segment of the journey-to-work Census data.

Employment not covered by the UI programs

Railroads.—The railroad industry is covered by its own unemployment insurance program, which is administered by the Railroad Retirement Board (RRB), rather than by the state UI system. Data suitable for estimating local area employment of railroads are available from the RRB only on a place-of-residence basis.[3] Because BEA's employment estimates are designed to conform conceptually and statistically with the place-of-work earnings estimates, the RRB

[3] RRB provides these data to BEA summed to ZIP-code area totals; BEA assigns these data to counties.

data are adjusted to a place-of-work basis by using Journey-to-work data from the 2000 Census of Population. The national totals for all railroad companies combined are allocated to counties in proportion to the adjusted RRB series.

Private households.—For this largely noncovered industry—mainly domestic servants—the national employment estimates are allocated to counties in proportion to place-of-work private household employment from the Census journey-to-work data.

Farm labor contractors.—This industry is classified in support activities for agriculture and forestry rather than in farms. The UI coverage in Arizona and California is complete enough to permit the use of the QCEW data for both the state and county estimates, but most state UI programs only partially cover this industry. For these states, the county estimates of farm labor contractor employment are based on the geographic distribution of expenditures for contract labor reported in the Census of Agriculture.

Private elementary and secondary schools.—Private elementary and secondary schools are treated as a noncovered industry because religiously affiliated elementary and secondary schools, which account for most of the employment in this industry, remain largely outside the scope of the UI program. The state estimates of private elementary and secondary school employment are primarily based on the employment reported annually by the Census Bureau's *County Business Patterns* (CBP). The CBP data are tabulated from the administrative records of the social security program—Old-Age, Survivors, Disability, and Hospital Insurance—and are more complete for elementary and secondary schools than the data prepared under the UI program. The social security program, although exempting nonprofit religious organizations—including schools—from mandatory coverage, has elective coverage provisions that have resulted in broad participation among religiously affiliated elementary and secondary schools.

In about half of the states, the UI coverage of elementary and secondary schools is complete enough to permit the use of QCEW data as the basis for the county employment estimates. For the other states, the county estimates are based on the best available series of private elementary and secondary school employment chosen from data published by state departments of education, data from the U.S. Department of Education's 2002 survey of private elementary and secondary schools, or data from CBP, which cannot be used more generally because they are frequently suppressed at the county level to prevent disclosures.

Religious organizations.—The Federal Unemployment Tax Act permits states to exclude religious organizations from mandatory UI coverage. Although most state UI laws do have some provisions for elective coverage, less than 10 percent of the national total employment of religious organizations obtain coverage. Therefore, the county estimates of the employment of religious

organizations are based on CBP data. The CBP data are adjusted proportionately to sum to the BEA national employment totals for this industry.

Military.—County military employment is measured as the number of military personnel assigned to active duty units that are stationed in the area plus the number of military reserve unit members. The estimates of active duty employment for the Army, Air Force, Navy, Marine Corps, and Coast Guard are based on the annual averages of 12 monthly observations, for a given year, from reports received from each branch of service. Navy personnel assigned to ships and other mobile units and Marines assigned to Fleet Marine Force units are measured according to the units' home ports rather than their actual locations as of the reporting date.

The measure of the employment of the military Reserves—including the National Guard—is confined to members of reserve units that meet regularly for training. The state estimates are based on fiscal year—ending September 30—tabulations of military reserve pay provided by the Army, Air Force, Navy, Marine Corps, and Coast Guard.[4] For consistency with the BEA estimates of military reserve wages, the state totals of military reserve employment are allocated to counties in proportion to civilian population.[5]

Other.—U.S. residents employed in the United States by international organizations and by foreign embassies and consulates are classified in an "other" industry. "Other" differs from "rest-of-the-world"—the corresponding category in the national employment estimates—in that "rest-of-the-world" also includes the net flow of international border workers—i.e., U.S. residents working across the border in Canada and foreign residents working in the United States. Border workers are not reflected in the county employment estimates.

County estimates of "other" employment are made by allocating the national totals for all years to counties in proportion to estimated 1968 administrative expenses of international and foreign organizations operating in the United States. The administrative expenses series was prepared by the BEA.

Comparison of the BEA estimates with the Current Employment Statistics estimates

The Bureau of Labor Statistics (BLS)—in cooperation with state employment security agencies—prepares the Current Employment Statistics (CES)—a set of state and local area wage and salary employment estimates—that is similar to the BEA estimates. Both are job-count measures of full-time and part-time employment on a place-of-work basis. The CES estimates are based on a monthly sample survey—using Form BLS-790—of nonagricultural establishments with employees. The sample for UI-covered industries is drawn

[4] The payroll tabulations include only pay for regularly scheduled training duty; National Guard pay for service during natural disasters, riots, and the like is not included.

[5] Military reserve wages are estimated directly on a place-of-residence basis because there are no source data to convert a place-of-work series to a place-of-residence basis for inclusion in personal income.

from all establishments reported in employers' UI contributions returns, and the monthly sample-based series for covered industries is benchmarked annually to QCEW employment; thus both the BEA and the CES series are grounded on the same set of administrative records data. A detailed description of the sampling and estimating methodologies for the CES estimates is presented in the "Explanatory Notes" of BLS's monthly *Employment and Earnings*.

The CES estimates are more timely than the BEA estimates; preliminary BLS estimates are released with a one-month lag. By contrast, the BEA estimates are prepared only as annual averages and are released at the state level nine months after the reference year. At the county level, the all-industry totals are released 12 months after the reference year, and the estimates by industry are released 17 months after the reference year.

The BEA series is somewhat broader in its coverage than the CES series. The BEA series includes industries—agriculture, forestry, fishing, and hunting; private households; the military; and "other"—that CES excludes.[6] The misreporting adjustment—see the section on employment covered by the UI programs—is unique to the BEA series. However, the CES series includes, within the scope of its coverage, all the noncovered segments of UI-covered industries for which BEA makes explicit adjustments.

The BEA estimates of wage and salary employment are accompanied by a self-employment series that is consistent with the wage and salary employment series as much as the available source data allow. No self-employment series is available in conjunction with the CES employment estimates.

At the national and state levels, the BEA estimates of wage and salary employment are available at the NAICS three-digit subsector beginning with 2001 and by SIC two-digit level for 1969-2000. By contrast, the CES estimates for the nation (in *Employment and Earnings*) are available in more detail: At the state level the CES estimates are presented only at the NAICS sector or SIC division ("one-digit") level; however, more detailed estimates are available from some of the state employment security agencies. At the county level, the BEA estimates of wage and salary employment are available at the all-industry level, and at the NAICS sector or SIC division level, when combined with BEA's self-employment estimates. The CES local area estimates are available at the NAICS sector or SIC division level.

The BEA estimates are available for almost all counties, and for all county-based metropolitan areas as defined for Federal statistical purposes. The local area CES estimates presented in *Employment and Earnings* are for the larger metropolitan areas only, but estimates for smaller metropolitan areas and for counties are available from some of the state employment security agencies. BLS uses the alternative city-and-town definitions of the metropolitan areas in the New England states, while BEA uses the standard county-based metropolitan area definitions.

Nonfarm Self-Employment

[6] More precisely, the CES excludes all of NAICS sector 11 (agriculture, forestry, fishing, and hunting) except logging (1133).

The BEA local area estimates of nonfarm self-employment consist of the number of sole proprietorships and the number of individual general partners.[7] The nonfarm self-employment estimates resemble the wage and salary employment estimates in that both measure jobs—as opposed to workers—on a full-time and part-time basis. However, because of limitations in source data, two important measurement differences exist between the two sets of estimates. First, the self-employment estimates are largely on a place-of-residence basis rather than on the preferred place-of-work basis. Second, the self-employment estimates reflect the total number of sole proprietorships or partners active at any time during the year—as opposed to the annual average measure used for wage and salary employment.

National totals

For each NAICS three-digit subsector (or SIC two-digit industry in years prior to 2001), the national total of nonfarm self-employment is derived as the sum of the number of sole proprietorships and of the number of individual general partners.

Sole proprietorships.—Income from a nonfarm sole proprietorship is reported on Schedule C—*Profit, or Loss, from Business or Profession*—of Internal Revenue Service (IRS) form 1040—*U.S. Individual Income Tax Return.* A schedule is filed for each business operated by the filer and the industry of the proprietorship reported. In addition, corporate directors—who are not officers in the corporation—use Schedule C to report their director's fees. The national estimate of the number of nonfarm sole proprietorships in each NAICS three-digit subsector is based on a sample of these schedules.[8] In the absence of IRS data for the most recent years, the number of proprietorships is extrapolated forward using prior years' growth rates.

Partners.—A preliminary national estimate of the number of nonfarm partners by NAICS three-digit subsector is based on a sample of returns of IRS form 1065—*U.S. Partnership Return of Income.* One form 1065 is filed by each business partnership. The number of partners—including corporations and other legal entities as well as individuals—and the industry of the business are indicated on the form.

The preliminary estimate of the number of partners by industry is adjusted by using relationships from two special tabulations of partnership tax data provided by the IRS. The first tabulation, available annually, is of the number of limited partners—generally at the NAICS sector level. The second tabulation, available for 1986 only, is the number of partners by SIC division by type—

[7] Partners can be individuals, corporations, partnerships, estates, trusts, limited liability companies, tax-exempt organizations, or individual retirement arrangements. They can be either general or limited.

[8] When a husband and wife jointly operate a nonfarm sole proprietorship (e.g. a restaurant) and file a joint income tax return, only one will be counted as a proprietor.

including individuals, corporations, other partnerships acting as partners, and fiduciaries—in partnerships with 10 or fewer partners.

The adjustment of the preliminary estimate is at the NAICS sector level. The preliminary estimates of the number of partners are summed to the appropriate industry totals. The number of limited partners from the first IRS special tabulation is subtracted from the preliminary estimate to yield the number of general partners. Next, the 1986 ratio of the number of individual partners to the total number of partners is calculated for each industry from the second IRS special tabulation. This ratio is multiplied by the number of general partners in the industry in each year to yield the number of individual general partners. Finally, the NAICS sector totals of the number of individual general partners are allocated to the three-digit subsectors in proportion to the number of partnerships to yield the final estimate of partners.

In the absence of IRS data for the most recent years, the number of partners is extrapolated forward using prior years' growth rates.

State and county estimates

Preliminary state and county estimates of self-employment are also based on tabulations of the number of nonfarm sole proprietorships filing IRS Schedule C, form 1040 and on the number of nonfarm general partners as reported on IRS Schedule B, form 1065. However, the entire population of returns are used (rather than just the sample used for the national estimates) and slightly different data from the form are available for states and counties. Specifically, data are available on the number of partners in each partnership and the type of partnership. Up to four partners in each partnership are counted except limited partnerships which are assumed to have a single general partner.[9] Tabulations are prepared by NAICS three-digit subsector. The national estimates of sole proprietorships and partners are combined to form an estimate of total self-employment and allocated to states in proportion to the preliminary state estimate of total self-employment. In the absence of IRS data for the most recent years, the state allocators for prior years is used.

At the county level, tabulations of Schedule C and form 1065 are available at the NAICS sector level only. Therefore state estimates are summed to the NAICS sector level for use as control totals for the county estimates. The controls are then allocated to the counties in proportion to preliminary estimates of county self-employment. In the absence of IRS data for the most recent years, the county allocators for prior years is used.

Farm Self-Employment

Farm self-employment is defined as the number of non-corporate farm operators, consisting of sole proprietors and partners. A farm is defined as an establishment that produces, or normally would be expected to produce, at least

[9] Up to 500 partners are counted in law and accounting firms.

$1,000 worth of farm products—crops and livestock—in a typical year. Because of the low cutoff point for this definition, the farm self-employment estimates are effectively on a full-time and part-time basis. The estimates are consistent with the job-count basis of the estimates of wage and salary employment because farm proprietors are counted without regard to any other employment. The distinction between place-of-work and place-of-residence is not significant because most farmers live on or near their land. Similarly, because of the annual production cycle of most farming, the distinctions between the point-in-time, the average annual, and the any-activity temporal concepts of employment measurement are not significant.

National and State Estimates

Both the national and state estimates of farm self-employment are prepared by the application of a series of ratios to the annual estimates of the number of all farms prepared by the National Agricultural Statistics Service (NASS), U.S. Department of Agriculture (USDA). For the BEA national estimates, the ratios are drawn from the USDA's annual Agricultural Resource Management Study (ARMS), previously the Farm Costs and Returns Survey (FCRS); for the state estimates, the ratios are drawn from the quinquennial Census of Agriculture. The census ratios are interpolated between census years, and the ratios from the last census are used for each subsequent year.[10] The sequence of estimating steps for the national totals and the preliminary state estimates is as follows:

1. The number of non-corporate farms is derived as the product of the NASS number of all farms and the ratio of the number of non-corporate farms to all farms.
2. The number of sole-proprietor farms is derived as the product of the number of non-corporate farms (step 1) and the ratio of the number of sole-proprietor farms to non-corporate farms.
3. The number of partnership farms is derived as the product of the number of non-corporate farms (step 1) and the ratio of the number of partnership farms to non-corporate farms.
4. The number of farm partners is derived as the product of the number of partnership farms (step 3) and the ratio of the number of farm partners to partnership farms. The 1992 FCRS-based ratio is used for each subsequent year because BEA has not received a survey-based number of farm partners since 1992. In addition, the national annual ARMS-based ratios are used for the state—as well as the national calculations—because the number of farm partners is not available from the Census of Agriculture.
5. Total farm self-employment (final for the nation; provisional for the states) is derived as the sum of the number of sole-proprietor farms (step 2) and the number of farm partners (step 4).

[10] The most recent Census of Agriculture in use for the BEA employment estimates is that for 1997.

DCN:11697

Finally, the national totals are allocated to states in proportion to the provisional state estimates (the allocators developed in step 5).

County Estimates

The county estimates of farm self-employment are based on the state totals, the quinquennial Census of Agriculture counts of the number of sole-proprietor farms and partnership farms by county, and the FCRS-based national ratios of the number of farm partners to farm partnerships. The census counts of the number of sole-proprietor farms and of partnership farms are interpolated between census years, and the counts from the last census are used for each subsequent year. For each county and year, the number of farm partners is approximated as the product of the census-based number of partnership farms and the FCRS-based national ratio of the number of farm partners to farm partnerships. Provisional county estimates of total farm self-employment are derived as the sum of the census-based number of sole-proprietor farms and the approximation of the number of farm partners. The final county estimates of farm self-employment are derived by the allocation of the state totals in proportion to the provisional estimates.

XI. ALTERNATIVE MEASURES OF COUNTY EMPLOYMENT AND WAGES

Three widely used measures of county employment and wages by place of work are employment and payroll published in the Census Bureau's *County Business Patterns* (CBP), employment and wages from the Quarterly Census of Employment and Wages (QCEW) program of the Bureau of Labor Statistics (BLS), and wage and salary disbursements and employment from the Bureau of Economic Analysis (BEA). (See Table B.) These measures differ in source data and coverage.

The CBP data are derived from Census Bureau business establishment surveys and Federal administrative records. The QCEW data are tabulations of monthly employment and quarterly wages of workers covered by state unemployment insurance programs or by the unemployment insurance program for federal civilian employees. The BEA estimates of employment and wages are primarily derived from the QCEW data, but the estimates are also based on supplemental data from other agencies—such as the Department of Defense, Department of Agriculture, and the Railroad Retirement Board—for industries that are either not covered or not fully covered by the QCEW.[1]

The coverage of the CBP data differs from that of the QCEW data primarily because the CBP data exclude most government employees, while the QCEW data cover civilian government employees.[2] The QCEW data also include some farm and private household employees that are excluded by the CBP data. However, the CBP data cover the employees of educational institutions, membership organizations, and small nonprofit organizations in other industries more completely than the QCEW data.[3]

Beginning in 2001, both QCEW and BEA include employees of Indian tribal governments and enterprises in local government. These employees were previously included in the relevant private industries.[4] In the CBP data, these employees are still classified in private industries.

Finally, CBP reports employment for the month of March. The QCEW employment data are quarterly and annual averages of monthly data.

The BEA estimates of employment and wages differ from the QCEW data because BEA adjusts estimates to account for employment and wages not

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[1] The QCEW data account for 95 percent of BEA wages and salaries.

[2] The CBP data cover only those government employees who work in government hospitals, federally chartered savings institutions and credit unions, liquor stores, and wholesale liquor establishments. QCEW data in most states exclude state and local elected officials, members of the judiciary, state national and air national guardsmen, temporary emergency employees, and those in policy and advisory positions.

[3] Some religious elementary and secondary schools are not covered by QCEW because of a 1981 Supreme Court decision stating "schools operated and supported by churches and not separately incorporated [are] held exempt from unemployment compensation taxes." College students (and their spouses) employed by the school in which they are enrolled and student nurses and interns employed by hospitals as part of their training are also excluded from QCEW. While QCEW coverage varies, half of the states only include nonprofit organizations with four or more employees during twenty weeks in a calendar year.

[4] For example, employees of casinos owned by tribal councils were included in the North American Industry Classification System subsector "Amusement, Gambling, and Recreation Industries."

DCN:11697

covered, or not fully covered, by unemployment insurance programs. BEA adds estimates of employment and wages to the QCEW data to bridge small gaps in coverage for nonprofit organizations (in several industries), for students and their spouses employed by colleges or universities, for elected officials and members of the judiciary (in state and local government), for interns employed by hospitals and by social service agencies, and for insurance agents classified as statutory employees (in insurance agencies and brokerages). In addition, BEA uses supplemental source data to estimate most or all of the employment and wages for the following: Farms, farm labor contractors and crew leaders, private households, private elementary and secondary schools, membership organizations, rail transportation, military, and U.S. residents who are employed by international organizations and by foreign embassies and consulates in the United States. BEA also adjusts for employment and wages subject to unemployment insurance coverage, but not reported by employers. Estimates of unreported tips, judicial fees paid to jurors and witnesses, compensation of prison inmates, and marriage and license fees paid to justices of the peace are added to wages.

XII. TECHNICAL NOTES

Disclosure-avoidance procedures

Like other statistical agencies, the Bureau of Economic Analysis (BEA) is legally required to safeguard the confidentiality of the information that it receives. In addition, like other agencies, it must balance its responsibility to avoid disclosing confidential information with its responsibility to release as much information as possible. It balances these responsibilities by presenting the estimates for regions, states, and local areas only at the North American Industry Classification System (NAICS) subsector level or Standard Industrial Classification (SIC) two-digit level, even though it receives source data at the NAICS four- and five-digit industry levels or SIC three- and four-digit levels.

Most of the data series that BEA receives from other agencies are not confidential. The agencies summarize their data by program, county, or state, so that each record, or data cell, contains data for enough individuals or establishments to preclude the identification of data for a specific individual or establishment and, therefore, to preclude disclosure of confidential information.[1]

However, the Quarterly Census of Employment and Wages (QCEW, formerly known as ES-202 data) tabulations that BEA receives from the Bureau of Labor Statistics (BLS) include records that would disclose confidential information. The confidential information on wages and salaries for some business firms is identifiable from the state and county estimates of wages and salaries that are derived from the QCEW data.[2]

To prevent either the direct or the indirect disclosure of the confidential information, BEA uses the BLS state and county nondisclosure file. BEA uses as many BLS nondisclosure cells as possible, but cannot use some of them for various reasons. The most important reasons are that the industry structure published by BEA does not exactly match the NAICS subsector or SIC two-digit detail provided by BLS and that BEA does not use QCEW data for the farm sector. When BEA drops BLS nondisclosure cells, other cells must be selected to prevent the disclosure of confidential information. In order to determine which estimates should be suppressed, the total wages and salaries file and the wages-and-salaries-nondisclosure file are used to prepare a multidimensional matrix. This matrix is tested, and the estimates that should be suppressed are selected.[3]

Dual allocation

Dual allocation is a statistical procedure that forces the elements of a matrix to sum to column and row control totals. It is used to adjust, for instance, a preliminary estimate of income by state and industry so that sum of income in

[1] For a list of some of the agencies that provide data to BEA, see "Sources of the data" in the Chapter II Sources and Methods.

[2] For specific information, see Chapter III Wage and Salary Disbursements.

[3] In this test, computer programs impose a set of rules and priorities on this matrix so that the estimates that should be suppressed are selected until indirect disclosure is impossible.

an industry across all states equals a national control total for that industry and simultaneously the sum of income in a state across all industries equals a control total for that state. It is also used to adjust a preliminary estimate of quarterly state personal income so that it is consistent with both national control totals by quarter and annual state control totals.

Specifically, dual allocation subtracts the sum of the algebraic values in a row from the row control total. It divides this difference by the sum of the absolute values in the row and then multiplies the resulting ratio by the absolute value of each element in the row and adds the result to the algebraic value of that element. This procedure is repeated for each row and then a parallel procedure is repeated for each column. The whole process is repeated five times.

After the fifth repetition, any differences between the row and column control totals and the output matrix row and column sums are eliminated by a process called feathering. This is accomplished by selecting the first column with a non-zero difference and the first non-zero row difference with the same sign. The smaller of the two differences is subtracted from the element in that row and column and from the final row and column sums. This procedure forces the difference between either the final row sum and its corresponding control total or the final column sum and its corresponding control total to zero.

Before performing any subtraction, the element in the row and column selected is checked for a zero value and to see if the subtraction would cause a change in the element's sign. If either of these tests is true, the next non-zero row difference with like sign is selected.

The entire feathering process is repeated until all differences between final column sums and column control totals have been forced to zero. At this point the row sums and row control totals will also be equal.

Employment

BEA gives equal weight to full-time and part time jobs in its estimates of employment. Wage and salary jobs and proprietors' jobs are counted, but unpaid family workers and volunteers are not. Proprietors' employment consists of the number of sole proprietorships and the number of partners in partnerships. Wage and salary employment is on a place of work basis. Proprietors' employment, however, is more nearly by place of residence because, for nonfarm sole proprietorships, the estimates are based on IRS tax data that reflect the address from which the proprietor's individual tax return is filed, which is usually the proprietor's residence. Nonfarm partnership employment reflects the tax-filing address of the partnership, which may be either the residence of one of the partners or the business address of the partnership.

The employment estimates are designed to be consistent with the estimates of wage and salary disbursements, proprietors' income, and earnings. The employment estimates are based on the same sets of source data as the corresponding earnings estimates and are prepared with parallel methodologies. Two components of proprietors' income—the income of limited partnerships and

DCN:11697

the income of tax-exempt cooperatives—have no corresponding employment estimates.

Imputation

One of the principles of the national income and product accounts (NIPAs) is that they reflect market transactions. In a few instances, a comprehensive account of total income and production requires BEA to impute a value or a transaction. This keeps the NIPA invariant to how certain activities are carried out. For instance, some transactions, such as the provision of food, lodging, and clothing to employees have an element of barter—food is bartered for labor (at least in part). In this case, imputation involves placing a market value on the food employees received so that the estimate of their total compensation is comprehensive and invariant to changes in the proportions received in cash and in kind. In other transactions, such as the rental of housing to an owner-occupant, no transaction appears in the records of the economy. In this case, imputation involves constructing a transaction between a producer and a consumer (who happen to be the same person) and placing a market value on the housing services exchanged. If the imputation were not made, then housing output and consumption would fall if a household purchased the house it had been renting.

The imputations described here are those that affect state personal income.[4] They are: pay-in-kind, employer-paid health and life insurance premiums, the value of food and fuel produced and consumed on farms, the net rental value of owner-occupied housing, the net margins on owner-built housing, the value of depositor services furnished without payment by financial intermediaries except life insurance carriers, premium supplements for property and casualty insurance, and the interest received from life insurance carriers. These imputations accounted for about 8 percent of personal income at the national level in 2003.

Imputed pay-in-kind is added to the estimates of wage and salary disbursements so that all the earnings of employees who receive part of their wages in pay-in-kind will be included in personal income. This imputation is an estimate of the value of the food, lodging, clothing, and other goods and services that are received by employees from their employers as partial or full payment for their services.

The imputation for employer-paid health and life insurance premiums is included in employer contributions for employee pension and insurance funds, a component of supplements to wages and salaries.

The imputed value of food and fuel produced and consumed on farms is included in farm proprietors' income so that that measure reflects the income from all of the production of noncorporate farms.

The imputed net rental value of owner-occupied housing is included in the rental income of persons. The imputation assumes that the owner-occupants are

[4] See table 7.12, "Imputations in the National Income and Product Accounts," *Survey of Current Business* 84 (February 2004): 24-5.

in the rental business and that they are renting the houses in which they live to themselves: As tenants, they pay rent to the landlords (that is, to themselves); as landlords, they collect rent from their tenants (that is, from themselves), they incur expenses, and they may have a profit or a loss from the rental business.

The imputed net margin on owner-built housing is included in proprietors' income, classified in the construction industry. It represents the net income of individuals from the management of the construction or renovation of their own dwellings and is included in the measure of the output of structures.

The imputed value of depositor services furnished without payment by financial intermediaries except life insurance carriers is included in personal interest income. The value of depositor services is received by persons from depository institutions, that is, from commercial banks, mutual savings banks, savings and loan associations, credit unions, and regulated investment companies. It is an estimate of the value of the services (such as checking and record keeping) that these institutions provide to persons without an explicit charge.[5]

The premium supplement for property and casualty insurance is the imputed value of financial protection and intermediation services insurance companies provide to policyholders.[6] It is included in personal interest income.

Also included in personal interest income is the imputed interest received from life insurance carriers. It consists of the property income earned on life insurance and pension reserves. This income is attributed to policyholders in order to include it in personal saving, rather than in business saving, and when the income is earned, rather than when it is distributed.

Industrial classification

For the private sector the North American Industry Classification System (NAICS) is used for the industrial classification of wage and salary disbursements, employer contributions for employee pension and insurance funds, and proprietors' income. NAICS is used for 2001 to the present at the state level and from 2000 to the present at the county level.[7]

For earlier years the Standard Industrial Classification (SIC) was used. The *Standard Industrial Classification Manual, 1967* was used for the years 1969-74, the 1972 *Manual* was used for the years 1975-87, and the 1987 *Manual* was used for 1988-2001 for states and 1988-2000 for counties.[8]

For the public sector, the estimates of wages and salaries and employer contributions for employee pension and insurance funds are classified by level of

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[5] See "Measuring the Services of Commercial Banks in the NIPAs," *Survey* 83 (September 2003):33-44.

[6] See "Measuring the Services of Property-Casualty Insurance in the NIPAs," *Survey* 83 (October 2003): 10-26.

[7] Office of Management and Budget: *North American Industry Classification System, United States, 2002* (Lanham, MD: Bernan Press, 2002)

[8] Executive Office of the President, Office of Management and Budget, Statistical Policy Division, *Standard Industrial Classification Manual, 1967* (Washington, DC: U.S. Government Printing Office (GPO), 1967); *Manual, 1972* (GPO, 1972); *Manual, 1987* (GPO, 1987).

government—Federal, state, and local. The estimates for the Federal government are subclassified into civilian and military.

Interpolation and extrapolation

Interpolation and extrapolation are used to prepare the first approximations of some components of personal income for the years in which direct source data are unavailable. Both procedures use the data for these components for benchmark years—the years for which the best data are available—and both frequently use other data that are related to the benchmark-year data for the components.

Interpolation is used to derive the first approximation of estimates for years that are between benchmark years. For example, if data for wages and salaries for an industry were available only from the decennial censuses of population but employment data were available annually from another source, the first approximations of wages and salaries for 1981-89 could be interpolated from the wages and salaries data for 1980 and 1990, the two census benchmark years, and from the employment data for 1980-90.

Extrapolation is used to derive first approximations for years that are beyond the most recent benchmark year. For example, the first approximations of wages for 1991-99 might be extrapolated from the census benchmark data for 1990 and from the employment data for 1990-99. The estimates based on extrapolation are usually superseded by revised estimates when benchmark data become available for a more current year. For the preceding example, the estimates for 1991-99 would be superseded by estimates based on interpolation when census benchmark data became available for 2000.

Both interpolation and extrapolation are illustrated in the following examples. In the first two examples, interpolation is used to derive the first approximations of wages and salaries for an industry in areas A, B, and C for the years 2 and 3 that are between the benchmark years 1 and 4. In the third example, extrapolation is used to derive the approximations for year 5.

In the first example, "straight-line interpolation" is used to derive the first approximations for years 2 and 3 from the data for benchmark years 1 and 4.[9] The first approximations for year 2 equals the amount for year 1 plus one-third of the increase from year 1 to year 4; the preliminary estimate for year 3 equals the amount for year 1 plus two-thirds of the increase.

Wages and salaries in thousands of dollars

	Year 1 (benchmark)	Year 2 (interpolation)	Year 3 (interpolation)	Year 4 (benchmark)
Area A	28	34	40	46

[9] Straight-line interpolation assumes that the magnitude of the annual change is the same in each year in the interpolated time series, subject to modification by the adjustment to the national control totals. Straight-line interpolation is used as the default option, when no annual source data related to the income series are available.

Area B	34	43	53	62
Area C	74	81	87	94

In the second example, interpolation with a related series of data, the indicator series, is used to derive the first approximations for years 2 and 3 from the benchmark data for years 1 and 4 and from the indicator series for all four years. The data for wages and salaries are the benchmark data, the employment data are the indicator series, and the average wages (computed as wages and salaries divided by employment) are the interpolation ratios.[10] This method of interpolation is illustrated in three steps.

First, average wages for years 1 and 4 are calculated from the wage and employment data for those years. Wages for each year are divided by the number of employees for the year to yield the average wages of the employees.

Employment and average wages

	Year 1		Year 4	
	Employment	Average Wages in dollars	Employment	Average wages in dollars
Area A	4	7,000	4	11,500
Area B	6	5,667	10	6,200
Area C	11	6,727	10	9,400

Second, straight-line interpolation is used to derive average wages for years 2 and 3 from average wages for years 1 and 4.

Average wages in dollars

	Year 1 (benchmark)	Year 2 (interpolation)	Year 3 (interpolation)	Year 4 (benchmark)
Area A	7,000	8,500	10,000	11,500
Area B	5,667	5,845	6,022	6,200
Area C	6,727	7,618	8,509	9,400

Third, the interpolated average wages for each year are multiplied by the employment data for each year to yield the first approximations.

[10] Using an indicator series for interpolation between two benchmark years assumes that any change in the relationship between the data for the income component for the benchmark years and the data from the indicator series for the benchmark years occurs uniformly over time. This relationship is embodied in the interpolation ratios, which in this example are the average wages. For this procedure, straight-line interpolation of the benchmark-year interpolation ratios is used to calculate the ratios for the intervening years. A benchmark-year interpolation ratio is the ratio of the datum for an income component for the benchmark year to the datum for the same year from the annual indicator series. The interpolation ratios for the intervening years are multiplied by the data for those years from the indicator series to yield the interpolated series for those years.

DCN:11697

Employment and wage approximations

	Year 2		Year 3	
	Employment	Wages in thousands of dollars	Employment	Wages in thousands of dollars
Area A	5	43	4	40
Area B	7	41	9	54
Area C.....	10	76	9	77

In the third example, extrapolation with an indicator series is used to derive the first approximations of wages for year 5 from average wages for year 4—used here as the extrapolation ratios—and employment data for year 5.[11] The average wages are multiplied by employment to yield the first approximations of wages for year 5.

First approximations of wages for year 5

	Year 4	Year 5	
	Average Wages in dollars	Employment	Wages in thousands of dollars
Area A.....	11,500	5	58
Area B.....	6,200	12	74
Area C.....	9,400	9	85

After interpolation or extrapolation is used to calculate the first approximations of a component of personal income, the approximations are adjusted proportionately to sum to the component's control total.

Per capita personal income

Per capita personal income is calculated as the personal income of the residents of a given area divided by the resident population of that area. In computing per capita personal income for states and counties, BEA uses the Census Bureau's annual midyear population estimates. Except for college student and other seasonal populations, which are measured on April 1, the population for all years is estimated on July 1.

Local area per capita personal income estimates should be used with caution for several reasons. In some instances, an unusually high or low per capita personal income is the temporary result of unusual conditions, such as a bumper crop or hurricane. In other instances, the income levels of certain groups atypical of the resident population may cause a longer term high or low per capita

[11] Using an indicator series for extrapolation assumes that the relationship between the data for the income component for the latest benchmark year and the data from the indicator series for that year remains unchanged in the subsequent years.

DCN:11697

personal income that is not indicative of the economic well-being of the area. For instance, a major construction project—such as a defense facility, power plant, or dam—may substantially raise the per capita personal income of an area for several years because it attracts highly paid workers whose income is measured at the construction site. This high per capita income is not indicative of the economic well-being of the permanent residents of the area (or, in many cases, of the resident construction workers themselves, because they frequently send a substantial portion of their wages to their dependents living in other areas).

Conversely, the presence of a large institutional population—such as that of a college or a prison—will tend to keep the per capita personal income of an area at a lower level because the residents of these institutions have little income attributable to them at these institutions. This lower per capita personal income is not indicative of the economic well—being of the other residents of the area (or, in some cases, of the institutional populations, because some of these populations, such as college students, typically receive support from their families living in other areas).

The per capita personal income estimates can also be misleading in areas where population changes rapidly. Population is measured at midyear, whereas income is measured as a flow over the year; therefore, a significant change in the population of an area during the year, particularly if it occurs around midyear, can cause a distortion in the per capita personal income estimates.

In counties where farm income predominates, additional considerations should be taken into account. Farm proprietors' income as measured for personal income reflects returns from current production; it does not measure current cash flows. Sales out of inventories are included in current gross farm income, but they are excluded from net farm income because they represent income from a previous year's production. Additions to inventories are included in net farm income at current market prices; therefore, farmers' attempts to regulate their cash flows by adjusting inventories are not reflected in BEA's farm proprietors' income estimates. However, this regulation of cash flows by farmers extends their earnings cycles, so it helps them to survive losses or lowered income for 2 or 3 years. In addition, the per capita personal income of sparsely populated counties that are dependent on farming will react more sharply to vagarious weather, world market demand, and changing government policies related to agriculture than that of counties where the sources of income are more diversified.

Personal income, adjusted gross income, and money income

The measure of personal income that is prepared by BEA differs substantially from adjusted gross income (AGI), which is the principal measure of the income of individuals that is tabulated by the Internal Revenue Service. Personal income also differs from money income, which is prepared by the Census Bureau.

As compared with AGI, personal income consists of the income of nonprofit institutions serving individuals, private noninsured welfare funds, and

DCN:11697

private trust funds as well as of individuals, whereas AGI consists only of the income of individuals who file individual income tax returns. Personal income also includes employer contributions to private health and pension funds and to government employee retirement plans, several types of imputed incomes, transfer payments, and all of the interest received by individuals, whereas AGI excludes all employer contributions, imputed incomes, most transfer payments, and the nontaxable interest received by individuals. Personal income, unlike AGI, excludes personal contributions for social insurance, realized capital gains and losses, and pensions and annuities from private and government employee retirement plans.[12]

Personal income differs from money income mainly because money income consists only of the income that is received by individuals in cash and its equivalents. Personal income, unlike money income, includes imputed income, lump-sum payments not received as part of earnings, certain in-kind personal current transfer receipts—such as Medicaid, Medicare, and food stamps—and employer contributions to private health and pension funds and to government employee retirement plans. Personal income, unlike money income, excludes personal contributions for social insurance, pensions and annuities from private and government employee retirement plans, and income from interpersonal transfers, such as child support.

Personal income for a given area and year includes the income received by individuals living in that area during that year. In contrast, money income for a given area and year consists of the income received during the year by individuals living in the area on April 1 of the following year, regardless of where they were living when they received the income. The income received by individuals who died or moved abroad before April 1 of the following year is not included in the money income of any area.

Personal income is prepared quarterly for states and annually for counties, whereas money income for states, counties, and cities is prepared decennially on the basis of data from the "long-form" sample of the census of population.[13]

[12] For more information, see Mark A. Ledbetter, "Comparison of BEA Estimates of Personal Income and IRS Estimates of Adjusted Gross Income," *Survey* 84 (April 2004): 8-22.

[13] The Small Area Income and Poverty Estimates program of the Census Bureau has prepared post-censal estimates of median household income for counties. In addition, the Census Bureau prepares estimates of median household income for states using data from the annual Current Population Survey.

DCN:11697

XIII. GLOSSARY

Allocation procedures.—Allocation procedures are used in the estimation of state and county personal income, because the available state and county data for many of the components of personal income may not be as comprehensive or as reliable as the national data. A national estimate of a component is allocated to states in proportion to their ' shares of an economic, or allocating, series that is a measure of the component or that is related to the component that is being allocated; the state estimates are then allocated to counties. For example, the national estimate of personal dividend income received by individuals is allocated to states—and the state estimates are allocated to counties—in proportion to dividends reported by individuals on their Federal income tax returns. *See also "Allocation procedures" in Chapter II Sources and Methods.*

Annual rates.—The quarterly estimates of state personal income are presented at annual rates, which show the value that would be registered if the seasonally adjusted rate of activity measured for a quarter were maintained for a full year. Annual rates are used so that periods of different lengths—for example, quarters and years—may be easily compared. *See also* ***Seasonal adjustment.***

BEA economic areas.—A set of geographic areas, defined in terms of counties, that exhaust the area of the Nation. Each of the BEA economic areas consists of one or more economic nodes—metropolitan or micropolitan statistical areas that serve as regional centers of economic activity—and the surrounding counties that are economically related to the node.[1] *See also* ***Geographic areas.***

Capital consumption adjustment (CCAdj).—The CCAdj is the difference between private consumption of fixed capital (CFC) and private capital consumption allowances. Private CFC is a charge for the using up of private fixed capital. It is based on studies of prices of used equipment and structures in resale markets.[2] Private capital consumption allowances consists of tax-return-based depreciation charges for corporations and nonfarm proprietorships and of historical-cost depreciation, calculated by BEA, for farm proprietorships, rental income of persons, and nonprofit institutions. In personal income, CFC is used in the estimation of proprietors' income—both farm and nonfarm—and rental income of persons.

Compensation.—As a component of personal income, compensation is the sum of wage and salary disbursements and supplements to wages and salaries; as a component of Gross State Product, compensation is the sum of

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[1] For a description of the economic areas and the methodology used to define them, see Kenneth P. Johnson and John R. Kort, "2004 Redefinition of the BEA Economic Areas," *Survey of Current Business* 84 (November 2004): 68-75. This article and a list of the economic areas and their constituent counties and county equivalents are available on BEA's Web site at http://www.bea.gov.

[2] For further information, see Arnold J. Katz and Shelby W. Herman, "Improved Estimates of Fixed Reproducible Tangible Wealth," *Survey* 77 (May 1997): 69-92; and Barbara M. Fraumeni, "The Measurement of Depreciation in the U.S. National Income and Product Accounts," *Survey* 77 (July 1997): 7-23.

DCN:11697

wage and salary accruals and supplements to wages and salaries. The difference between disbursements and accruals is typically very small.

Corporate business.—Corporate business consists of entities required to file Federal corporate tax returns (Internal Revenue Service (IRS) form 1120 series) and the following entities: Mutual financial institutions and cooperatives subject to Federal income tax, private noninsured pension funds, nonprofit organizations that primarily serve businesses, Federal Reserve banks, and federally sponsored credit agencies. *See also* ***Sectors and legal form of organization.***

County.—Counties consist of counties and county equivalents, such as the parishes of Louisiana, the boroughs and census areas of Alaska, the independent cities of Maryland, Missouri, Nevada, and Virginia, and the District of Columbia. The estimates for Kalawao County, Hawaii and the small independent cities of Virginia—generally those with fewer than 100,000 residents—are combined with those for adjacent counties. *See also* ***Geographic areas.***

County equivalents.—*See* ***County.***

Disclosure-avoidance procedures.—*See "Disclosure-avoidance procedures" in Chapter XII Technical Notes.*

Disposable personal income.—Disposable personal income is personal income less personal current taxes. It is personal income that is available for spending and saving. *See also* ***Personal income*** *and* ***Personal current taxes.***

Dual allocation.—*See "Dual allocation" in Chapter XII Technical Notes.*

Earnings.—Earnings is the sum of three components of personal income—wage and salary disbursements, supplements to wages and salaries, and proprietors' income. Net earnings is calculated as earnings less contributions for government social insurance plus an adjustment to convert it from a place of work to a place of residence basis. *See also* ***Net labor earnings.***

Employment.—The BEA employment series for states and local areas comprises estimates of the number of jobs, full-time plus part-time, by place of work. Full-time and part-time jobs are counted at equal weight. Employees, sole proprietors, and general partners are included, but unpaid family workers and volunteers are not included. *See also "Employment" in Chapter XII Technical Notes.*

Employer contributions for employee pension and insurance funds.—This component of personal income consists of employer payments to private and government employee retirement plans, private group health and life insurance plans, privately administered workers' compensation plans, and supplemental unemployment benefit plans. It was formerly called other labor income.

Employer contributions for government social insurance.—These contributions, which are subtracted in the calculation of personal income as part of contributions for government social insurance, consist of employer payments under the following Federal and state and local government programs: Old-age, survivors, and disability insurance (OASDI); hospital insurance (HI); unemployment insurance; railroad retirement; pension benefit guaranty; veterans

DCN:11697

life insurance; publicly-administered workers' compensation; military medical insurance; and temporary disability insurance. These contributions are excluded from personal income by definition, but as part of supplements to wages and salaries, are included in earnings by place of work.

ES-202.—The reporting form used by the Quarterly Census of Employment and Wages (QCEW). *See also* ***Quarterly Census of Employment and Wages.***

Extrapolation.—*See "Interpolation and extrapolation" in Chapter XII Technical Notes.*

Farm income.—Farm income is the sum of wage and salary disbursements, employer contributions for employee pension and insurance funds, and proprietors' income in the farm industry (crop production and animal production only—NAICS subsectors 111 and 112). It comprises the net income of sole proprietors, partners, and hired laborers arising directly from the current production of agricultural commodities, both livestock and crops, and specifically excludes the income of non-family farm corporations.

Fiduciary.—Fiduciaries are individuals or legal entities that serve as administrators or trustees of private trust funds (including estates) and are classified as persons in the NIPAs. A fiduciary is required to report the income that the private trust fund receives on behalf of the beneficiaries of the estate or trust to the Internal Revenue Service.

Geographic areas.—The estimates of personal income are prepared for the following geographic areas: counties, metropolitan areas, micropolitan areas, BEA Economic Areas, states, and regions.—*See also* ***County, Metropolitan areas, BEA Economic Areas,*** *and* ***Regions.***

Government enterprise.—Government enterprises are government agencies that cover a substantial portion of their operating costs by selling goods and services to the public and that maintain separate accounts. *See also* ***Sectors and legal form of organization.***

Income subject to adjustment.—*See* ***Net Labor earnings.***

Imputation.—An imputation constructs a transaction or places a market value on a transaction so that the measurement of personal income and its components is invariant to how certain activities are carried out. *See also "Imputation" in Chapter XII Technical Notes.*

Interpolation.—*See "Interpolation and extrapolation" in Chapter XII Technical Notes.*

Inventory valuation adjustment (IVA).—The inventory valuation adjustment is made in the estimation of nonfarm proprietors' income to reflect the difference between the cost of inventory withdrawals as valued in the source data used to determine profits and the cost of withdrawals valued at replacement cost. It is needed because inventories as reported in the source data are often charged to cost of sales (that is, withdrawn) at their acquisition (historical) cost rather than at their replacement cost (the concept underlying the NIPAs). As prices change, companies that value inventory withdrawals at acquisition cost may realize profits or losses. Inventory profits, a capital-gains-like element in profits, result from an increase in inventory prices, and inventory losses, a

DCN:11697

capital-loss-like element in profits, result from a decrease in inventory prices. Inventory profits or losses equal the IVA with the sign reversed. No adjustment is needed to farm proprietors' income because inventories reported in the source data are measured on a current-market basis that approximates current replacement cost.

Investment income.—Investment income is another name for income received in the form of dividends, interest, and rents.

Local areas.—Local areas consist of counties, metropolitan areas, micropolitan areas and BEA economic areas. *See also* ***Geographic areas.***

Metropolitan areas.—Metropolitan areas are defined for Federal statistical purposes by the Office of Management and Budget.[3] In New England metropolitan areas are defined in terms of both cities and towns and in terms of counties. BEA uses the county-based definitions. Metropolitan areas consist of metropolitan statistical areas, metropolitan divisions, and combined statistical areas. *See also* ***Geographic areas.***

Net earnings.—Net earnings is earnings less contributions for government social insurance plus an adjustment to convert it from a place of work to a place of residence basis. *See also* ***Earnings.***

Net labor earnings.—Net labor earnings is the sum of wage and salary disbursements and supplements to wages and salaries less contributions for government social insurance. This measure and a slightly modified version—termed "income subject to adjustment"—are used in the residence adjustment procedure for both the annual and the quarterly estimates of state personal income and for the annual county estimates. *See also* ***Earnings.***

North American Industry Classification System (NAICS).—NAICS is an industry classification system that classifies economic units that have similar production processes in the same industry. This is a supply-based or production-oriented economic concept. Statistics Canada, Mexico's Instituto Nacional de Estadistica Geografia e Informatica (INEGI), and the Economic Classification Policy Committee (ECPC) of the United States, acting on behalf of the Office of Management and Budget, created a common classification system that replaced the existing classification of each country, the Standard Industrial Classification (1980) of Canada, the Mexican Classification of Activities and Products (1994), and the Standard Industrial Classification (1987) of the United States. NAICS is used in the presentation of state and local area estimates of earnings and employment by industry from the year 2001 forward. It is used by BEA for the estimates of the private sector only, although it is designed to cover both public and private earnings and employment activities. *See also* ***Standard Industrial Classification.***

Other labor income.—*See* ***Employer contributions for employee pension and insurance funds.***

Other private business.—Other private business consists of tax-exempt cooperatives and all entities that are required to report rental and royalty income

[3] The list of the metropolitan areas and their constituent counties and county equivalents is available on BEA's Web site at http://www.bea.gov.

DCN:11697

on IRS Schedule E (Supplemental Income and Loss). *See also* ***Sectors and legal form of organization.***

Partnership.—A partnership is an unincorporated business association of two or more partners. *See also* ***Sectors and legal form of organization.***

Pay-in-kind.—Pay-in-kind is an imputed component of wage and salary disbursements. The estimates of pay-in-kind reflect the value of the food, lodging, clothing, and miscellaneous goods and services that are received by employees from their employers as full or partial payment for services performed. *See also "Imputation" in Chapter XII Technical Notes.*

Per capita personal income.—This measure of income is calculated as the total personal income of the residents of an area divided by the population of the area. Per capita personal income is often used as an indicator of the character of consumer markets and of the economic well-being of the residents of an area. *See also "Per capita personal income" in Chapter XII Technical Notes.*

Personal contributions for government social insurance.—These contributions, which are subtracted in the calculation of personal income, consist of the contributions, or payments, by employees, by the self-employed, and by other individuals who participate in the following government programs: Old-age, survivors, and disability insurance (social security); hospital insurance (Medicare Part A); supplementary medical insurance (Medicare Part B); unemployment insurance; railroad retirement; veterans life insurance; and temporary disability insurance. These contributions are excluded from personal income by definition, but the components of personal income upon which these contributions are based—mainly wage and salary disbursements and proprietors' income—are presented gross of these contributions. *See also* ***Earnings, Net labor earnings,*** *and* ***Personal income.***

Personal current taxes.—Personal current taxes are tax payments (net of refunds) by persons that are not chargeable to business expense and certain other payments that are made by persons to government agencies (except government enterprises) that are treated like taxes. Personal taxes includes taxes on income, including realized net capital gains, and on personal property.[4] Contributions for government social insurance are not included. Personal current taxes are used in the derivation of disposable personal income, which is calculated as personal income less personal current taxes.

Personal current transfer receipts.—These receipts (formerly called transfer payments) are benefits received by persons for which no current services are performed. It consists of benefits received by individuals and by nonprofit institutions from Federal, state, and local governments and from businesses. Benefits received by individuals from government include retirement and disability insurance benefits, medical benefits (mainly Medicare and Medicaid), income maintenance benefits, unemployment insurance benefits,

[4] Personal current taxes exclude payments of both real estate taxes and sales taxes. Real estate taxes are excluded because, in the calculation of the imputed rental income of owner-occupied housing, they are considered business expenses. Sales taxes are included in the selling price of the commodity and are treated as being paid by the seller.

DCN:11697

veterans benefits, and Federal grants and loans to students. Benefits received by nonprofit institutions from government exclude payments by the Federal Government for work under research and development contracts. Benefits received by persons from business consist primarily of compensation for personal injury and of corporate gifts to nonprofit institutions.

Personal dividend income.—This component of personal income consists of the payments in cash or other assets, excluding the corporation's own stock, made by corporations located in the United States or abroad to persons who are U.S. residents. It excludes that portion of dividends paid by regulated investment companies (mutual funds) related to capital gains distributions.

Personal income.—Personal income is the income that is received by persons from participation in production plus government and business transfer payments, and government interest (which is treated like a transfer payment). It is calculated as the sum of wage and salary disbursements, supplements to wages and salaries, proprietors' income with inventory valuation and capital consumption adjustments, rental income of persons with capital consumption adjustment, personal dividend income, personal interest income, and personal current transfer receipts, less contributions for government social insurance. The personal income of an area is the income that is received by, or on behalf of, all the individuals who live in the area; therefore, the estimates of personal income are presented by the place of residence of the income recipients. *See also* ***Earnings; Net labor earnings; Supplements to wages and salaries; Employer contributions for government social insurance; Personal contributions for government social insurance; Personal dividend income; Personal interest income; Persons; Proprietors' income; Rental income of persons; Residence adjustment; Residence, place of; Personal current transfer receipts;*** *and* ***Wage and salary disbursements.***

Personal interest income.—This component of personal income is the interest income (monetary and imputed) of persons from all sources.

Persons.—Persons consist of individuals and quasi-individuals that serve individuals or that act on behalf of individuals. Quasi-individuals consist of nonprofit institutions that primarily serve individuals, private noninsured welfare funds, and private trust funds.

Property income.—Property income is another name for income received in the form of dividends, interest, and rents.

Proprietors' income with inventory valuation and capital consumption adjustments.—This component of personal income is the current-production income (including income in kind) of sole proprietorships, partnerships, and tax-exempt cooperatives. Corporate directors' fees are included in proprietors' income. Proprietors' income excludes dividends and monetary interest received by nonfinancial business and rental income received by persons not primarily engaged in the real estate business; these incomes are included in dividends, net interest, and rental income of persons, respectively. *See also* ***Capital consumption adjustment*** *and* ***Inventory valuation adjustment.***

DCN:11697

Quarterly Census of Employment and Wages (QCEW).—The QCEW is data from the administration of the state unemployment insurance system. It originates from employers' quarterly contributions reports filed on form ES 202 with the state employment security agencies. The data, which are provided to BEA by the Bureau of Labor Statistics, include quarterly number of establishments, wage and salary disbursements and monthly employment by county and industry. *See also* ***ES-202*** *and* ***Wage and salary disbursements.***

Quasi-individuals.—Quasi-individuals consist of nonprofit institutions that primarily serve individuals, private noninsured welfare funds, and private trust funds. *See also* ***Persons.***

Regions.—BEA developed a regional classification of the states and the District of Columbia in the mid-1950's. The eight regional classifications, Far West, Great Lakes, Mideast, New England, Plains, Rocky Mountain, Southeast, and Southwest, are based on the homogeneity of the states in terms of economic characteristics, such as the industrial composition of the labor force, and in terms of demographic, social, and cultural characteristics.[5] *See* ***Geographic areas.***

Rental income of persons with capital consumption adjustment.—This component of personal income is the net income of persons from the rental of real property except for the income of persons primarily engaged in the real estate business, the imputed net rental income of owner-occupied housing, and the royalties received by persons from patents, copyrights, and rights to natural resources. *See also* ***Capital consumption adjustment*** *and* ***Proprietors' income.***

Residence adjustment.—The residence adjustment is the net flow of net labor earnings of interarea commuters. The state and county estimates of personal income are presented by the state and county of residence of the income recipients. However, the source data for most of the components of wage and salary disbursements, supplements to wages and salaries, and contributions for government social insurance are on a place-of-work basis. Consequently, a residence adjustment is made to convert the estimates based on these source data to a place-of-residence basis.[6] *See also* ***Net labor earnings*** *and "Geographic characteristics of the source data" in Chapter II Sources and Methods.*

Residence, place of.—The place of residence of an individual is the state and county in which he or she lives. The residence of military personnel is the state and county in which they live while they are on military assignment, not their permanent or legal state and county of residence. The residence of seasonal migrant workers, except those working in Alaska, is the state and county in which they live while they are working; this may differ from the usual

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[5] For a brief description of the regional classification of states used by BEA, see U.S. Department of Commerce, Bureau of the Census, *Geographic Areas Reference Manual*, Washington, DC, U.S. Government Printing Office, November 1994, pp. 6-18—6-19. A list of the regions and their constituent states is available on BEA's Web site at http://www.bea.gov.

[6] In the tables on this disc, each of the components of net labor earnings—wage and salary disbursements, supplements to wages and salaries, and contributions for government social insurance—is presented by place of work. The residence adjustment is estimated for net labor earnings, and that statistic is presented by place of residence.

DCN:11697

state and county of residence they report on the decennial census of population. *See also* ***Personal income, Persons,*** *and* ***Residence adjustment.***

Seasonal adjustment.—The quarterly estimates of state personal income are adjusted, where appropriate, to remove from the time series of the source data the average effect of variations that normally occur at about the same time and in about the same magnitude each year—for example, weather and holidays. After seasonal adjustment, cyclical and other short-term changes in the economy stand out more clearly. For the income components for which no state-level quarterly source data are available, the quarterly series are estimated from the trend in the annual state estimates, and the resulting estimates are on a seasonally adjusted basis. *See also* ***Annual rates.***

Sectors and legal form of organization.—In the national income and product accounts (NIPAs), gross domestic product and other major aggregates are presented in terms of three economic sectors: Business, households and institutions, and general government. Businesses are classified into five categories, generally according to legal form of organization: Corporations, sole proprietorships, partnerships, other private business, and government enterprises. **Corporate business** consists of entities required to file Federal corporate tax returns (IRS form 1120 series) and the following entities: Mutual financial institutions and cooperatives subject to Federal income tax, private noninsured pension funds, nonprofit organizations that primarily serve businesses, Federal Reserve banks, and federally sponsored credit agencies. **Sole proprietorships** are all entities that are required to file IRS Schedule C (Profit or Loss from Business) or Schedule F (Farm Income and Expenses).[7] **Partnerships** are all entities required to file Federal partnership income tax returns, IRS Form 1065 (U.S. Partnership Return of Income). **Other private business** consists of tax-exempt cooperatives and all entities that are required to report rental and royalty income on IRS Schedule E (Supplemental Income and Loss)and.[8] **Government enterprises** are government agencies that cover a substantial portion of their operating costs by selling goods and services to the public and that maintain separate accounts.[9]

Sole proprietorship.—A sole proprietorship is an unincorporated business owned by a person. *See also* ***Sectors and legal form of organization*** *and* ***Proprietors' income.***

Standard Industrial Classification (SIC).—The SIC is an establishment-industry classification system that was prepared by the Office of Management and Budget for use by all federal statistical agencies.[10] The SIC is used in the

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[7] Also included in sole proprietorships are similar entities operated by individuals who do not meet the reporting requirements.

[8] Also included in other private business are entities with rental and royalty income whose individual owners who do not meet the reporting requirements.

[9] For further information, see U.S. Department of Commerce, Bureau of Economic Analysis, *Methodology Paper Series MP-5, Government Transactions* (Washington, DC: U.S. Government Printing Office, November 1988). This publication is available on BEA's Internet site: Go to www.bea.gov and select "Methodologies."

[10] See Executive Office of the President, Office of Management and Budget, *Standard Industrial Classification Manual, 1997*, National Technical Information Service order no. PB 87-100012. The Manual

DCN:11697

DCN:11697

presentation of the state and local area estimates of earnings by industry through 2001 for states and 2000 for counties. It is used by BEA for the estimates for the private sector only, although it is designed to cover both public and private economic activities. In the SIC, establishments are classified by the primary activity in which they are engaged, and each establishment is assigned an industry code.[11] *See also* ***North American Industry Classification System.***

Supplements to wages and salaries.—This component of personal income consists of employer contributions for government social insurance and employer contributions for employee pension and insurance funds.

Tax-exempt cooperative.—A tax-exempt cooperative is a nonprofit business organization that is collectively owned by its members. Although tax-exempt cooperatives are incorporated, in the NIPAs these institutions are classified in the other private business sector, and their income is classified as part of proprietors' income. *See also* ***Sectors and legal form of organization.***

Transfer payments.—*See* ***Personal current transfer receipts.***

Wage and salary disbursements.—Wage and salary disbursements consists of the monetary remuneration of employees, including the compensation of corporate officers; commissions, tips, and bonuses; and receipts in kind, or pay-in-kind, such as the meals furnished to the employees of restaurants. It reflects the amount of wages and salaries disbursed, but not necessarily earned, during the year. This component is measured before deductions, such as social security contributions, union dues, and voluntary employee contributions to certain deferred compensation plans, such as 401(k) plans,. *See also* ***Earnings, Net labor earnings, Pay-in-kind,*** *and* ***Supplements to wages and salaries.***

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is available on the Web site of the Occupational Safety and Health Administration: Go to www.osha.gov/oshstats/sicser.html.

[11] Establishments, as defined in the SIC, are economic units, generally at a single physical location, where business is conducted or where services or industrial operations are performed.

DCN:11697

DCN:11697

Table DP-1. Profile of General Demographic Characteristics: 2000

Geographic area: Mountain Home city, Idaho

[For information on confidentiality protection, nonsampling error, and definitions, see text]

Subject	Number	Percent
Total population	**11,143**	**100.0**
SEX AND AGE		
Male	5,598	50.2
Female	5,545	49.8
Under 5 years	922	8.3
5 to 9 years	892	8.0
10 to 14 years	920	8.3
15 to 19 years	871	7.8
20 to 24 years	783	7.0
25 to 34 years	1,729	15.5
35 to 44 years	1,923	17.3
45 to 54 years	1,200	10.8
55 to 59 years	452	4.1
60 to 64 years	369	3.3
65 to 74 years	586	5.3
75 to 84 years	374	3.4
85 years and over	122	1.1
Median age (years)	31.7	(X)
18 years and over	7,845	70.4
Male	3,912	35.1
Female	3,933	35.3
21 years and over	7,418	66.6
62 years and over	1,299	11.7
65 years and over	1,082	9.7
Male	458	4.1
Female	624	5.6
RACE		
One race	10,797	96.9
White	9,794	87.9
Black or African American	291	2.6
American Indian and Alaska Native	105	0.9
Asian	193	1.7
Asian Indian	10	0.1
Chinese	15	0.1
Filipino	77	0.7
Japanese	19	0.2
Korean	36	0.3
Vietnamese	6	0.1
Other Asian [1]	30	0.3
Native Hawaiian and Other Pacific Islander	34	0.3
Native Hawaiian	15	0.1
Guamanian or Chamorro	15	0.1
Samoan	-	-
Other Pacific Islander [2]	4	-
Some other race	380	3.4
Two or more races	346	3.1
Race alone or in combination with one or more other races: [3]		
White	10,107	90.7
Black or African American	350	3.1
American Indian and Alaska Native	217	1.9
Asian	289	2.6
Native Hawaiian and Other Pacific Islander	65	0.6
Some other race	485	4.4

Subject	Number	Percent
HISPANIC OR LATINO AND RACE		
Total population	**11,143**	**100.0**
Hispanic or Latino (of any race)	928	8.3
Mexican	628	5.6
Puerto Rican	62	0.6
Cuban	15	0.1
Other Hispanic or Latino	223	2.0
Not Hispanic or Latino	10,215	91.7
White alone	9,320	83.6
RELATIONSHIP		
Total population	**11,143**	**100.0**
In households	11,022	98.9
Householder	4,337	38.9
Spouse	2,417	21.7
Child	3,496	31.4
Own child under 18 years	3,079	27.6
Other relatives	320	2.9
Under 18 years	159	1.4
Nonrelatives	452	4.1
Unmarried partner	177	1.6
In group quarters	121	1.1
Institutionalized population	71	0.6
Noninstitutionalized population	50	0.4
HOUSEHOLD BY TYPE		
Total households	**4,337**	**100.0**
Family households (families)	2,956	68.2
With own children under 18 years	1,596	36.8
Married-couple family	2,417	55.7
With own children under 18 years	1,194	27.5
Female householder, no husband present	390	9.0
With own children under 18 years	293	6.8
Nonfamily households	1,381	31.8
Householder living alone	1,153	26.6
Householder 65 years and over	323	7.4
Households with individuals under 18 years	1,695	39.1
Households with individuals 65 years and over	745	17.2
Average household size	2.54	(X)
Average family size	3.11	(X)
HOUSING OCCUPANCY		
Total housing units	**4,738**	**100.0**
Occupied housing units	4,337	91.5
Vacant housing units	401	8.5
For seasonal, recreational, or occasional use	17	0.4
Homeowner vacancy rate (percent)	2.8	(X)
Rental vacancy rate (percent)	12.8	(X)
HOUSING TENURE		
Occupied housing units	**4,337**	**100.0**
Owner-occupied housing units	2,889	66.6
Renter-occupied housing units	1,448	33.4
Average household size of owner-occupied units	2.71	(X)
Average household size of renter-occupied units	2.20	(X)

- Represents zero or rounds to zero. (X) Not applicable.

[1] Other Asian alone, or two or more Asian categories.

[2] Other Pacific Islander alone, or two or more Native Hawaiian and Other Pacific Islander categories.

[3] In combination with one or more of the other races listed. The six numbers may add to more than the total population and the six percentages may add to more than 100 percent because individuals may report more than one race.

Source: U.S. Census Bureau, Census 2000.

Table DP-2. Profile of Selected Social Characteristics: 2000

Geographic area: Mountain Home city, Idaho

[Data based on a sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see text]

Subject	Number	Percent
SCHOOL ENROLLMENT		
Population 3 years and over enrolled in school	**3,399**	**100.0**
Nursery school, preschool	311	9.1
Kindergarten	168	4.9
Elementary school (grades 1-8)	1,580	46.5
High school (grades 9-12)	697	20.5
College or graduate school	643	18.9
EDUCATIONAL ATTAINMENT		
Population 25 years and over	**6,832**	**100.0**
Less than 9th grade	273	4.0
9th to 12th grade, no diploma	526	7.7
High school graduate (includes equivalency)	1,950	28.5
Some college, no degree	2,101	30.8
Associate degree	665	9.7
Bachelor's degree	848	12.4
Graduate or professional degree	469	6.9
Percent high school graduate or higher	88.3	(X)
Percent bachelor's degree or higher	19.3	(X)
MARITAL STATUS		
Population 15 years and over	**8,458**	**100.0**
Never married	1,751	20.7
Now married, except separated	5,131	60.7
Separated	186	2.2
Widowed	411	4.9
Female	322	3.8
Divorced	979	11.6
Female	543	6.4
GRANDPARENTS AS CAREGIVERS		
Grandparent living in household with one or more own grandchildren under 18 years	**139**	**100.0**
Grandparent responsible for grandchildren	55	39.6
VETERAN STATUS		
Civilian population 18 years and over	**6,772**	**100.0**
Civilian veterans	1,902	28.1
DISABILITY STATUS OF THE CIVILIAN NONINSTITUTIONALIZED POPULATION		
Population 5 to 20 years	**2,911**	**100.0**
With a disability	169	5.8
Population 21 to 64 years	**5,390**	**100.0**
With a disability	844	15.7
Percent employed	62.3	(X)
No disability	4,546	84.3
Percent employed	78.2	(X)
Population 65 years and over	**994**	**100.0**
With a disability	403	40.5
RESIDENCE IN 1995		
Population 5 years and over	**10,456**	**100.0**
Same house in 1995	3,726	35.6
Different house in the U.S. in 1995	5,923	56.6
Same county	2,166	20.7
Different county	3,757	35.9
Same state	972	9.3
Different state	2,785	26.6
Elsewhere in 1995	807	7.7

Subject	Number	Percent
NATIVITY AND PLACE OF BIRTH		
Total population	**11,458**	**100.0**
Native	10,646	92.9
Born in United States	10,075	87.9
State of residence	3,121	27.2
Different state	6,954	60.7
Born outside United States	571	5.0
Foreign born	812	7.1
Entered 1990 to March 2000	368	3.2
Naturalized citizen	301	2.6
Not a citizen	511	4.5
REGION OF BIRTH OF FOREIGN BORN		
Total (excluding born at sea)	**812**	**100.0**
Europe	244	30.0
Asia	138	17.0
Africa	-	-
Oceania	23	2.8
Latin America	338	41.6
Northern America	69	8.5
LANGUAGE SPOKEN AT HOME		
Population 5 years and over	**10,456**	**100.0**
English only	9,271	88.7
Language other than English	1,185	11.3
Speak English less than "very well"	475	4.5
Spanish	782	7.5
Speak English less than "very well"	311	3.0
Other Indo-European languages	189	1.8
Speak English less than "very well"	51	0.5
Asian and Pacific Island languages	140	1.3
Speak English less than "very well"	89	0.9
ANCESTRY (single or multiple)		
Total population	**11,458**	**100.0**
Total ancestries reported	*11,983*	*104.6*
Arab	18	0.2
Czech[1]	65	0.6
Danish	137	1.2
Dutch	255	2.2
English	1,700	14.8
French (except Basque)[1]	346	3.0
French Canadian[1]	134	1.2
German	2,130	18.6
Greek	19	0.2
Hungarian	47	0.4
Irish[1]	1,030	9.0
Italian	427	3.7
Lithuanian	32	0.3
Norwegian	414	3.6
Polish	158	1.4
Portuguese	30	0.3
Russian	31	0.3
Scotch-Irish	129	1.1
Scottish	301	2.6
Slovak	9	0.1
Subsaharan African	15	0.1
Swedish	301	2.6
Swiss	33	0.3
Ukrainian	39	0.3
United States or American	1,057	9.2
Welsh	99	0.9
West Indian (excluding Hispanic groups)	8	0.1
Other ancestries	3,019	26.3

-Represents zero or rounds to zero. (X) Not applicable.

[1]The data represent a combination of two ancestries shown separately in Summary File 3. Czech includes Czechoslovakian. French includes Alsatian. French Canadian includes Acadian/Cajun. Irish includes Celtic.

Source: U.S. Bureau of the Census, Census 2000.

Table DP-3. Profile of Selected Economic Characteristics: 2000

Geographic area: Mountain Home city, Idaho

[Data based on a sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see text]

Subject	Number	Percent
EMPLOYMENT STATUS		
Population 16 years and over	**8,198**	**100.0**
In labor force	5,973	72.9
Civilian labor force	4,849	59.1
Employed	4,560	55.6
Unemployed	289	3.5
Percent of civilian labor force	6.0	(X)
Armed Forces	1,124	13.7
Not in labor force	2,225	27.1
Females 16 years and over	**4,179**	**100.0**
In labor force	2,708	64.8
Civilian labor force	2,485	59.5
Employed	2,301	55.1
Own children under 6 years	**1,150**	**100.0**
All parents in family in labor force	695	60.4
COMMUTING TO WORK		
Workers 16 years and over	**5,609**	**100.0**
Car, truck, or van - - drove alone	4,392	78.3
Car, truck, or van - - carpooled	808	14.4
Public transportation (including taxicab)	16	0.3
Walked	167	3.0
Other means	128	2.3
Worked at home	98	1.7
Mean travel time to work (minutes)[1]	21.0	(X)
Employed civilian population 16 years and over	**4,560**	**100.0**
OCCUPATION		
Management, professional, and related occupations	1,326	29.1
Service occupations	991	21.7
Sales and office occupations	1,149	25.2
Farming, fishing, and forestry occupations	84	1.8
Construction, extraction, and maintenance occupations	434	9.5
Production, transportation, and material moving occupations	576	12.6
INDUSTRY		
Agriculture, forestry, fishing and hunting, and mining	106	2.3
Construction	235	5.2
Manufacturing	490	10.7
Wholesale trade	97	2.1
Retail trade	607	13.3
Transportation and warehousing, and utilities	280	6.1
Information	81	1.8
Finance, insurance, real estate, and rental and leasing	301	6.6
Professional, scientific, management, administrative, and waste management services	308	6.8
Educational, health and social services	957	21.0
Arts, entertainment, recreation, accommodation and food services	450	9.9
Other services (except public administration)	165	3.6
Public administration	483	10.6
CLASS OF WORKER		
Private wage and salary workers	3,023	66.3
Government workers	1,279	28.0
Self-employed workers in own not incorporated business	258	5.7
Unpaid family workers	-	-

Subject	Number	Percent
INCOME IN 1999		
Households	**4,367**	**100.0**
Less than $10,000	283	6.5
$10,000 to $14,999	284	6.5
$15,000 to $24,999	770	17.6
$25,000 to $34,999	649	14.9
$35,000 to $49,999	1,013	23.2
$50,000 to $74,999	862	19.7
$75,000 to $99,999	280	6.4
$100,000 to $149,999	190	4.4
$150,000 to $199,999	17	0.4
$200,000 or more	19	0.4
Median household income (dollars)	37,307	(X)
With earnings	3,783	86.6
Mean earnings (dollars)[1]	41,429	(X)
With Social Security income	797	18.3
Mean Social Security income (dollars)[1]	9,088	(X)
With Supplemental Security Income	115	2.6
Mean Supplemental Security Income (dollars)[1]	7,434	(X)
With public assistance income	134	3.1
Mean public assistance income (dollars)[1]	1,817	(X)
With retirement income	1,037	23.7
Mean retirement income (dollars)[1]	14,842	(X)
Families	**3,024**	**100.0**
Less than $10,000	143	4.7
$10,000 to $14,999	138	4.6
$15,000 to $24,999	397	13.1
$25,000 to $34,999	403	13.3
$35,000 to $49,999	746	24.7
$50,000 to $74,999	741	24.5
$75,000 to $99,999	250	8.3
$100,000 to $149,999	176	5.8
$150,000 to $199,999	11	0.4
$200,000 or more	19	0.6
Median family income (dollars)	41,485	(X)
Per capita income (dollars)[1]	17,029	(X)
Median earnings (dollars):		
Male full-time, year-round workers	28,724	(X)
Female full-time, year-round workers	21,905	(X)

Subject	Number below poverty level	Percent below poverty level
POVERTY STATUS IN 1999		
Families	**259**	**8.6**
With related children under 18 years	238	13.5
With related children under 5 years	118	17.0
Families with female householder, no husband present	**105**	**26.9**
With related children under 18 years	105	33.8
With related children under 5 years	23	16.2
Individuals	**1,183**	**10.4**
18 years and over	683	8.7
65 years and over	117	11.8
Related children under 18 years	489	13.9
Related children 5 to 17 years	286	11.3
Unrelated individuals 15 years and over	308	17.3

-Represents zero or rounds to zero. (X) Not applicable.

[1]If the denominator of a mean value or per capita value is less than 30, then that value is calculated using a rounded aggregate in the numerator. See text.

Source: U.S. Bureau of the Census, Census 2000.

DCN:11697

Table DP-4. Profile of Selected Housing Characteristics: 2000

Geographic area: Mountain Home city, Idaho

[Data based on a sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see text]

Subject	Number	Percent
Total housing units	**4,730**	**100.0**
UNITS IN STRUCTURE		
1-unit, detached	3,332	70.4
1-unit, attached	119	2.5
2 units	135	2.9
3 or 4 units	361	7.6
5 to 9 units	174	3.7
10 to 19 units	97	2.1
20 or more units	17	0.4
Mobile home	488	10.3
Boat, RV, van, etc	7	0.1
YEAR STRUCTURE BUILT		
1999 to March 2000	204	4.3
1995 to 1998	741	15.7
1990 to 1994	177	3.7
1980 to 1989	610	12.9
1970 to 1979	1,105	23.4
1960 to 1969	879	18.6
1940 to 1959	743	15.7
1939 or earlier	271	5.7
ROOMS		
1 room	49	1.0
2 rooms	171	3.6
3 rooms	486	10.3
4 rooms	811	17.1
5 rooms	1,112	23.5
6 rooms	901	19.0
7 rooms	528	11.2
8 rooms	367	7.8
9 or more rooms	305	6.4
Median (rooms)	5.3	(X)
Occupied housing units	**4,381**	**100.0**
YEAR HOUSEHOLDER MOVED INTO UNIT		
1999 to March 2000	1,306	29.8
1995 to 1998	1,384	31.6
1990 to 1994	615	14.0
1980 to 1989	462	10.5
1970 to 1979	409	9.3
1969 or earlier	205	4.7
VEHICLES AVAILABLE		
None	255	5.8
1	1,339	30.6
2	1,896	43.3
3 or more	891	20.3
HOUSE HEATING FUEL		
Utility gas	3,170	72.4
Bottled, tank, or LP gas	52	1.2
Electricity	1,004	22.9
Fuel oil, kerosene, etc	66	1.5
Coal or coke	-	-
Wood	74	1.7
Solar energy	-	-
Other fuel	8	0.2
No fuel used	7	0.2
SELECTED CHARACTERISTICS		
Lacking complete plumbing facilities	-	-
Lacking complete kitchen facilities	-	-
No telephone service	79	1.8

Subject	Number	Percent
OCCUPANTS PER ROOM		
Occupied housing units	**4,381**	**100.0**
1.00 or less	4,184	95.5
1.01 to 1.50	144	3.3
1.51 or more	53	1.2
Specified owner-occupied units	**2,540**	**100.0**
VALUE		
Less than $50,000	88	3.5
$50,000 to $99,999	1,552	61.1
$100,000 to $149,999	762	30.0
$150,000 to $199,999	122	4.8
$200,000 to $299,999	-	-
$300,000 to $499,999	10	0.4
$500,000 to $999,999	6	0.2
$1,000,000 or more	-	-
Median (dollars)	91,400	(X)
MORTGAGE STATUS AND SELECTED MONTHLY OWNER COSTS		
With a mortgage	2,092	82.4
Less than $300	19	0.7
$300 to $499	134	5.3
$500 to $699	516	20.3
$700 to $999	792	31.2
$1,000 to $1,499	531	20.9
$1,500 to $1,999	93	3.7
$2,000 or more	7	0.3
Median (dollars)	833	(X)
Not mortgaged	448	17.6
Median (dollars)	216	(X)
SELECTED MONTHLY OWNER COSTS AS A PERCENTAGE OF HOUSEHOLD INCOME IN 1999		
Less than 15.0 percent	871	34.3
15.0 to 19.9 percent	490	19.3
20.0 to 24.9 percent	278	10.9
25.0 to 29.9 percent	351	13.8
30.0 to 34.9 percent	194	7.6
35.0 percent or more	350	13.8
Not computed	6	0.2
Specified renter-occupied units	**1,465**	**100.0**
GROSS RENT		
Less than $200	93	6.3
$200 to $299	124	8.5
$300 to $499	570	38.9
$500 to $749	497	33.9
$750 to $999	101	6.9
$1,000 to $1,499	20	1.4
$1,500 or more	-	-
No cash rent	60	4.1
Median (dollars)	464	(X)
GROSS RENT AS A PERCENTAGE OF HOUSEHOLD INCOME IN 1999		
Less than 15.0 percent	235	16.0
15.0 to 19.9 percent	303	20.7
20.0 to 24.9 percent	245	16.7
25.0 to 29.9 percent	162	11.1
30.0 to 34.9 percent	179	12.2
35.0 percent or more	270	18.4
Not computed	71	4.8

-Represents zero or rounds to zero. (X) Not applicable.

Source: U.S. Bureau of the Census, Census 2000.

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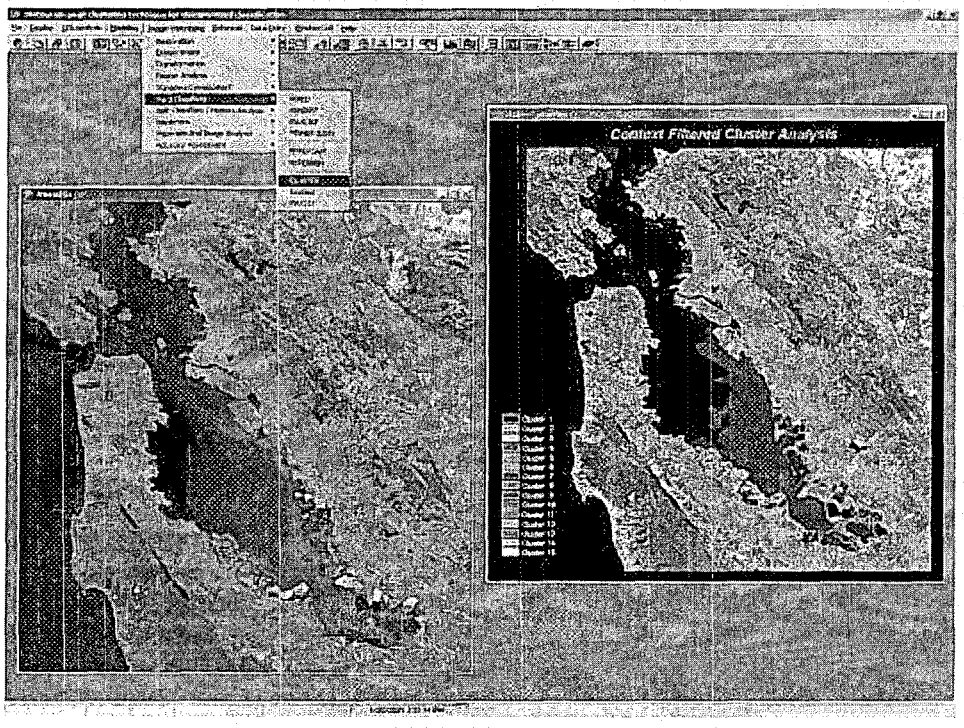
Geographic information system

From Wikipedia, the free encyclopedia.

(Redirected from Geographic information systems)

GIS redirects here. For other meanings, see GIS (disambiguation).

A **geographic information system** (GIS) is a system for managing spatial data and associated attributes. In the strictest sense, it is a computer system capable of integrating, storing, editing, analyzing, and displaying geographically-referenced information. In a more generic sense, GIS is a "smart map" tool that allows users to create interactive queries (user created searches), analyze the spatial information, and edit data.



Geographic information systems technology can be used for scientific investigations, resource management, asset management, development planning, cartography and route planning. For example, a GIS might allow emergency planners to easily calculate emergency response times in the event of a natural disaster, or a GIS might be used to find wetlands that need protection from pollution.

Contents

- 1 History of development
- 2 Techniques used in GIS
  - 2.1 Relating information from different sources
  - 2.2 Data representation
  - 2.3 Data capture
  - 2.4 Data manipulation
  - 2.5 Projections, coordinate systems and registration
  - 2.6 Spatial analysis with GIS

DCN:11697

- 2.6.1 Data modeling
- 2.6.2 Topological modeling
- 2.6.3 Networks
- 2.6.4 Cartographic modelling
- 2.6.5 Vector overlay
- 2.6.6 Spatial statistics
- 2.6.7 GeoCoding
- 2.6.8 Reverse geocoding
  - 2.7 Data output and cartography
  - 2.8 Graphic display techniques
- 3 GIS software
- 4 The future of GIS
  - 4.1 OGC standards
  - 4.2 Global change and climate history program
  - 4.3 Adding the dimension of time
- 5 See also
- 6 Textbooks
- 7 External links

History of development

35,000 years ago, on the walls of caves near Lascaux, France, Cro-Magnon hunters drew pictures of the animals they hunted. Associated with the animal drawings are track lines and tallies thought to depict migration routes. These early records followed the two-element structure of modern geographic information systems: a graphic file linked to an attribute database.

In the 18th century, modern surveying techniques for topographic mapping were implemented, along with early versions of thematic mapping, e.g. for scientific or census data.

The early 20th century saw the development of "photo lithography" where maps were separated into layers. Computer hardware development spurred by nuclear weapon research would lead to general purpose computer "mapping" applications by the early 1960s.

The year 1967 saw the development of the world's first true operational GIS in Ottawa, Ontario by the federal Department of Energy, Mines and Resources. Developed by Roger Tomlinson, it was called "Canadian GIS" (CGIS) and was used to store, analyse and manipulate data collected for the Canada Land Inventory (CLI)—an initiative to determine the land capability for rural Canada by mapping information about soils, agriculture, recreation, wildlife, waterfowl, forestry, and land use at a scale of 1:250,000. A rating classification factor was also added to permit analysis.

CGIS was the world's first "system" and was an improvement over "mapping" applications as it provided capabilities for overlay, measurement, digitizing/scanning, supported a national coordinate system that spanned the continent, coded lines as "arcs" having a true embedded topology, and it stored the attribute and locational information in separate files. Its developer, geographer Roger Tomlinson, has become known as the "father of GIS."

CGIS lasted into the 1990s and built the largest digital land resource data base in Canada. It was developed as a mainframe based system in support of federal and provincial resource planning and management. Its strength was continent-wide analysis of complex data sets. The CGIS was never available in a commercial form. Its initial development and success stimulated various commercial

mapping applications being sold by vendors such as Intergraph. The development of micro-computer hardware spurred vendors such as ESRI, MapInfo and CARIS to successfully incorporate many of the CGIS features, combining the 1st generation approach to separation of spatial and attribute information with a 2nd generation approach to organizing attribute data into database structures. The 1980s and 1990s industry growth were spurred on by the growing use of GIS on UNIX workstations and the personal computer. By the end of the 20th century, the rapid growth in various systems had been consolidated and standardized on relatively few platforms and users were beginning to export the concept of viewing GIS data over the Internet, requiring data format and transfer standards.

Techniques used in GIS

Relating information from different sources

If you could relate information about the rainfall of your state to aerial photographs of your county, you might be able to tell which wetlands dry up at certain times of the year. A GIS, which can use information from many different sources in many different forms, can help with such analyses. The primary requirement for the source data consists of knowing the locations for the variables. Location may be annotated by x,y, and z coordinates of longitude, latitude, and elevation, or by other geocode systems like ZIP Codes or by highway mile markers. Any variable that can be located spatially can be fed into a GIS. Several computer databases that can be directly entered into a GIS are being produced by government agencies and non-government organizations. Different kinds of data in map form can be entered into a GIS.

A GIS can also convert existing digital information, which may not yet be in map form, into forms it can recognize and use. For example, digital satellite images generated through remote sensing can be analyzed to produce a map-like layer of digital information about vegetative covers. Another fairly developed resource for naming GIS objects is the Getty Thesaurus of Geographic Names (GTGN), which is a structured vocabulary containing around 1,000,000 names and other information about places[1].

Likewise, census or hydrologic tabular data can be converted to map-like form, serving as layers of thematic information in a GIS.

Data representation

GIS data represents real world objects (roads, land use, elevation) with digital data. Real world objects can be divided into two abstractions: discrete objects (a house) and continuous fields (rain fall amount or elevation). There are two broad methods used to store data in a GIS for both abstractions: Raster and Vector.

Raster data type consists of rows and columns of cells where in each cell is stored a single value. Most often, raster data are images (raster images), but besides just color, the value recorded for each cell may be a discrete value, such as land use, a continuous value, such as rainfall, or a null value if no data is available. While a raster cell stores a single value, it can be extended by using raster bands to represent RGB (red, green, blue) colors, colormaps (a mapping between a thematic code and RGB value), or an extended attribute table with one row for each unique cell value. The resolution of the raster dataset is its cell width in ground units. For example, one cell of a raster image represents one meter on the ground. Usually cells represent square areas of the ground, but other shapes can also be used.

Vector data type uses geometries such as points, lines (series of point coordinates), or polygons, also called areas (shapes bounded by lines), to represent objects. Examples include property boundaries for a housing subdivision represented as polygons and well locations represented as points. Vector features can

be made to respect spatial integrity through the application of topology rules such as 'polygons must not overlap'. Vector data can also be used to represent continuously varying phenomena. Contour lines and triangulated irregular networks (TIN) are used to represent elevation or other continuously changing values. TIN's record values at point locations, which are connected by lines to form an irregular mesh of triangles. The face of the triangles represent the terrain surface.

There are advantages and disadvantages to using a raster or vector data model to represent reality. Raster datasets record a value for all points in the area covered which may require more storage space than representing data in a vector format that can store data only where needed. Raster data also allows easy implementation of overlay operations, which are more difficult with vector data. Vector data can be displayed as vector graphics used on traditional maps, whereas raster data will appear as an image that may have a blocky appearance for object boundaries.

Additional non-spatial data can also be stored besides the spatial data represented by the coordinates of a vector geometry or the position of a raster cell. In vector data, the additional data are attributes of the object. For example, a forest inventory polygon may also have an identifier value and information about tree species. In raster data the cell value can store attribute information, but it can also be used as an identifier that can relate to records in another table.

Data capture

Data capture—entering information into the system—consumes much of the time of GIS practitioners. There are a variety of methods used to enter data into a GIS where it is stored in a digital format.

Existing data printed on paper or mylar maps can be digitized or scanned to produce digital data. A digitizer produces vector data as an operator traces points, lines, and polygon boundaries from a map. Scanning a map results in raster data that could be further processed to produce vector data.

Survey data can be directly entered into a GIS from digital data collection systems on survey instruments. Positions from another survey tool, global positioning system (GPS), can also be directly entered into GIS.

Remotely sensed data also plays an important role in data collection and consist of sensors attached to a platform. Sensors include cameras, digital scanners and LIDAR, while platforms usually consist of aircrafts and satellites.

The majority of digital data currently comes from photo interpretation of aerial photographs. Soft copy workstations are used to digitize features directly from stereo pairs of digital photographs. These systems allow data to be captured in 2 and 3 dimensions, with elevations measured directly from a stereo pair using principles of photogrammetry. Currently, analog aerial photos are scanned before being entered into a soft copy system, but as high quality digital cameras become cheaper this step will be skipped.

Satellite remote sensing provides another important source of spatial data. Here satellites use different sensor packages to passively measure the reflectance from parts of the electromagnetic spectrum or radio waves that were sent out from an active sensor such as radar. Remote sensing collects raster data that can be further processed to identify objects and classes of interest, such as land cover.

When data is captured, the user should consider if the data should be captured with either a relative accuracy or absolute accuracy, since this could not only influence how information will be interpreted but also the cost of data capture.

In addition to collecting and entering spatial data, attribute data is also entered into a GIS. For vector data this includes additional information about the objects represented in the system.

After entering data into a GIS, it usually requires editing, to remove errors, or further processing. For vector data it must be made "topologically correct" before it can be used for some advanced analysis. For example, in a road network, lines must connect with nodes at an intersection. Errors such as undershoots and overshoots must also be removed. For scanned maps, blemishes on the source map may need to be removed from the resulting raster. For example, a fleck of dirt might connect two lines that should not be connected.

Data manipulation

Data restructuring can be performed by a GIS to convert data into different formats. For example, a GIS may be used to convert a satellite image map to a vector structure by generating lines around all cells with the same classification, while determining the cell spatial relationships, such as adjacency or inclusion.

Since digital data are collected and stored in various ways, the two data sources may not be entirely compatible. So a GIS must be able to convert geographic data from one structure to another.

Projections, coordinate systems and registration

A property ownership map and a soils map might show data at different scales. Map information in a GIS must be manipulated so that it registers, or fits, with information gathered from other maps. Before the digital data can be analyzed, they may have to undergo other manipulations—projection and coordinate conversions, for example—that integrate them into a GIS.

The earth can be represented by various models, each of which may provide a different set of coordinates (e.g., latitude, longitude, elevation) for any given point on the earth's surface. The simplest model is to assume the earth is a perfect sphere. As more measurements of the earth have accumulated, the models of the earth have become more sophisticated and more accurate. In fact, there are models that apply to different areas of the earth to provide increased accuracy (e.g., North American Datum, 1983 - NAD83 - works well in North America, but not in Europe).

Projection is a fundamental component of map making. A projection is a mathematical means of transferring information from a model of the Earth, which represents a three-dimensional curved surface, to a two-dimensional medium—paper or a computer screen. Different projections are used for different types of maps because each projection particularly suits certain uses. For example, a projection that accurately represents the shapes of the continents will distort their relative sizes.

Since much of the information in a GIS comes from existing maps, a GIS uses the processing power of the computer to transform digital information, gathered from sources with different projections and/or different coordinate systems, to a common projection and coordinate system.

Spatial analysis with GIS

Data modeling

It is difficult to relate wetlands maps to rainfall amounts recorded at different points such as airports, television stations, and high schools. A GIS, however, can be used to depict two- and three-dimensional characteristics of the Earth's surface, subsurface, and atmosphere from information points.

For example, a GIS can quickly generate a map with lines that indicate rainfall amounts.

Such a map can be thought of as a rainfall contour map. Many sophisticated methods can estimate the characteristics of surfaces from a limited number of point measurements. A two-dimensional contour map created from the surface modeling of rainfall point measurements may be overlaid and analyzed with any other map in a GIS covering the same area.

Topological modeling

In the past 35 years, were there any gas stations or factories operating next to the swamp? Any within two miles and uphill from the swamp? A GIS can recognize and analyze the spatial relationships that exist within digitally stored spatial data. These topological relationships allow complex spatial modelling and analysis to be performed. Topological relationships between geometric entities traditionally include adjacency (what adjoins what), containment (what encloses what), and proximity (how close something is to something else).

Networks

If all the factories near a wetland were accidentally to release chemicals into the river at the same time, how long would it take for a damaging amount of pollutant to enter the wetland reserve? A GIS can simulate the routing of materials along a linear network. Values such as slope, speed limit, pipe diameter can be incorporated into network modelling in order to represent the flow of the phenomenon more accurately. Network modelling is commonly employed in transportation planning, hydrology modelling, and infrastructure modelling.

Cartographic modelling

Powerful analysis techniques with raster data.

Vector overlay

The combination of two separate spatial data sets (points, lines or polygons) to create a new output vector data set. Typically, the attribute tables of the two input vector data sets get their fields and values combined into the attribute table of the new output data set. These overlays are similar to mathematical Venn diagram overlays. For example, a "Union Overlay" will typically combine all the geographic features of both input vector data sets into the new output data set.

Spatial statistics

Using geostatistics to predict fields from points. Point pattern analysis. A way of looking at the statistics of spatial data. What makes it unique from other kinds of statistics is the use of graph theory and matrix algebra to reduce the number of parameters in the data being analyzed. This is neccessary because it is actually the second-order properties the GIS data that need analyzing.

GeoCoding

Calculating spatial locations (X,Y coordinates) from street addresses. A reference theme is required to geocode individual addresses, such as a road centerline file with address ranges. The individual address locations are interpolated, or estimated, by examining address ranges along a road segment. These are usually provided in the form of a table or database. The GIS will then place a dot approximately where that address belongs along the segment of centerline. For example, an address point of 500 will be at the

midpoint of a line segment that starts with address 1 and ends with address 1000. Geocoding can also be applied against actual parcel data, typically from municipal tax maps. In this case, the result of the geocoding will be an actually positioned space as opposed to an interpolated point.

It should be noted that there are several (potentially dangerous) caveats that are often overlooked when using interpolation. See the full entry for Geocoding for more information.

Various algorithms are used to help with address matching when the spellings of addresses differ. Address information that a particular entity or organization has data on, such as the post office, may not entirely match the reference theme. There could be variations in street name spelling, community name, etc. Consequently, the user generally has the ability to make matching criteria more stringent, or to relax those parameters so that more addresses will be mapped. Care must be taken to review the results so as not to erroneously map addresses incorrectly due to overzealous matching parameters.

Reverse geocoding

Reverse geocoding is the process of returning an estimated street address number as it relates to a given coordinate. For example, a user can click on a road centerline theme (thus providing a coordinate) and have information returned that reflects the estimated house number. This house number is interpolated from a range assigned to that road segment. If the user clicks at the midpoint of a segment that starts with address 1 and ends with 100, the returned value will be somewhere near 50. Note that reverse geocoding does not return actual addresses, only estimates of what should be there based on the predetermined range.

Data output and cartography

Cartography is the design and production of maps, or visual representations of spatial data. The vast majority of modern cartography is done with the help of computers, usually using a GIS. Most GIS software gives the user substantial control over the appearance of the data.

Cartographic work serves two major functions:

First, it produces graphics on the screen or on paper that convey the results of analysis to the people who make decisions about resources. Wall maps and other graphics can be generated, allowing the viewer to visualize and thereby understand the results of analyses or simulations of potential events. Web Map Servers facilitate distribution of generated maps via the web technology.

Second, other database information can be generated for further analysis or use. A list of all addresses within 1 mile of a toxic spill for instance.

Graphic display techniques

Traditional maps are abstractions of the real world, a sampling of important elements portrayed on a sheet of paper with symbols to represent physical objects. People who use maps must interpret these symbols. Topographic maps show the shape of land surface with contour lines; the actual shape of the land can be seen only in the mind's eye.

Today, graphic display techniques such as shading based on altitude in a GIS can make relationships among map elements visible, heightening one's ability to extract and analyze information. For example, two types of data were combined in a GIS to produce a perspective view or a portion of San Mateo County, California.

- The digital elevation model, consisting of surface elevations recorded on a 30-meter horizontal grid, shows high elevations as white and low elevation as black.
- The accompanying Landsat Thematic Mapper image shows a false-color infrared image looking down at the same area in 30-meter pixels, or picture elements, for the same coordinate points, pixel by pixel, as the elevation information.

A GIS was used to register and combine the two images to render the three-dimensional perspective view looking down the San Andreas Fault, using the Thematic Mapper image pixels, but shaded using the elevation of the landforms. The GIS display depends on the viewing point of the observer and time of day of the display, to properly render the shadows created by the sun's rays at that latitude, longitude, and time of day.

GIS software

See the List of GIS software.

The future of GIS

Many disciplines can benefit from GIS techniques. An active GIS market has resulted in lower costs and continual improvements in the hardware and software components of GIS. These developments will, in turn, result in a much wider use of the technology throughout science, government, business, and industry, with applications including real estate, public health, crime mapping, national defense, sustainable development, natural resources, transportation & logistics.

OGC standards

Open Geospatial Consortium (OGC)

Global change and climate history program

Maps have traditionally been used to explore the Earth and to exploit its resources. GIS technology, as an expansion of cartographic science, has enhanced the efficiency and analytic power of traditional mapping. Now, as the scientific community recognizes the environmental consequences of human activity, GIS technology is becoming an essential tool in the effort to understand the process of global change. Various map and satellite information sources can combine in modes that simulate the interactions of complex natural systems.

Through a function known as visualization, a GIS can be used to produce images - not just maps, but drawings, animations, and other cartographic products. These images allow researchers to view their subjects in ways that literally never have been seen before. The images often are equally helpful in conveying the technical concepts of GIS study-subjects to non-scientists.

Adding the dimension of time

The condition of the Earth's surface, atmosphere, and subsurface can be examined by feeding satellite data into a GIS. GIS technology gives researchers the ability to examine the variations in Earth processes over days, months, and years.

As an example, the changes in vegetation vigor through a growing season can be animated to determine when drought was most extensive in a particular region. The resulting graphic, known as a normalized vegetation index, represents a rough measure of plant health. Working with two variables over time would then allow researchers to detect regional differences in the lag between a decline in rainfall and its effect on vegetation.

GIS technology and the availability of digital data on regional and global scales enable such analyses. The satellite sensor output used to generate a vegetation graphic is produced by the Advanced Very High Resolution Radiometer or AVHRR. This sensor system detects the amounts of energy reflected from the Earth's surface across various bands of the spectrum for surface areas of about 1 square kilometer. The satellite sensor produces images of a particular location on the Earth twice a day. AVHRR is only one of many sensor systems used for Earth surface analysis. More sensors will follow, generating ever greater amounts of data.

GIS and related technology will help greatly in the management and analysis of these large volumes of data, allowing for better understanding of terrestrial processes and better management of human activities to maintain world economic vitality and environmental quality.

See also

- Cartography
- Digital raster graphic
- Geodesy
- Geoinformatics
- Geoinformation
- GRASS GIS
- Open GIS Consortium
- Remote sensing
- Virtual globe

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DCN:11697

DCN:11697
Chapter-04.qxd 6/11/2004 5:33 PM Page 61

4 Culture: Economy

Trevor Barnes

> Culture is not 'a decorative addendum to the "hard world" of production and things, the icing on the cake of the material world'.
>
> (Hall, 1988)

> Many of us have learned to want to cleave to an order. This is a modernist dream. In one way or another, we are attached to the idea that if our lives, our organizations, our social theories or our societies, were 'properly ordered' then all would be well. And we take it that such ordering is possible, at least some of the time. So when we encounter complexity we tend to treat it as a distraction. We treat it as a sign of the limits to order. Or we think of it as evidence of failure.
>
> (Law, 1994: 4–5).

What do Christmas, the Sex Pistols and a plank of wood have in common? While this sounds like the beginning of a bad joke, I want to use the question as an entrance point to one of the more intractable issues in the social sciences, the relation between economy and culture, and which, with its recent 'cultural turn', spills into economic geography (Crang, 1997; Thrift, 2000a; Barnes, 2001). In academic and popular representations, economy and culture are often sharply separated, put into quite different conceptual boxes. Karl Marx, for example, puts economy in a box called base or infrastructure, and culture in a very different box called superstructure. Or Talcott Parsons puts economy in box called adaptation, and culture in another box called latency. This same separation is also repeated in popular media: newspapers separate out their business and review sections; there are magazines focusing on the economy (for example, *The Economist Magazine*) and magazines focusing on culture (such as *People Magazine*); and there are TV programmes that discuss only finance (for example, 'Wall Street Review') and other shows that are only concerned with the arts (such as 'Sister Wendy's One Thousand Masterpieces').

DCN:11697
Chapter-04.qxd 6/11/2004 5:33 PM Page 62

Indeed, in North America there are whole channels devoted exclusively to one or the other topic, 24 hours a day, seven days a week.

In contrast, I argue in this chapter that rather than being clear and distinct, the relation between economy and culture is muddy and indefinite. Following the argument of this book, I suggest that economy and culture are not a neatly divided binary but a hybrid. This is also the answer to my opening question. What Christmas, the Sex Pistols and a plank of wood have in common is that they are hybrids of culture and economy. That is, they take on attributes of both such that it is difficult to know where one begins and the other ends.

That Christmas is a culture-economy hybrid is clear (and discussed systematically by Thrift and Olds, 1996). Marking the birth of one of the world's greatest cultural religious figures, Christmas in high-income Western countries is also fundamentally about money: it is about shopping until you drop, crowded retail malls, sales and bargains, gifting, re-gifting and de-gifting. It is about spending time with family and friends, but it is also about overdrawn bank accounts and usurious interest on unpaid credit card balances. It is about eating special foods – in my Anglo-cultural tradition such delicacies as mince tarts, sausage rolls and Christmas pudding – and drinking special drinks – egg nogg, sherry and warm punch – and carrying out culturally specific rituals – trimming the tree, lighting the Christmas pud, putting up interior and exterior house decorations – but it is also about capitalist producers drawing together an immense amount of economic resources, and undertaking planning, sometimes years in advance, for the production, delivery and selling of the kind of commodities required to make these rituals possible, such as turkeys, or Christmas trees, or Christmas cards and wrapping paper. It is about glistening eyes and radiant smiles at infant school nativity plays or at elementary school Christmas concerts, or hissing at villains and cheering at heroes in pantomimes, or seeing Christmas specials on the TV that you have seen ever since you were a child – Alistair Sim as Scrooge terrorizing the Cratchett family, Mr Bean getting his head stuck in the rear-end of a turkey, James Stewart realizing 'it's a wonderful life' – but it is also about unrelenting TV adverts, fliers in newspapers, handbills in letter boxes, under car windshield wipers, and thrust into your fingers on the street, all trying to convince you to open your purse and wallet to buy that perfect commodity for your loved ones. Is Christmas a cultural celebration? Or is Christmas a once-a-year economic bonanza for capitalism? It is both. It is a hybrid.

The same goes for the Sex Pistols, the English punk-rock band that burst on to the cultural scene in 1977 with their singles 'Anarchy in the UK' and 'God Save the Queen', and whose LP 'Never Mind the Bollocks. Here's the Sex Pistols' initially was sold under plain brown wrapping so as not to offend innocent bystanders. Apart from the fact that they produced a cultural product, music (or at least *they* thought so – Sid Vicious said, 'You just pick a chord, go twang, and you have music'), the Pistols influenced, and came to

DCN:11697
Chapter-04.qxd 6/11/2004 5:33 PM Page 63

define, a wider youth sub-culture, punk. It was a culture defined by: particular forms of dress and deportment – ripped jeans and t-shirts, green- and red-dyed hair, Doc Marten boots, and the ubiquitous use of safety pins for tethering things that should never be tethered; a specialized language and vocabulary marked by 'insults and rejection ... [but] yet recognisable as everyday speech' (Savage, 1993: 206); and a broader philosophy and politics of life rooted not in 'the negative or cynical rejection of belief but the positive courage to live without it' (Savage, 1993: 195). If the hallmarks of culture are innovation, new forms of language, and changed values and ways of life, then the Sex Pistols were real culture. The Pistols from their very creation, however, were always also about making money, of selling product, of being part of 'the great rock 'n' roll swindle' (Mitchell, 2000: 68). They were a manufactured band directed towards making profit for their sponsors, primarily their manager Malcolm McLaren. As a consequence, it was entirely in fiscal character that the Pistols recorded with then-on-the-run great train robber Ronnie Biggs, that Johnny Rotten engaged in an eight-year legal suit with McLaren to recover unpaid royalties (Lydon, 1994: chs 19–20), and that McLaren coined the slogan 'cash from chaos', and also insisted that 'Sex' be in the name of the group because it advertised his shop of the same name located on Kings Road, Chelsea. Were the Sex Pistols an explosive and original cultural phenomenon, 'a distinct break in the pop milieu' (Marcus, 1989: 2–3), like Picasso's cubism, or Schoenberg's atonalism, or Joyce's stream of consciousness, or were they only about 'filthy lucre'? They were both. They were a hybrid.

Making the hybrid argument for a piece of lumber is more of a stretch. Like 'death and furniture', to use Edwards, Ashmore, and Potter's (1994) examples, there is a seemingly brute finality about a plank of wood that puts it outside of the cultural pale. A plank is a plank is a plank. But it is not. Culture infuses every stage of plank-making and selling, which I will illustrate by using examples from one of the great plank-making regions of the world, British Columbia (BC). It begins with broad cultural attitudes to nature, and in the case of BC an attitude towards the temperate rainforest that covers the province's southern coastal region. Are we stewards of this forest or masters of it? Since European settlement in the mid-nineteenth century mastering has been the order of the day. Legally formalized through the recommendations of a series of BC Royal Commissions on forestry beginning in 1945, mastering nature in the province has produced gargantuan clear-cuts, a policy of cut and run and the proliferation of single-industry towns, one task of which is to produce two-by-fours. Culture further extends into the very process of work. While recently those work practices have been transformed following a move from Fordist to post-Fordist methods (Barnes et al., 2001), they remain highly masculinized – 'men's work' – turning on the use of large machines and male brawn (about 90 per cent of jobs in the Canadian wood products are held by men: Randall and Ironside, 1996). Furthermore, the

DCN:11697
Chapter-04.qxd 6/11/2004 5:33 PM Page 64

masculinist culture inside the sawmills infects the culture outside, producing among other things patriarchal relations (Egan and Klausen, 1998), a particular culture of education, especially among boys who discount its benefits because of the presumed inevitability of job availability at the mill (Behrisch et al., 2003), and a community culture of fatalism, feelings of impermanence and isolation, and characterised by a lack of initiative. Finally, culture stretches into the kinds of planks that are made. In particular, from the 1980s onwards, among especially coastal BC lumber producers, there was a switch from selling to the US and Canadian housing construction industry to exporting particularly to Japan, South East Asia and China. But those latter markets do not want traditional two-by-fours, but lumber of quite different dimensions to construct their own culturally distinct housing and commercial buildings (Hayter and Edgington, 1987). In part, the shift from Fordist to post-Fordist methods was to enable production of these new dimensions. So, is a plank only a plank? In my interpretation, it is not. While a plank might be physically unblemished, it is knotted by both economic and cultural markings; it is a hybrid.

The argument in this chapter is that the economy–culture hybrids illustrated above are pervasive in economic geography. That we do not typically recognize them is because of an equally pervasive mindset of binary thinking found in the discipline that divides phenomena into either the economic, which is a legitimate domain of study, or the cultural, which is not, and is passed on to others to investigate. With the 'cultural turn' in economic geography such a mindset is not viable any more, if ever it was, and we need to engage in different practices. To determine what kind of practices, I divide the chapter into three parts. First, I discuss the longstanding debate about the relationship between economy and culture, and economic geography's relationship to it. What emerges is a need to theorize outside the binary of economy and culture. Secondly, I will argue that such a theorization is achievable by using the idea of a hybrid, and here I draw principally on the work of Bruno Latour and other proponents of actor-network theory. Finally, I discuss two attempts by economic geographers – respectively J.K. Gibson-Graham and Nigel Thrift – to work through the idea of an economy–culture hybrid, and which can be used as the basis for a potentially reconfigured economic geography.

Economy, culture and economic geography

Economy and culture are typically interpreted as a binary. For Derrida such binaries are the very vehicle by which meaning is created in the West, forming the basis of what he calls logocentrism (Gibson-Graham, 2000). Logocentrism – meaning literally reason-centred – is the strategy of producing meaning by dividing language into opposite pairs of terms. The first term

DCN:11697
Chapter-04.qxd 6/11/2004 5:33 PM Page 65

of a given binary is defined positively, and the second term is defined as its antonym. Formally, it is represented by the scheme A/not-A. In the case of economy and culture, the first term, economy, is positive, and the second term, culture, is everything that the economy is not. As a result, while the economy is hard, culture is soft; while the economy is about facts, culture is about values; while the economy is strong, masterful and masculine, culture is weak, submissive and feminine. And on it goes.

It further follows given the binary nature of this scheme that economy and culture are doomed never to be on the same page; that things economic are separated from things cultural because they are their opposites. Certainly, such a strategy characterized much of social science, which in the past assiduously divided economy and culture into sealed spheres of a enquiry.

In particular, the study of the economy is given over to the discipline of economics. In its orthodox form, known as neoclassicism, economics removes any trace of culture from its study by making two related methodological moves. The first is by pursuing methodological individualism, an approach that explains social events by reducing them to the beliefs and actions of the individual rational actors involved. More specifically, in the neoclassical model, the economy is constituted by a set of rational individuals. Imbued with an exogenous map of preferences, those individuals are guided in their consumption and production choices by both their innate rationality and the invisible hand of market prices that ensures eventual collective optimization and harmony. Following methodological individualism, that collective never exists, *sui generis*, on its own, but is only ever the sum of its individual parts; that is, it is always reducible to the beliefs and actions of constitutive individual rational agents. Consequently, methodological individualism portrays culture as chimera, as something that appears real, but is not. As Margaret Thatcher might have said, 'There is no such thing as culture, only individuals.' The real are rational economic agents, the spurious are communal entities like culture.

The second methodological move evacuating culture is neoclassicism's deployment of formal modes of reasoning and analysis. Joan Robinson once said, 'You can't put culture into an equation.' If so, neoclassical economics has no hope of dealing with culture because as a discipline it defines itself by the use of mathematical models. For example, the influential American economist Paul Krugman says, 'to be taken seriously an idea has to be *something you can model*' (Krugman, 1995: 5; original emphasis). And while admitting that 'people who do not write formal models may have rich insights', he also says, 'strangely, though, I can't think of any' (Krugman, 1995: 88). The further implication is that if non-economists, such as economic geographers, are to study the economy then to have credibility they must also adopt the standards of economics and undertake formal modelling. A failure to do so results in economic geographers not studying the economy, but engaging in forms of pseudo enquiry. This is Krugman's opinion of current research by economic

DCN:11697
Chapter-04.qxd 6/11/2004 5:33 PM Page 66

geographers who eschew formal modelling. He lambasts those, for example, who make reference to '"post-Fordism" ... [a term coined by] the Derrida-influenced regulationist school – deconstructionist geography!' (Krugman, 1995: 85). While it is doubtful that Derrida is much of a regulation theorist (Eagleton, 1995), the important point for Krugman is that by shunning formal models economic geographers engage in absurd forms of study like 'deconstructionist geography!'. It is the economist's way or no way. And the economist's way produces a distilled world of pure economy, unblemished by culture.

Neoclassical economics is extreme in its aversion to culture, leaving its study to soft, unscientific, or non-rigorous social sciences and which include, at least in Krugman's interpretation, economic geography. It is true that during one period in the history of economic geography, some but certainly not all economic geographers threw their lot in with the economists, and by deploying neoclassical mathematical models, and adopting methodological individualism, pursued an approach that displaced culture. The most systematic application of neoclassical economic principles to economic geography occurred roughly in the 20-year period 1955–75, and was associated with the discipline's 'quantitative revolution' (Barnes, 2001). Best represented by the theoretical tradition of locational analysis (Haggett, 1965), culture was often difficult to discern in the consequently flattened, formalized economic geographical geometries of concentric rings of agricultural production, industrial locational triangles, and hexagonal market nets of central place services (Barnes, 2003).

Some of the work within locational analysis represented a direct translation of the methodological individualist assumption of the rational agent to the geographical case. For example, in the writings on spatial interaction, which was often formulated mathematically in terms of the Newtonian gravity model equation, it was assumed that individuals who spatially interacted exhibited 'uniformly rational behavior' (Sheppard, 1978: 388). In particular, individuals' decisions to interact spatially were determined by their utility function, which they attempted to maximize. But the form of that function, and which represents a person's preferences for travel, and for that matter everything else, is given exogenously; that is, an individual's preferences are represented as lying outside formal analysis, neither requiring nor obtaining scrutiny and explanation. But it is those preferences that contain everything interesting about cultural norms, values and rules. It is in this sense that economic geography in the tradition of locational analysis only begins after culture is set aside.

Locational analysis, and the influence of neoclassicism, began waning in economic geography from the mid-1970s when a new, political economy approach increasingly took hold (albeit not without resistance; Johnston, 1991). At least initially, however, the same binary impulse remained, one that cleaved economy and culture, and asserted the dominance of the former over

DCN:11697
Chapter-04.qxd 6/11/2004 5:33 PM Page 67

the latter. To see how and why, it is best to return to Marx's most succinct, and most well-known theoretical statement about economy and culture, and found in his Preface to *A Contribution to the Critique of Political Economy* (1859). There Marx writes, 'the mode of production of material life conditions the social, political and intellectual life process in general. It is not the consciousness of men that determines their being, but, on the contrary, their social being that determines their consciousness' (Marx, 1904: Preface). As Marx makes clear in other parts of the Preface, the social being that determines consciousness is rooted in 'relations of production which correspond to a definite stage of development in the material productive forces' (Marx, 1904: Preface). It is therefore economic relations, or what Marx called the 'base' or 'infrastructure,' that is the prime mover. In contrast, social being or consciousness, which correspond to the 'infrastructure' and comprise cultural elements such as religious and legal institutions, are the consequence and of secondary importance.

Marx's position is often interpreted as economic determinism: culture as a set of 'social, political and intellectual processes in general' is irrevocably determined by the economy, 'the mode of production'. Culture is thereby reduced to an epiphenomenon, performing the functional role of an ideological smokescreen for an oppressive capitalist class bent on immiserizing the proletariat. In this interpretation, while there are differences between Marx's and neoclassicism's view of economy and culture – for Marx culture performs a functional role in keeping capitalism going, but for neoclassicism it plays no role – there are also strong commonalities: both prioritize and essentialize the economy, conceiving it respectively as either the embodiment of material productive forces or of individual rational choice. Culture, in contrast, is sloughed off; it is not real, not essential and not a priority.

Certainly, when economic geographers began systematically drawing upon Marx's work they reproduced the economic determinist interpretation of classical Marxism, where culture was an after-thought if it was a thought at all. Such a position is perhaps best found in the work of David Harvey, who through the 1970s and 1980s developed a systematic and often brilliant geographical interpretation of Marx through a detailed exegesis of his writings (summarized in Harvey, 1982). The details are complicated, but the gist is that propelling geographical change are economic imperatives of accumulation turning on the maximization of surplus value within the sphere of production. Culture does not get much of a mention by Harvey until the late 1980s, when it is theorized in *The Condition of Postmodernity* (Harvey, 1989), and subtitled significantly, *An Enquiry into the Origins of Cultural Change*. But even here, Harvey resorts to a version of Marx's original base–superstructure model. Modernist culture is predicated upon a Fordist economy, and postmodernist culture is predicated upon a post-Fordist one. Furthermore, both types of economies derive from the basal logic of all capitalist accumulation resting on an incessant need to reduce turnover time in

DCN:11697
Chapter-04.qxd 6/11/2004 5:33 PM Page 68

order to realize surplus value. Marx's original binary thus remains firmly in place. Ten years later or so, still not much has changed. Harvey in his introduction to his latest book, *Spaces of Hope* (2000), continues to assert the dualism of culture and economy. On the one hand, there is 'cultural analysis' which is 'fun', and on the other, 'political economy' which is about 'the dour world and crushing realities of capitalist exploitation)' (Harvey, 2000: 5). For Harvey (2000: 7), of course, it is those 'crushing realities' that demand our attention, and his list of the most important – 'fetishism of the market', 'the savage history of downsizing', 'technological change', 'weakened organized labour' and an 'industrial reserve army' – make it clear that it is not going to be fun. We need to be prepared for serious work. No cultural analysis here.

I realize this is caricaturing Harvey, and that his prose and theorizing is more nimble and nuanced than I have suggested. But he is now almost alone among Marxist geographers in his resistance to 'cultural analysis'. For example, the former dyed-in-the-wool, classical Marxist Dick Peet (2000: 1215) now searches for 'the cultural source of economies', urging the use of 'cultural terms such as symbol, imaginary, and rationality ... to understand crucial economic processes' (p. 1213). As Peet (2000: 1231) writes, 'In a phrase I never thought I would say, political economy should become cultural economy.' Or Neil Smith, a student of Harvey's, who in his earlier days trumpeted 'the universalization of value in the form of abstract labour' (Smith, 1984: 82) now says, '"Back-to-class" in any narrow sense is its own self-defeating cul-de-sac' (Smith, 2000: 1028), and it is necessary 'to find a way of integrating class into the issues of identity and cultural politics' (Smith, 2000: 1011).

Helping produce such changes of heart among former hard-line Marxist economic geographers has been an increasingly large body of work from the left that rethinks the relationship between economy and culture, and in doing so moves away from Marx's binary base–superstructure relation. Again, the details are complex. Its general impetus is to show that the cultural, for example, as gender, and/or race, and/or religion, partially constitute(s) the economic and vice versa, and as a result there is no neat dividing line between one sphere and the other. Although there are historical precedents for this cultural turn (for example, in Gramsci's notion of 'hegemony' articulated in the 1920s), much of the impulse derives from cultural studies, which comes in at least two versions. The older British type, and particularly associated with Raymond Williams ('structure of feeling'), Richard Hoggart ('the felt quality of life') and later Stuart Hall ('Marxism without guarantees'), remains committed to a socialist politics intent on remedying the inequities of capitalism. Its novelty is in trying to hang on to class analysis and the economy, while at the same time recognizing and merging cultural values and practices, ways of life, and emotional and political commitments that lie outside. Hence, for example, Williams' phrase the 'structure of feeling' that connotes the 'doubleness of culture ... [as both] material reality and lived experience' (Eagleton, 2000: 36). The North American version of cultural studies is less interested in

DCN:11697
Chapter-04.qxd 6/11/2004 5:33 PM Page 69

class politics. Embracing tenets of post-structuralism, especially as expressed by Derrida and Foucault (Gibson-Graham, 2000), culture and economy can become in the North American version simply the 'free play of texts, representations and discourses' (Bradley and Fenton, 1999: 114).

In economic geography, the move towards culture has been a long time coming. Of course, one might argue that the two were together right from the beginning. Certainly, the line between the economy and culture is smudged, if it is there at all, in early economic geographical texts such as in Chisholm (1889) or in J. Russell Smith (1913). That said, it is not until Doreen Massey's (1984) *Spatial Divisions of Labour* that there is an explicit attempt to *theorize* the relation between culture and economy. Writing from a Marxist perspective, Massey in effect criticizes, and provides an alternative to Harvey's theory of accumulation. Using a geological metaphor, she conceives of culture and economy in particular places as involved in a recursive, two-way relationship, and in so doing, she clearly moves away from Marx's classical base–superstructure rendering. There is not space to provide a detailed account of her analysis. The important point is that *Spatial Divisions* put culture on the economic geographer's theoretical agenda in a way that it was never there before, and paved the way for the 'cultural turn' now found in the discipline. That 'cultural turn' has taken a variety of forms, embracing both the traditions of British and North American cultural studies, but it has also drawn upon other bodies of work as well, ranging from critical realism (Sayer, 1997), to Karl Polyani's idea of embeddedness (Mitchell, 1995), to Thorstein Veblen's institutionalism (Martin, 1994).

All of this is to say, that in the past few decades there has been a sustained effort, at least from some factions on the left, as well as the left in economic geography, to shift their thinking from the binary of culture and economy to something more complex; one that tries to overlap and dissolve the boundaries of the two categories. To use the vocabulary of this book, there has been a move to conceive culture and economy as a hybrid.

Hybrids and translation

Deriving from botany and zoology, and more recently genetics, a hybrid is the result of combining two different species or different genetic strains of the same species. The consequence is a new object that, while sharing characteristics of its 'parents', also possesses unique traits.

That hybridity as an idea has travelled from the life sciences to the social sciences is because of dissatisfaction with the conceptual binaries pervading the latter. Hybrids provide the possibility for thinking outside traditional dualisms. Additionally, such possibilities have political resonance, for example, as is the case with the use of hybridity in post-colonial literature. The identity of the colonial migrant living within the metropole is hybrid, lying

DCN:11697
Chapter-04.qxd 6/11/2004 5:33 PM Page 70

betwixt and between colonial and native subject positions. As such, it challenges the very binary of home and colony, the same and the Other (Bhabha, 1994), and the relations of power that inhere between them. Or again, Donna Haraway (1991) uses the notion of a cyborg – a creature that is half human and half machine – as an exemplar for the kind of politics that she want to prosecute, and which cuts across hitherto oppressive binaries like man/woman, straight/gay, white/black and able-bodied/disabled. The hybrid cyborg interrupts and thwarts categories typically used to assert domination, power and control. As I will discuss in the next section, some economic geographers also believe that opening up a hybrid space between economy and culture provides a location for political potentialities.

Another possibility afforded hybrids is making connections between types and objects of enquiry that because of binary thinking have been hitherto kept separate, for example, nature and society, science and humanities, or in our case, economy and culture. In particular, the notion of a hybrid or hybrid *collectif* has been used extensively within actor-network theory (ANT) to subvert the dualism of nature and society (Latour, 1993; Callon and Law, 1995). By reviewing that work, I will try to provide a vocabulary and set of concepts that I can use in the last section to discuss a hybridized economy and culture within a reconceived economic geography.

ANT emerges out of science studies, and is especially associated with the work of Bruno Latour (1993, 1999) and John Law (1994, 1999). One of its most insistent claims is that 'entities take their form and acquire their attributes as a result of their relations with other entities' (Law, 1999: 3). Those entities can literally be anything – Petri dishes, microscopic bacteria, spectrometers, papers published in *Nature*, people in white coats. There are no limits. The important point is that the meaning of an entity is a relational effect of its association with other entities. As Callon and Law (1995: 485) write: 'it is the relations ... that are important. Relations which perform.' In the language of ANT, individual entities are called actants, and the sum of the relations established among them is termed a network. A network is a tight-knit assemblage of heterogeneous actants that are persuaded at least temporarily to stay in place, and work with one another to produce order (Whatmore, 1999: 28; Murdoch, 1997).

Order is only as durable as the network itself, however, and reaches only as far as the network extends. There is nothing outside. Order is not universal and fixed from on high, given by transcendental categories like Nature or Society, or Economy and Culture. Rather, it is contingent upon the workings of particular networks, their stability and geographical reach. As Whatmore (1999: 31–2) writes, order is ' always in the making, not ... a priori'. That we sometimes think it is a priori, inherent in transcendental categories, is because of a process of purification (Latour, 1993); that is, the process of fastidiously dividing the world into unblemished categories – rocks into Nature, working class into Society, money into Economy, opera into Culture – making the world

DCN:11697
Chapter-04.qxd 6/11/2004 5:33 PM Page 71

neat and tidy, as if it is one giant filing cabinet. But for Latour such categories are not beginning points for enquiry, but end points. As he writes, Society and Nature are not 'causes of our knowledge ... but a consequence'. So, scientists do not start with Nature, but produce it only at the end of their research by a process of purification; that is, by systematically excluding from their accounts parts of their work that do not fit into the Nature box. But in reality scientists continually bring together all manner of heterogeneous entities – Petri dishes, microscopic bacteria, and so on – connecting them, forming networks, or what amounts to the same thing, working with, and producing hybrids. But those hybrids are not recognized. They are continually purified into sub-components, separated into various binaries. Latour (1993: 2) provides an example:

> The smallest AIDS virus takes you from sex to the unconscious, then to Africa, tissue cultures, DNA and San Francisco, but the analysts, thinkers, journalists and decision makers will slice the delicate network traced by the virus for you into tidy compartments where you will find only science, only economy, only social phenomena, only local news, only sentiment, only sex.

For Latour, however, if we want to understand how science works, we must trace through the multitudinous networks of which it is composed, recognizing their hybridity. The real action does not take place at the rarefied poles of Nature and Society, but in 'the middle kingdom' (Latour, 1993: 47); that is, within the 'imbroglio' or 'Gordian knot' of hybrids (Latour, 1993: 3). Callon and Law (1995: 485) call that imbroglio a 'hybrid *collectif*', and define it as 'an emergent effect created by the interaction of the heterogeneous parts that make it up'. As with Latour, they are keen to stress that the hybridity of the *collectif* often goes unrecognized, and, important for this chapter, it is a criticism that they apply as much to social scientists as to natural scientists. Social scientists are as blinkered by binaries as natural scientists. The solution is to follow the interaction of heterogeneous actants wherever they lead, and the hybrids that are consequently produced.

Useful for understanding how hybridity is produced from these heterogeneous actants is the notion of 'translation'. Michel Callon (1980: 211) writes that 'translation involves creating convergences and homologies by relating things that were previously different'. Translation is thus the very basis of hybridity. Latour (1999: 88) elaborates:

> The question of translation consists of combining two hitherto interests ... to form a single goal ... Even if the balance is equal, neither of the parties ... will be able to arrive at exactly [their] original goal. There is a drift, a slippage, a displacement, which, depending on the case, may be tiny or infinitely large

Translation, then, involves bringing together entities that are sometime radically different, and convincing them that they have an interest in connecting

DCN:11697
Chapter-04.qxd 6/11/2004 5:33 PM Page 72

and relating. Through a process of 'drift', 'slippage' and 'displacement', that connection creates something new, a hybrid. Callon's (1986) original example of translation involved marine scientists, fishers, scallops and techniques of scallop propagation in St Brieuc Bay in Normandy, France. The context is a sudden decline in scallops in the Bay for harvesting. The task of the scientist is to understand the process, and which, as Callon shows, is achieved through creating a hybrid *collectif* that brings together through translation the four actants. Scientists must be persuaded that St Brieuc is an interesting problem to study, fishers must be persuaded to curb their harvesting while scientists work, scallops must be persuaded to join the experiments of the scientists, and techniques of scallop propagation must be persuaded to operate in conditions quite different from those in which they were initially designed. There are no guarantees here, and to enable the hybrid *collectif* to emerge and attain stability requires the expenditure of a lot of work and resources. It is always in process, always an achievement.

In sum, the science studies literature on hybrids provides a vocabulary and set of concepts to represent the relationship between culture and economy. It says that terms like Economy and Culture are the consequence of a prior process of purification in which tainted hybrid entities are either removed, or cleansed. The world we study, though, is not like that. It is full of messy distinctions and objects that smudge boundaries and cross borders. It is a hybrid world. Michael Mann (1986: 1) writing in a different context says, 'the world is messier than our theories of it'. ANT provides a means of coping with the messiness. It says that we need to attend to the networks of relations that crosscut, interleave and fold across culture and economy, and that form hybrid collectives. More particularly, the task is to trace specific translations of objects, people and ideas, as they come together from a variety of origins, and sometimes split apart. It is by undertaking this tracing that we enter the 'middle kingdom', and see the world before it is torn in two, in this case purified by the binary of Culture and Economy.

In addition, there is a political imperative. I have not discussed issues of power, but they are there, especially in Law's (1994, 2001) work, and certainly in Haraway's (1994, 1997), who is sympathetic to ANT (her notions of a 'cat's cradle' and cyborg compliment the hybrid *collectif*). The political problem with applying purified categories, especially in a binary form, is that they can produce dogma and intolerance, and sometimes much worse (Bauman, 1989, brilliantly discusses the 'much worse'). It is for this reason that Haraway (1991: 81) says, 'I would rather be a cyborg than a Goddess.' Recognizing and staying with hybrids, with complexity, if not creating a kinder, gentler world, might create a more politically tolerant, modest one, less skewered by immaculate binaries. As Whatmore (1999: 35) writes, 'hybrid geographies cannot be other than plural and partial', which is surely better than monolithic and absolute.

DCN:11697
Chapter-04.qxd 6/11/2004 5:33 PM Page 73

Toward a hybrid economic geography: two examples

As I suggested, since Massey's (1984) work there has been a shift towards recognizing the cultural within economic geography, and since the mid-1990s that move has sped up producing the 'cultural turn', thus pushing the discipline farther away from the economism of either the neoclassical or Marxist type. Thrift (2000a: 692) even says that 'it is possible to argue that economic geographers have become some of the leading exponents of cultural geography'. However, there are already critics, including those who are otherwise sympathetic to the inclusion of the cultural within economic geography. For example, Martin and Sunley (2001) and Plummer and Sheppard (2001) in reacting to the cultural economic geographical manifesto put forward by Amin and Thrift (2000) see that project weighed down by the same kinds of problems found in economistic accounts except here it is a culturalist dogma that is espoused: actors are cultural rather than economic dopes. Further, both sets of critics are suspicious about both the lack of theoretical and empirical rigour in cultural approaches – Martin and Sunley (2001: 152) talk about its 'vague theory and thin empirics' – and the limited, small-scale nature of the studies produced that are unrepresentative of larger-scale phenomena and geographies.

Certainly, the arguments of Martin and Sunley and Plummer and Sheppard are important warnings. The task of a hybrid economic geography should not be simply to reverse the binary and make culture primary, and the economy secondary. Rather, it should be to dissolve the binary altogether (and which I would argue Thrift attempts at least in his substantive work, and discussed below). In addition, a hybrid economic geography should recognize and utilize a variety of methodological strategies, quantitative and qualitative, statistical and story-based, and not be methodologically monist. Finally, it should not confine particular kinds of phenomena to particular scales of analysis. The cultural is not inherently local, and the economic is not inherently global. Some hybrids of culture and economy, like LETS schemes, operate at a local scale, while other hybrids of culture and economy, like transnational corporations, operate at a global scale. Rather than assuming economy and culture are naturally found at particular geographical scales, the important task is to evaluate the strength and nature of the linkages of the particular hybrid in question to ascertain its ability to extend spatially its reach.

More broadly, the debate between Amin and Thrift, and Martin, Sunley, Plummer and Sheppard (and there were others, see the special issue of *Antipode*, volume 33, number 2, 2001) suggests that the task of bringing together culture and economy within economic geography is still in process, still in discussion. There are no definitive approaches or answers. There are already, however, some interesting substantive works that attempt to realize the promise of a hybrid economic geography that takes culture seriously, and to finish let me provide two examples.

DCN:11697
Chapter-04.qxd 6/11/2004 5:33 PM Page 74

The first, and exemplifying the political possibilities of a hybrid economic geography, is J.K. Gibson-Graham's (1996, 2000) work. Rejecting the classical Marxist base–superstructure position and associated economism they had earlier deployed, from the early 1990s they began making use of Althusser's concept of overdetermination, which enabled them to explore the political possibilities of conceiving the economy as an open, porous entity, influenced as much by culture as it influences culture itself (Gibson-Graham, 1996: Preface). By overdetermination, they mean the idea that everything determines everything else. The result is that it is impossible to uphold traditional binaries like culture and economy. The two are continually in interaction and exchange, displacing, drifting and swerving, creating new hybrid entities. Gibson-Graham (2000) give the example of the factory. As a term, it is part of a classic binary positively associated with economy, and all the other words that go with it like production, man and reason (Gibson-Graham, 2000: 98). As a master signifier, it defines itself by what it is not – household, reproduction, woman, emotion. Gibson-Graham argues, however, it is not this simple. The two sides of that binary are always leaking into one another, disrupting them. For example, it is possible to 'reverse the flow of cultural valuation by pointing out how many hours are spent in unpaid domestic labor in the household and how this contributes to Gross Domestic Product, [and which] if measured, would outweigh the labor performed in factory-based production' (Gibson-Graham, 2000: 98). Through this reversal, the binary begins to crumble.

They apply this same anti-binary, overdetermination logic to understand capitalism itself, and it is here that they work out the political possibilities of hybridization. Capitalism as a term gains meaning from being on the same positive side of the binary as factory, and associated with the kindred words already listed. The problem with this binary politically is that it makes capitalism seem invincible, masterful in every sense. People accept the binary, and act accordingly, believing they cannot go against it. The purified category of Capitalism is too strong to resist. But for Gibson-Graham (as for Latour), the political task is to tarnish those purities, and in doing so provide the possibilities for resistance and change. This needs elaborating. Gibson-Graham argues that once capitalism becomes Capitalism through the binary, the only means of transformation is seemingly an apocalyptic one, a revolution on the same scale and magnitude of Capitalism itself. But the effort and resolve necessary for such a revolution is so large as to preclude it. If, however, we begin to reconceive the binary through an overdetermination logic, and exemplified by the factory example, we begin to see that Capitalism is plural and partial – a hybrid – and as a result strategies for change appear far less daunting, and more likely to occur. In particular, Gibson-Graham provide two particular strategies for recognizing the hybridity of capitalism, thereby opening spaces for political action.

The first is empirical. It is to investigate alternative forms of capitalism. By their very nature as alternatives, they are necessarily open to features on

DCN:11697
Chapter-04.qxd 6/11/2004 5:33 PM Page 75

the other side of the binary, for example, reproduction, household, family, emotion and culture. Here Gibson-Graham has studied the 'alternative' economic regions of the Mandragon region in Spain, the Latrobe valley in Australia and the Katahdin region in Maine (for further details on their project see www.arts.monash.edu.au/projects/cep/knowledges). The second is conceptual. It is to replace traditional metaphors stemming from the old binary and used to describe capitalism – masculinity, heterosexuality, domination, closure – and which make it so monolithic and absolute, with another set turning on femininity, homosexuality, resistance and openness (Gibson-Graham 1996: chs 5, 6). Once capitalism is described by these new metaphors, political action and the promise of alternatives become imaginable in ways inconceivable before.

The second example comes from Nigel Thrift's work and his attempt to deal with the hybridity of particular quaternary service activities within capitalism. Thrift's work is part of a wider body of writing by both economic geographers and others that recognizes a sea change in the operation of capitalism over the past two decades, transforming the nature of goods produced and sold, the behaviour and choices of consumers, and the very internal work-a-day operations of firms. Here Scott Lash and John Urry's (1994) book on 'economies of signs', Ulrich Beck's (1992) work on 'reflexive modernization', and in economic geography, Nigel Thrift's (1999) own writings on 'soft capitalism' are signal contributions. Such works argue that the economy operates as a discursive construction blending economy and culture. As Thrift (1999: 136) says, 'capitalism seems to be undergoing its own cultural turn as increasingly ... business is about the creation, fostering, and distribution of knowledge'.

It is the 'knowledge' industries on which Thrift has focused, and in particular those in the financial sector and high-level management consultancy firms (Leyshon and Thrift, 1996; Thrift, 2000b). In both cases, he is keen to illustrate their hybrid nature, and he does so by drawing explicitly upon the vocabulary and concepts of ANT. The contrast he makes is between an earlier form of business organization and management resting on structures, hierarchies, systems of inputs and outputs, and control devices, and a newer form couched in the vocabulary of networks, post-bureaucracy, teams, virtual management and post-structuralist organization (Thrift, 1999). The earlier form represented an application of binary thinking, or pure categories, of seeing the firm as a large flow chart with its different operations neatly organized into pre-assigned separated boxes. This was the era of the 'rational company man' (Thrift, 1999: 154). But in the post-Bretton Woods, post-Cold War, post-Fordist period, with flattened corporate structures, pervasive use of IT and ever-compressed space–time horizons, binary thinking no longer works. There is a need to be looser, quicker, more flexible, more creative and more adaptable. And to be this, argues Thrift, requires above all openness to a heterogeneous range of institutions, techniques, technologies, ideas and people.

DCN:11697
Chapter-04.qxd 6/11/2004 5:33 PM Page 76

The task of 'corporate social persona of the 1990s' (Thrift, 1999: 154) is to bring these different elements together, to make them perform. That is, it is to make them work as a hybrid *collectif*. As a result, and for reasons already given, the distinction between culture and economy loses its force.

Concluding remarks

As John Law (1994: 4–5) says in the epigraph to this chapter, we become nervous in the face of complexity, treating it at best as a 'distraction', and at worst as a sign of 'failure', both ours and the wider system. One means by which we impose order is by deploying binaries of various kinds. They enable us to sleep at night, to have the modernist dream. My argument in this chapter, however, is that the binaries are the dream. The world is not cleaved so neatly. Shakespeare has Hamlet declare to Horatio, 'There are more things in heaven and earth, ... than are dreamt of in ... philosophy'. Shakespeare (and Hamlet) were probably not thinking of a critique of binaries when they said that, but they might have been. The contention of this chapter is that there are more things in heaven and earth, including within economic geography, that are hybrids than binaries: like Christmas, like punk rock, like a plank of wood. And they demand a vocabulary sensitive to their hybridity.

Such a vocabulary has not existed in economic geography for much of its recent history, which was dominated by the economism of either neoclassicism or classical Marxism. This is changing with the 'cultural turn'. One component of that 'turn', I suggested, might be a vocabulary drawn from ANT, and one which is sensitive to hybridity. That said, it is not the only sensitive vocabulary available, as is evident from other contributions to this volume. It is flexible, though, which I tried to illustrate by casting the work of Gibson-Graham and Thrift within it as they prosecute a hybrid economic geography.

Haraway (1991: 129) argues that for political and intellectual reasons we must be vigilant in search of 'geometries, paradigms and logics [that] break out of binaries'. But even if we find them, such as ANT, there are always pressures to capitulate and return to a binary world. Jonathan Murdoch (1997: 732) writes: 'Spanning the divides, overcoming the dualisms, will not simply be a matter of adding terms such as "hybrid" or "cyborg" into our existing modes of thought, but will require a much more thorough re-examination of our theories and methodologies for there is an ever present danger that the dualisms will prise apart the connections and associations we might stitch together.' For this reason, we need to be watchful and alert. Whatever we do we should not roll over and go back to sleep. Only the binary dreams of modernism and Western philosophy await us, and not the hybrid world of our waking lives.

DCN:11697
Chapter-04.qxd 6/11/2004 5:33 PM Page 77

Acknowledgement

I would like to thank Ron Johnston for his very helpful comments that improved this chapter.

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DCN:11697

News

United States Department of Labor

Bureau of Labor Statistics Washington, D.C. 20212

Technical information: (202) 691-6567
http://www.bls.gov/cew/

Media contact: 691-5902

USDL 04-1200

For release: 10:00 A.M. EDT
Thursday, July 8, 2004

(This release was reissued on Tuesday, August 31, 2004, to correct data in the second column of table A and in the release text associated with table A. See page 5 for corrections to data from prior releases.)

COUNTY EMPLOYMENT AND WAGES: FOURTH QUARTER 2003

In December 2003, Clark County, Nev., and Loudoun County, Va., had the largest over-the-year percentage increases in employment among the largest counties in the U.S., according to preliminary data released today by the Bureau of Labor Statistics of the U.S. Department of Labor. Clark and Loudoun counties experienced over-the-year employment gains of 5.2 percent each, compared with zero job growth in the nation. Collier County, Fla., had the largest over-the-year gain in average weekly wages in the fourth quarter of 2003, with an increase of 9.7 percent. The U.S. average weekly wage increased by 3.6 percent over the same time span.

Of the 315 largest counties in the United States, 171 had over-the-year growth in employment and 137 experienced declines in employment, while the national average employment level was unchanged. (See chart 1.) Average weekly wages grew faster than the national average in 166 of the largest U.S. counties, while the percent change in average weekly wages was below the national average in 144 counties. (See chart 2.)

Total Coun
3141

The employment and average weekly wage data by county are compiled under the Quarterly Census of Employment and Wages (QCEW) program, also known as the ES-202 program. The data are derived from reports submitted by every employer subject to unemployment insurance (UI) laws. The 8.3 million employer reports cover 129.3 million full- and part-time workers. The attached tables and charts contain data for the nation and for the 315 U.S. counties with employment levels of 75,000 or more. In addition, data for San Juan, Puerto Rico, are provided, but not used in calculating U.S. averages, or in the analysis in the text. (See Technical Note.) December 2003 employment and 2003 fourth-quarter average weekly wages for all states are provided in table 4 of this release. Data for all states, MSAs, counties, and the nation through the third quarter of 2003 are available on the BLS Web site at http://www.bls.gov/cew/. Preliminary data for the fourth quarter of 2003 and revised data for the first, second, and third quarters of 2003 will be available later in July on the BLS Web site.

Large County Employment

The national employment total in December 2003 was 129.3 million, unchanged from December 2002. The 315 U.S. counties with 75,000 or more employees accounted for 70.5 percent of total U.S. covered employment and 76.6 percent of total wages. These 315 counties had a net job loss of 26,708 over the year. The biggest gains in employment from December 2002 to December 2003 were recorded in the

Table A. Top 10 counties ranked by December 2003 employment, December 2002-03 employment change, and December 2002-03 percent change in employment

Employment in large counties					
December 2003 employment (thousands)		Net change in employment, December 2002-03 (thousands)		Percent change in employment, December 2002-03	
U.S.	129,341.5	U.S.	-37.3	U.S.	0.0
Los Angeles, Calif.	4,075.3	Clark, Nev.	38.5	Clark, Nev.	5.2
Cook, Ill.	2,539.8	Orange, Calif.	18.6	Loudoun, Va.	5.2
New York, N.Y.	2,253.6	Riverside, Calif.	16.5	Prince William, Va.	5.1
Harris, Texas	1,841.5	San Diego, Calif.	15.9	Rutherford, Tenn.	4.6
Maricopa, Ariz.	1,621.2	Fairfax, Va.	15.3	Hidalgo, Texas	4.4
Dallas, Texas	1,450.8	San Bernardino, Calif.	14.7	Montgomery, Texas	4.3
Orange, Calif.	1,436.6	Pinellas, Fla.	10.0	Placer, Calif.	4.3
San Diego, Calif.	1,278.2	Wake, N.C.	8.9	Chesapeake City, Va.	4.2
King, Wash.	1,100.6	Gwinnett, Ga.	8.2	Lee, Fla.	3.9
Miami-Dade, Fla.	980.8	Orange, Fla.	8.0	Frederick, Md.	3.8

counties of Clark, Nev. (38,500), Orange, Calif. (18,600), Riverside, Calif. (16,500), San Diego, Calif. (15,900), and Fairfax, Va. (15,300). (See table A.)

Employment increased in 171 counties from December 2002 to December 2003. Clark County, Nev., and Loudoun County, Va., had the largest over-the-year percentage increases in employment (5.2 percent each). Prince William County, Va., had the next largest increase, 5.1 percent, followed by the counties of Rutherford, Tenn. (4.6 percent), and Hidalgo, Texas (4.4 percent). (See table 1.)

Employment declined in 137 counties from December 2002 to December 2003. The largest percentage decline in employment was in San Mateo County, Calif. (-4.7 percent), followed by the counties of Sangamon, Ill. (-3.9 percent), Santa Clara, Calif. (-3.4 percent), Tulsa, Okla. (-3.0 percent), and Shawnee, Kan. (-2.9 percent). The largest absolute declines in employment occurred in Cook County, Ill. (-30,800), followed by the counties of Santa Clara, Calif. (-30,500), New York, N.Y. (-21,900), Dallas, Texas (-20,700), and Middlesex, Mass. (-20,400).

Large County Average Weekly Wages

The national average weekly wage in the fourth quarter of 2003 was $767, which was 3.6 percent higher than in the fourth quarter of 2002. Average weekly wages were higher than the national average in 109 of the largest 315 U.S. counties. New York County, N.Y., held the top position among the highest-paid large counties with an average weekly wage of $1,480. Santa Clara County, Calif., was second with an average weekly wage of $1,333, followed by Fairfield, Conn. ($1,308), Suffolk, Mass. ($1,245), and Washington, D.C. ($1,238). (See table B.)

Collier County, Fla., led the nation in growth in average weekly wages with an increase of 9.7 percent. Madison County, Ill., was second with 8.8 percent growth, followed by the counties of Washington, Ore. (8.5 percent), Genesee, Mich. (8.0 percent), and Peoria, Ill. (7.6 percent).

Table B. Top 10 counties ranked by fourth quarter 2003 average weekly wages, fourth quarter 2002-03 change in average weekly wages, and fourth quarter 2002-03 percent change in average weekly wages

Average weekly wage in large counties					
Average weekly wage, fourth quarter 2003		Change in average weekly wage, fourth quarter 2002-03		Percent change in average weekly wage, fourth quarter 2002-03	
U.S.	$767	U.S.	$27	U.S.	3.6
New York, N.Y.	$1,480	New York, N.Y.	$99	Collier, Fla.	9.7
Santa Clara, Calif.	1,333	Santa Clara, Calif.	86	Madison, Ill.	8.8
Fairfield, Conn.	1,308	Suffolk, Mass.	75	Washington, Ore.	8.5
Suffolk, Mass.	1,245	Fairfax, Va.	70	Genesee, Mich.	8.0
Washington, D.C.	1,238	Washington, Ore.	70	Peoria, Ill.	7.6
San Mateo, Calif.	1,234	San Mateo, Calif.	67	Okaloosa, Fla.	7.5
Arlington, Va.	1,199	Collier, Fla.	62	Norfolk City, Va.	7.3
San Francisco, Calif.	1,178	Philadelphia, Pa.	61	New York, N.Y.	7.2
Somerset, N.J.	1,159	Genesee, Mich.	59	Philadelphia, Pa.	7.2
Fairfax, Va.	1,158	Hudson, N.J.	56	Richmond, N.Y.	7.1

There were 206 counties with an average weekly wage below the national average. The lowest average weekly wages were reported in Cameron County, Texas ($480), followed by the counties of Hidalgo, Texas ($487), Yakima, Wash. ($515), Horry, S.C. ($523), and Brazos, Texas ($537). (See table 1.)

Six large counties experienced declines in average weekly wages. Broome County, N.Y., and Olmsted County, Minn., had the largest decreases, -3.3 percent each, followed by the counties of Hamilton, Ind. (-1.5 percent), Arapahoe, Colo. (-1.3 percent), and Santa Cruz, Calif. (-1.2 percent).

Ten Largest U.S. Counties

Of the 10 largest U.S. counties (based on 2002 employment levels), 3 reported increases in employment, while declines occurred in 6 from December 2002 to December 2003. Orange County, Calif., and San Diego County, Calif., experienced the fastest growth in employment among the largest counties with a 1.3 percent increase each. Orange County showed employment gains in every private industry supersector, except manufacturing and information. San Diego County had a similar experience, but also reported a decline in the natural resources and mining supersector. Government employment in Orange County declined by 5.7 percent, whereas government employment in San Diego County increased by 0.1 percent. (See table 2.) King County, Wash., had the next largest increase in employment, 0.2 percent. The largest decline in employment for the 10 largest counties was in Dallas County, Texas, -1.4 percent. The next largest declines in employment were recorded in Cook County, Ill., -1.2 percent, and in New York County, N.Y., -1.0 percent.

All of the 10 largest U.S. counties saw over-the-year increases in average weekly wages. New York County, N.Y., had the fastest growth in wages among the top 10 counties, growing at a 7.2 percent rate. New York County's fastest growing supersectors were financial activities, where the average weekly wage rose by 16.1 percent, and information, with a 7.9 percent increase. Orange County, Calif., was second in wage growth, increasing by 5.3 percent, followed by Dallas County, Texas, where the average wage in-

creased by 4.3 percent. King County, Wash., experienced the smallest increase in average weekly wages among the largest 10 counties, rising by only 0.2 percent, primarily due to wage decreases in the information supersector. This was followed by Harris County, Texas, and San Diego County, Calif., with increases in average weekly wages of 2.1 percent and 2.6 percent, respectively.

Largest County by State

Table 3 shows December 2003 employment and 2003 fourth-quarter average weekly wage in the largest county in each state. This table includes two counties that have employment below 75,000 (Yellowstone, Mont., and Laramie, Wyo.). The employment levels in these counties in December 2003 ranged from approximately 4.1 million in Los Angeles County, Calif., to 39,500 in Laramie County, Wyo. The highest average weekly wage of these counties was in New York, N.Y. ($1,480), while the lowest average weekly wage was in Laramie, Wyo. ($597).

Correction of Data in Prior County Employment and Wages News Releases

In addition to the corrections made to the data in the second column of table A in this release, corrections also have been made to data originally published in the second column of table A of the second and third quarter 2003 County Employment and Wages news releases (USDL 04-6 and USDL 04-599). Corrected data from these releases are presented in the tables below. All data released through Create Customized Tables, Series Report, and FTP tools on the BLS Web site are unaffected.

Table A. Top 10 counties ranked by June 2003 employment, June 2002-03 employment change, and June 2002-03 percent change in employment

Employment					
June 2003 employment (thousands)		Net change in employment, June 2002-03 (thousands)		Percent change in employment, June 2002-03	
U.S.	129,169.4	U.S.	-628.3	U.S.	-0.5
Los Angeles, Calif.	4,060.4	Clark, Nev.	25.4	Loudoun, Va.	5.2
Cook, Ill.	2,543.0	Riverside, Calif.	16.1	Yakima, Wash.	4.8
New York, N.Y.	2,214.1	Orange, Fla.	13.4	Lee, Fla.	4.6
Harris, Texas	1,837.2	Orange, Calif.	13.1	St. Charles, Mo.	4.3
Maricopa, Ariz.	1,547.0	Maricopa, Ariz.	10.5	Placer, Calif.	4.2
Dallas, Texas	1,442.7	Sacramento, Calif.	9.3	Rutherford, Tenn.	4.1
Orange, Calif.	1,433.5	Pinellas, Fla.	9.1	Pasco, Fla.	3.9
San Diego, Calif.	1,263.1	San Bernardino, Calif.	8.5	Thurston, Wash.	3.7
King, Wash.	1,090.7	Lee, Fla.	8.0	Hidalgo, Texas	3.6
Miami-Dade, Fla.	966.5	Kern, Calif.	8.0	Clark, Nev.	3.5

Table A. Top 10 counties ranked by September 2003 employment, September 2002-03 employment change, and September 2002-03 percent change in employment

Employment					
September 2003 employment (thousands)		Net change in employment, September 2002-03 (thousands)		Percent change in employment, September 2002-03	
U.S.	128,546.3	U.S.	-494.3	U.S.	-0.4
Los Angeles, Calif.	4,007.2	Clark, Nev.	32.6	Manatee, Fla.	5.7
Cook, Ill.	2,529.5	Maricopa, Ariz.	17.5	Lee, Fla.	5.4
New York, N.Y.	2,184.9	Orange, Calif.	16.1	Loudoun, Va.	5.4
Harris, Texas	1,823.7	Riverside, Calif.	14.8	Gloucester, N.J.	4.6
Maricopa, Ariz.	1,571.3	San Bernardino, Calif.	14.4	Clark, Nev.	4.4
Dallas, Texas	1,438.9	Pinellas, Fla.	11.3	Okaloosa, Fla.	4.4
Orange, Calif.	1,426.5	San Diego, Calif.	10.8	Placer, Calif.	4.3
San Diego, Calif.	1,256.7	Lee, Fla.	9.4	Hidalgo, Texas	4.0
King, Wash.	1,095.4	Fairfax, Va.	9.0	Rutherford, Tenn.	3.9
Miami-Dade, Fla.	965.2	Orange, Fla.	7.8	Pasco, Fla.	3.8

Technical Note

These data are the product of a federal-state cooperative program, the Quarterly Census of Employment and Wages (QCEW) program, also known as the ES-202 program. The data are derived from summaries of employment and total pay of workers covered by state and federal unemployment insurance (UI) legislation and provided by State Workforce Agencies (SWAs). The summaries are a result of the administration of state unemployment insurance programs that require most employers to pay quarterly taxes based on the employment and wages of workers covered by UI. Data for 2003 are preliminary and subject to revision.

The preliminary QCEW data presented in this release may differ from data released by the individual states. These potential differences result from the states' continuing receipt of UI data over time and ongoing review and editing. The individual states determine their data release timetables.

Differences between QCEW, BED, and CES employment measures

The Bureau publishes three different establishment-based employment measures for any given quarter. Each of these measures—QCEW, Business Employment Dynamics (BED), and Current Employment Statistics (CES)—makes use of the quarterly UI employment reports in producing data; however, each measure has a somewhat different universe coverage, estimation procedure, and publication product.

Differences in coverage and estimation methods can result in somewhat different measures of over-the-quarter employment change. It is important to understand program differences and the intended uses of the program products. (See table below.) Additional information on each program can be obtained from the program Web sites shown in the table below.

Summary of Major Differences between QCEW, BED, and CES Employment Measures

	QCEW	BED	CES
Source	• Count of UI administrative records submitted by 8.3 million employers	• Count of longitudinally-linked UI administrative rocords submited by 6.4 million private sector employers	• Sample survey: 400,000 employers
Coverage	• UI and UCFE coverage, including all employers subject to state and federal UI Laws	• UI coverage, excluding government, private households, and establishments with zero employment	Nonfarm wage and salary jobs: • UI coverage, excluding agriculture, private households, and self-employed • Other employment, including railroads, religious organizations, and other non-UI-covered jobs
Publication frequency	• Quarterly - 7 months after the end of each quarter	• Quarterly - 8 months after the end of each quarter	• Monthly - Usually first Friday of following month
Use of UI file	• Directly summarizes and publishes each new quarter of UI data	• Links each new UI quarter to longitudinal database and directly summarizes gross job gains and losses	• Uses UI file as a sampling frame sample estimates to first quarter and annually realigns (benchmarks) UI levels
Principal products	• Provides a quarterly and annual universe count of establishments, employment, and wages at the county, MSA, state, and national levels by detailed industry	• Provides quarterly employer dynamics data on establishment openings, closings, expansions, and contractions at the national level • Future expansions will include data at the county, MSA, and state level by industry and size of establishment	• Provides current monthly estimates of employment, hours, and earnings at the MSA, state, and national level by industry
Principal uses	• Major uses include: - Detailed locality data - Periodic universe counts for benchmarking sample survey estimates - Sample frame for BLS establishment surveys	• Major uses include: - Business cycle analysis - Analysis of employer dynamics underlying economic expansions and contractions - Future: employment expansion and contraction by size of establishment	• Major uses include: - Principal national economic indicator - Official time series for employment change measures - Input into other major economic indicators
Program Web sites	• www.bls.gov/cew/	• www.bls.gov/bdm/	• www.bls.gov/ces/

Coverage

Employment and wage data for workers covered by state UI laws and for federal civilian workers covered by the Unemployment Compensation for Federal Employees (UCFE) program are compiled from quarterly contribution reports submitted to the SWAs by employers. In addition to the quarterly contribution reports, employers who operate multiple establishments within a state complete a questionnaire, called the "Multiple Worksite Report," which provides detailed information on the location and industry of each of their establishments. The employment and wage data included in this release are derived from microdata summaries of more than 8 million employer reports of employment and wages submitted by states to the BLS. These reports are based on place of employment rather than place of residence.

UI and UCFE coverage is broad and basically comparable from state to state. In 2002, UI and UCFE programs covered workers in 128.2 million jobs. The estimated 123.4 million workers in these jobs (after adjustment for multiple jobholders) represented 99.1 percent of civilian wage and salary employment. Covered workers received $4.713 trillion in pay, representing 94.3 percent of the wage and salary component of personal income and 45.1 percent of the gross domestic product.

Major exclusions from UI coverage include self-employed workers, most agricultural workers on small farms, all members of the Armed Forces, elected officials in most states, most employees of railroads, some domestic workers, most student workers at schools, and employees of certain small nonprofit organizations.

Concepts and methodology

Monthly employment is based on the number of workers who worked during or received pay for the pay period including the 12th of the month. With few exceptions, all employees of covered firms are reported, including production and sales workers, corporation officials, executives, supervisory personnel, and clerical workers. Workers on paid vacations and part-time workers also are included.

Average weekly wage values are calculated by dividing quarterly total wages by the average of the three monthly employment levels (all employees, as described above) and dividing the result by 13, for the 13 weeks in the quarter. These calculations are made from unrounded employment and wage values so the average wage values that can be calculated from data from this database may differ from the averages reported, due to rounding. Included in the quarterly wage data are nonwage cash payments such as bonuses, the cash value of meals and lodging when supplied, tips and other gratuities, and, in some states, employer contributions to certain deferred compensation plans such as 401(k) plans and stock options.

Average weekly wages are affected by the ratio of full-time to part-time workers as well as the number of individuals in high-paying and low-paying occupations. When comparing average weekly wage levels between industries and/or states, these factors should be taken into consideration. Percent changes are calculated using the final 2002 quarterly data as the base data. Final data for 2002 may differ from preliminary data published earlier.

In order to insure the highest possible quality of data, states verify with employers and update, if necessary, the industry, location, and ownership classification of all establishments on a 3-year cycle. Changes in establishment classification codes resulting from this process are introduced with the data reported for the first quarter of the year. Changes resulting from improved employer reporting also are introduced in the first quarter.

These changes in classifications are partially adjusted for in order to improve the measure of economic change over time, as presented in this release. Some changes in classification reflect economic events, while other changes are simply the result of corrections and other noneconomic events. Changes of an *economic* nature (such as a firm moving from one county to another or changing its primary economic activity) are not adjusted for in the over-the-year change, because these changes are due to an actual event. But to the extent possible, changes that are *not* economic in nature (such as a correction to a previously reported location or industry classification) are adjusted for in the measures of change presented in this release.

The adjustment is made by reassigning year-ago data for establishments with noneconomic changes into the classification shown in the current data. The year-ago totals are then recreated reflecting this reassignment process. The adjusted year-ago data are then used to calculate the over-the-year change. The adjusted year-ago data differ to some extent from the data available on the BLS Web site. This process results in a more accurate presentation of change in local economic activity than what would result from the simple comparison of current and year-ago data points.

County definitions are assigned according to Federal Information Processing Standards Publications (FIPS PUBS) as issued by the National Institute of Standards and Technology, after approval by the Secretary of Commerce pursuant to Section 5131 of the Information Technology Management Reform Act of 1996 and the Computer Security Act of 1987, Public Law 104-106. Areas shown as counties include those designated as independent cities in some jurisdictions and, in Alaska, those designated as census areas where counties have not been created. County data also are presented for the New England states for comparative purposes even though townships are the more common designation used in New England (and New Jersey). The regions referred to in this release are defined as census regions.

Additional statistics and other information

An annual bulletin, *Employment and Wages*, features comprehensive information by detailed industry on es-

DCN:11697

tablishments, employment, and wages for the nation and all states. *Employment and Wages Annual Averages, 2002* is available for sale from the BLS Publications Sales Center, P.O. Box 2145, Chicago, Illinois 60690, telephone 312-353-1880. The bulletin is now available in a portable document format (PDF) on the BLS Web site at http://www.bls.gov/cew/cewbultn02.htm.

News releases on quarterly measures of gross job flows also are available upon request from the Division of Administrative Statistics and Labor Turnover (Business Employment Dynamics), telephone 202-691-6467; (http://www.bls.gov/bdm/); (e-mail: BDMInfo@bls.gov).

Information in this release will be made available to sensory impaired individuals upon request. Voice phone: 202-691-5200; TDD message referral phone number: 1-800-877-8339.

DCN:11697

Table 1. Covered[1] establishments, employment, and wages in the 316 largest counties, fourth quarter 2003[2]

County[3]	Establishments, fourth quarter 2003 (thousands)	Employment			Average weekly wage[5]		
		December 2003 (thousands)	Percent change, December 2002-03[4]	Ranking by percent change	Average weekly wage	Percent change, fourth quarter 2002-03[4]	Ranking by percent change
United States[6]	8,314.1	129,341.5	0.0	-	$767	3.6	-
Jefferson, AL	18.2	374.3	0.3	150	761	2.6	235
Madison, AL	7.7	160.0	2.5	26	825	4.8	75
Mobile, AL	9.5	161.7	-0.9	240	625	3.3	185
Montgomery, AL	6.5	130.5	0.1	163	698	4.6	88
Tuscaloosa, AL	4.1	76.7	0.4	138	657	4.3	105
Anchorage Borough, AK	7.8	140.0	1.7	59	787	2.3	256
Maricopa, AZ	80.9	1,621.2	([7])	-	757	4.0	129
Pima, AZ	17.6	335.6	1.3	74	669	4.5	92
Benton, AR	4.1	83.1	3.4	14	679	6.3	21
Pulaski, AR	13.2	242.9	1.1	88	716	4.5	92
Washington, AR	4.9	85.6	1.5	66	603	3.1	201
Alameda, CA	48.2	677.7	-2.3	297	981	3.2	195
Contra Costa, CA	27.7	338.2	-1.0	249	928	2.4	249
Fresno, CA	29.2	325.7	1.2	83	613	3.4	176
Kern, CA	15.9	246.2	1.1	88	648	3.3	185
Los Angeles, CA	356.0	4,075.3	-0.5	205	903	4.2	114
Marin, CA	11.9	111.4	-1.1	257	1,001	5.1	52
Monterey, CA	11.9	149.9	-0.6	217	672	4.3	105
Orange, CA	88.8	1,436.6	1.3	74	874	5.3	47
Placer, CA	9.2	126.9	4.3	6	731	2.8	220
Riverside, CA	36.9	549.1	3.1	18	646	5.4	40
Sacramento, CA	46.1	598.6	0.7	116	834	2.8	220
San Bernardino, CA	40.8	592.0	2.5	26	674	3.5	171
San Diego, CA	85.3	1,278.2	1.3	74	815	2.6	235
San Francisco, CA	43.8	539.1	-0.9	240	1,178	3.5	171
San Joaquin, CA	15.7	207.5	-0.5	205	675	4.3	105
San Luis Obispo, CA	8.6	97.7	0.5	132	632	4.1	122
San Mateo, CA	22.9	327.8	-4.7	312	1,234	5.7	32
Santa Barbara, CA	13.1	171.1	0.2	158	728	4.9	67
Santa Clara, CA	52.0	855.1	-3.4	310	1,333	6.9	11
Santa Cruz, CA	8.4	90.3	-1.4	271	715	-1.2	310
Solano, CA	9.3	126.3	0.3	150	703	4.8	75
Sonoma, CA	17.1	187.0	-2.8	305	753	2.7	227
Stanislaus, CA	13.1	164.5	1.2	83	636	4.1	122
Tulare, CA	8.8	133.1	-1.0	249	540	4.2	114
Ventura, CA	20.4	301.6	0.1	163	812	3.3	185
Yolo, CA	5.0	93.9	([7])	-	702	([7])	-
Adams, CO	8.5	139.1	-2.8	305	726	2.5	242
Arapahoe, CO	18.7	272.0	-1.7	278	918	-1.3	311
Boulder, CO	11.7	151.5	-1.7	278	924	4.4	99
Denver, CO	24.1	425.7	-2.3	297	935	3.4	176
El Paso, CO	15.6	233.8	-0.5	205	705	2.2	263
Jefferson, CO	17.8	204.6	-2.0	289	781	1.0	299
Larimer, CO	9.0	120.3	0.1	163	708	1.3	295
Fairfield, CT	31.9	417.3	-0.3	191	1,308	3.2	195
Hartford, CT	24.3	484.5	-0.9	240	946	3.4	176
New Haven, CT	22.0	362.8	-0.7	224	858	4.5	92
New London, CT	6.6	129.8	1.3	74	816	2.8	220
New Castle, DE	18.0	283.1	0.8	108	917	6.0	27
Washington, DC	30.0	654.8	-0.4	198	1,238	3.9	136

See footnotes at end of table.

DCN:11697

Table 1. Covered[1] establishments, employment, and wages in the 316 largest counties, fourth quarter 2003[2] — Continued

County[3]	Establishments, fourth quarter 2003 (thousands)	Employment			Average weekly wage[5]		
		December 2003 (thousands)	Percent change, December 2002-03[4]	Ranking by percent change	Average weekly wage	Percent change, fourth quarter 2002-03[4]	Ranking by percent change
Alachua, FL	5.8	124.7	2.3	32	$586	3.4	176
Brevard, FL	12.1	190.5	2.2	35	714	3.0	209
Broward, FL	56.5	691.6	-0.2	184	742	4.4	99
Collier, FL	10.2	122.6	0.6	125	698	9.7	1
Duval, FL	21.8	431.6	-0.3	191	750	4.9	67
Escambia, FL	7.1	122.7	0.8	108	595	2.2	263
Hillsborough, FL	30.5	604.3	0.2	158	731	6.4	17
Lee, FL	14.6	195.3	3.9	9	641	3.7	159
Leon, FL	7.2	144.1	-0.1	176	653	0.9	300
Manatee, FL	6.7	120.3	3.7	11	583	3.4	176
Marion, FL	6.2	88.6	3.3	16	568	3.8	150
Miami-Dade, FL	80.2	980.8	-0.5	205	765	3.5	171
Okaloosa, FL	5.0	80.7	3.0	21	588	7.5	6
Orange, FL	29.0	617.2	1.3	74	707	3.5	171
Palm Beach, FL	42.5	521.8	-0.5	205	770	3.6	168
Pasco, FL	7.2	82.8	1.8	53	558	4.9	67
Pinellas, FL	27.9	436.7	2.3	32	671	1.5	290
Polk, FL	10.1	188.3	-0.7	224	617	4.9	67
Sarasota, FL	12.6	151.1	-1.6	276	648	5.7	32
Seminole, FL	11.7	150.6	0.8	108	683	2.7	227
Volusia, FL	11.5	151.2	1.1	88	583	4.5	92
Bibb, GA	4.8	87.3	2.2	35	642	0.0	308
Chatham, GA	7.0	126.6	1.6	63	639	1.8	280
Clayton, GA	4.4	109.6	-1.7	278	784	3.7	159
Cobb, GA	19.8	303.4	2.5	26	850	4.3	105
De Kalb, GA	17.1	295.7	-0.2	184	832	2.5	242
Fulton, GA	37.7	732.5	-1.3	267	990	3.6	168
Gwinnett, GA	21.4	298.0	2.8	23	823	1.5	290
Muscogee, GA	4.8	97.0	0.9	99	603	-0.5	309
Richmond, GA	4.8	106.0	0.9	99	641	3.7	159
Honolulu, HI	24.5	427.0	0.7	116	704	3.7	159
Ada, ID	13.0	184.9	1.0	95	685	1.9	278
Champaign, IL	3.9	90.5	-0.6	217	659	2.0	273
Cook, IL	126.7	2,539.8	-1.2	262	922	3.0	209
Du Page, IL	32.3	571.2	-0.6	217	921	2.4	249
Kane, IL	10.8	198.5	0.6	125	718	2.3	256
Lake, IL	18.8	320.3	-0.5	205	976	3.3	185
McHenry, IL	7.3	93.2	0.7	116	695	1.9	278
McLean, IL	3.4	86.0	-0.7	224	758	3.3	185
Madison, IL	5.6	94.9	-1.7	278	666	8.8	2
Peoria, IL	4.6	97.1	-1.9	288	749	7.6	5
Rock Island, IL	3.4	77.4	-0.7	224	792	4.9	67
St. Clair, IL	5.1	93.6	1.2	83	605	2.9	215
Sangamon, IL	5.1	136.3	-3.9	311	754	0.3	305
Will, IL	10.4	155.7	2.4	29	731	0.6	304
Winnebago, IL	6.6	137.1	-1.0	249	672	2.3	256
Allen, IN	8.7	179.8	-1.7	278	678	2.6	235
Elkhart, IN	4.8	117.8	1.8	53	685	5.4	40
Hamilton, IN	6.0	85.9	3.4	14	780	-1.5	312
Lake, IN	9.9	191.2	-0.9	240	689	5.0	59

See footnotes at end of table.

DCN:11697

Table 1. Covered[1] establishments, employment, and wages in the 316 largest counties, fourth quarter 2003[2] — Continued

County[3]	Establishments, fourth quarter 2003 (thousands)	Employment			Average weekly wage[5]		
		December 2003 (thousands)	Percent change, December 2002-03[4]	Ranking by percent change	Average weekly wage	Percent change, fourth quarter 2002-03[4]	Ranking by percent change
Marion, IN	23.7	578.1	-0.5	205	$800	3.8	150
St. Joseph, IN	6.0	124.9	-0.1	176	670	5.7	32
Vanderburgh, IN	4.8	108.3	-1.0	249	666	5.4	40
Linn, IA	5.9	115.8	-1.2	262	732	5.0	59
Polk, IA	13.8	262.7	0.3	150	763	5.0	59
Scott, IA	5.0	85.5	0.4	138	643	3.9	136
Johnson, KS	18.8	293.8	0.6	125	783	2.1	267
Sedgwick, KS	11.6	240.4	-1.6	276	699	1.2	298
Shawnee, KS	4.8	95.9	-2.9	308	641	4.1	122
Wyandotte, KS	3.2	76.6	-0.4	198	744	4.3	105
Fayette, KY	8.7	167.5	0.0	173	696	4.7	82
Jefferson, KY	21.4	421.5	-0.3	191	752	3.7	159
Caddo, LA	7.0	121.1	1.4	67	647	4.0	129
Calcasieu, LA	4.5	81.9	-1.8	283	625	3.1	201
East Baton Rouge, LA	12.9	246.2	2.1	39	659	2.3	256
Jefferson, LA	13.7	213.8	0.3	150	647	3.4	176
Lafayette, LA	7.4	120.9	0.7	116	682	2.6	235
Orleans, LA	12.3	251.3	0.7	116	717	1.6	288
Cumberland, ME	11.3	172.2	1.8	53	718	5.9	31
Anne Arundel, MD	13.1	209.4	1.4	67	797	2.4	249
Baltimore, MD	20.0	361.9	-0.1	176	807	3.1	201
Frederick, MD	5.3	88.7	3.8	10	724	1.7	284
Howard, MD	7.6	138.5	1.7	59	873	3.2	195
Montgomery, MD	30.8	455.5	0.4	138	1,006	4.7	82
Prince Georges, MD	14.6	316.7	1.4	67	828	4.0	129
Baltimore City, MD	14.1	368.7	-0.4	198	870	3.8	150
Barnstable, MA	9.1	88.0	0.9	99	690	2.7	227
Bristol, MA	14.9	220.4	0.4	138	701	6.4	17
Essex, MA	20.4	294.1	-2.5	301	844	5.1	52
Hampden, MA	13.7	199.1	-2.1	291	728	5.4	40
Middlesex, MA	47.5	790.6	-2.5	301	1,085	5.0	59
Norfolk, MA	21.7	319.5	-1.3	267	971	5.0	59
Plymouth, MA	13.3	171.3	0.4	138	762	4.4	99
Suffolk, MA	22.2	563.4	-2.8	305	1,245	6.4	17
Worcester, MA	20.0	319.0	-0.5	205	799	6.3	21
Genesee, MI	8.6	156.8	-1.5	273	794	8.0	4
Ingham, MI	7.0	171.7	0.1	163	764	3.9	136
Kalamazoo, MI	5.5	116.5	-0.2	184	737	4.5	92
Kent, MI	14.4	337.3	0.1	163	744	2.2	263
Macomb, MI	18.0	325.6	-0.4	198	884	3.9	136
Oakland, MI	41.3	728.5	-1.8	283	984	3.3	185
Ottawa, MI	5.7	110.0	-0.2	184	720	1.3	295
Saginaw, MI	4.6	92.3	-0.9	240	751	4.7	82
Washtenaw, MI	8.1	197.5	-1.1	257	885	4.2	114
Wayne, MI	35.2	820.3	-1.5	273	907	5.3	47
Anoka, MN	7.4	111.7	0.8	108	753	2.0	273
Dakota, MN	9.7	167.2	1.9	51	760	2.4	249
Hennepin, MN	41.4	829.1	-1.0	249	957	3.8	150
Olmsted, MN	3.3	87.2	0.4	138	762	-3.3	313
Ramsey, MN	15.1	327.5	-0.9	240	871	3.9	136

See footnotes at end of table.

DCN:11697

Table 1. Covered[1] establishments, employment, and wages in the 316 largest counties, fourth quarter 2003[2] — Continued

County[3]	Establishments, fourth quarter 2003 (thousands)	Employment			Average weekly wage[5]		
		December 2003 (thousands)	Percent change, December 2002-03[4]	Ranking by percent change	Average weekly wage	Percent change, fourth quarter 2002-03[4]	Ranking by percent change
St. Louis, MN	5.7	92.8	-2.2	294	$621	2.5	242
Stearns, MN	4.2	77.1	-0.5	205	632	3.9	136
Harrison, MS	4.5	89.6	3.1	18	543	3.2	195
Hinds, MS	6.6	132.4	1.1	88	680	2.6	235
Boone, MO	4.2	77.3	-0.7	224	600	2.7	227
Clay, MO	4.8	85.9	-0.4	198	716	3.2	195
Greene, MO	7.9	145.9	0.7	116	589	3.7	159
Jackson, MO	18.7	365.6	-2.4	300	780	2.1	267
St. Charles, MO	7.1	108.2	1.8	53	659	3.1	201
St. Louis, MO	33.7	625.2	-1.8	283	820	2.6	235
St. Louis City, MO	8.3	227.4	-2.7	303	836	2.6	235
Douglas, NE	15.0	314.3	-0.3	191	705	2.5	242
Lancaster, NE	7.5	150.5	1.3	74	631	2.1	267
Clark, NV	36.6	779.9	5.2	1	715	4.8	75
Washoe, NV	12.2	200.1	2.1	39	739	5.3	47
Hillsborough, NH	12.2	195.8	1.1	88	876	4.8	75
Rockingham, NH	10.6	133.8	1.0	95	799	2.4	249
Atlantic, NJ	6.6	144.3	1.9	51	698	3.4	176
Bergen, NJ	34.7	455.3	-0.5	205	1,029	5.0	59
Burlington, NJ	11.1	198.5	2.2	35	819	1.5	290
Camden, NJ	13.4	207.2	1.6	63	838	(7)	-
Essex, NJ	21.6	364.0	-0.6	217	1,000	4.6	88
Gloucester, NJ	6.1	99.3	3.6	12	713	3.9	136
Hudson, NJ	14.0	236.8	-1.8	283	989	6.0	27
Mercer, NJ	10.6	223.5	2.4	29	988	4.2	114
Middlesex, NJ	20.8	396.3	-1.3	267	995	4.6	88
Monmouth, NJ	20.0	249.9	0.4	138	882	3.9	136
Morris, NJ	17.8	283.1	-0.2	184	1,135	2.3	256
Ocean, NJ	11.5	141.4	1.7	59	691	2.7	227
Passaic, NJ	12.6	178.3	-0.7	224	854	2.9	215
Somerset, NJ	10.0	165.8	(7)	-	1,159	1.7	284
Union, NJ	15.2	243.5	2.8	23	991	0.1	307
Bernalillo, NM	16.7	313.9	0.5	132	690	5.2	50
Albany, NY	9.5	232.2	0.9	99	802	5.5	37
Bronx, NY	15.1	215.1	-2.1	291	744	4.2	114
Broome, NY	4.4	95.9	-2.2	294	613	-3.3	313
Dutchess, NY	7.6	116.8	0.4	138	776	2.2	263
Erie, NY	23.1	461.5	0.1	163	682	4.4	99
Kings, NY	41.3	448.5	0.1	163	708	4.4	99
Monroe, NY	17.5	388.2	-0.3	191	748	4.0	129
Nassau, NY	50.0	608.7	0.2	158	904	6.0	27
New York, NY	111.9	2,253.6	-1.0	249	1,480	7.2	8
Oneida, NY	5.3	109.2	-0.3	191	599	3.5	171
Onondaga, NY	12.5	247.5	-0.5	205	734	3.8	150
Orange, NY	9.0	127.4	0.8	108	664	5.1	52
Queens, NY	39.7	477.3	-0.7	224	797	3.0	209
Richmond, NY	7.9	90.4	-0.8	234	726	7.1	10
Rockland, NY	9.2	113.4	0.4	138	832	5.1	52
Suffolk, NY	46.8	600.6	1.0	95	838	3.3	185
Westchester, NY	34.7	413.0	-0.2	184	1,035	5.6	35

See footnotes at end of table.

DCN:11697

Table 1. Covered[1] establishments, employment, and wages in the 316 largest counties, fourth quarter 2003[2] — Continued

County[3]	Establishments, fourth quarter 2003 (thousands)	Employment			Average weekly wage[5]		
		December 2003 (thousands)	Percent change, December 2002-03[4]	Ranking by percent change	Average weekly wage	Percent change, fourth quarter 2002-03[4]	Ranking by percent change
Buncombe, NC	6.7	106.2	1.4	67	$617	4.8	75
Catawba, NC	4.3	86.8	-2.7	303	614	4.1	122
Cumberland, NC	5.6	110.8	0.5	132	579	3.0	209
Durham, NC	6.2	164.4	0.9	99	955	4.3	105
Forsyth, NC	8.4	176.8	0.1	163	730	4.4	99
Guilford, NC	13.7	267.2	-0.9	240	705	5.4	40
Mecklenburg, NC	27.5	508.9	0.0	173	878	4.9	67
New Hanover, NC	6.3	89.2	2.0	48	629	4.1	122
Wake, NC	23.2	389.7	2.3	32	783	4.7	82
Cass, ND	5.2	86.5	1.8	53	630	2.4	249
Butler, OH	6.9	131.3	1.3	74	690	3.1	201
Cuyahoga, OH	39.2	767.8	-0.8	234	803	4.7	82
Franklin, OH	29.9	696.5	-0.4	198	765	4.1	122
Hamilton, OH	25.4	550.2	-0.1	176	828	4.5	92
Lake, OH	6.8	98.6	0.7	116	641	0.8	303
Lorain, OH	6.3	100.9	-0.1	176	677	5.6	35
Lucas, OH	11.1	228.9	-0.5	205	717	4.8	75
Mahoning, OH	6.6	105.7	-1.1	257	582	3.4	176
Montgomery, OH	13.5	288.7	-1.1	257	755	4.7	82
Stark, OH	9.1	166.8	-2.2	294	609	2.4	249
Summit, OH	14.9	265.2	-0.3	191	724	3.9	136
Trumbull, OH	4.9	86.0	-2.1	291	729	6.6	14
Oklahoma, OK	21.6	404.3	-0.8	234	671	6.2	24
Tulsa, OK	18.0	319.4	-3.0	309	681	3.0	209
Clackamas, OR	11.2	134.5	0.9	99	722	4.2	114
Lane, OR	10.3	138.1	-1.2	262	614	2.7	227
Marion, OR	8.4	126.7	2.0	48	613	1.8	280
Multnomah, OR	25.7	426.0	-0.7	224	780	1.7	284
Washington, OR	14.1	221.7	-0.6	217	889	8.5	3
Allegheny, PA	36.3	695.7	-1.2	262	802	3.8	150
Berks, PA	8.9	163.1	0.6	125	715	4.1	122
Bucks, PA	19.3	253.1	0.7	116	763	5.0	59
Chester, PA	14.2	221.0	1.7	59	964	4.3	105
Cumberland, PA	5.5	125.2	0.5	132	715	3.8	150
Dauphin, PA	6.9	174.2	-0.4	198	754	6.5	15
Delaware, PA	13.8	211.4	-2.3	297	852	6.8	12
Erie, PA	7.1	125.9	0.1	163	613	2.0	273
Lackawanna, PA	5.6	98.7	0.8	108	594	5.1	52
Lancaster, PA	11.7	222.5	0.1	163	679	4.6	88
Lehigh, PA	8.2	171.0	1.8	53	783	4.0	129
Luzerne, PA	7.8	141.6	1.4	67	608	2.7	227
Montgomery, PA	27.4	481.9	-0.8	234	936	5.1	52
Northampton, PA	5.9	92.5	0.6	125	677	4.5	92
Philadelphia, PA	27.8	652.6	-1.1	257	903	7.2	8
Westmoreland, PA	9.3	132.7	-0.6	217	612	3.2	195
York, PA	8.4	166.3	0.9	99	668	3.7	159
Kent, RI	5.5	81.3	2.1	39	689	3.9	136
Providence, RI	17.4	290.7	0.4	138	763	5.5	37
Charleston, SC	11.3	189.7	2.7	25	633	3.8	150
Greenville, SC	11.9	225.4	0.5	132	683	1.8	280

See footnotes at end of table.

Table 1. Covered[1] establishments, employment, and wages in the 316 largest counties, fourth quarter 2003[2] — Continued

County[3]	Establishments, fourth quarter 2003 (thousands)	Employment			Average weekly wage[5]		
		December 2003 (thousands)	Percent change, December 2002-03[4]	Ranking by percent change	Average weekly wage	Percent change, fourth quarter 2002-03[4]	Ranking by percent change
Horry, SC	7.5	97.8	(7)	-	$523	2.8	220
Lexington, SC	5.2	84.6	0.9	99	595	3.7	159
Richland, SC	9.2	208.9	0.3	150	659	2.5	242
Spartanburg, SC	6.1	117.7	-0.6	217	669	1.8	280
Minnehaha, SD	5.9	109.0	0.8	108	644	4.0	129
Davidson, TN	18.0	432.3	1.1	88	778	3.7	159
Hamilton, TN	8.3	191.2	1.1	88	683	5.4	40
Knox, TN	10.2	213.0	1.2	83	679	3.3	185
Rutherford, TN	3.6	86.7	4.6	4	712	6.7	13
Shelby, TN	19.9	501.5	0.6	125	792	4.9	67
Bell, TX	4.1	90.2	0.6	125	568	2.9	215
Bexar, TX	29.5	659.9	0.5	132	675	6.1	25
Brazoria, TX	4.0	75.7	-1.0	249	719	1.4	293
Brazos, TX	3.4	78.0	0.3	150	537	4.3	105
Cameron, TX	6.0	115.3	-0.1	176	480	3.9	136
Collin, TX	12.1	198.5	2.1	39	844	1.4	293
Dallas, TX	68.6	1,450.8	-1.4	271	952	4.3	105
Denton, TX	8.2	131.6	2.1	39	654	1.7	284
El Paso, TX	12.5	254.1	-0.8	234	553	5.1	52
Fort Bend, TX	6.2	98.3	0.0	173	766	3.8	150
Galveston, TX	4.7	86.8	-1.8	283	666	0.9	300
Harris, TX	89.4	1,841.5	-0.9	240	906	2.1	267
Hidalgo, TX	9.1	186.3	4.4	5	487	3.0	209
Jefferson, TX	5.9	117.5	-0.1	176	732	6.1	25
Lubbock, TX	6.4	116.4	-0.7	224	574	2.9	215
McLennan, TX	4.7	98.1	0.2	158	605	2.0	273
Montgomery, TX	6.1	88.2	4.3	6	700	0.9	300
Nueces, TX	8.0	143.9	-0.1	176	640	3.9	136
Smith, TX	4.8	85.6	-0.2	184	661	3.1	201
Tarrant, TX	33.7	693.5	-0.9	240	793	2.3	256
Travis, TX	24.7	511.4	-1.3	267	863	3.9	136
Williamson, TX	4.8	84.3	3.2	17	751	1.6	288
Davis, UT	6.0	90.9	2.1	39	615	2.8	220
Salt Lake, UT	33.8	523.3	0.3	150	700	2.8	220
Utah, UT	10.5	147.1	2.1	39	589	2.1	267
Weber, UT	5.1	87.1	1.4	67	578	2.1	267
Chittenden, VT	5.7	95.3	0.4	138	769	4.9	67
Arlington, VA	6.9	153.5	1.2	83	1,199	4.0	129
Chesterfield, VA	6.6	112.8	2.1	39	697	3.6	168
Fairfax, VA	30.0	548.1	2.9	22	1,158	6.4	17
Henrico, VA	8.1	171.5	1.4	67	773	2.7	227
Loudoun, VA	5.9	108.0	5.2	1	965	3.1	201
Prince William, VA	5.7	91.9	5.1	3	688	4.2	114
Alexandria City, VA	5.6	92.2	1.3	74	986	2.5	242
Chesapeake City, VA	4.7	93.3	4.2	8	595	3.3	185
Newport News City, VA	3.7	97.6	1.6	63	694	5.5	37
Norfolk City, VA	5.5	146.0	-1.0	249	746	7.3	7
Richmond City, VA	7.0	159.3	-1.5	273	856	6.3	21
Virginia Beach City, VA	10.4	170.5	2.0	48	609	6.5	15
Clark, WA	10.7	117.7	3.5	13	680	2.9	215

See footnotes at end of table.

DCN:11697

Table 1. Covered[1] establishments, employment, and wages in the 316 largest counties, fourth quarter 2003[2] — Continued

County[3]	Establishments, fourth quarter 2003 (thousands)	Employment			Average weekly wage[5]		
		December 2003 (thousands)	Percent change, December 2002-03[4]	Ranking by percent change	Average weekly wage	Percent change, fourth quarter 2002-03[4]	Ranking by percent change
King, WA	81.6	1,100.6	0.2	158	$935	0.2	306
Kitsap, WA	6.3	79.2	3.1	18	678	5.4	40
Pierce, WA	20.4	246.2	2.2	35	668	4.2	114
Snohomish, WA	16.3	208.0	0.8	108	757	1.3	295
Spokane, WA	15.2	191.2	0.7	116	604	2.5	242
Thurston, WA	6.5	89.7	2.4	29	673	2.0	273
Yakima, WA	9.2	86.0	0.9	99	515	2.8	220
Kanawha, WV	6.2	109.6	-0.7	224	654	2.3	256
Brown, WI	6.8	146.0	1.3	74	714	3.3	185
Dane, WI	13.6	290.9	1.0	95	748	3.9	136
Milwaukee, WI	22.6	502.0	-1.2	262	772	5.2	50
Outagamie, WI	4.9	98.8	0.4	138	669	3.4	176
Racine, WI	4.3	76.1	-0.8	234	761	4.8	75
Waukesha, WI	13.4	226.0	0.3	150	791	3.1	201
Winnebago, WI	4.0	87.2	-2.0	289	741	5.0	59
San Juan, PR	13.0	335.5	2.1	39	512	6.0	27

[1] Includes workers covered by Unemployment Insurance (UI) and Unemployment Compensation for Federal Employees (UCFE) programs. These 315 U.S. counties comprise 70.5 percent of the total covered workers in the U.S.
[2] Data are preliminary.
[3] Includes areas not officially designated as counties. See Technical Note.
[4] Percent changes were computed from quarterly employment and pay data adjusted for noneconomic county reclassifications. See Technical Note.
[5] Average weekly wages were calculated using unrounded data.
[6] Totals for the United States do not include data for Puerto Rico or the Virgin Islands.
[7] Data do not meet BLS or State agency disclosure standards.

DCN:11697

Table 2. Covered[1] establishments, employment, and wages in the ten largest counties, fourth quarter 2003[2]

County by NAICS supersector	Establishments, fourth quarter 2003 (thousands)	Employment		Average weekly wage[4]	
		December 2003 (thousands)	Percent change, December 2002-03[3]	Average weekly wage	Percent change, fourth quarter 2002-03[3]
United States[5]	8,314.1	129,341.5	0.0	$767	3.6
Private industry	8,048.7	108,215.1	0.0	769	3.9
Natural resources and mining	123.7	1,557.8	0.1	703	4.9
Construction	804.9	6,689.5	1.2	837	2.3
Manufacturing	376.8	14,307.8	-4.2	943	6.7
Trade, transportation, and utilities	1,853.6	25,957.3	-0.3	665	3.4
Information	145.2	3,165.9	-4.0	1,139	3.9
Financial activities	767.0	7,874.7	1.2	1,138	5.9
Professional and business services	1,329.4	16,113.2	0.6	945	3.8
Education and health services	732.2	15,974.0	2.1	731	3.8
Leisure and hospitality	669.9	12,042.8	1.7	335	3.4
Other services	1,080.6	4,274.1	-0.1	494	3.1
Government	265.3	21,126.3	-0.2	757	2.4
Los Angeles, CA	356.0	4,075.3	-0.5	903	4.2
Private industry	352.2	3,486.3	-0.2	898	4.2
Natural resources and mining	0.6	11.0	0.7	955	16.9
Construction	12.9	133.9	-1.1	883	1.7
Manufacturing	17.8	485.2	-7.1	900	6.5
Trade, transportation, and utilities	53.9	794.6	-1.2	735	2.7
Information	9.2	194.9	-2.0	1,627	5.2
Financial activities	23.0	237.9	0.9	1,258	7.0
Professional and business services	40.1	575.0	1.6	1,043	3.7
Education and health services	26.6	456.5	1.9	820	3.9
Leisure and hospitality	25.6	375.9	5.6	766	6.5
Other services	142.1	220.7	3.5	422	5.0
Government	3.8	589.0	-2.3	930	3.3
Cook, IL	126.7	2,539.8	-1.2	922	3.0
Private industry	125.5	2,221.9	-0.9	929	3.2
Natural resources and mining	0.1	1.3	-3.6	1,037	3.2
Construction	10.5	96.7	0.0	1,169	-0.8
Manufacturing	7.9	265.7	-5.1	975	6.3
Trade, transportation, and utilities	26.7	499.4	-0.8	753	0.4
Information	2.5	66.1	-4.1	1,164	0.1
Financial activities	13.8	219.4	-0.8	1,471	8.1
Professional and business services	26.1	405.5	-1.3	1,206	4.1
Education and health services	12.3	350.8	1.0	791	3.7
Leisure and hospitality	10.5	217.7	2.8	375	-0.3
Other services	12.6	95.1	-2.0	655	3.0
Government	1.2	317.9	-3.1	871	0.9
New York, NY	111.9	2,253.6	-1.0	1,480	7.2
Private industry	111.7	1,800.4	-0.6	1,623	8.1
Natural resources and mining	0.0	0.1	0.0	1,197	-6.5
Construction	2.2	30.0	-4.5	1,567	3.4
Manufacturing	3.5	46.6	-4.9	1,290	6.4
Trade, transportation, and utilities	22.1	247.6	-1.2	1,164	5.5
Information	4.3	130.6	-5.1	1,751	7.9
Financial activities	16.7	352.0	-2.0	3,034	16.1
Professional and business services	22.6	439.7	0.5	1,702	2.6
Education and health services	7.8	273.8	2.4	918	7.6
Leisure and hospitality	10.1	188.2	0.4	787	6.1
Other services	16.0	82.9	-1.1	871	6.1
Government	0.2	453.2	-2.2	912	0.1

See footnotes at end of table.

DCN:11697

Table 2. Covered[1] establishments, employment, and wages in the ten largest counties, fourth quarter 2003[2] — Continued

County by NAICS supersector	Establishments, fourth quarter 2003 (thousands)	Employment		Average weekly wage[4]	
		December 2003 (thousands)	Percent change, December 2002-03[3]	Average weekly wage	Percent change, fourth quarter 2002-03[3]
Harris, TX	89.4	1,841.5	-0.9	$906	2.1
Private industry	89.0	1,595.2	-1.2	929	2.1
Natural resources and mining	1.2	62.5	([6])	2,185	([6])
Construction	6.3	135.5	-5.0	919	2.6
Manufacturing	4.7	164.0	-4.9	1,106	2.3
Trade, transportation, and utilities	21.1	403.2	-2.1	821	1.0
Information	1.4	33.8	-3.9	1,098	0.4
Financial activities	9.7	113.1	1.7	1,181	4.9
Professional and business services	17.0	279.0	-1.7	1,073	3.2
Education and health services	8.8	188.3	1.5	812	1.8
Leisure and hospitality	6.5	155.2	0.7	335	-0.9
Other services	10.3	56.3	-3.1	539	0.4
Government	0.4	246.3	1.1	759	3.1
Maricopa, AZ	80.9	1,621.2	([6])	757	4.0
Private industry	80.5	1,401.8	2.2	755	3.9
Natural resources and mining	0.5	9.8	-2.6	545	4.4
Construction	8.4	131.7	5.9	779	2.1
Manufacturing	3.3	128.0	-2.5	1,050	8.2
Trade, transportation, and utilities	18.6	336.4	1.5	712	3.2
Information	1.6	36.6	-4.1	872	0.5
Financial activities	9.5	133.3	1.5	933	3.7
Professional and business services	18.1	261.5	4.2	776	3.5
Education and health services	7.6	160.5	5.6	842	5.0
Leisure and hospitality	5.6	155.8	0.8	364	2.8
Other services	5.7	44.7	-2.6	500	2.2
Government	0.5	219.4	1.6	766	3.7
Dallas, TX	68.6	1,450.8	-1.4	952	4.3
Private industry	68.2	1,294.6	-1.4	970	4.8
Natural resources and mining	0.5	6.8	([6])	2,680	([6])
Construction	4.5	73.0	-2.2	909	5.5
Manufacturing	3.5	144.9	-3.1	1,075	6.8
Trade, transportation, and utilities	15.8	326.1	-3.3	898	5.2
Information	1.9	64.0	-5.1	1,272	8.7
Financial activities	8.6	140.0	1.2	1,215	2.9
Professional and business services	14.0	237.7	0.0	1,152	4.2
Education and health services	6.3	131.4	2.4	887	2.7
Leisure and hospitality	5.2	127.5	0.0	432	4.3
Other services	6.7	40.5	-3.4	587	2.8
Government	0.4	156.2	-1.8	800	-0.1
Orange, CA	88.8	1,436.6	1.3	874	5.3
Private industry	87.4	1,305.5	2.1	875	5.2
Natural resources and mining	0.3	6.1	8.3	579	0.2
Construction	6.4	85.5	4.4	969	5.9
Manufacturing	6.1	179.9	-3.0	1,036	11.4
Trade, transportation, and utilities	17.3	278.8	0.6	802	2.7
Information	1.5	33.8	-4.4	1,152	5.3
Financial activities	9.7	127.8	9.9	1,354	6.2
Professional and business services	17.4	261.0	1.0	942	2.8
Education and health services	9.1	126.6	6.1	849	3.7
Leisure and hospitality	6.6	159.9	2.5	358	3.8
Other services	12.9	46.0	6.3	518	3.0
Government	1.4	131.1	-5.7	859	6.0

See footnotes at end of table.

DCN:11697

Table 2. Covered[1] establishments, employment, and wages in the ten largest counties, fourth quarter 2003[2] — Continued

County by NAICS supersector	Establishments, fourth quarter 2003 (thousands)	Employment		Average weekly wage[4]	
		December 2003 (thousands)	Percent change, December 2002-03[3]	Average weekly wage	Percent change, fourth quarter 2002-03[3]
San Diego, CA	85.3	1,278.2	1.3	$815	2.6
Private industry	83.9	1,060.2	1.5	809	2.5
Natural resources and mining	0.9	11.0	-5.4	491	1.0
Construction	6.4	81.1	4.7	869	0.7
Manufacturing	3.6	105.4	-4.2	1,129	11.5
Trade, transportation, and utilities	14.2	220.4	2.2	655	0.9
Information	1.4	36.7	-4.5	1,582	-2.0
Financial activities	8.8	81.6	4.8	1,058	0.4
Professional and business services	14.9	208.1	1.5	989	2.8
Education and health services	7.6	122.6	1.6	778	5.7
Leisure and hospitality	6.5	141.5	3.5	346	2.4
Other services	19.5	51.6	1.8	449	2.7
Government	1.3	218.0	0.1	843	2.9
King, WA	81.6	1,100.6	0.2	935	0.2
Private industry	81.0	945.5	0.1	944	-0.3
Natural resources and mining	0.4	2.8	-11.3	1,109	0.8
Construction	6.2	53.4	-0.4	921	1.4
Manufacturing	2.7	101.9	-8.2	1,176	-2.1
Trade, transportation, and utilities	14.8	225.5	1.1	804	2.6
Information	1.5	69.2	0.8	1,829	-15.7
Financial activities	6.1	77.5	2.4	1,114	3.5
Professional and business services	11.7	158.3	0.7	1,160	8.4
Education and health services	5.9	108.3	1.5	746	4.8
Leisure and hospitality	5.4	100.5	2.9	390	3.7
Other services	26.4	48.1	1.2	463	0.4
Government	0.6	155.1	1.0	882	3.6
Miami-Dade, FL	80.2	980.8	-0.5	765	3.5
Private industry	79.9	827.5	-0.7	742	3.6
Natural resources and mining	0.5	9.9	-1.8	421	4.0
Construction	4.9	40.7	0.3	788	2.7
Manufacturing	2.8	49.4	-9.8	695	5.8
Trade, transportation, and utilities	23.2	247.2	-1.7	689	4.2
Information	1.7	28.5	-3.2	990	1.7
Financial activities	8.2	65.5	0.7	1,062	-1.1
Professional and business services	15.9	132.0	-0.2	948	5.2
Education and health services	7.8	123.4	1.4	748	2.3
Leisure and hospitality	5.3	92.8	2.1	432	9.9
Other services	7.5	34.5	-1.8	450	3.0
Government	0.3	153.3	0.5	886	2.8

[1] Includes workers covered by Unemployment Insurance (UI) and Unemployment Compensation for Federal Employees (UCFE) programs.
[2] Data are preliminary.
[3] Percent changes were computed from quarterly employment and pay data adjusted for noneconomic county reclassifications. See Technical Note.
[4] Average weekly wages were calculated using unrounded data.
[5] Totals for the United States do not include data for Puerto Rico or the Virgin Islands.
[6] Data do not meet BLS or State agency disclosure standards.

DCN:11697

Table 3. Covered[1] establishments, employment, and wages in the largest county by state, fourth quarter 2003[2]

County[3]	Establishments, fourth quarter 2003 (thousands)	Employment		Average weekly wage[5]	
		December 2003 (thousands)	Percent change, December 2002-03[4]	Average weekly wage	Percent change, fourth quarter 2002-03[4]
United States[6]	8,314.1	129,341.5	0.0	$767	3.6
Jefferson, AL	18.2	374.3	0.3	761	2.6
Anchorage Borough, AK	7.8	140.0	1.7	787	2.3
Maricopa, AZ	80.9	1,621.2	([7])	757	4.0
Pulaski, AR	13.2	242.9	1.1	716	4.5
Los Angeles, CA	356.0	4,075.3	-0.5	903	4.2
Denver, CO	24.1	425.7	-2.3	935	3.4
Hartford, CT	24.3	484.5	-0.9	946	3.4
New Castle, DE	18.0	283.1	0.8	917	6.0
Washington, DC	30.0	654.8	-0.4	1,238	3.9
Miami-Dade, FL	80.2	980.8	-0.5	765	3.5
Fulton, GA	37.7	732.5	-1.3	990	3.6
Honolulu, HI	24.5	427.0	0.7	704	3.7
Ada, ID	13.0	184.9	1.0	685	1.9
Cook, IL	126.7	2,539.8	-1.2	922	3.0
Marion, IN	23.7	578.1	-0.5	800	3.8
Polk, IA	13.8	262.7	0.3	763	5.0
Johnson, KS	18.8	293.8	0.6	783	2.1
Jefferson, KY	21.4	421.5	-0.3	752	3.7
Orleans, LA	12.3	251.3	0.7	717	1.6
Cumberland, ME	11.3	172.2	1.8	718	5.9
Montgomery, MD	30.8	455.5	0.4	1,006	4.7
Middlesex, MA	47.5	790.6	-2.5	1,085	5.0
Wayne, MI	35.2	820.3	-1.5	907	5.3
Hennepin, MN	41.4	829.1	-1.0	957	3.8
Hinds, MS	6.6	132.4	1.1	680	2.6
St. Louis, MO	33.7	625.2	-1.8	820	2.6
Yellowstone, MT	5.6	69.1	1.3	609	4.1
Douglas, NE	15.0	314.3	-0.3	705	2.5
Clark, NV	36.6	779.9	5.2	715	4.8
Hillsborough, NH	12.2	195.8	1.1	876	4.8
Bergen, NJ	34.7	455.3	-0.5	1,029	5.0
Bernalillo, NM	16.7	313.9	0.5	690	5.2
New York, NY	111.9	2,253.6	-1.0	1,480	7.2
Mecklenburg, NC	27.5	508.9	0.0	878	4.9
Cass, ND	5.2	86.5	1.8	630	2.4
Cuyahoga, OH	39.2	767.8	-0.8	803	4.7
Oklahoma, OK	21.6	404.3	-0.8	671	6.2
Multnomah, OR	25.7	426.0	-0.7	780	1.7
Allegheny, PA	36.3	695.7	-1.2	802	3.8
Providence, RI	17.4	290.7	0.4	763	5.5
Greenville, SC	11.9	225.4	0.5	683	1.8
Minnehaha, SD	5.9	109.0	0.8	644	4.0
Shelby, TN	19.9	501.5	0.6	792	4.9
Harris, TX	89.4	1,841.5	-0.9	906	2.1
Salt Lake, UT	33.8	523.3	0.3	700	2.8
Chittenden, VT	5.7	95.3	0.4	769	4.9
Fairfax, VA	30.0	548.1	2.9	1,158	6.4
King, WA	81.6	1,100.6	0.2	935	0.2
Kanawha, WV	6.2	109.6	-0.7	654	2.3
Milwaukee, WI	22.6	502.0	-1.2	772	5.2

See footnotes at end of table.

DCN:11697

Table 3. Covered[1] establishments, employment, and wages in the largest county by state, fourth quarter 2003[2] — Continued

County[3]	Establishments, fourth quarter 2003 (thousands)	Employment		Average weekly wage[5]	
		December 2003 (thousands)	Percent change, December 2002-03[4]	Average weekly wage	Percent change, fourth quarter 2002-03[4]
Laramie, WY	2.8	39.5	2.6	$597	1.5
San Juan, PR	13.0	335.5	2.1	512	6.0
St. Thomas, VI	1.7	23.3	1.4	594	3.3

[1] Includes workers covered by Unemployment Insurance (UI) and Unemployment Compensation for Federal Employees (UCFE) programs.
[2] Data are preliminary.
[3] Includes areas not officially designated as counties. See Technical Note.
[4] Percent changes were computed from quarterly employment and pay data adjusted for noneconomic county reclassifications. See Technical Note.
[5] Average weekly wages were calculated using unrounded data.
[6] Totals for the United States do not include data for Puerto Rico or the Virgin Islands.
[7] Data do not meet BLS or State agency disclosure standards.

DCN:11697

Table 4. Covered[1] establishments, employment, and wages by state, fourth quarter 2003[2]

State	Establishments, fourth quarter 2003 (thousands)	Employment		Average weekly wage[3]	
		December 2003 (thousands)	Percent change, December 2002-03	Average weekly wage	Percent change, fourth quarter 2002-03
United States[4]	8,314.1	129,341.5	0.0	$767	3.6
Alabama	111.8	1,838.1	-0.1	657	4.0
Alaska	20.0	282.7	1.1	746	1.1
Arizona	126.9	2,352.1	2.2	710	3.8
Arkansas	75.2	1,133.6	0.5	587	4.1
California	1,190.8	14,922.3	0.0	869	3.8
Colorado	160.0	2,134.6	-1.1	784	2.0
Connecticut	109.1	1,648.9	-0.7	992	3.8
Delaware	27.1	408.4	0.5	825	5.0
District of Columbia	30.0	654.8	-0.4	1,238	3.9
Florida	504.1	7,424.5	0.8	685	3.8
Georgia	245.6	3,845.6	0.2	734	2.8
Hawaii	37.4	583.0	1.3	678	3.7
Idaho	48.5	577.5	0.6	579	1.8
Illinois	325.7	5,738.7	-1.2	827	3.2
Indiana	152.1	2,852.2	-0.3	675	3.5
Iowa	90.6	1,418.5	0.0	626	4.7
Kansas	82.2	1,298.3	-0.9	631	2.8
Kentucky	105.7	1,740.6	0.3	645	3.5
Louisiana	114.0	1,870.9	0.5	628	2.4
Maine	47.4	595.8	0.7	631	4.6
Maryland	150.4	2,466.4	0.7	831	3.6
Massachusetts	206.6	3,154.6	-1.9	954	5.2
Michigan	251.3	4,365.8	-1.1	806	3.9
Minnesota	159.0	2,591.9	-0.5	777	3.2
Mississippi	65.6	1,108.1	0.4	559	3.7
Missouri	165.4	2,633.6	-0.7	676	2.4
Montana	42.0	396.6	1.1	549	4.0
Nebraska	55.3	884.4	0.6	613	3.2
Nevada	60.3	1,111.2	4.4	721	5.1
New Hampshire	47.0	614.9	0.6	788	4.0
New Jersey	268.1	3,912.8	0.1	945	3.4
New Mexico	50.4	757.1	1.4	612	4.1
New York	550.3	8,379.2	-0.4	959	5.2
North Carolina	227.8	3,759.6	-0.1	679	4.5
North Dakota	24.0	317.6	0.9	563	4.3
Ohio	294.2	5,322.4	-0.7	713	3.8
Oklahoma	91.6	1,423.4	-1.3	597	4.2
Oregon	118.8	1,579.8	0.2	694	3.3
Pennsylvania	326.9	5,524.5	-0.2	750	4.7
Rhode Island	34.7	480.5	1.2	738	5.1
South Carolina	108.4	1,781.0	0.3	623	3.1
South Dakota	28.1	365.4	0.3	559	4.1
Tennessee	128.4	2,648.0	0.4	689	4.2
Texas	505.3	9,300.1	-0.3	754	3.1
Utah	73.9	1,066.2	1.2	630	2.3
Vermont	24.1	300.7	0.3	661	5.1
Virginia	202.6	3,477.5	1.2	786	5.2
Washington	222.7	2,654.7	1.0	759	1.3
West Virginia	47.2	685.2	0.1	587	2.1
Wisconsin	157.6	2,715.4	0.0	683	4.1

See footnotes at end of table.

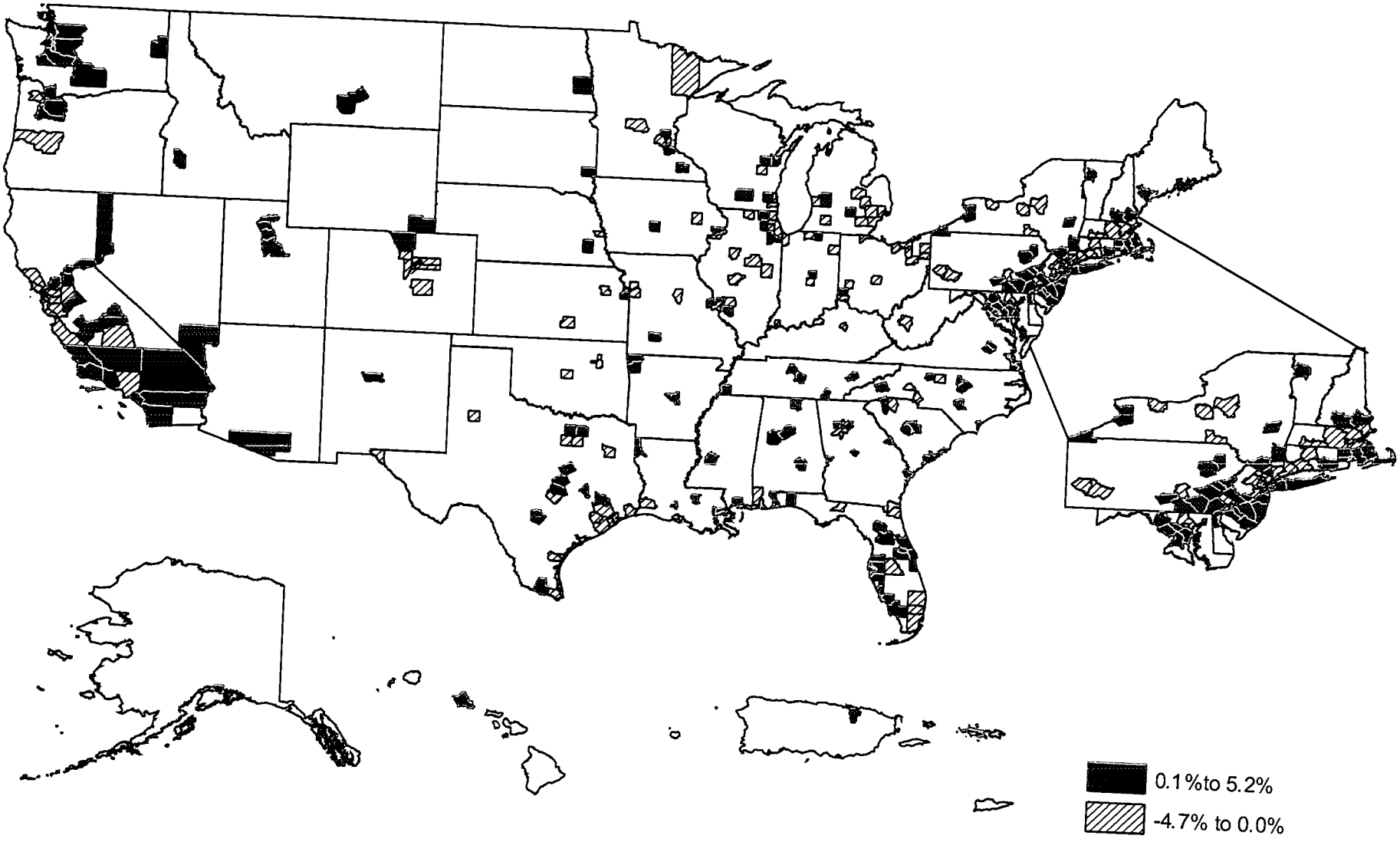
DCN:11697

Table 4. Covered[1] establishments, employment, and wages by state, fourth quarter 2003[2] — Continued

State	Establishments, fourth quarter 2003 (thousands)	Employment		Average weekly wage[3]	
		December 2003 (thousands)	Percent change, December 2002-03	Average weekly wage	Percent change, fourth quarter 2002-03
Wyoming	22.0	241.6	1.7	$616	4.1
Puerto Rico	50.2	1,074.1	3.5	450	4.7
Virgin Islands	3.2	42.5	-0.2	629	2.4

[1] Includes workers covered by Unemployment Insurance (UI) and Unemployment Compensation for Federal Employees (UCFE) programs.
[2] Data are preliminary.
[3] Average weekly wages were calculated using unrounded data.
[4] Totals for the United States do not include data for Puerto Rico or the Virgin Islands.

Chart 1. Percent change in employment in counties with 75,000 employees or more, December 2002-03 (U.S. Average = 0.0%)

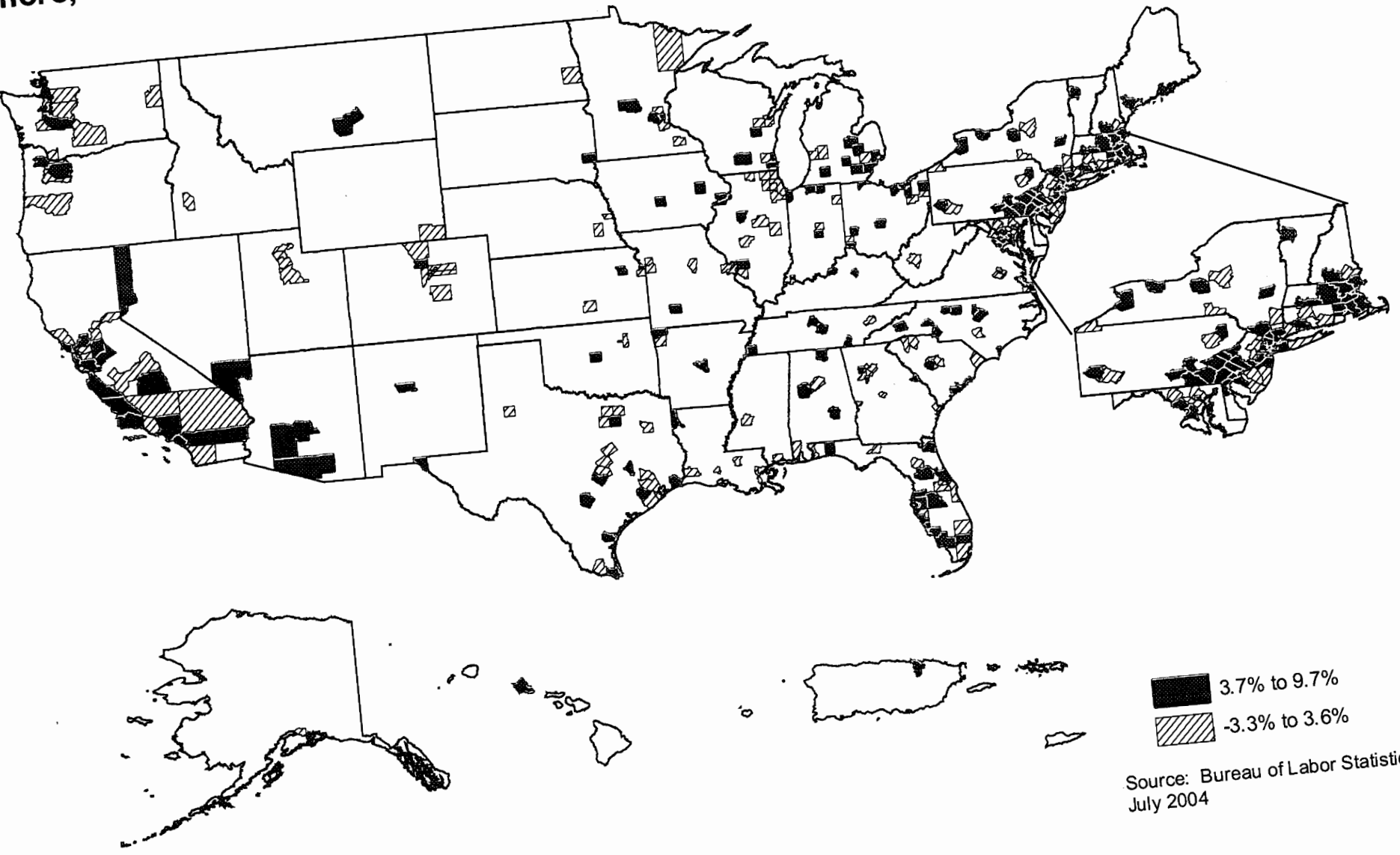


Source: Bureau of Labor Statistics
July 2004

Note: The following counties have fewer than 75,000 employees but are included because they are the largest county in their state or territory: Laramie, Wyo., Yellowstone, Mont., and St Thomas, V.I.

DCN:11697

Chart 2. Percent change in average weekly wages in counties with 75,000 employees or more, fourth quarter 2002-03 (U.S. Average = 3.6%)



Source: Bureau of Labor Statistics
July 2004

Note: The following counties have fewer than 75,000 employees but are included because they are the largest county in their state or territory: Laramie, Wyo., Yellowstone, Mont., and St. Thomas, V.I.

DCN:11697

UMUC *Europe*

BOWIE STATE UNIVERSITY
COMPREHENSIVE EXAMINATION FOR
PUBLIC ADMINISTRATION
18 October 2003

Instructions and Grading Criteria:

The Comprehensive Examination for Public Administration is a four-hour examination. You are required to answer **four questions.** You must answer TWO questions from Part A and ONE question from Part B. Finally, answer a FOURTH question from either part of the exam.

The questions on this exam relate to the problem of civilian encroachment at military installations. **However, the questions are of a general nature. Your answers should build on the concepts, theories, and models introduced in the degree program.** Quotes and figures in this exam come from either *State Strategies to Address Encroachment at Military Installations* (March 2003, http://www.nga.org/cda/files/032403MILITARY.PDF) or *Economic Impact of Arizona's Principal Military Operations* (May 2002, http://www.ci.glendale.az.us/LukeAFB/Economic-Impact-of-AZ-Military.cfm.) **Attached to the last page of this exam is a table that you may detach and use in analyzing and the developing your answers to the questions.**

Grading the comprehensive exam requires approximately six weeks. No results will be released until all examinations, in all degree programs, have been graded. Answers to each question are graded "blind" by three faculty members with expertise in the subject matter. All faculty members are required to use the grading criteria and weights as explained below:

75%	Substantive Knowledge: Does the answer display adequate breadth and depth? Is appropriate information introduced?
15%	Quality of English: Is the response well organized, with proper grammar and correctly spelled words?
10%	Authors Referenced: Does the student mention appropriate authors and their work by name?

Answers are graded as either "pass" or "fail." A score of 60% or better is a "pass." A score of less than 60% must be accompanied by written comments from the grader explaining how the student went wrong and what would be required for a passing grade. A student must pass three of four questions to receive a grade of "pass" for the comprehensive examination.

PART A
(You must answer TWO questions from this section)

1. Analyze the problem of civilian encroachment at military installations and the various policy solutions being employed by the states (**see the table on the last page of this exam**) from a public choice theory point of view.
   a. How is "policy" defined in public choice theory?
   b. What are the basic assumptions of the theory?
   c. What "public goods" and "externalities" are involved in this particular case?
   d. How useful is the theory in clarifying the issues and bringing understanding to the situation?

DCN:11697

2. In 2002, California passed a law requiring cities and counties to consider the impact of new growth on military readiness when preparing zoning ordinances or designating land uses covered by the general plan for land adjacent to military facilities or underlying designated military aviation routes and airspace. The limitations of this statute lie in its funding provisions and lack of enforceability. Only towns that receive federal funding from the Department of Defense must consider the impact of development on military readiness. If funding cannot be secured, many of these localities may not have the financial capacity to conduct impact studies and draft growth regulations. Discuss the position of the California cities and counties in terms of intergovernmental relations.
   a. Why are local governments limited in their ability to finance projects such as this one?
   b. What are some of the strategies the cities and counties might employ to assist them in implementing the state law?

3. National defense is typically defined as a primary and critical concern of the national government. Strategy C (**see the table on the last page of this exam**) calls for state governments to use statutory language to designate military installations as protected areas of critical **state** concern. Discuss this option in terms of our federalist system of government.
   a. Can military installations be considered critical state concerns?
   b. Use academic literature, public administration theories and concepts, and/or public law to defend your position.

4. Strategy E (**see the table on the last page of this exam**) involves the creation of a non-regulatory, advisory body to serve as a forum and unified voice for all stakeholders.
   a. If you were a member of an advisory body, what strategies and techniques would you employ in order to ensure that the advisory body is able to affect a working atmosphere among the affected parties that would favorably impact upon a resolution of this problem?
   b. In your reply, be sure to cite academic literature and address such aspects as:
      - Stages in the conflict process,
      - Conflict-management techniques, and
      - The major phases in the negotiation process.

5. Regardless of the solution chosen, resolving the problem of civilian encroachment at military installations will require a significant level of strategic management. Based on the information contained in the table and your understanding of the strategic management literature:
   a. What kind of issues might be revealed or analyzed in the environmental scanning phase?
   b. Who are the major stakeholders?
   c. What is the nature of the mandates involved?
   d. What kinds of issues might be encountered in the implementation and evaluation phases?

6. Each of the strategies (**see the table on the last page of this exam**) requires the creation or augmentation of a system of personnel management in order to fully implement the chosen solution.
   a. Chose one strategy and develop a series of recommendations on how to develop or reform the system of personnel management that is implied.
   b. Be sure to include details such as, but not limited, to the kind of employees (professional, administrative support, military officials, etc.) required; the training (if any) required; the style of supervision or leadership required.
   c. What theories of personnel management do you recommend using to ensure that the employees are as effective, motivated, and satisfied as possible?

DCN:11697

7. Each of the strategies (**see the table on the last page of this exam**) requires the creation or augmentation of an information management system in order to fully implement the chosen solution.
   a. Chose one strategy and describe the information needs of that strategy.
   b. Make recommendations on how that information will be made accessible to decision makers.
   c. Make recommendations on whether the information should be treated as classified or open to the general public.

PART B

(You must answer at least **one question** from this part)

8. *Economic Impact of Arizona's Principal Military Operations* (May 2002) represents an important effort to analyze the economic relationship between military installations and their neighboring municipalities. The Study Team charged with conducting the analysis collected information from the following military installations in Arizona:

Davis-Monthan Air Force Base	Army Intelligence Center & Fort Huachuca
Luke Air Force Base	Yuma Army Proving Grounds
Marine Corps Air Station – Yuma	Air National Guard's 161st Air Refueling Wing
Air National Guard's 162nd Fighter Wing	Army National Guard

Western Army National Guard Aviation Training Site

Personnel at the different operations were grouped into several broad categories, including permanent active duty, reserves, rotational, military students, and civilians. In addition to these groups, the Study Team included 9,991, or one quarter, of the nearly 40,000 military retirees living within approximately a one-hour travel radius of the key military facilities.

The following quote describes the methodology used by the Study Team:

The IMPLAN econometric model operates by estimating the **direct** impact, **indirect** impacts, and **induced** impacts of specific economic activity. **Direct** economic impacts are those attributable to the initial economic activity; for example, an operation with ten full time employees creates ten *direct* jobs. **Indirect** economic impacts are those economic activities undertaken by vendors and suppliers within the supply chain of the direct activity as a result of the initial economic activity. For example, suppliers of goods, materials, and services used in the direct activities produce *indirect* economic impacts. **Induced** economic impacts result from the spending of wages paid to employees in local industries involved in direct and indirect activities. (May 2002, p. ii)

   a. Develop an alternative description of the economic impact model using terms from standard research methodology such as independent, dependent and intervening variables, research design, hypotheses, and the nature of the data.
   b. Critique the IMPLAN Pro methodology used, giving special attention to issues of reliability, validity, and replicability

DCN:11697

9. The Study Team found that the Department of Defense disperses over $3 billion dollars in Arizona each year. The following tables summarize the major categories of spending.

Summary of Payroll and Retirement Benefits
Arizona's Principle Military Operations
($ millions)

Active Duty Permanent Party	Reserves	Rotational	Students (Military)	Civilians	Linked Retirees	**Total**
$705.9	$36.9	$7.4	$146.2	$499.8	$193.0	**$1,589.2**

Source: *Economic Impact of Arizona's Principal Military Operations* (May 2002)

Summary of Spending Statistics
Arizona's Principle Military Operations
($ millions)

Contracts and direct spending: Maintenance & operations	$ 538.9
Construction & Buildings maintenance and repair	$ 100.9
Spending for supplies	$ 517.1
Utilities	$ 35.0
Education Payments	$ 13.4
Health Services	$ 100.3
Commissary & Exchange	$ 281.2
Total	**$1,586.8**

Source: *Economic Impact of Arizona's Principal Military Operations* (May 2002)

This spending generates over $5.7 billion in economic output, of which only $233.7 million goes to state and local governments in form of tax receipts. The remainder represents a significant redistribution of federal tax money from the general public to private industry in Arizona.

a. Explain this situation using public budgeting theory.
b. What would be required to reform this type of spending?

10. Some of the strategies found in *State Strategies to Address Encroachment at Military Installations* (**see the table on the last page of this exam**) suggest economic methods for the internalization of externalities. "Externalities" are typically defined as the benefits and costs of market transactions that are not reflected in the prices. In the problem of civilian encroachment of military installations, local governments have created a negative externality (reduction of effective military training) through ineffective planning and zoning.
    a. Draw an economic model that depicts the current marginal social costs and benefits of unabated growth.
    b. Discuss various methods of internalizing externalities.
    c. Select one of the methods to illustrate as an economic model.

DCN:11697

Summary chart of State Strategies to Address Encroachment at Military Installations

	Strategy	State Use	Parties Involved	Pros	Cons
A	Crafting legislation to require compatible land use	Arizona California Oklahoma	State Legislature Governor	Provides a clear, well-defined law that requires compatible land use	Passing legislation is often a long, arduous process
B	Passing zoning, planning, and noise requirements	Colorado Florida	Local government Military bases Public	Lets local governments decide how best to approach the problem in their locality Allows for detailed provisions that can be amended if necessary	Zoning and local land-use plans can be influenced by local special interest groups Regulation can be resisted Enforcement can be uncertain
C	Using statutory language to designate military installations as protected areas of critical state concern	To date, no state has done this	State legislature Governor Military bases	Existing legal framework already exists in many states Formally recognizes land surrounding military installations as needing protection	Not all states have this statutory language in place Amending a state statute requires legislative and executive approval
D	Acquiring property surrounding military installations	Arizona Florida Oklahoma Nevada North Carolina	State Local government Military bases Conservation groups Landowners	Can bypass legislative, zoning, and regulatory formalities Non-regulatory There are ways to avoid buying land Allows local determination of future land use	Land purchase requires significant funds Landowner must be willing to sell land or development rights, or trade All parties must reach agreement on terms
E	Creating a state military advisory body	California Texas North Carolina Georgia Virginia Arizona	Governor State Local government Business community Military bases Residents	Serves as forum and unified voice for all stakeholders Non-regulatory	Does not have the authority to regulate or enforce

Source: State Strategies to Address Encroachment at Military Installations (March 2003, p. 15)

DCN:11697

Potential Bias of Using IMPLAN Type III Multipliers for Assessing Economic Impacts of Tourism Spending: A Comparison of IMPLAN and RIMS II Multipliers for the State of Michigan

The Potential Bias of IMPLAN Type III Multipliers
Procedures of Making Comparison Table for IMPLAN and RIMS II
Table 1. IMPLAN industry aggregation template
Multiplier Comparison
Table 2. Comparison of RIMS II (1989) and IMPLAN (1990) multipliers for the State of Michigan
Table 3. Sample economic impacts of tourism spending estimated from RIMS II and IMPLAN multipliers for Michigan
References

The Potential Bias of IMPLAN Type III Multipliers

IMPLAN (Impact Analysis for Planning) and RIMS II (Regional Input-output Modeling System) are among the most used economic impact assessment packages. However, because of the different approaches for computing induced effects, they yield very different results when tourism spending was applied. The IMPLAN system was originally developed by the US Department of Agriculture (USDA) Forest Service and then extended by the Minnesota IMPLAN Group Inc. as a DOS application (prior to 1995) and Windows application (after 1995). The RIMS II model is maintained by the US Department of Commerce (USDC) Economics and Statistics Administration and Bureau of Economic Analysis. Both systems derive multipliers based on Input-Output models. However, the IMPLAN DOS version 91-F generates only Type III multipliers while the RIMS II produces Type II multipliers. Both multipliers capture direct, indirect and induced effects resulting from the changes of final demands (ratios of total to direct effects). The main difference lies between the computation techniques for induced effects. The Type II multiplier approach brings households into the transaction matrix endogenously as an industry sector (closed model), and the total requirements coefficients include induced effects in addition to direct and indirect effects. That is, households are defined as a production sector, and the relationship between changes in final demand and household spending is linear (Richardson, 1972; USDC, 1992, 1997). In contrast, the IMPLAN Type III multipliers treat households as exogenous (open model). The direct and indirect effects are first converted to the changes in employment. Population change is then calculated by multiplying employment change by average population/employment ratio. The change in household spending is then derived by multiplying population change by average per-capita consumption. The change in household spending is treated as an additional set of final demand changes and is then used to estimate the first round of induced effects. This process will be iterated until the changes in some criteria (IMPLAN uses the population change) resulting from the exogenous effects converge (Olson and Lindall, 1994).

This approach used by IMPLAN to generate Type III multipliers could, however, overestimate multipliers on industry sectors from which tourists will typically buy goods. The IMPLAN Type III multiplier estimates induced effects based on the changes of jobs (it assumes full employment and considers any job as full-time job). It applies the population/job ratio to estimate changes in population, then applies the average household consumption to determine the income to be re-circulated in the region. In other words, it assumes all the new population would have the same spending patterns regardless of if they were generated by high or low income jobs. This assumption will overestimate multipliers if the industry's employees are low in salaries and wages, or are part-time and seasonal workers. Because most tourism related industries pay below average wage and salaries or hire many seasonal and part-time workers, using IMPLAN Type III multipliers would significantly overestimate the resulting impacts on a region. For example, the 1990 Michigan average income per job for all industries was $40,152 (where income equals employee compensation, proprietary and other property type income). However, the three industry sectors tourists will spend the most on have very low income per job ratios. The income per job for the retail sales sector in Michigan in 1990 was $17,605; for the hotel, lodging and amusement sector it was $15,210; and for the eating and drinking places sector it was $11,729. These three

DCN:11697

DCN:11697

sectors have lower income per job than average by at least 50% and should result in overestimated multipliers by using IMPLAN Type III approach. A sector by sector comparison of multipliers between IMPLAN and RIMS II was made next to illustrate the potential bias of using IMPLAN Type III multipliers for assessing economic impact of tourism spending on a region.

Procedures of Making Comparison Table for IMPLAN and RIMS II

The RIMS II Type II multipliers were taken from a 1992 USDC publication: "Regional Multipliers: a User Handbook for the Regional Input-output Modeling System." This handbook includes RIMS II output, income and employment multipliers by 39 aggregated industry sectors for each of the 50 States in the US for 1989. For this comparison, IMPLAN DOS version 91-F system using the 1990 database is used. The definitions for multipliers that are compared in this study are:

> Output multiplier: Ratio of total dollar change in outputs from all industries to change in output directly resulting from change in final demand.
>
> Income multiplier: Ratio of total dollar change in income from all industries to change in output directly resulting from change in final demand.
>
> Employee multipliers: Ratio of total change in number of jobs from all industries to change in output directly resulting from change in final demand. It is the number of jobs per one million dollars of output.

Of the three multipliers, the income multiplier should not be directly compared. Note that although the IMPLAN DOS version generates three different income multipliers, none of them are equivalent to the RIMS II income multiplier. The RIMS II income multiplier is composed of wages and salaries minus personal contributions for social insurance; proprietors' income; and other labor income (directors' fees, employer contributions for health insurance). The IMPLAN personal income multipliers (uses employee compensation) are the closest to RIMS II and they can only be compared for general perspective.

There are as many as 528 industry sectors for a single region at the disaggregated level in the IMPLAN database. Of these sectors, 485 exist in the 1990 Michigan database. To match the industry aggregation scheme, an aggregation template for IMPLAN was applied to the industry sectors. This template was developed based on two sources. The first was the industry aggregation table from USDC RIMS II multiplier handbook (USDC, 1992, Appendix III, p M-22), which specifies the matching BEA Industry Numbers for each of the 39 industry sectors used in RIMS II. The second was the IMPLAN/SIC code bridge table from IMPLAN user's guide (Olson et al., 1994, Appendix D, p. D-11), which bridges the 1982 BEA numbers to 1990 IMPLAN sectors. This template was applied to IMPLAN and aggregated 38 industry sectors that match the RIMS II sectors (Table 1).

Table 1. IMPLAN industry aggregation template

RIMS II Industry Sector Names	IMPLAN Matching Sector Numbers
Agricultural products and agricultural, forestry, and fishery services	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 26 27
Forestry and fishery products	24 25
Coal mining	37
Crude petroleum and natural gas	38 39
Miscellaneous mining	28 29 30 31 32 33 34 35 36 40 41 42 43 44 45 46 47
New. construction	48 49 50 51 52 53 54
Maintenance and repair construction	55 56 57

DCN:11697

Food and kindred products and tobacco	58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107
Textile mill products	108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123
Apparel	124 125 126 127 128 129 130 131 132
Paper and allied products	161 162 163 164 165 166 167 168 169 170 171 172 173
Printing and publishing	174 175 176 177 178 179 180 181 182 183 184 185
Chemicals and petroleum refining	186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214
Rubber and leather products	215 216 217 218 219 220 221 222 223 224 225 226 227 228 229
Lumber and wood products and furniture	133 134 135 136 137 138 139 140 141 142 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160
Stone, clay, and glass products	230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253
Primary metal industries	254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 290
Fabricated metal products	273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306
Machinery, except electrical	307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354
Electric and electronic equipment	324 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 404 410 411
Motor vehicles and equipment	384 385 386 387
Transportation equipment except motor vehicles	143 388 389 390 391 392 393 394 395 396 397 398 399
Instruments and related products	400 401 402 403 405 406 407 408 409 412 413 414
Miscellaneous manufacturing industries	415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432
Transportation	433 434 435 436 437 438 439 440 513
Communication	441 442
Electric, gas, water, and sanitary services	443 444 445 446 514 515
Wholesale trade	447
Retail trade	448 449 450 451 452 453 455
Finance	456 457 458
Insurance	459 460
Real estate	461 462

DCN:11697

DCN:11697

Hotels and lodging places and amusements	463 483 484 485 486 487 488 489
Personal services	464 465 466 467 468 480 481 482
Business services	469 470 471 472 473 474 475 476 494
Eating and drinking places	454
Health services	490 491 492 493
Miscellaneous services	477 478 479 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 516 517 518 519 520 521 522 523 524 525 526 527 528

Multiplier Comparison

For 30 of the 37 comparable sectors, the IMPLAN Type III multipliers are smaller than the RIMS II Type II output multipliers ranging from 0.16 to 0.87 million dollars per million dollar change in final demand. IMPLAN generates larger multipliers in only six sectors, differences ranging from 0.09 to 0.52 million per million dollar change in final demand. On average, the 37 IMPLAN output multipliers are smaller than RIMS II by 0.31 million dollars per million dollar change in final demand. The IMPLAN income multipliers (24) and employment multipliers (28) are also smaller than those of RIMS II. On average, the 37 IMPLAN income multipliers are lower than RIMS II by 0.03 million dollars, and are smaller by 2.77 job for employment multipliers per every million dollar change in final demand (Table 2).

Table 2. Comparison of RIMS II (1989) and IMPLAN (1990) multipliers for the State of Michigan

Total multipliers, by industry aggregation, for output, income, and employment*

	Output[1]			Income[3]			Employment[4]		
Sector	(dollars)			(dollars)			(number of jobs)		
	IMPLAN	RIMS II	Diff.[2]	IMPLAN	RIMS II	Diff.[2]	IMPLAN	RIMS II	Diff.[2]
Agriculture, forestry, and fisheries:									
Agricultural products and agricultural, forestry, and fishery services	2.00	1.78	0.22	0.42	0.44	-0.02	33.18	35.10	-1.92
Forestry and fishery products	1.64	1.39	0.25	0.26	0.17	0.10	19.37	9.70	9.67
Mining:									
Coal mining	1.93	-	-	0.34	-	-	43.98	-	-
Crude petroleum and natural gas	1.13	1.45	-0.32	0.11	0.19	-0.09	5.55	7.40	-1.85
Miscellaneous mining	1.26	2.10	-0.84	0.13	0.61	-0.48	4.34	23.10	-18.76
Construction:									
New. construction	1.56	2.19	-0.64	0.46	0.71	-0.25	19.38	30.20	-10.82
Maintenance and repair construction	1.73	2.12	-0.39	0.78	0.78	0.00	31.50	31.70	-0.20
Manufacturing:									
Food and kindred products and tobacco	1.64	1.81	-0.17	0.36	0.35	0.01	14.57	15.60	-1.03
Textile mill products	1.58	1.81	-0.23	0.44	0.43	0.01	16.25	17.20	-0.95
Apparel	1.50	1.90	-0.40	0.51	0.52	-0.01	16.97	19.60	-2.63
Paper and allied products	1.51	2.02	-0.51	0.38	0.46	-0.09	11.68	17.30	-5.62
Printing and publishing	1.56	2.09	-0.53	0.55	0.63	-0.08	20.83	27.20	-6.37
Chemicals and petroleum refining	1.39	1.86	-0.48	0.26	0.38	-0.12	7.07	13.50	-6.43
Rubber and leather products	1.69	2.09	-0.40	0.46	0.53	-0.07	16.70	23.10	-6.40
Lumber and wood products and furniture	1.69	2.10	-0.41	0.53	0.62	-0.08	18.64	25.10	-6.47
Stone, clay, and glass products	1.45	2.05	-0.60	0.48	0.57	-0.09	14.45	21.40	-6.95
Primary metal industries	1.48	2.15	-0.67	0.44	0.61	-0.17	12.28	21.70	-9.42
Fabricated metal products	1.48	2.35	-0.87	0.50	0.70	-0.21	15.38	26.30	-10.92

DCN:11697

DCN:11697

Machinery, except electrical	1.48	2.17	-0.68	0.59	0.72	-0.13	17.28	26.10	-8.82
Electric and electronic equipment	1.55	2.18	-0.63	0.52	0.64	-0.12	16.69	24.70	-8.01
Motor vehicles and equipment	1.51	2.48	-0.97	0.35	0.56	-0.21	8.76	19.30	-10.54
Transportation equipment except motor vehicles	1.40	2.14	-0.74	0.49	0.61	-0.12	14.44	22.20	-7.76
Instruments and related products	1.51	1.98	-0.47	0.51	0.63	-0.12	16.96	25.10	-8.14
Miscellaneous manufacturing industries	1.62	2.06	-0.44	0.53	0.56	-0.03	21.30	24.50	-3.20
Transportation and public utilities:									
Transportation	1.65	1.90	-0.25	0.77	0.72	0.05	26.77	28.80	-2.03
Communication	1.41	1.57	-0.16	0.40	0.48	-0.08	13.28	18.10	-4.82
Electric, gas, water, and sanitary services	1.32	1.58	-0.26	0.26	0.21	0.05	7.70	7.50	0.20
Wholesale and retail trade:									
Wholesale trade	1.53	1.76	-0.23	0.83	0.65	0.18	26.51	24.20	2.31
Retail trade	2.21	1.95	0.26	0.97	0.78	0.19	58.39	48.70	9.69
Finance, insurance, and real estate:									
Finance	1.67	1.96	-0.29	0.72	0.71	0.01	27.45	31.40	-3.95
Insurance	1.77	2.21	-0.44	0.71	0.83	-0.12	26.48	33.80	-7.32
Real estate	1.29	1.20	0.09	0.13	0.08	0.05	8.73	3.70	5.03
Services:									
Hotels and lodging places and amusements	2.38	1.86	0.52	0.89	0.57	0.31	58.71	38.30	20.41
Personal services	2.19	1.90	0.29	0.80	0.76	0.04	52.48	50.00	2.48
Business services	1.73	1.97	-0.24	0.71	0.85	-0.14	33.47	36.50	-3.03
Eating and drinking places	2.42	1.94	0.48	0.88	0.58	0.30	63.78	49.90	13.88
Health services	1.87	2.01	-0.15	0.79	0.91	-0.12	32.32	39.20	-6.88
Miscellaneous services	2.03	2.09	-0.06	1.11	0.73	0.39	46.93	42.00	4.93
Households	-	1.07	-	-	0.33	-	-	17.50	-
Average[5]	1.65	1.95	-0.31	0.54	0.58	-0.03	23.70	25.92	-2.77

* The RIMS II multipliers are from a government report: "Regional multipliers : a user handbook for the regional input-output modeling system (RIMS II), 2nd edition. Washington, DC: U.S. Government Printing Office, May 1992" with 1989 database. The IMPLAN multipliers were generated using IMPLAN Version 91-F with 1990 database and were aggregated to match the RIMS II 39 industry sectors.

1. Each entry in column 1 represents the total dollar change in output that occurs in all row industries for each additional dollar of output delivered to final demand by the industry corresponding to each entry.

2. Diff. = IMPLAN - RIMS II

3. Each entry this column represents the total dollar change in earnings of households employed by all row industries for each additional dollar of output delivered to final demand by the industry corresponding to each entry. The RIMS II income multiplier is composed of wages and salaries less personal contributions for social insurance, proprietors' income, directors' fees, and employer contributions for health insurance. The IMPLAN personal income (employee compensation) is used here to compare with RIMS II income.

4. Each entry in this column represents the total change in number of jobs in all row industries for each additional 1 million dollars of output delivered to final demand by the industry corresponding to each entry.

5. Column averages, excluding coal mining and households sectors.

For these 37 sectors, IMPLAN output, income, and employment multipliers are smaller than RIMS II in all mining, construction, and manufacturing sectors. The exceptions are the first two manufacturing sectors for income multipliers. In contrast, IMPLAN generates larger multipliers than RIMS II for five of the service related industry sectors including hotels and lodging places and amusement, eating and drinking places, retail trade, real estate, and personal services. On average, IMPLAN are higher than RIMS II in these five sectors by 0.33 and 0.18 million dollars for output and income multipliers and 10.26 job for employment multipliers per million dollar change in final demand.

The economic impacts of typical tourism spending estimated from these two systems are presented in Table 3. It was assumed that a one million tourism spending was distributed proportionally to five industry sectors, hotels and lodging places and amusement, eating and drinking places, retail sales, and food. It is clear from Table 3 that IMPLAN has higher estimates on the three sectors that have received the most money flows from tourism spending-- hotels and lodging places and amusement, eating and drinking places, and retail sales. These three sectors have lower income per job than average by at least 50% and IMPLAN generates higher multipliers than RIMS II by 13%, 28%, and 25%. For these three sectors accounting for about 80% of the final demand,

DCN:11697

Table 2.13. The pulp and paper and hardboard industries in Minnesota, 1990.[a]

Company	Location	Hardwood Roundwood Purchases (CPD)[b]	Softwood Roundwood Purchases (CPD)[b]	Pulp Produced (TPD)[c]	Type of Pulp	Final Product	Quantity	Units (per day)
Superwood Corp.	Bemidji	82	27	100	GW[d]	hardboard	37	mmsf[e](3/8)
Potlatch Corp.	Brainerd	0	0	0	--	coated offset text and cover	329	tons
Potlatch Corp.	Cloquet	699	164	534	Kraft	coated offset text and cover	504	tons
USG Interiors Inc. Co.	Cloquet	0	0	0	--	misc.: ceiling panels, decor. tiles	--	--
Lake Superior Paper Ind.	Duluth	0	438	438	GW	SC[f] groundwood printing papers	685	tons
Superwood Corp.	Duluth	274	27	350	GW	hardboard	128	mmsf (3/8)
Blandin Paper Co.	Grand Rapids	329	315	521	GW/TM[g]	coated and uncoated printing	1,370	tons
Boise Cascade Corp.	Intn'l Falls	1,260	247	890	Kraft	business papers	1,397	tons
International Bildrite Inc.	Intn'l Falls	68	0	110	GW	sheathing	--	--
Hennepin Paper Co.	Little Falls	14	41	68	GW	bleached & unbleached printing	82	tons
Champion International	Sartell	178	164	493	GW	SC groundwood printing papers	233	tons
Champion (Cont')						lightweight coated pub. papers	548	tons
Certain-Teed Corp.	Shakopee	60	0	80	GW	roofing dry felt	185	tons
Waldorf Corp.	St. Paul	0	0	0	--	clay coated boxboard	850	mmsf
Totals		2,964	1,425	3,585				

[a] These data are from a variety of sources: Hackett (1991), Lockwood-Post's Directory of the Paper and Allied Industries (1991), Jaakko Pöyry Consulting and contacts with individual companies. The data were often inconsistent, and the authors cannot vouch for their accuracy.
[b] CPD - cords per day.
[c] TPD - tons per day.
[d] GW - groundwood pulp.
[e] mmsf - million square feet (3/8 indicates 3/8 inch basis).
[f] SC - supercalendared paper.

DCN:11697

Public Concern

The Forest Service should conduct a more thorough cost-benefit analysis of its LRMP and maximize net benefits.
Because they are bound to do so by the National Forest Management Act;
To better represent the public benefits of forest management;
To better represent the public's recreation desires;
To determine local and regional economic impacts of proposed plans;
To determine the environmental costs of alternatives.

Response

A thorough and comprehensive cost analysis of the various plan options was accomplished following Forest Service protocol, documenting the expected impact and associated cost of each option. Additional information related to public benefits and passive use values was added between draft and final. The analysis can be found in the EIS.

Ltr#	Cmt#	Comment
226	5	(continued from comment 4) Draft Environmental Impact Statement, Ch. 3, p. 242, states in the paragraph about Direct, Indirect, and Cumulative Economic Effects: "The management of Land Between The Lakes has the potential to affect jobs and income within its area of influence. Employment and income estimates were determined by using the input-output model IMPLAN (Impact for Planning Analysis). Due to substitution effects from competing non-government sources, these jobs are characterized as being associated with local economic activity initiated by Forest Service programs and activities, rather than caused by these activities." Trying to understand what the difference is between "initiated" and "caused," we came to the conclusion that what this sentence means is the following: That if the Forest Service stops providing certain services at LBL, the surrounding communities will step in and provide them instead, with no net loss of incomes or jobs. This interpretation was confirmed by the following sentence in Chapter 3, p. 246: "Economically speaking, commodity-oriented alternatives have a greater role in producing impacts on the economy. However, substitutions may occur in certain sectors, such as those related to the timber program, where non-government owners could supply those entities the timber demanded in this local economy. Therefore, there would likely be no loss of jobs or income from a reduced federal timber program." Taking this into account, we suggest that the employment and labor income figures for alternative "Z" be reconsidered. It is Alternative "Z" that reflects a greater reduction in Forest Service activities than other alternatives. It should therefore be analyzed which of these services, besides timber, are likely to be substituted by the private sector, and therefore will not lead to the lower numbers for employment and labor income that the DEIS displays.

DCN:11697

226	11	(continued from comment 10)Or, Forest Service managers could have used benefit transfer and discussed studies done on passive use values in the region. The concept of passive use value may sound terribly abstract, but in fact, people regularly manifest passive use values by donating money to such entities as The Nature Conservancy to protect parcels of land that they will likely never visit. Passive use values are generally measured through contingent valuation surveys that elicit households' willingness to pay. Damage to passive use values is one of the non-market economic costs federal agencies must address to ensure that decisions are being made in a manner that maximizes net public benefits. For example, the Department of the Interior includes passive use values in its procedures for valuing natural resource damages under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Kopp and Smith, 1993).
226	10	(continued from comment 9) A qualitative analysis of Net Present Value of the management alternatives could proceed in the following way: First Step: The difference between the quantifiable Net Present Values of Alternative Z and Alternative Y (which has the highest Net Present Value of all the alternatives) is $375,128. Second Step: Is the increased quantifiable benefit of "Y" compared to "Z" likely to outweigh the increased passive use value associated with "Z"? Here, managers could qualitatively describe these passive use values. In the case of the different alternatives in the DEIS, managers could have compared and contrasted the different alternatives' passive use values in the same way. For example, perhaps Alternative Y has a higher net present value in qualitative terms, but in Alternative Z, the people of the region and in other parts of the United States will be better off because they know that under this alternative forests will not be logged, wild places not replaced by commercial development, and therefore sensitive wildlife that thrive in wild places will be better off. Therefore, Alternative Z has a higher actual net present value.
226	9	(contnued from comment 8) There is reason to assume that an inclusion of qualitative considerations in the net present valuations could lead to much higher Net Present Value for Alternative Z than currently assumed in Table 3.4.7.H, to a degree that Z may become the preferred alternative) It is likely that Alternative "Z" has a much higher passive use value (existence, option, and bequest value) associated with it than the other alternatives. Alternative Z is about reduced intervention into natural processes. Research into the demand for and supply of wilderness (Cordell, H. Ken, 1999, Loomis, Bonetti, Echohawk, 1999, p. 374) comes to the conclusion that a review of the literature on passive use values, such as existence and, bequest values, provided by wilderness protection suggests that the nonrecreation benefits of Wilderness are larger in percentage terms and in the aggregate than the recreation use benefits of wilderness. Accurate assessment of the benefits of wilderness management and designation requires inclusion of these benefits. Otherwise, benefits of Wilderness are underestimated by at least 50 percent.

DCN:11697

226	12	(continued from comment 11) (Haefele et al., 1992), conducted a CV mail survey of North Carolina households regarding their annual willingness to pay (WTP) to protect: (1) spruce- fir forests along the roads and trails in the Southern Appalachian Mountains; and (2) all spruce-fir forests in the Southern Appalachian Mountains. Program (1) represented about one-third of forest area in program (2). They found total economic values (TEV) of $73 (in 2001) for program 1 and $124 (in $2001) for program 2. Respondents were also asked to decompose these total values into use(recreation) and nonuse components. In each case, over 80 percent ($58 and $90, respectively) of the total value was attributed to nonuse motives (existence and bequest)....(Reaves et al., 1999) used a CV survey to evaluate household WTP for protecting old-growth long-leaf pine habitats for the red-cockaded woodpecker (RCW) in the 250,000 acre Francis Marion National Forest in South Carolina. ...Respondents were asked for their individual annual WTP for two different protection programs (1) acreage suitable for 50 percent survival probability for the RCW (current conditions), and (2) acreage suitable for 99 percent survival probability for the RCW (improved conditions). While the study produced a number of value estimates...we focus here a conservative value estimate. As such, the mean annual WTP for South Carolina residents for restoration of oldgrowth pine forests sufficient to improve RCW survival probability from 50 percent to 99 percent was $8.38 per person (in 2001). They argue that the values elicited would be almost entirely comprised of nonuse motivations. These studies may not be "perfectly scientific," however, just as the Forest Service relied on "professional expertise and judgment" to come up with predictions for growth in visitation under the two preferred alternatives, they could also use this judgment to compare and contrast qualitative differences between alternatives.
226	8	The Net Present Value calculation of Ch. 3. 4.7 of the DEIS does not include a systematic qualitative analysis of passive and other non-monetary values, even though it states that such a qualitative analysis is necessary, as the quotes from the document below indicate. The DEIS states in Ch. 3, p. 247, that "...The NFMA regulations define net public benefits as: "An expression used to signify the overall long-term value to the nation of all outputs and positive effects (benefits) less all associated inputs and negative effects (costs) whether they can be quantitatively valued or not. Net public benefits are measured by both quantitative and qualitative criteria, rather than a single measure or index [36 CFR 219.3]." A qualitative analysis that is integrated with the quantitative one is especially important if there is reason to believe that qualitative aspects, such as passive use values, may differ between the alternatives, or, as in the case of LBL, that people are holding values that are "highly personal and subjective in nature" that differ between alternatives.

DCN:11697

226 4 In order for the Forest Service experts in Atlanta to use IMPLAN, they must rely on the LBL to give them forecasts on how each alternative will grow or decrease visitation to the area. We were given a table with numbers that supposedly was used as a basis for IMPLAN. When we asked how the LBL arrived at their conclusions in this table, which state a decrease for most uses under Alternative "Z", we were told "professional judgment and expertise." Being that Forest Service managers seem to have a bias toward developing the area, and respond to budgetary incentives and other institutional biases, we feel that this protocol is too subjective and leaves the entire analysis open to a bias in the direction of development. The table that we reviewed does not clarify the assumptions that have gone into it. Estimated uses are dependent on two components: Supply and Demand. When supply of certain LBL-related services (availability of campgrounds, trailheads, fishing docks, wildlife viewing opportunities etc.) is reduced, this may lead to a reduction in the number of visitors. Are the reductions in resource output for Alternative Z in this table based on the assumption of a reduced supply of such services? While it may be reasonable to assume that some visitors will stay away if certain services are reduced, such a view disregards other aspects of the demand side. ...The demand for "wild recreation" is on the rise. This demand will not be manifest in increased visitor numbers until there is an increased supply of wild areas. ...it is likely that those visitors that stay away because they have a demand for "developed" recreation, will be replaced by visitors that have a preference for "wild" recreation. Loomis, Bonetti, Echohawk, (in: Cordell, 1999, p. 374) state that there is a statistically significant positive influence of additional Wilderness acreage on recreation use. Taking into account this increased demand for"wild recreation" do those #'s...for Alt Z make sense?

226 3 (continued from comment 2) Do the figures representing the PV Costs include estimates of environmental costs associated with each alternative? Environmental impacts are detailed in Chapter 3 (soil erosion, air pollution from controlled burning ..), and there are differences among the alternatives. If environmental costs are not included in the PV Costs, then they should be considered qualitatively. The agency uses a model to determine the effects of their management decisions on the local economy. This model is called IMPLAN, and was sold by the Forest Service to a private firm in Minnesota. When we asked for a copy of IMPLAN so that we could understand the basic assumptions and underlying tenets of the model, we were told that since the software was privately owned, we were only able to purchase a copy. The price of IMPLAN makes it prohibitively expensive for us as lay people to purchase. Therefore, we are essentially blocked out of truly understanding the process the Forest Service economists use to arrive at their economic impact numbers. When we pointed out that we therefore could not say we truly understood neither the process nor the conclusions, a Forest Service employee told us "it wasn't the Forest Service's fault that we didn't understand regional economic input-output modeling. Maybe we should take a course." The Forest Service has taken the attitude of "trust us, we're the experts." Being that this DEIS is supposed to be a tool for the public to understand and participate in the forest's long-term planning, we find this response unacceptable. The Forest Service should make clear in the document itself the assumptions that are included in the model.

"Trust Us
We are the Experts" attitude!

DCN:11697