

Real Property Performance Results

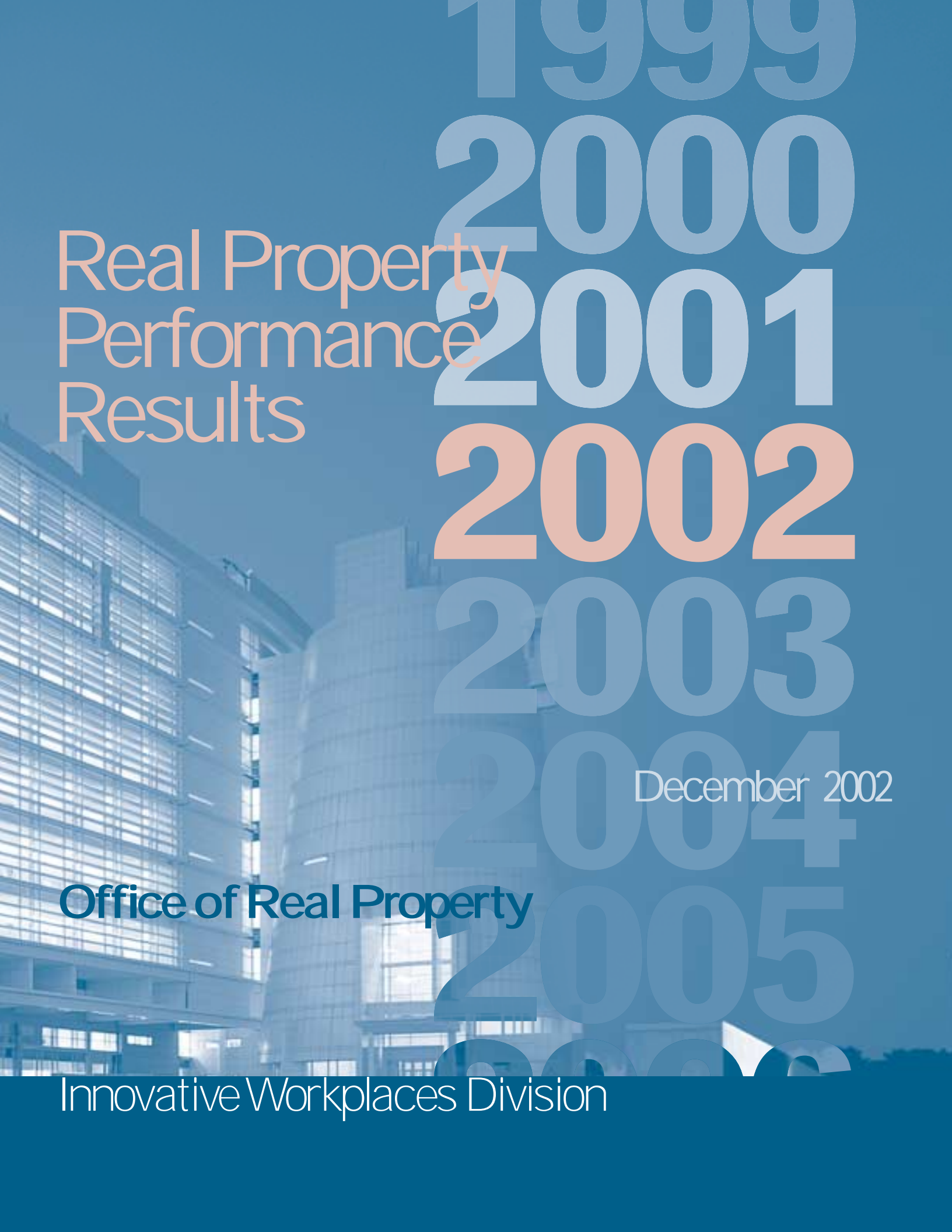
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December 2002

Office of Real Property

Innovative Workplaces Division





Real Property
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Results

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Foreword

The Office of Governmentwide Policy is pleased to issue *Real Property Performance Results 2002*, our fifth annual analysis of real property performance in the Federal office space sector. In these pages you will find our annual update on the 7 key measures of Federal real property performance selected by an interagency working group in 1998. This edition also features an update on the number of Federal teleworkers, the most current private sector benchmarks, and a new metric on sustainability. A special feature included this year is a section updating the 1997 *Office Space Use Review: Current Practices and Emerging Trends*. Our goal is to clearly summarize the relevant data and to provide our customers with a concise reference document. We expect this to be useful to Federal real property asset management decision-makers as well as our stakeholders. The publication will also benefit interested professionals in other governments, the private sector, and academia.

I would like to recognize David Bibb, whose Office of Real Property undertook the data collection and analysis. With leadership from Stan Kaczmarczyk of the Innovative Workplaces Division, the project team of Helen Harlow, Shirley Morris, Joanne Shore, and Ray Wynter produced this fifth annual collection of performance data. Additionally, we would like to recognize the contributors from the entire real property community, especially our Federal agency customers. Without your dedication and participation, this publication would not have been possible. I would also like to offer special thanks to Chris Coneeny, an original member of the project team whose personal involvement and commitment in maintaining data quality were immeasurable.

The Office of Governmentwide Policy presents this information to the Federal real property community to facilitate more informed decision-making leading to improved asset management. Organizations throughout the world in both the private and public sectors have embraced strategic planning, performance measurement and benchmarking. We want to support the Federal real property community in this important transformation, which is consistent with the overall direction of the Government Performance and Results Act of 1993.



G. Martin Wagner
Associate Administrator
Office of Governmentwide Policy
U.S. General Services Administration



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Executive Summary

The following table summarizes Governmentwide performance for the year 2002 on the 7 original key indicators plus the number of Federal teleworkers and the percentage of sustainable Federal buildings, as estimated by our analysis of the sample data:

Summary of Results

<i>Measure</i>	<i>2002 Federal Government Performance</i>
Cost per square foot (owned)	\$4.94 per rentable square foot
Cost per square foot (leased)	\$19.14 per rentable square foot
Vacancy rate	3.1 percent
Cost per person	\$13,800
Customer satisfaction	85 percent on GSA Survey
Employees housed	1,773,600 FTE
Total square feet	759,218,000 rentable square feet of office space
Federal teleworkers	4.2 percent of Federal work force
Sustainability	44 percent of Federal agencies

Executive Summary

We conclude the following based on the 2002 Governmentwide results:

- 2002 Governmentwide performance is consistent with past performance as well as private sector performance on the key indicators of Cost per Square Foot Owned, Cost per Square Foot Leased, and Vacancy Rate.
- For the fifth straight year, we received outstanding cooperation from a core group of Federal agency partners. The main value of the annual Performance Results exercise continues to be the opportunity for a core group of Federal partners to benchmark performance and to benefit from the learning that has occurred around this effort. Good examples of this learning are the development and growing use of the Cost per Person Model and timely guidance such as we provide this year in the Office Space Use Update (see Appendix B).

Acknowledgements

Federal Government Benchmarking Participants

We would like to thank the following agencies for participating in the voluntary benchmarking effort for the 2002 edition of *Real Property Performance Results*:

- Department of Agriculture
- Department of Energy
- Department of the Interior
- Department of Justice
- Department of State
- Department of Veterans Affairs
- GSA Public Buildings Service
- National Science Foundation
- Social Security Administration
- Tennessee Valley Authority
- United States Postal Service
- U.S. Army Corps of Engineers

Other Partners

We would like to acknowledge the following organizations, each of which contributed to the Office of Real Property's performance measurement initiative in 2002 with data, research and other valuable assistance:

- Advanced Learning Institute
- Building Owners and Managers Association International
- CoreNet Global
- Federal Facilities Council
- GSA Federal Technology Service
- Institute of Real Estate Management
- International Facilities Management Association
- International Telework Association and Council
- Journal of Facilities Management
- Leadership in Energy and Environmental System
- Logistics Management Institute
- National Academy of Public Administration
- Office of Management and Budget
- Office of Personnel Management
- Public Works and Government Services Canada
- Society of Industrial and Office Realtors
- Tradeline, Inc.
- Worldwide Workplace Web



2002 Governmentwide Results

Introduction

The Office of Real Property compiled the information in this section from more than 660 million rentable square feet of building data submitted voluntarily by Federal agencies during the latter half of calendar year 2002. The GSA data were selected using certain pre-established criteria, but the rest of the Federal data were obtained subject to the discretion of the contributing agencies.

Although the sampling method may not be rigorously scientific, we believe that the large volume of data collected provides us with a reasonably accurate picture of overall Federal real property and workplace performance. We also believe that the value added by the benchmarking process itself far exceeds the benefits of a more academic exercise that would severely limit participation due to excessive requirements.

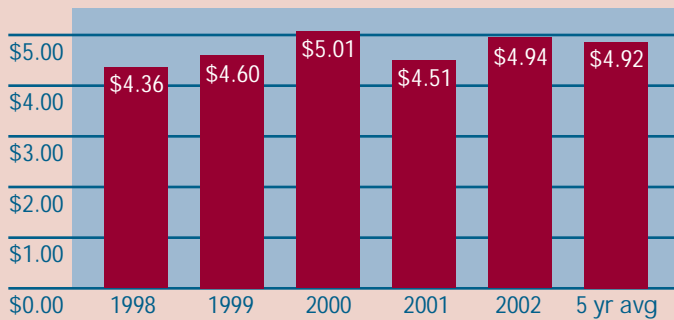
Summary of Results

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Sustainability	44 percent of Federal agencies

2002 Governmentwide Results

Cost Per Square Foot (Owned)

Mean = ■

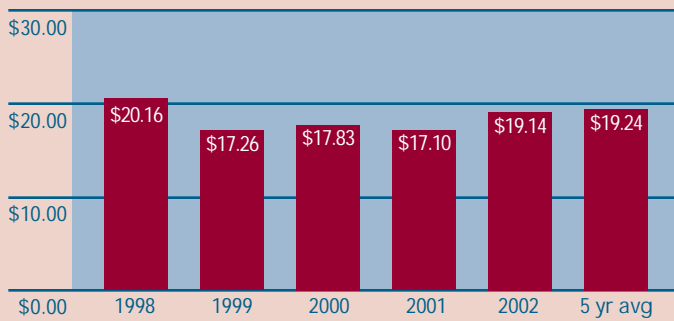


Cost per Square Foot (Owned)

- The current indicator reflects fiscal year 2002 dollars per rentable square foot.
- The current indicator is an average derived from a Federal agency sample of 153,375,618 rentable square feet of owned office space.
- The definition for this indicator is the sum of expenditures for cleaning, maintenance and utilities.
- In calculating the 5-year average, we inflated all prior year data to fiscal year 2002 values.

Cost Per Square Foot (Leased)

Mean = ■



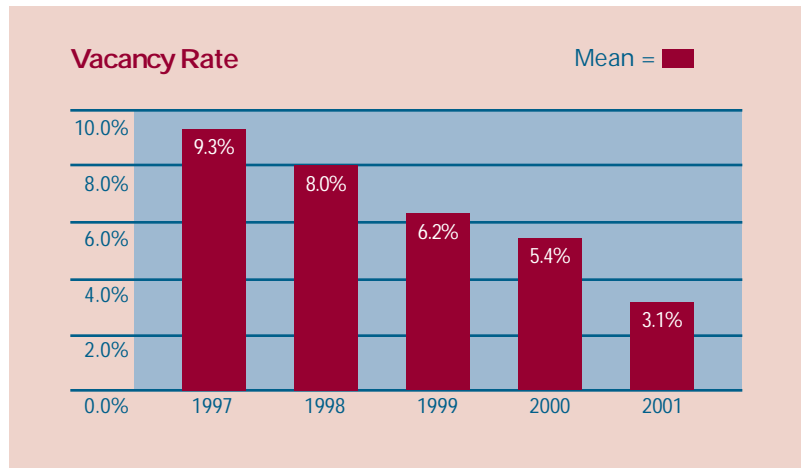
Cost per Square Foot (Leased)

- The current indicator reflects fiscal year 2002 dollars per rentable square foot.
- The current indicator is an average derived from a Federal agency sample of 112,765,105 rentable square feet of leased office space.
- The definition of this indicator is the fully serviced rental rate.
- In calculating the 5-year average, we inflated all prior year data to fiscal year 2002 values.

2002 Governmentwide Results

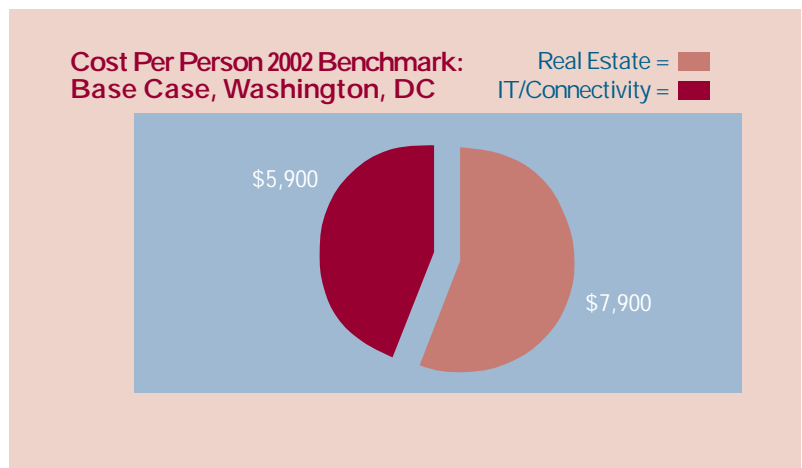
Vacancy Rate

- The current indicator is the average vacancy based on a Federal agency sample of 526,037,187 rentable square feet of owned and leased office space.
- The current estimate is based on actual 2001 data submitted by Federal agencies.



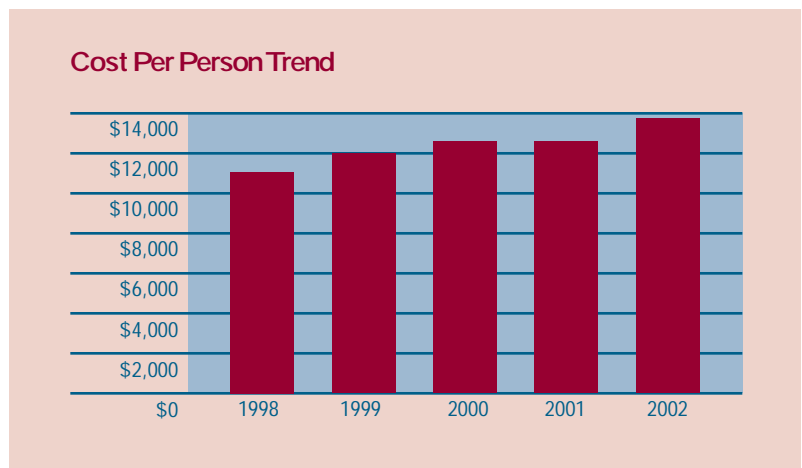
Cost per Person

- We derived the 2002 Cost per Person estimate by updating our 2001 internal study conducted for *Real Property Performance Results 2001*.



Note: Our popular GSA Cost per Person Model will be updated in 2003. GSA Cost per Person Model Version 2 will analyze hoteling situations and additional cost factors.

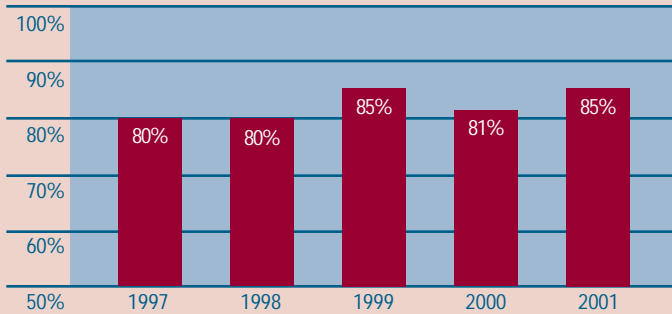
The new, improved model will be available only by e-mail request. There is no charge. Please e-mail your requests for the GSA Cost Per Person Model Version 2 to ray.wynter@gsa.gov.



2002 Governmentwide Results

Customer Satisfaction

Natl. Survey Avg. = ■

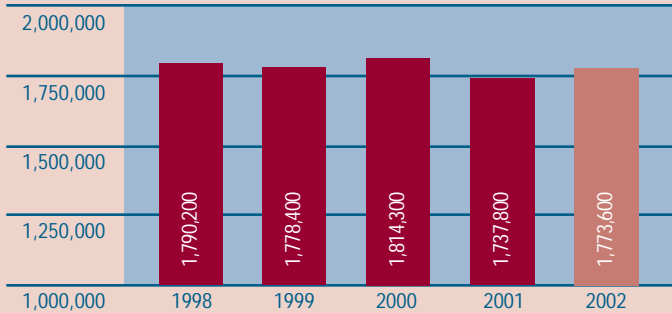


Customer Satisfaction

This chart summarizes the results of the GSA Public Buildings Service's Customer Satisfaction Survey. An independent contractor administers this survey to tenants of approximately half of GSA's eligible buildings annually, with the entire inventory being surveyed every two years. Customer Satisfaction is one of the original 7 key indicators of real property performance derived by an interagency working group in 1998. We are unaware of other formal Customer Satisfaction surveys administered consistently and comprehensively by Federal agencies, so we continue to report the results of the GSA Public Buildings Service survey in our annual assessment for Real Property Performance Results.

Employees Housed

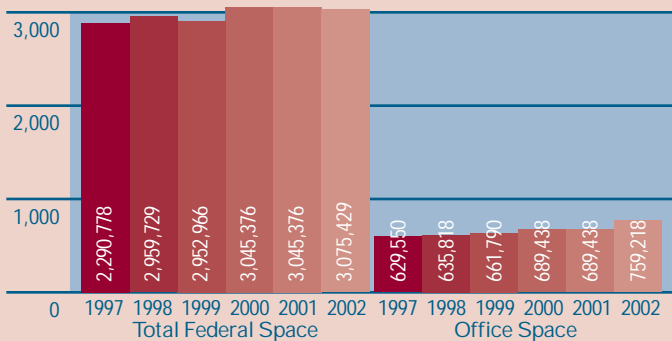
Actual = ■
Estimate = ■



Employees Housed

- The 2002 Governmentwide estimate for Employees Housed is the 2002 FTE (Full Time Equivalent) estimate in the fiscal year 2003 President's Budget.

Total Square Feet (Thousands RSF)



Total Square Feet

- During the year, OGP met with Federal agency representatives to "retool" both input requirements and output results of the inventory of the United States. We derived the 2002 Governmentwide totals from information in the *Federal Real Property Profile*, formerly called the *Worldwide Inventory of the United States Real Property*. Copies of the reports are also available from the Office of Real Property.

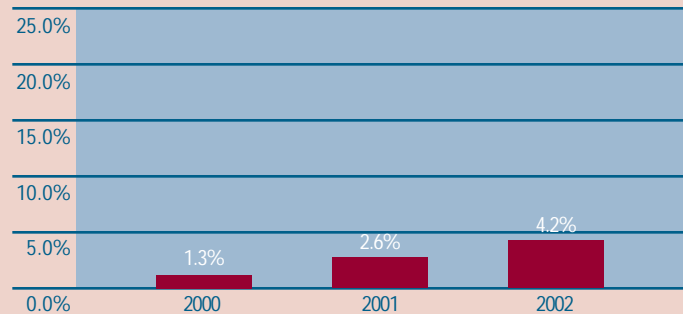
2002 Governmentwide Results

Federal Teleworkers

Telework means performing work on a regular basis in a location other than the principal office, such as the employee's home or a nearby telecenter. Generally, telework arrangements are designed to reduce employee or associate commutes and are enhanced by the use of affordable technology.

- In August 1998, The Office of Personnel Management (OPM) submitted a report to Congress that estimated the number of Federal teleworkers at 1.3 percent of the Federal work force.
- In June 2001, OPM issued an interim report to Congress that estimated the number of Federal teleworkers at 2.6 percent of the Federal work force.
- In January 2002, OPM issued a report to Congress that estimated the number of Federal teleworkers had increased to 4.2 percent of the Federal work force.
- Public Law 106-346 (Section 359) states that each Federal agency must establish a policy under which eligible employees of the agency may participate in telework to the maximum extent possible without diminished employee performance. The law requires that this policy be applied initially to 25 percent of the Federal work force, and then to an additional 25 percent each year for four consecutive years, until 100 percent of the eligible work force is offered the opportunity to telework.
- The International Telework Association and Council (ITAC) estimates private sector participation in telework arrangements at 21.2 percent of the total work force.

Federal Teleworkers (OPM Estimate)



While there has been welcome improvement in the number of Federal teleworkers, Governmentwide performance in this indicator lags private sector benchmarks and falls short of legislative goals. Telework is an important alternative workplace strategy that needs to be part of your Federal workplace planning and human capital development. For more information about telework, contact the Innovative Workplaces Division or visit the joint OPM-GSA web site:

www.telework.gov

Sustainability

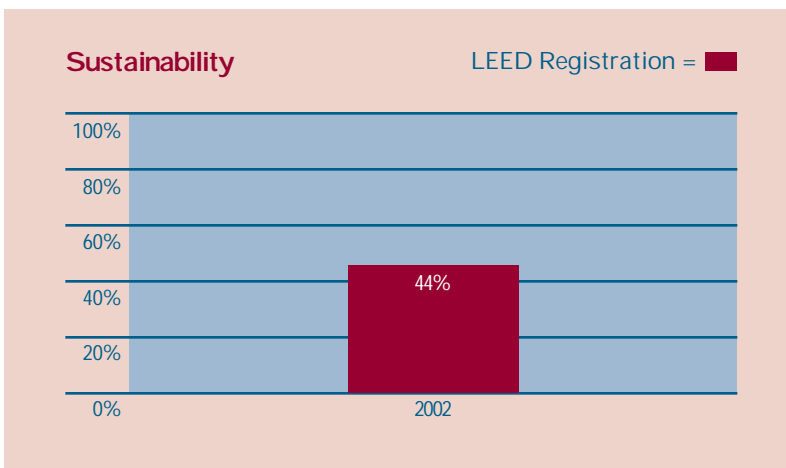
The U.S. Green Building Council's Leadership in Energy and Environmental System (LEED™) is the fastest growing green building metric. LEED™ provides guidance in the areas of building development and design resulting in a more sustainable project. Agencies such as the Army Corps of Engineers have adapted LEED in developing their own measurement programs (SpiRiT). GSA's Public Buildings Service is requiring a LEED™ certification for all new construction and major renovation projects, with a goal of LEED™ Silver.

As of December 2002, a total of 48 Federal government projects were registered under the LEED™ rating system for new construction and renovated buildings. These projects include office buildings, courthouses, laboratories --even a daycare center-- and vary in size from 6,900 gross square feet (the Bushkill Postal Service facility) to 2,000,000 gross square feet (the USDA modernization of the South Building). Registered projects involve:

- Department of Agriculture
- Department of the Air Force
- Department of Commerce (NOAA)
- Department of Defense
- Department of Energy (through GSA)
- Department of Health and Human Services (CDC, FDA)
- Department of the Interior (USGS, National Park Service, Bureau of Indian Affairs)
- Department of the Navy
- Department of Transportation (FAA)
- Environmental Protection Agency
- National Aeronautics & Space Administration
- Social Security Administration
- U.S. General Services Administration
- U.S. Postal Service

Using the list of landholding agencies included in the Office of Real Property's Worldwide Inventory (32), this represents approximately 44 percent (14) participating in LEED™ registered projects. To date, the Department of the Navy, Social Security Administration and GSA have LEED™ certified projects.

The Office of Governmentwide Policy, while not endorsing the LEED™ rating system, is using the percent of agencies participating in LEED™ registered projects as a performance measure, since we believe it serves as an indicator of agencies' level of commitment in creating sustainable workplace environments.



2002 Private Sector Performance

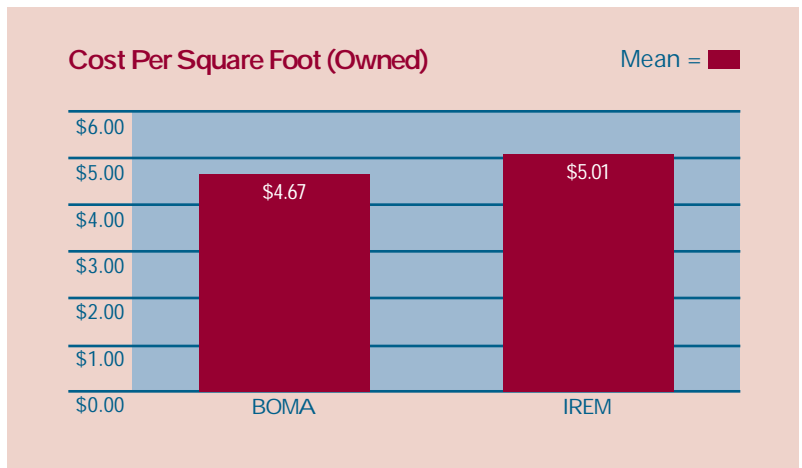
Introduction

The information summarized in this section provides a context for the Governmentwide data we presented earlier. Each data source analyzes a different building sample and the methods of data collection and analysis vary. Using the summary data presented in this report to benchmark the

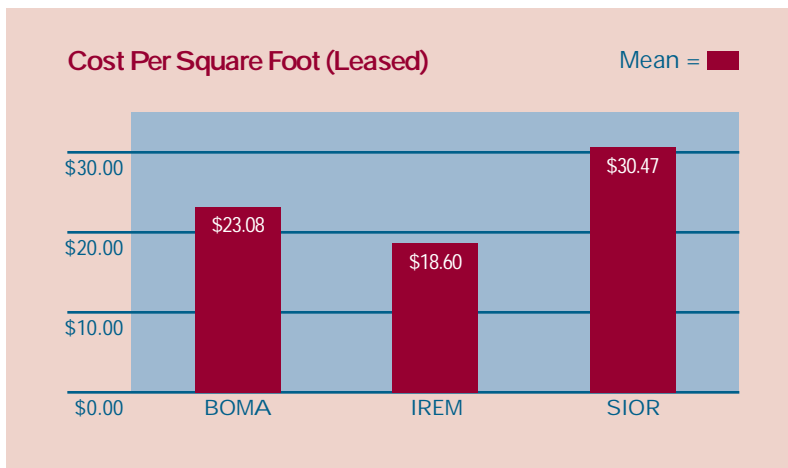
Federal Government against the private sector would be an inaccurate oversimplification of the benchmarking process. However, individual Federal real property asset managers can use the Governmentwide and private sector data to evaluate and improve their Federal real property portfolios.

Cost per Square Foot (Owned)

- The numbers reflect fiscal 2002 dollars per rentable square foot.
- The source for the Building Owners and Managers Association (BOMA) numbers is the 2002 BOMA Experience Exchange Report. We escalated the reported 2001 actual cost data by 1.8 percent (Consumer Price Index or CPI) to obtain 2002 dollars.
- The BOMA sample consists of 2,790 buildings covering 548,090,758 rentable square feet of office space.
- The source for the Institute of Real Estate Management (IREM) numbers is the 2002 IREM Income/Expense Analysis. We escalated the reported 2001 actual cost data by 1.8 percent (CPI) to obtain 2002 dollars.
- The IREM sample consists of 430 buildings covering 132,716,000 rentable square feet of office space.



2002 Private Sector Performance



Cost per Square Foot (Leased)

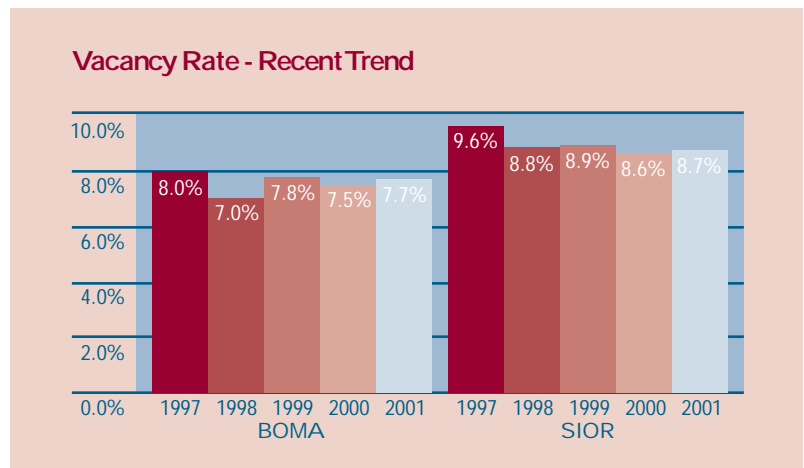
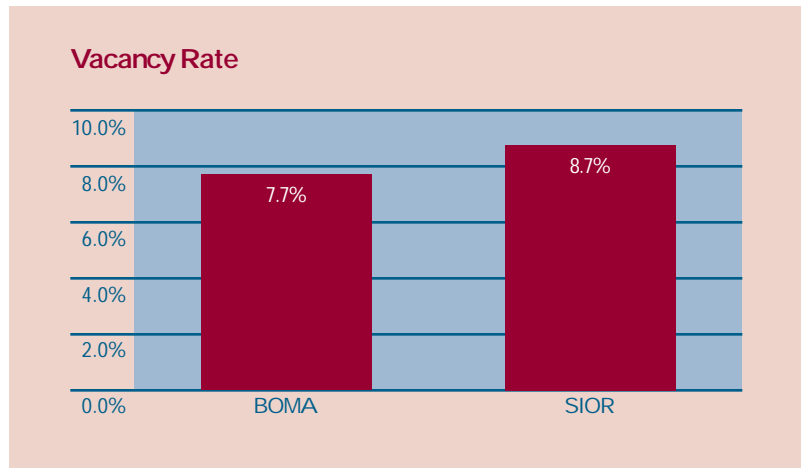
- The numbers reflect 2002 dollars per rentable square foot.
- Leasing cost per square foot is derived from office income figures.
- The source for the BOMA numbers is the 2002 BOMA Experience Exchange Report. We escalated the reported 2001 actual cost data by 1.8 percent (CPI) to obtain 2002 dollars.
- The BOMA sample consists of 2,970 buildings covering 548,090,758 rentable square feet of office space.
- The source for the IREM numbers is the 2002 IREM Income/Expense Analysis. We escalated the reported 2001 actual cost data by 1.8 percent (CPI) to obtain 2002 dollars.
- The IREM sample consists of 419 buildings covering 132,780,000 rentable square feet of office space.
- The source for the Society of Industrial and Office Realtors (SIOR) data is the 2002 Comparative Statistics of Industrial and Office Real Estate Markets. We escalated the reported 2001 actual cost data by 1.8 percent (CPI) to obtain 2002 dollars.
- The SIOR sample consists of buildings from the Washington, D.C. and Northern Virginia markets totaling 222,831,186 rentable square feet of office space.

2002 Private Sector Performance

Vacancy Rate

- BOMA vacancy rate represents all office space while SIOR vacancy rate represents Central Business District (CBD) Class A Office Space.
- The sources for the data are the 2002 editions of the BOMA and SIOR publications noted previously.
- The 2002 vacancy rate estimates are based on reported 2001 data.

- The sources for the BOMA and SIOR data are the 1998, 1999, 2000, 2001 and 2002 editions of the publications noted earlier.





Observations and Recommendations

Observations from the Data

1. Over the past 5 years, we have collected data and benchmarked the 7 key indicators of real property performance derived by an interagency working group in 1998. The work of the interagency group and the concept for the benchmarking were published as the *Governmentwide Real Property Performance Measurement Study* in June 1998. This 2002 edition is the fifth annual edition of *Real Property Performance Results*, which presents the annual results of the Federal benchmarking effort.
2. The purpose of this publication is to provide benchmark data in support of asset management activities of Federal real property professionals. Considering the broad scope of the indicators, the data may be useful to stakeholders interested in the relative performance of Federal real property asset management as compared to other commercial, owner/user, and government organizations. We do not represent the information in this publication to be a precise cost accounting of the chosen indicators. The correct frame of reference for the data is a benchmarking effort, not an audit.
3. Please remember that most of the data presented in this publication are in the form of national averages. When making comparisons to local portfolios or individual facilities, you should consider geographic cost differentials.
4. 2002 Governmentwide performance is consistent with past performance as well as private sector performance on the key indicators of Cost per Square Foot Owned, Cost per Square Foot Leased, and Vacancy Rate.
5. For the fifth straight year, we received outstanding cooperation from a core group of Federal agency partners. The main value of the annual Performance Results exercise continues to be the opportunity for a core group of Federal partners to benchmark performance and to benefit from the learning that has occurred around this effort. Good examples of this learning are the development and growing use of the Cost per Person Model and timely guidance such as we provide this year in the Office Space Use Update.

Observations and Recommendations

Quality of the Data

1. We used conversion factors to translate all submitted data into consistent units of rentable square feet and fiscal year 2002 dollars. These modifications to the original source data were necessary to enhance comparability of the results.
2. We continue to strive for uniformity of definitions among data from disparate sources. We occasionally reject data that appears to include other factors besides what we are attempting to measure. Generally, we err on the side of inclusion.
3. Many respondents submit data at the summary level, which occasionally involves certain assumptions or interpolations on our end.
4. Considering the variety of participating organizations with disparate information systems, the overall estimate of Governmentwide performance is reasonably accurate.
5. Information systems for real property inventory and measurement continue to be an issue. Many agencies struggle to obtain real property performance data from agency financial information systems that are not designed to generate such data (they are geared towards agency mission). GSA focuses on office space, but many other agencies occupy a wide variety of space types. Information systems in these agencies often cannot easily break out office data from total space and cost data.

Observations and Recommendations

Recommendations and Next Steps

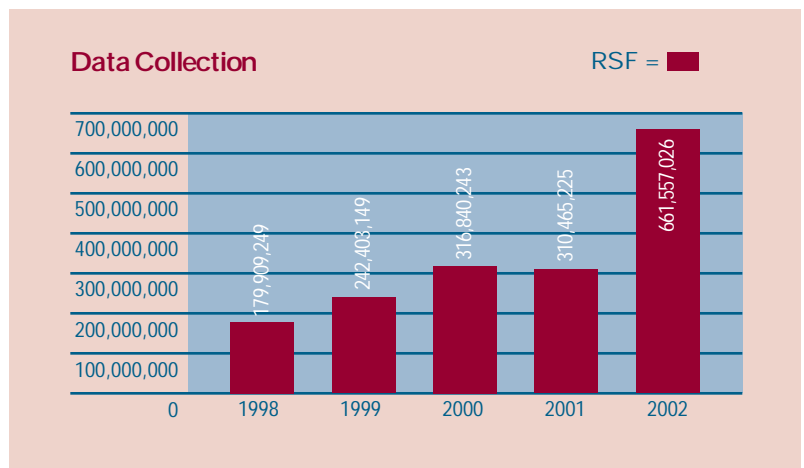
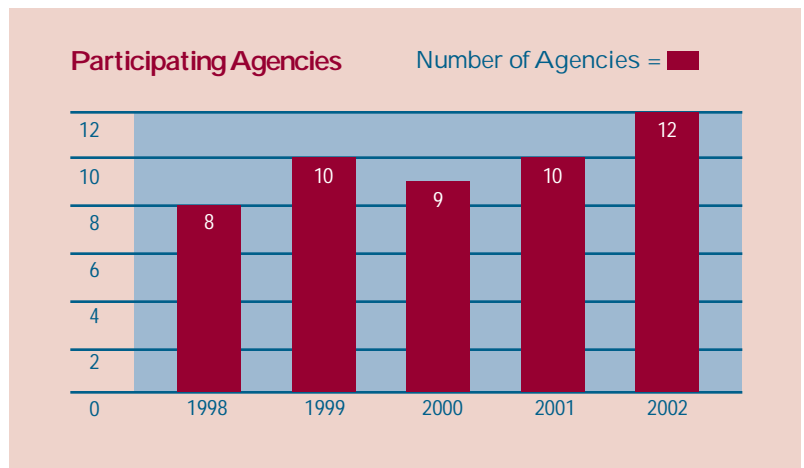
1. In the 1997 *Office Space Use Review*, we noted that real property and workplace performance measures only make sense within the context of an agency strategic plan that ties real estate and workplace planning to agency mission. We immediately picked up on the performance measurement “thread” of this argument and instituted the voluntary benchmarking effort that has produced this fifth annual assessment (and come full circle by itself updating the *Office Space Use Review* in Appendix B). We recently picked up the other “thread” by releasing *Strategic Planning: Aligning Workplace Services Creates Value*. Copies of this study may be obtained by contacting Ray Wynter (see Appendix C).
2. The Innovative Workplaces Division wants to help Federal agency customers reinvent their workplaces to provide modern, healthful and productive space that anyone would be proud to work in. We do this through programs such as The Integrated Workplace, Sustainable Development, Telework, alternative and virtual workplaces. Contact Stan Kaczmarczyk, Division Director (see Appendix C) for friendly customer service.
3. Although the number of Federal teleworkers is at an historic high, it is still far short of the levels of participation envisioned by Public Law 106-346 (Section 359). Federal agencies should strive to provide greater opportunities so that everyone whose job will allow them to telework has a fair opportunity to participate.
4. In 2003, we will write a letter to landholding Federal agencies and provide some more specific feedback on “lessons learned” from the five years of data collection and analysis to date.
5. In 2003, we will have an independent party conduct a strategic evaluation of this performance measurement program to assess its value, impact and potential for improvement.



Appendix A: Data Collection

The 2002 voluntary benchmarking effort succeeded for a fifth year thanks to the enthusiastic participation of a core group of Federal partners.

- In 2002, we had 12 Federal agency participants in the annual benchmarking effort. We reclaimed four partners. There are 32 agencies that report on their independently-owned or leased (non-GSA) space in the Worldwide Inventory.
- In 2002, we collected voluntary data samples from Federal agencies representing approximately 661 million rentable square feet of space.





Appendix B: Space Use Update 2002

Introduction

In 1997, the Office of Governmentwide Policy (OGP), Office of Real Property conducted a review of office space use in the Federal government and the private sector.¹ The published findings of that study have been “used and useful” to many Federal government agencies. This report provides an update to the 1997 effort.

In the 5 years since publication of the previous review, space allocation trends have shifted. Increased competitiveness in the marketplace, coupled with limited space availability, has resulted in many private sector organizations moving away from strict space standards based on pay level or employee position. Space planners now must weigh space availability, corporate culture, mission, job requirements, cost, and efficiency when determining how to forecast and allocate space usage; however, they continue to monitor space per person to assist with space allocation and space planning.

Management and allocation of office space are a constant challenge for both public and private organizations. Often the issue is complicated by limited space resources coupled with functional space demands. Accommodating these issues in a single organizational standard is difficult.

The Federal government also is shifting away from strict space standards based on pay grade. The Code of Federal Regulations has been updated to encourage space planning based on

organizational needs. To reflect this modification, GSA replies to inquiries regarding space allocation, “Space assignments based on pay grade are no longer mandated by Federal regulations, stipulated by GSA, or recommended by the OGP Office of Real Property.”² This is also reflected in GSA’s policy for an “integrated workplace.”³

To identify new trends, practices and standards in space utilization planning and allocation since the 1997 GSA study, we reviewed literature and searched the Internet to collect new or updated information on industry and government space allocation standards. We also conducted telephone and e-mail surveys of public and private organizations, several of which participated in the 1997 study.

We found that comparison among the organizations is difficult because space measurement is inconsistent among the organizations surveyed. Some of the organizations refer to rentable square feet (RSF); others report usable square feet (USF); and others measure office square feet. Some organizations surveyed report a space-per-person standard based on the position held by a worker. Other organizations base their standard on a set space per person for the overall organization. Even when an organization indicated the type of square-footage measurement in its standard, often the organization neglects to identify the method of measurement.

¹ U.S. General Services Administration, Office of Governmentwide Policy, Office of Real Property, *Office Space Use Review: Current Practices and Emerging Trends*, September 1997.

² U.S. General Services Administration, Office of Governmentwide Policy, Office of Real Property, *Response to Request for Guidance on GSA or Federal Space Requirements*, August 2002.

³ U.S. General Services Administration, Office of Governmentwide Policy, Office of Real Property, *An Overview—The Integrated Workplace: A Comprehensive Approach to Developing Workspace* [online document], [cited November 2002]. Available from www.gsa.gov/attachments/GSA_PUBLICATIONS/pub/Completeiwrt1.pdf.

Summary of Findings

We found that many organizations focus on organizational mission, job function, space availability, cost, and effectiveness to plan and allocate space in an organization. Most of the organizations surveyed that report using a space-per-person allocation standard designate worker position as a basis for allocating square footage, although some organizations report a single space-per-person target for the overall organization. ***We have based our benchmarking analysis primarily upon those organizations that, as advocated by the original 1997 Office Space Use Review, provided an overall average square feet per person standard.***

Observations and Recommendations

1. Summary data from the government and private sector need careful interpretation to compare like measurement because large-scale data collection gathers from diverse sources.
2. Our research for this study does not show significant differences between government and private space use trends.
3. Regarding the individual case data on space use, we found a wide range of scenarios and space standards depending on individual job functions and organizational mission (or business sector) and culture. Comparison of office space standards must include an in-depth understanding of the type of space measured, the area where the standards apply – overall space or functional areas – and the agency mission or business sector of organizations being used for comparison.

Appendix B: Space Use Update 2002

4. The U.S. Federal Government is itself a collection of diverse agencies with great variation among missions. This makes the task of developing or reconfirming a Governmentwide recommended average for space use – even for a defined space type such as office space – a formidable challenge. While reported averages have trended up, we found no evidence of this being the result of actual trends in how office space is being used that would require organizations to need larger per capita allocations of office space. We benchmarked the Governmentwide standard against those organizations that reported standards based on overall (all inclusive) average space per person. These organizations are all in the private sector, as this type of approach has been slow to catch on in the public sector. In the latter, rigid standards governing solely primary workspace per position or grade level continue to prevail. ***Based on the private sector overall average standards reported, and our analysis of prevailing trends, we continue to recommend 230 rentable square feet per person as the appropriate overall Governmentwide average for office space use.***
5. Based on our own office renovation experience in the GSA Office of Real Property project, we found that the Integrated Workplace planning and design process can result in 8 percent below the recommended average per person square footage. More aggressive alternative workplace strategies – as some organizations in both government and the private sector have demonstrated – can lead to even more dramatic reductions in the overall organizational space per person average.
6. Federal agencies that exceed the recommended overall Governmentwide average for office space use should ensure that agency mission mandates a direct requirement for higher per capita office space allocation. Once this link is established, agencies need to benchmark their office space to the allocation of other Government and private organizations with similar mission and needs. If the higher average cannot be directly linked to agency mission and corroborated by benchmarking with similar organizations, then the agency should seriously consider a strategy to bring office space use per person down closer to the recommended overall average of 230 rentable square feet per person.

Research

This section provided some basic information needed to understand the terminology of the case studies that follow.

Space Measurement Standards

Two major U.S. organizations and affiliated associations have established standards governing how office space is measured. Those organizations are the American National Standards Institute, Inc., (ANSI) in conjunction with the Building Owners and Managers Association International (BOMA) and the American Society for Testing and Materials (ASTM), in conjunction with the International Facility Management Association (IFMA).

In addition to the ANSI/BOMA and ASTM/IFMA standards, some organizations have used their own measurement methodology that may not follow the nationally accepted measurement standards.

ANSI-BOMA

ANSI developed and continually revises a standard for measuring office space. The latest revision, "Standard Method For Measuring Floor Area In Office Buildings, ANSI/BOMA Z65.1-1996,"⁴ was approved in June 1996. The latest revision was a collaborative effort with BOMA, GSA, and other professionals in the building industry.

The revised standard, used in both existing and new office buildings, defines the term "rentable square feet" as the gross square footage minus

vertical penetrations (e.g., stairwells and elevator and pipe shafts). The standard defines the term "usable square feet" as the sum of retail areas, office space used by tenants, and common areas.

Additional information on the ANSI/BOMA standard is contained in the publication, "Standard Method For Measuring Floor Area In Office Buildings," available through the BOMA website: www.boma.org. The publication provides detailed instructions and diagrams for the following space measurements:

- Gross building area
- Gross measured area
- Building rentable area
- Floor rentable area
- Floor usable area
- Usable area
- Floor common area
- Basic rentable area
- Building common area
- Rentable area
- Office area
- Store area

ASTM-IFMA

In 1996, ASTM/IFMA published a different standard methodology for measuring building floor area (E 1836-96), and revised it in December 2001 (E 1836-01).⁵

The ASTM/IFMA standard defines "facility rentable area" as the total facility gross area minus major penetrations, exterior walls, stairs and elevators, interior parking, and void areas. It defines "facility useable area" as the total facility rentable area minus building core and service

⁴ BOMA International, *Standard Method for Measuring Floor Area in Office Buildings*. ANSI/BOMA Z65.1996, June 1996.

⁵ ASTM International, *Standard Classification for Building Floor Area Measurements for Facility Management*. ASTM E1836-01, 2001.

⁶ Federal Register, December 13, 2002. Available from <http://a257.g.akamaitech.net/7/257/2422/14mar20010800/edocket.access.gpo.gov/2002/02-30051.htm>.

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areas such as lobbies, telephone rooms, electrical rooms, mechanical rooms, toilet rooms, and custodial rooms and utility tunnels.

Additional information on the ASTM/IFMA standard is contained in the publication, Standard Classification for Building Floor Area Measurements for Facility Management, available on the ASTM website: www.astm.org. The publication provides detailed instructions and diagrams for the following space measurements:

- Building exterior gross area
- Facility interior gross area
- Facility rentable area
- Facility usable area
- Facility assignable area
- Common support areas.

The Differences in the Standards

The basic difference between the ANSI/BOMA and ASTM/IFMA standards is the way floor area is measured when the external wall is reached. BOMA uses the concept of “dominant portion,” defined as “the portion of the inside finished surface of the permanent outer building which is 50 percent or more of the vertical-to-ceiling dimension.” With the “dominant portion” methodology, if a window takes up more than 50 percent of the wall, then the measurement is taken from the windowpane, therefore including the windowsill space in the rentable and useable square footage calculations. If the window takes up less than 50 percent of the wall, measurement is taken from the finished interior surface, and as a result, the windowsill space is not included in the measurement.

The ASTM/IFMA standard does not use the dominant portion theory; therefore, rentable and useable measurements are taken from the finished interior surface.

Space Allocation Policies And Practices

In addition to the nationally established ANSI/BOMA and ASTM/IFMA standards, space planners must also consider Federal regulations or company policies, the use of alternative work arrangements, and the practices of similar organizations (case studies).

Code of Federal Regulations:

Federal Management Regulations 102-79.20

In the December 13, 2002, Federal Register, GSA announced the final rule completing the transfer of all real property policies from the Federal Property Management Regulations and cross references them to the Federal Management Regulations.⁶ The 2002 update to the Code of Federal Regulation, Title 41, Section 102-79, addresses space allocation within the federal government. Following is the text of the updated code pertaining to space assignment and utilization:

Executive agencies must provide a quality workplace environment that supports program operations, preserves the value of real property assets, meets the needs of the occupant agencies, and provides childcare and physical fitness facilities in the workplace when adequately justified. An Executive agency must promote maximum utilization of Federal workspace, consistent with mission requirements, to maximize its value to the Government.

Executive agencies must promote the optimum

use of space for each assignment at the minimum cost to the Government, provide quality workspace that is delivered and occupied in a timely manner, and assign space based on mission requirements.⁷

Alternative Office Solutions

Today, many organizations are seeking methods for using limited space efficiently and effectively to meet the needs of both the organization and its employees. Telework, hoteling, and “hot desking” (two to three employees share a single work-space) are a few of the alternative office solutions that organizations are using to save space and associated costs. Often times these alternative office solutions are “win-win,” benefiting both the organization and the employee. While the employee benefits with a flexible work environment, the organization benefits by saving space as well as the associated real estate savings.

According to the Canadian Telework Association, telework has the potential to save thousands, often millions, of dollars in real estate cost. Because employees are more mobile in their jobs—spending more than half their time away from their offices on travel, in meetings, on vacation, or out sick—valuable office space is underused. Empty office space can be used more efficiently by use of alternative office techniques such as space-sharing, hoteling, or other office space strategies, illustrated in the following list of examples cited on the Canadian Telework Association website⁸:

- AT&T reduced office space costs using telework. The company estimates that since 1995, telecommuting has saved AT&T approximately \$500 million in lease costs. In 1998, about 55 percent of AT&T managers telecommuted at least once a month.
- IBM reduced its need for office space and saves \$56 million per year using telework. By using telework for the past 2 years, IBM has reduced its need for space by 2 million square feet.
- Merrill Lynch reported saving \$5,000 to \$6,000 for each office eliminated through telecommuting.

Comparisons of Space Allocation

When deciding how to allocate office space, it is important to compare the practices of similar organizations. Planners must be cautious when benchmarking for space planning and allocation purposes to ensure comparison of like measurements, established by asking the following questions:

- “How is the square footage expressed (e.g., usable, rentable, gross, or office square footage)?”
- “How is the measurement calculated (e.g., what standard was used to determine square footage)?”
- “Do the organizations have functions similar to the benchmarked organization (e.g., are

⁷ Electronic Code of Federal Regulations, *Title 41 Section 102-79.20* [online document], October 7, 2002, [cited December 17, 2002]. Available from http://www.access.gpo.gov/nara/cfr/waisidx_02/41cfr102-79_02.html.

⁸ Canadian Telework Association, *Office Space and Innovative Office Strategies* [online document], [cited August 2002]. Available at www.ivc.ca/part11.html.

⁹ Johnson Controls, *U.S. Facility Cost Index Briefing* [online document], Summer 2002 [cited August 2002]. Available at www.jci.com/fm/research/JCQ2_20023609_Ir.pdf.

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conference, warehouse, and common area requirements similar)?”

Johnson Controls publishes a semi-annual benchmarking briefing, *U.S. Facility Cost Index*.⁹ The Summer 2002 briefing contains a cost-per-occupant-per-year and a cost-per-rentable-square-foot benchmark for building operation costs. The briefing does not mention a benchmark for allocation of the amount of space per person. The Johnson Controls briefing says “The cost-per-occupant measure is considered to be the more meaningful of the two from a business perspective, as for all services it is that which is most closely aligned to the primary purpose of the facility from the users perspective; i.e., the productive support of people.”

Private Sector Case Studies

In order to update – and as it turned out to revalidate – our recommended Governmentwide overall average of 230 rentable square feet per person, we reviewed dozens of case studies and selected those cases where organizations reported overall standards most directly comparable to the Governmentwide recommended average. The following table summarizes this benchmark information. Organization names have been withheld at the request of the participants. Most of the standards are reported in usable square feet per person, so the appropriate comparison to the Governmentwide standard is 200 usable square feet per person (equivalent of 230 rentable square feet per person).

Summary of Overall Office Space Use

Organization	Overall space per person standard
Insurance company – target	230 usable square feet per person
Insurance company – actual	215 usable square feet per person
Consulting company – actual	320 usable square feet per person
Software engineering firm – actual	220 usable square feet per person
Telecommunications company I - actual w/hoteling	152 – 174 usable square feet per person
Telecommunications company II - actual	325 usable square feet per person
Energy firm – actual “best in class”	200 – 250 usable square feet per person
Range of benchmark averages	152 to 325 usable square feet per person
Mid-point of range	238 usable square feet per person
“Average” of the benchmark averages	239 usable square feet per person
Recommended Governmentwide standard	200 usable square feet per person

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The following case studies provide some detailed information breaking down aspects of the overall averages reported in the immediately preceding table. This detailed information is provided for the benefit of practitioners who are trying to develop space standards or actually implementing space projects. Most customers of the original *Office Space Use Review* fall somewhere in this description.

Customers who are struggling with developing or implementing space standards will often look at overall standards such as provided above, or simply divide the total space they are paying rent for by the number of employees, and wonder why they arrive at a result quantified in hundreds of square feet per person on average. After all, the

customer reasons, I look at my immediate cubicle or office and those of my colleagues, and no one seems to have hundreds of square feet of space allocated to him or her.

The tables included in the detailed case studies that follow provide a crosswalk for these customers. They provide “partial space standards” for individual primary work areas based generally on position in the organization. Support space, circulation, collaborative space, amenities, storage and other special spaces all figure into the equation summing up to the overall average office space use per person represented by the recommended Governmentwide standard of 230 rentable (equivalent of 200 usable) square feet per person.

Case Study #1: Insurance Company

Insurance Company is a Fortune-500 company that provides worldwide insurance and diversified financial services. The company indicated it previously assigned space by grade level, but it now assigns space by function. Table 1 shows how the insurance company allocates office and cubical space by category.

Table 1. Insurance Company

Space Allocation by Employee Category

Position	Office dimension (ft.)	Office sq. footage
Customer contact (call centers)	6.8 x 6	41
Managers, directors (mid-management)	6.8 x 10.6	72
Everyone else (excluding top executives)	6.8 x 8	54

There are different space allocations to “operating groups” on a case-by-case basis (to accommodate growth needs). The company charges rent to internal customers. All customers are charged the same rental rate. Customers are allowed to manage their own space, and they can

give back space to save money. As a result, there is a financial incentive for customers to conserve on space use. As an organization, this company uses an average of 215 USF per person, which is 15 USF per person less than the company target of 230 USF per worker.

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In its headquarters, only 0.5 percent of its employees telework, and only then because they are displaced because of major remodeling in the headquarters building. The company is

considering implementing a shift-work system that will affect the amount of space necessary to operate efficiently.

Case Study #2: Consulting Company

This organization provides facilities-related advice and counsel to large public-sector organizations of the Federal government. It has established standards for its own space based on prevailing industry figures. The firm's standards are based on office area. Space allocation depends on an employee's position in the company (see Table 2).

Table 2. Consulting Company

Space Allocation by Employee Position

Position	Office square footage	
Executive	325	(office)
Director	225	(office)
Managerial, supervisory, technical	175	(office)
Support Staff	132	(office)
Telecommuters, hoteling	N/A	

As an organization, the firm uses an average of 368 RSF per person, and 320 USF per person. The main facility contains a significant amount of

conference and meeting space that is considered in these calculations.

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Case Study #3: Software Engineering Firm

This large software engineering and consulting company implements information systems and technology solutions to help speed and improve service delivery and give better information to make decisions. The company provides converged voice, video, and data services as well as wireless and e-business solutions. Space allocation depends on an employee's position in the company (see Table 3).

Table 3. Software Engineering Company Space Allocation by Employee Position

Position	USF	
Executive	140	(office)
Director	130	(office)
Managerial, supervisory, technical	120	(office)
Support staff	64	(cubicle)
Telecommuters, hoteling	NA	

The average space requirement in the organization is 220 USF; however, this standard is not enforced on an individual basis. The average

space per person was calculated by dividing the USF by the number of employees. The company does not have hoteling workstations.

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Case Study #4: Telecommunications Company I

This major telecommunications company offers communication services and products, and it provides voice, data, and video telecommunications services to consumers, large and small businesses, and government entities. The company and its subsidiaries furnish regional, domestic, international, and local telecommunication services. The company also provides cellular telephone and wireless services. The space allocation standard depends on an employee's position in the company (see Table 4).

Table 4. Telecommunication Company I Space Allocation by Employee Position

<i>Position</i>	<i>USF</i>	
Executive	150 – 300	(office)
Director	96–150	(office)
Director	82	(cubicle)
Managerial, supervisory, technical	56–64	(cubicle)
Support staff	42–56	(cubicle)
Telecommuters, hoteling	36–42	(cubicle)

The average space allocation per person in the organization is between 175 and 200 RSF. The average space per person was calculated using space metric guidelines established in 1997 after extensive research and participation in pilot programs with leading commercial real estate

firms. The company has established hoteling workstations. These workstations are designed to allow a 3:1 ratio of use within the sales organization; otherwise, they are used for visitors or telecommuters.

Case Study #5: Telecommunications Company II

This large telecommunications company designs, builds, and delivers a wide range of public and private networks, communications systems, software, and data networking systems. The company also designs, builds, and delivers business telephone systems and microelectronic components. Space allocation depends on an employee’s position in the company (see Table 5).

Table 5. Telecommunication Company II Space Allocation by Employee Position

Position	USF	
Executive	225	(office)
Director	175	(office)
Managerial, supervisory, technical	150	(office)
Support staff	56–75	(office or cubicle)
Telecommuters/Hoteling	NA	

The average space allocation per person in the organization is 457 USF per person, which includes warehouse, manufacturing, and laboratory space in addition to office space. The average administrative space allocation per person in the organization is approximately 325 USF per person. The average space allocation per person was calculated using space metric guidelines developed through a benchmarking

process and historic usage in the company. Larger locations are calculated based on measured space; smaller locations are calculated based on square footage listed in a lease. All are measured using a monthly headcount provided by the human resources department. The company has very few established hoteling workstations. Information on the allocation of these workstations is not available.

Case Study #6: Energy Firm

This organization determined that “best in class” space in the firm averaged 200 to 250 usable square feet per person, and that 20 to 35 percent of the space provided in the best of class workplaces was in the nature of collaborative workspace. All subsequent new and renovation space projects will use these standards. Individual space allocations per position are not used.

Appendix C: Innovative Workplaces Division

The Innovative Workplaces Division provides Governmentwide leadership and innovative solutions that enhance the livability of the workplace and offer a sensible balance between work and home life. We develop programs, provide technical assistance, and devise strategies that support high-quality environments wherever people work.

In addition to Performance Measurement, other major programs in the Division are Telework, the Integrated Workplace, and Sustainable Development.

In 2002, we published the following studies:

- Real Property Performance Results 2002
- Strategic Planning: Aligning Workplace Services Creates Value
- Technology Barriers to Home-Based Telework

In 2003, we plan to publish:

- Cost Per Person Model, Version II
- Innovative Workplace Strategies
- Real Property Performance Results 2003

Please contact one of our staff professionals for information on specific programs or to find out how the evolving concept of the workplace supports your mission, your customers, and your employees or associates.

Appendix C: Innovative Workplaces Division

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Publication Survey

Real Property Performance Results 2002

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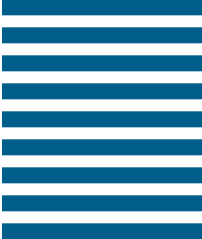
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