

The background of the entire page is a photograph of a large, classical-style government building with many windows and columns. An American flag is visible on a tall pole in the foreground. The image is overlaid with a semi-transparent blue horizontal band across the top and bottom, and a vertical blue band on the right side. Large, semi-transparent numbers representing years from 1999 to 2006 are arranged in a vertical column on the right side of the page.

# Real Property Performance Results

# 2001

December 2001

Office of Real Property

Featuring the  
*Cost Per Person  
Model*





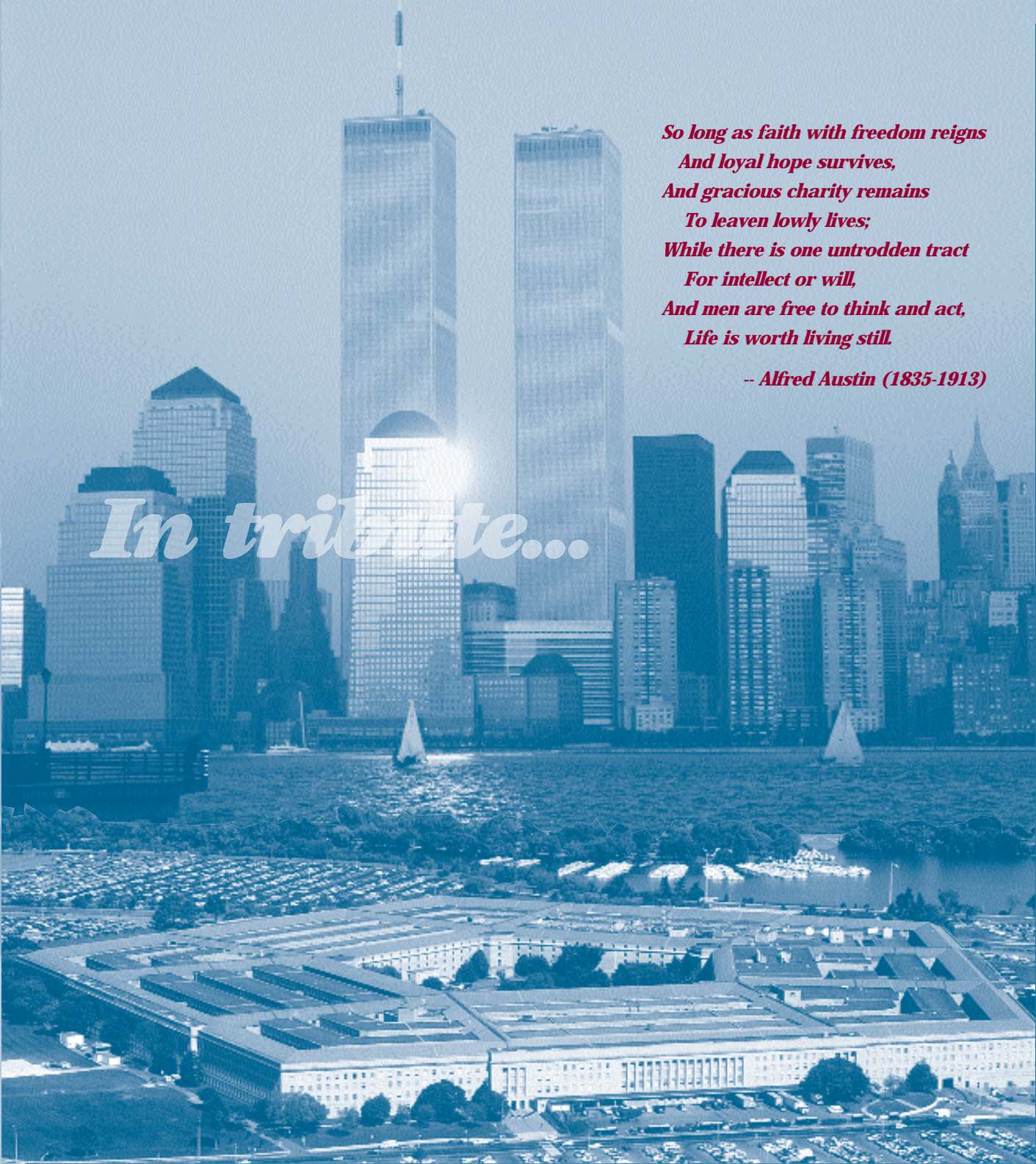
Real Property  
Performance  
Results

1999  
2000  
**2001**  
2002  
2003  
2004  
2005  
2006

December 2001

Office of Real Property

Featuring the  
*Cost Per Person  
Model*



*So long as faith with freedom reigns  
And loyal hope survives,  
And gracious charity remains  
To leaven lowly lives;  
While there is one untrodden tract  
For intellect or will,  
And men are free to think and act,  
Life is worth living still.*

*-- Alfred Austin (1835-1913)*

*In tribute...*

# Foreword

The Office of Governmentwide Policy is pleased to issue *Real Property Performance Results 2007*, our fourth 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 special study compiling private sector data in support of our popular Cost per Person metric. Of course, this publication is also your source for the 2001 update of the GSA Cost per Person Model itself. 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 Ray Wynter, Malcolm Saldanha, and Chris Coneeney produced this third 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.

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 lead the Federal real property community in this important transformation, as envisioned in 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 2001 on the 7 original key indicators plus the number of Federal teleworkers, as estimated by our analysis of the sample data:

## Summary of Results

<i>Measure</i>	<i>2001 Federal Government Performance</i>
Cost per square foot (owned)	\$4.51 per rentable square foot
Cost per square foot (leased)	\$17.10 per rentable square foot
Vacancy rate	5.4 percent
Cost per person	\$12,600
Customer satisfaction	81 percent on GSA Survey
Employees housed	1,751,400 FTE
Total square feet	689,438,000 rentable square feet of office space
Federal teleworkers	2.6 percent of Federal work force

# Executive Summary

We conclude the following based on the 2001 Governmentwide results:

- 2001 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.
- There is a receptive audience for tools and measures such as the GSA Cost Per Person Model and the new Productivity Payback Model (see our recent publication *Productivity and the Workplace*), that assess workplace rather than simply facilities performance.
- There has been a noticeable improvement in the number of Federal employees who telework, but performance on this metric falls considerably short of private sector performance and legislative goals.
- For the fourth straight year, we received outstanding cooperation from a core group of Federal agency partners. We collected a good deal of useful data, but less than we had hoped for. Some partners from past years could not or declined to participate, and several major “players” in the Federal office space market have never participated in our voluntary benchmarking effort. Data quality has always been satisfactory; however, in many cases data quality is stagnating or getting worse. We have produced four years worth of useful data and analysis, but probably need to reevaluate the Governmentwide real property performance measurement effort if future efforts are to maintain the same levels of quality and usefulness.

# Acknowledgements

## Federal Government Benchmarking Participants

We would like to thank the following agencies for participating in the voluntary benchmarking effort for the 2001 edition of Real Property Performance Results:

- Department of Agriculture
- Department of the Army
- Department of Commerce
- Department of Energy
- Department of Justice
- GSA Public Buildings Service
- National Science Foundation
- Social Security Administration
- Tennessee Valley Authority
- United States Postal Service

## 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 2001 with data, research and other valuable assistance:

- Advanced Learning Institute
- Building Owners and Managers Association International
- Department of State
- Federal Facilities Council
- GSA Federal Technology Service
- Institute of Real Estate Management
- International Facilities Management Association
- International Telework Association and Council
- Logistics Management Institute
- Office of Personnel Management
- Public Works and Government Services Canada
- Society of Industrial and Office Realtors
- Tradeline, Inc.
- U.S. Army Corps of Engineers
- Workplace Productivity Consortium
- Worldwide Workplace Web (W4)



# 2001 Governmentwide Results

## Introduction

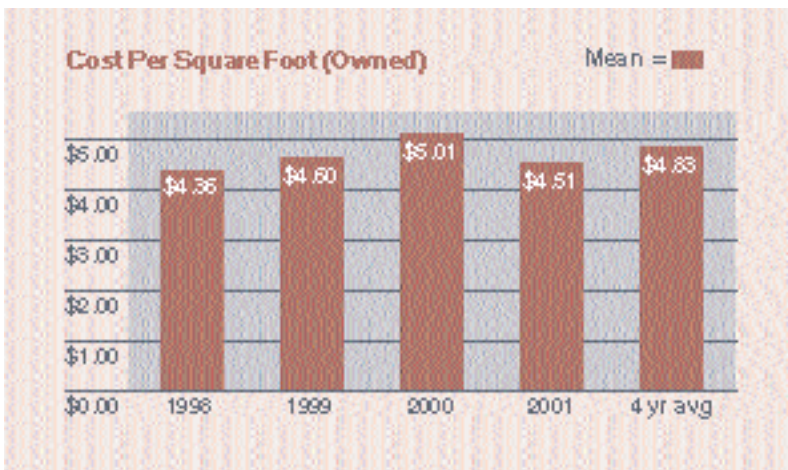
The Office of Real Property compiled the information in this section from more than 310 million rentable square feet of building data submitted voluntarily by Federal agencies during the latter half of calendar year 2001. This amount represents 45 percent of the total Governmentwide office space inventory. 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.

We questioned certain data, but generally accepted the submission for inclusion into the overall Governmentwide averages. Although the sampling method may not be rigorously scientific, we believe that the overall volume of data collected helps compensate for any shortcomings or individual inconsistencies. 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

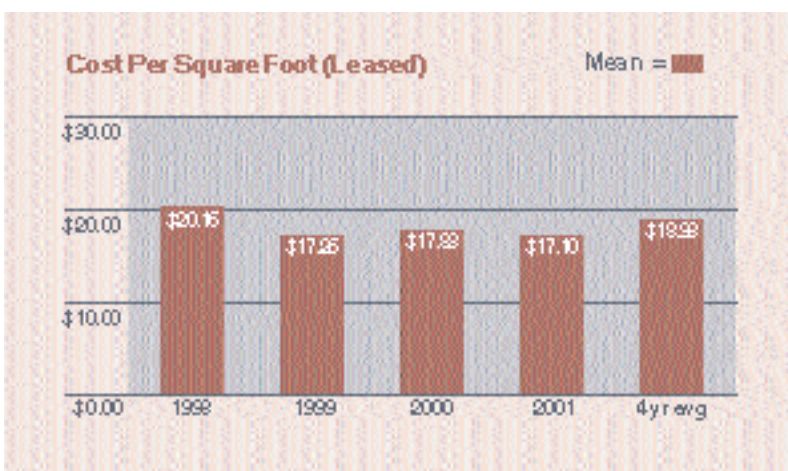
<i>Measure</i>	<i>2001 Federal Government Performance</i>
Cost per square foot (owned)	\$4.51 per rentable square foot
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Employees housed	1,751,400 FTE
Total square feet	689,438,000 rentable square feet of office space
Federal teleworkers	2.6 percent of Federal work force

# 2001 Governmentwide Results



## Cost per Square Foot (Owned)

- The current indicator reflects fiscal year 2001 dollars per rentable square foot.
- The current indicator is an average derived from a Federal agency sample of 226,760,299 rentable square feet of owned office space.
- The definition for this indicator is the sum of expenditures for cleaning, maintenance and utilities.
- The decrease from the 2000 estimate is due at least in part to the inclusion of less mixed-use space in the data sample and a slightly more proportionate representation of GSA building data in this average. GSA's Public Buildings Service consistently outperforms the private sector in Cost per Square Foot Owned.
- In calculating the 4-year average, we inflated all prior year data to fiscal year 2001 values.



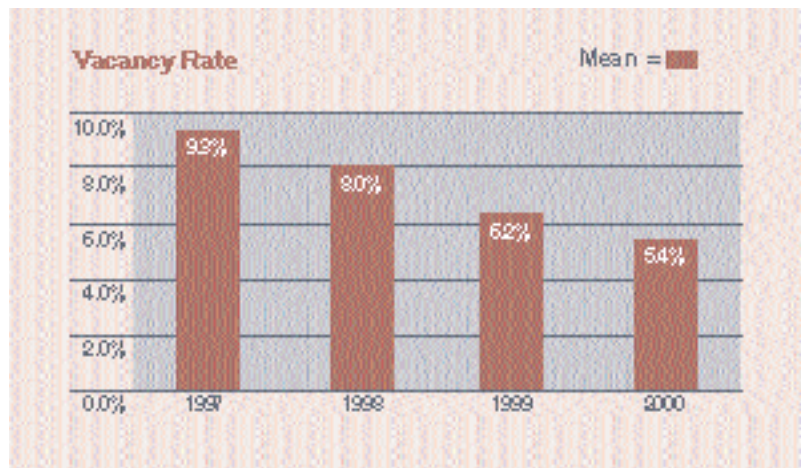
## Cost per Square Foot (Leased)

- The current indicator reflects fiscal year 2001 dollars per rentable square foot.
- The current indicator is an average derived from a Federal agency sample of 83,704,926 rentable square feet of leased office space.
- The definition of this indicator is the fully serviced rental rate.
- In calculating the 4-year average, we inflated all prior year data to fiscal year 2001 values.

# 2001 Governmentwide Results

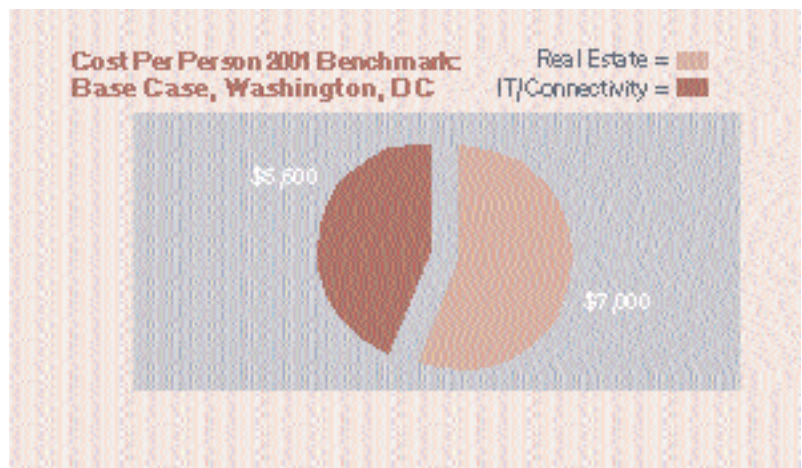
## Vacancy Rate

- The current indicator is the average vacancy based on a Federal agency sample of 310,465,225 rentable square feet of owned and leased office space.
- The current estimate is based on actual 2000 data submitted by Federal agencies.



## Cost per Person

- We derived the 2001 Cost per Person estimate by updating our 2000 internal study conducted for Real Property Performance Results 2000.
- Moderate increases in real estate and information technology costs were offset by a decrease in telephone/connectivity costs in the pilot organization. This resulted in no net change to the Cost per Person estimate compared to the 2000 estimate.



On the following pages we present the 2001 update of our popular GSA Cost per Person Model. The actual model is an Excel spreadsheet that enables you to estimate your actual cost per person or to plan different workplace scenarios and assess their cost impacts. Since its release in November 1999, we have provided the spreadsheet in electronic form at no cost to 100 customers in 84 government, private and

academic organizations. You can obtain your 2001 update of the GSA Cost per Person Model by contacting the Innovative Workplaces Division (see Appendix C).

**Note:** Please refer to our November 1999 publication, *the Workplace Evaluation Study*, for more detailed information on how to use the GSA Cost per Person Model, or contact the Innovative Workplaces Division (Appendix C).

# 2001 Governmentwide Results

## Average Cost per Person for FY 2001

Typical Federal Agency - "Base Case"  
Headquarters, Washington, DC

FullTime Equivalent (FTE)	1,008
---------------------------	-------

Number of Workstations	1,000
------------------------	-------

### **Component A: Real Estate** **Description**

Space per Person	230	230 rentable square feet (rsf) is based on the 200 usable square feet per person published in MP's Office Space Use Review adjusted upwards by 15% to reflect rentable square feet.
------------------	-----	---

Rental Rate for Building/Facility	\$30.40	Select the appropriate rental rate for the area, building class and type. Use current market rental rates or plug in the actual agency rental rate
-----------------------------------	---------	--

<b>Real Estate Cost:</b>	<b>\$6,992,000</b>	# of workstations x Space per person x Rental rate
--------------------------	--------------------	--

### **Component B: Telecommunications**

Instrument Cost per Workstation	\$544	For Analog use \$544; for ISDN use \$694
---------------------------------	-------	--

<b>Telecommunications Cost:</b>	<b>\$544,000</b>	# of Workstations x Instrument cost per workstation
---------------------------------	------------------	---

### **Component C: Information Technology**

Annual IT Cost	\$4,511	IT cost includes workstation and LAN interface. Use up to 30% adjustment factor for enhanced IT environment.
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<b>IT Cost:</b>	<b>\$4,511,000</b>	IT cost x # of workstations
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# 2001 Governmentwide Results

## Model

### **Component D: Workstation Furniture**

### **Description**

Workstation Furniture	\$0	N/A for base metric. Default value is \$4,500
<b>Furniture Cost:</b>	<b>\$0</b>	Workstation cost x # of workstations

### **Component E: Alternative Work Environment**

Total number of Teleworkers	121	For "base case" we assumed 12% of total FTEs telework.
No. Working at Home	109	For "base case" we assumed 90% of teleworkers work at home
No. Working at Telework Center	12	Total # of teleworkers - # working at home.
Annual Home Office Cost	\$5,784	Average annual cost to support teleworker at home
Daily Telework Center Cost	\$25.00	Daily cost per employee for a telework center
Avg. No. of days/wk at Telework Ctr	1	
<b>Alternative Work Cost:</b>	<b>\$646,056</b>	(Home office cost x # working at home) + (Daily telework center cost x Average # of days/wk at telework center x 52 weeks/yr. x # working at telework center)

**Total Annual Cost (year 1):**      **\$12,693,056**      Total Components A + B + C + D + E

**Cost per Person (year 1):**      **\$12,592**      Divide annual cost by the number of FTEs

**Cost per Person (years 2-3):**      **\$12,009**      Deducts Start-Up (year 1 only) costs

# 2001 Governmentwide Results

## 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*.

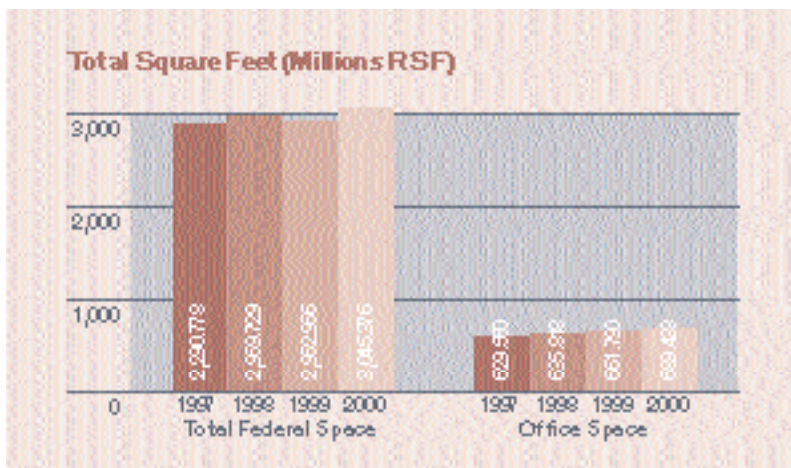
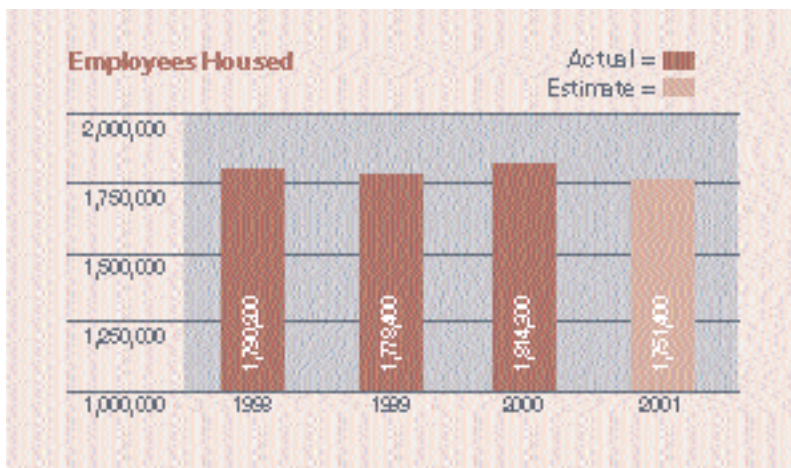
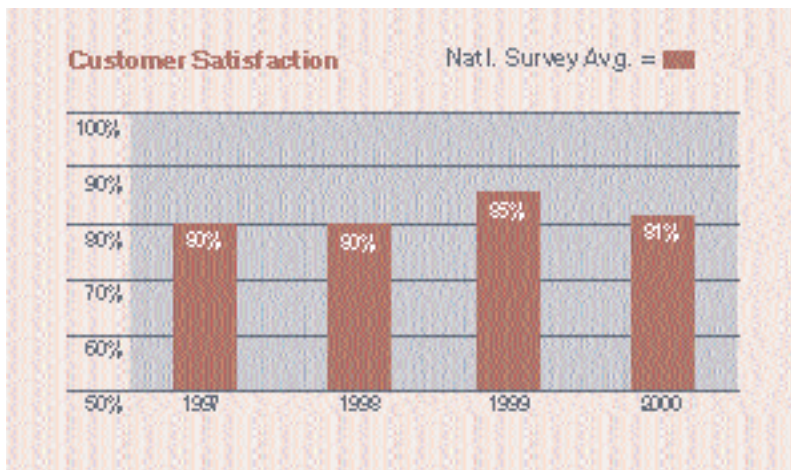
For research data on employee satisfaction from the Integrated Workplace perspective, conducted in the Federal, private and international sectors, please see our recent (December 2001) publication entitled *Productivity and the Workplace*.

## Employees Housed

- The 2001 Governmentwide estimate for Employees Housed is the 2001 FTE (Full Time Equivalent) estimate in the fiscal year 2002 President's Budget.

## Total Square Feet

- We derived the 2001 Governmentwide estimate from information in the latest (2000) Worldwide Inventory of the United States' real property. Copies of the Worldwide Inventory reports are also available from the Office of Real Property.

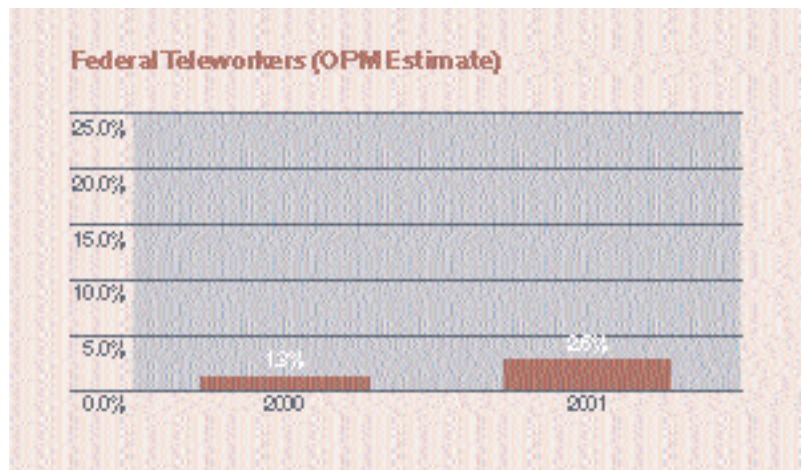


# 2001 Governmentwide Results

## 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 had increased to 2.6 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 12 percent of the total work force.



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](http://www.telework.gov)



# 2001 Private Sector Performance

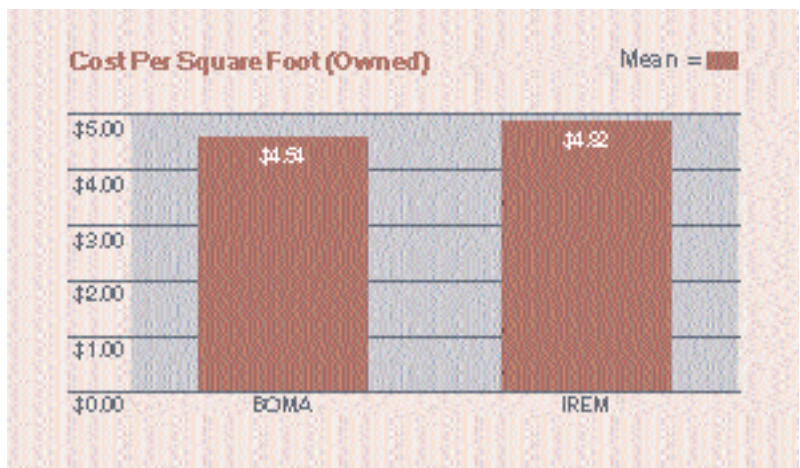
## Introduction

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

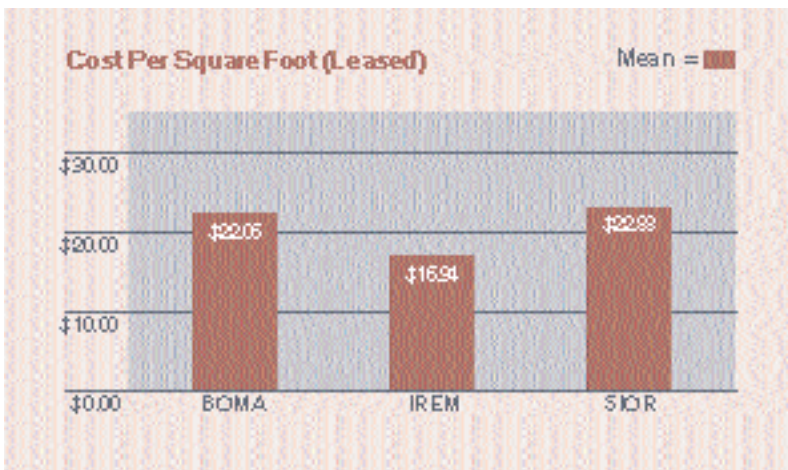
data presented in this report to benchmark the Federal Government against the private sector would be an inaccurate oversimplification of the benchmarking process. However, individual Federal real property asset managers can use the Governmentwide and private sector data to evaluate and improve their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

## Cost per Square Foot (Owned)

- The numbers reflect fiscal 2001 dollars per rentable square foot.
- The source for the Building Owners and Managers Association (BOMA) numbers is the 2001 BOMA Experience Exchange Report. We escalated the reported 2000 actual cost data by 3.28 percent (Consumer Price Index or CPI) to obtain 2001 dollars.
- The BOMA sample consists of 3,447 buildings covering 658,376,176 rentable square feet of office space.
- The source for the Institute of Real Estate Management (IREM) numbers is the 2001 IREM Income/Expense Analysis. We escalated the reported 2000 actual cost data by 3.28 percent (CPI) to obtain 2001 dollars.
- The IREM sample consists of 430 buildings covering 13,251,000 rentable square feet of office space.



# 2001 Private Sector Performance



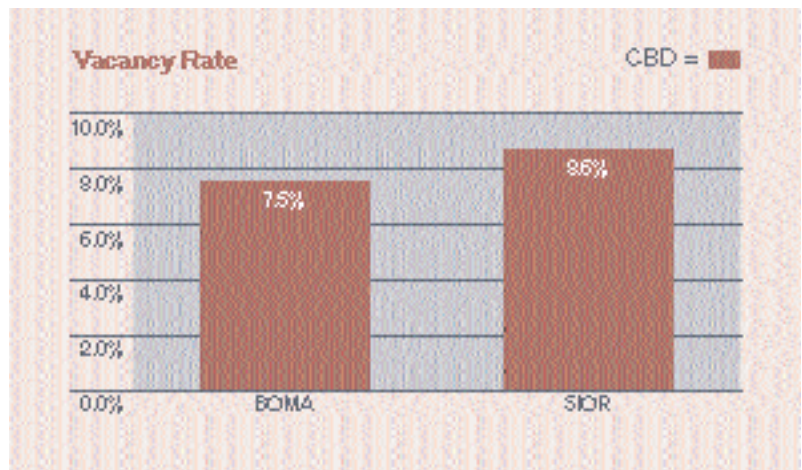
## Cost per Square Foot (Leased)

- The numbers reflect 2001 dollars per rentable square foot.
- Leasing cost per square foot is derived from office income figures.
- The source for the BOMA numbers is the 2001 BOMA Experience Exchange Report. We escalated the reported 2000 actual cost data by 3.28 percent (CPI) to obtain 2001 dollars.
- The BOMA sample consists of 3,447 buildings covering 658,376,176 rentable square feet of office space.
- The source for the IREM numbers is the 2001 IREM Income/Expense Analysis. We escalated the reported 2000 actual cost data by 3.28 percent (CPI) to obtain 2001 dollars.
- The IREM sample consists of 430 buildings covering 13,251,000 rentable square feet of office space.
- The source for the Society of Industrial and Office Realtors (SIOR) data is the 2001 Comparative Statistics of Industrial and Office Real Estate Markets. We escalated the reported 2000 actual cost data by 3.28 percent (CPI) to obtain 2001 dollars.
- The SIOR sample consists of buildings from 117 U.S. markets.

# 2001 Private Sector Performance

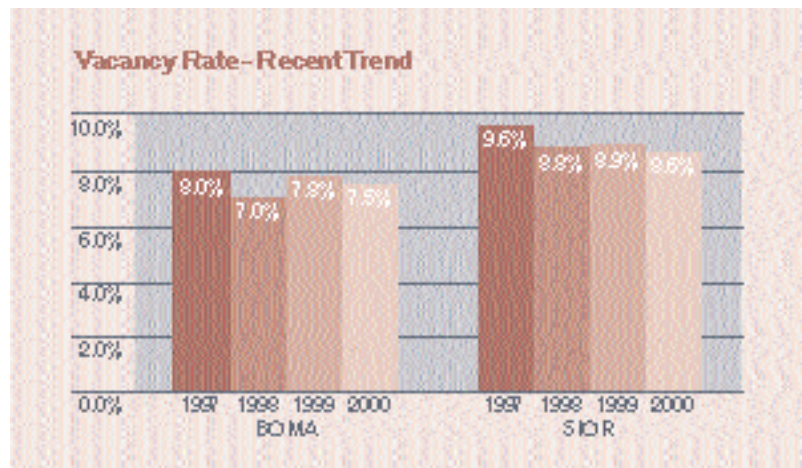
## Vacancy Rate

- Vacancy rates represent Central Business District (CBD) office space.
- The sources for the data are the 2001 editions of the BOMA and SIOR publications noted previously.
- The 2001 vacancy rate estimates are based on reported 2000 data.



## Vacancy Rate - Recent Trend

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







# Observations and Recommendations

## Observations from the Data

- 1) 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.
- 2) 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.
- 3) 2001 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.
- 4) There is a receptive audience for tools and measures such as the GSA Cost Per Person Model and the new Productivity Payback Model (see our recent publication *Productivity and the Workplace*), that assess workplace rather than simply facilities performance.
- 5) There has been a noticeable improvement in the number of Federal employees who telework, but performance on this metric falls considerably short of private sector performance and legislative goals.
- 6) For the fourth straight year, we received outstanding cooperation from a core group of Federal agency partners. We collected a good deal of useful data, but less than we had hoped for. Some partners from past years could not or declined to participate, and several major "players" in the Federal office space market have never participated in our voluntary benchmarking effort. Data quality has always been satisfactory; however in many cases data quality is stagnating or getting worse. We have produced four years worth of useful data and analysis, but probably need to reevaluate the Governmentwide real property performance measurement effort if future efforts are to maintain the same levels of quality and usefulness.

# 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 2001 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 appear to include other factors besides what we are attempting to measure. Generally, we err on the side on 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 numbers are generally reliable and consistent.
- 5) Although our methodology is not derived from a statistical frame of reference, we did collect a data sample representing 45 percent of the Federal office space inventory. We hope that such a large proportionate sample overrides the statistical shortcomings of our benchmarking methodology.
- 6) Information systems for real property inventory and measurement need to be updated. Different systems are in use across agencies, and systems differ among bureaus within agencies. The proposed Managerial Flexibility Act requires a central data system for Federal real property inventories. While this is needed, implementation will not be easy or inexpensive.

# Observations and Recommendations

## Recommendations and Next Steps

Over the past 4 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 2001 edition is the fourth annual edition of *Real Property Performance Results*, which presents the annual results of the Federal benchmarking effort.

We are pleased with the effort and very grateful to our Federal agency colleagues who have taken the time and effort to contribute to this initiative over the years. Nevertheless, we feel that we need to reevaluate the initiative in 2002 for the following reasons:

- The participation level in the data collection effort seems to have peaked short of our desired goal, and may be falling off.
- We continue to take a “band-aid” approach to data collection and analysis because of the different information systems in agencies and the inconsistent quality of some of the data systems themselves.
- Variations in data results can often be explained by data nuances rather than actual performance. For example, this year Cost per Square Foot is lower partly due to the inclusion of more GSA data in this average indicator. Vacancy rate generally tends to be lower in the Federal results due in part to the fact that many agencies do not track vacant space rigorously, or prefer to keep the space assigned rather than designate it vacant.
- The June 1998 *Performance Measurement Study* recommended a contractor-led performance measurement system. Due to a lack of funding, we volunteered to lead the benchmarking effort in its current form to make some progress in real property performance measurement. While the results of the effort have been useful, this is not a rigorous performance measurement system and it was never intended to substitute for one.
- The proposed Managerial Flexibility Act requires real property performance measurement. We should assess the impact of the law regarding the future of this initiative.

As for next steps, there are three alternatives:

- We can conduct a customer survey, and possibly an agency meeting, to assess the initiative’s value, impact and future direction.
- We can continue the benchmarking effort but limit it to GSA and a few key partners. We can publish these results along with the private sector and cost per person data each year.
- We can see what happens with the proposed Managerial Flexibility Act.

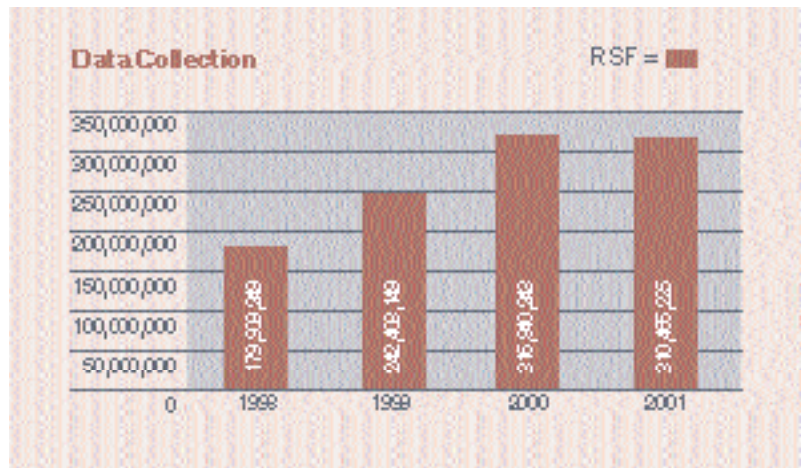


# Appendix A: Data Collection

The 2001 voluntary benchmarking effort succeeded for a fourth year thanks to the enthusiastic participation of a core group of Federal partners.

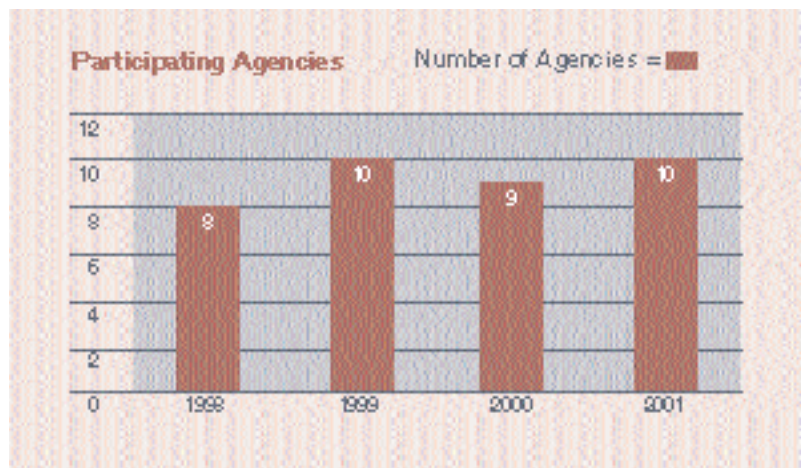
## Data Collection

- In 2001, we collected voluntary data samples from Federal agencies representing approximately 310 million rentable square feet of office space. This represents a 2 percent decrease in data collection compared to the 2000 sample.

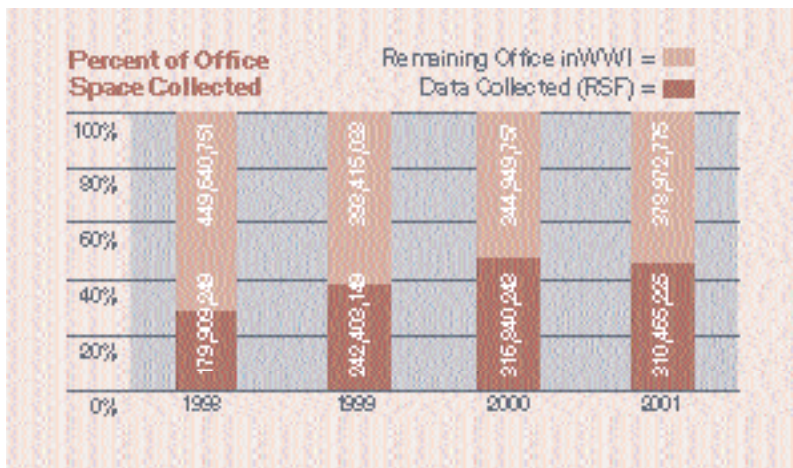


## Participating Agencies

- In 2001, we had 10 Federal agency participants in the annual benchmarking effort. We gained two new partners but lost one steady contributor. Once again, we did not receive data from several key agencies that control large amounts of office space. These potential benchmarking partners have not contributed to the 4-year effort to date.

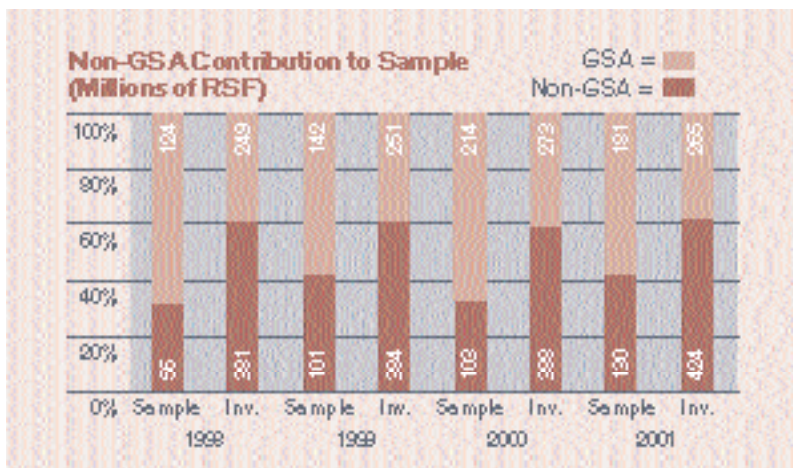


# Appendix A: Data Collection



## Percent of Office Space Collected

- In 2001, our data sample represents 45 percent of the total Governmentwide office space inventory. By comparison, the 2000 sample captured 48 percent of the total office space inventory.



## Non-GSA Contribution to Sample (Millions of RSF)

- Approximately 42 percent of the 2001 sample consists of non-GSA-controlled office space. The proportionate share of the total office space inventory for agencies other than GSA is 62 percent.
- The 42 percent representation by agencies other than GSA matches the best performance for this metric obtained in the 1999 data collection.

# Appendix B: Special Study of Private Sector Benchmarks for Cost per Person

**S**ince its introduction in late 1999, the GSA Cost per Person Model has provided our Federal customers and other colleagues with a valuable tool to assess workplace performance beyond traditional measures of real estate cost. In addition to providing benchmark data on information technology, telecommunications, and workstation furniture costs, the model provides the ability to measure the trade-off between the costs of working in the office versus working in alternative work environments. Using people (or FTE) as the common denominator is another innovation that helps us to compare costs across different workplace scenarios.

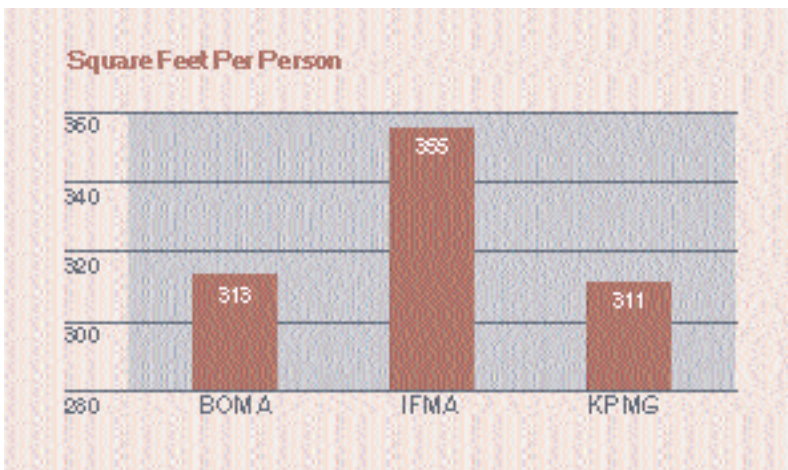
Over the years, we have found that users are as interested in the benchmark data provided by the model as they are in the model itself. The original

Cost per Person Model, as well as the 2000 and 2001 updates, is based on a pilot study in the GSA headquarters building in Washington, DC.

In this special study, we canvass various data sources to summarize additional input for the model's parameters. This has two major benefits. First, the data itself is valuable for users of the model who either do not know their own cost data or would like to compare the data they do have. Second, the new data confirms the general reliability and accuracy of the data we have been publishing based on our pilot study.

We present the data as a series of charts with explanatory notes. If you would like more information about the derivation of these charts, please contact the Innovative Workplaces Division (Appendix C).

# Appendix B: Special Study of Private Sector Benchmarks for Cost per Person



## Square Feet Per Person

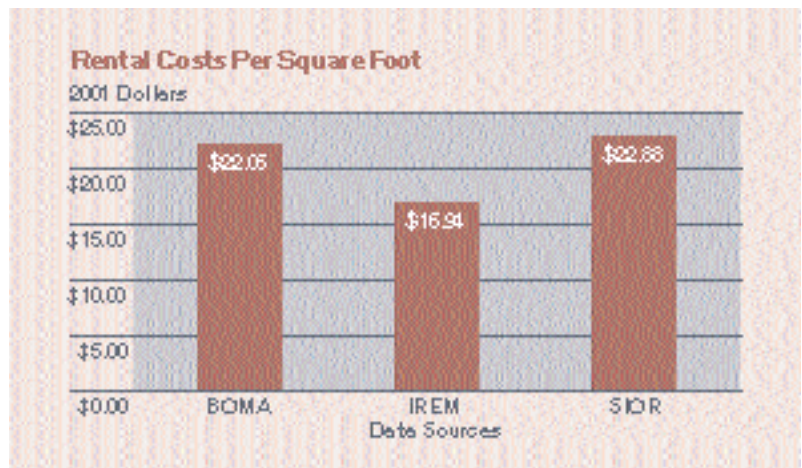
- The numbers reflect rentable square feet per person.
- The source for the Building Owners and Managers Association (BOMA) numbers is the average Square Feet Per Office Worker in the 2001 BOMA Experience Exchange Report.
- The BOMA sample consists of 2,599 buildings.
- The source for the International Facility Management Association (IFMA) numbers is the mean Square Footage Per Occupant data presented in the 2001 Operations and Maintenance Benchmarks Research Report 21.
- The IFMA sample consists of 746 organizations including service, manufacturing, and institutions.
- The source of the KPMG numbers is the median Total Square Feet per Full-time Equivalent in the 1999-2000 Financial Institution Corporate Real Estate Benchmarking study conducted by KPMG in August 2000.
- The KPMG sample consists of 20 financial service organizations.



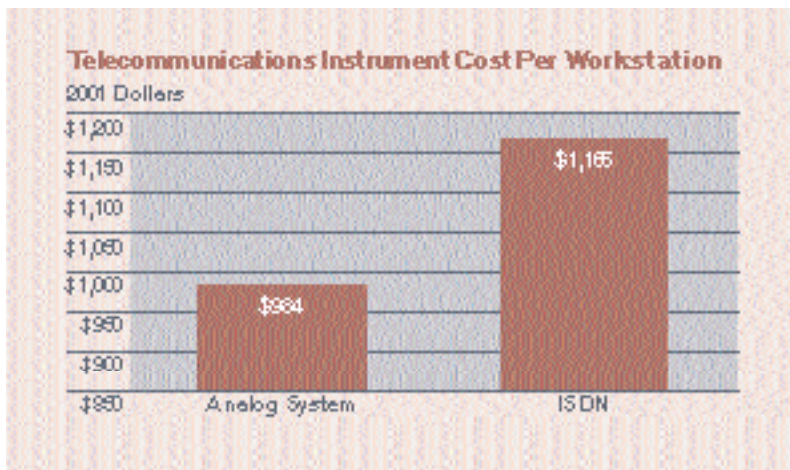
# Appendix B: Special Study of Private Sector Benchmarks for Cost per Person

## Rental Costs Per Square Foot

- The numbers reflect 2001 dollars per rentable square foot.
- Leasing cost per square foot is derived from office income figures.
- The source for the BOMA numbers is the 2001 BOMA Experience Exchange Report. We escalated the reported 2000 actual cost data by 3.28 percent (CPI) to obtain 2001 dollars.
- The BOMA sample consists of 3,447 buildings covering 658,376,176 rentable square feet of office space.
- The source for the Institute of Real Estate Management (IREM) numbers is the 2001 IREM Income/Expense Analysis. We escalated the reported 2000 actual cost data by 3.28 percent (CPI) to obtain 2001 dollars.
- The IREM sample consists of 430 buildings covering 13,251,000 rentable square feet of office space.
- The source for the Society of Industrial and Office Realtors (SIOR) data is the 2001 Comparative Statistics of Industrial and Office Real Estate Markets. We escalated the reported 2000 actual cost data by 3.28 percent (CPI) to obtain 2001 dollars.
- The SIOR sample consists of buildings from 117 U.S. markets.



# Appendix B: Special Study of Private Sector Benchmarks for Cost per Person



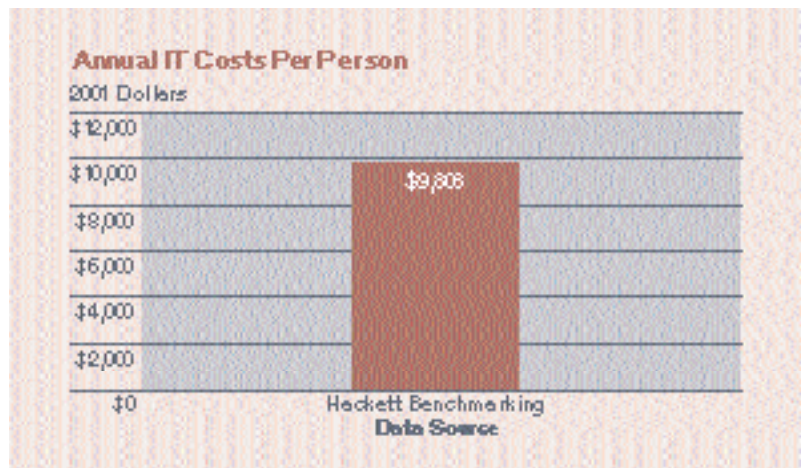
## Telecommunications Instrument Cost Per Workstation

- The numbers reflect 2001 dollars for telecommunication instrument costs per workstation.
  - Costs are based upon vendor cost estimates from Telephones.com and BostonTel.com. Costs include estimates for the telephone instrument, dial tone service, voice mailbox, long distance, 800 service, phone cards, and Internet access.
- Calculations for the 800 service were based on estimates from national telephone service companies using the assumption that the 800 service would be used an average of 10 hours per employee per year times the average cost per minute of \$0.11.
  - Calculations for phone card usage were based upon the employee making an average of 10 hours of calling card calls per year at an average price per minute of \$0.06 with an annual fee of \$16.
  - Calculations for the Internet access were based on average annual Internet access costs provided by the six major nationwide Internet service providers.
- The sources for the telephone instrument costs were estimates from Telephones.com and BostonTel.com. The vendors gave price ranges for various manufacturers and an average was used for the cost per person analysis:
    - The estimate for the dial tone was derived from cost estimates from three vendors in the Washington DC metro area. An average of the per-line costs was taken for both analog (n=2) and ISDN (n=1).
    - Voice mailbox costs were derived from vendor estimates for prices per mailbox.
    - Long distance costs were calculated using an average price per minute of \$0.05 using the assumption that an employee makes an average of 20 hours of long distance calls per year.

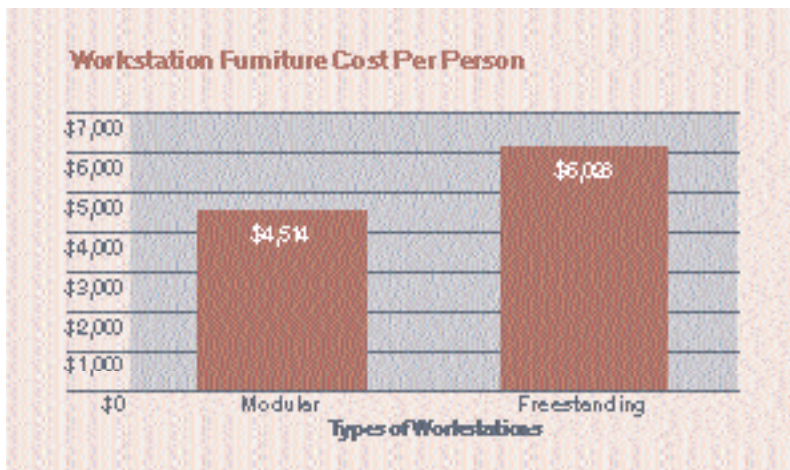
# Appendix B: Special Study of Private Sector Benchmarks for Cost per Person

## Annual IT Costs Per Person

- The numbers reflect 2001 dollars per end user.
- The source used is the 2000 edition of Hackett Benchmarking Solutions Book of Numbers for Information Technology. Hackett Benchmarking Solutions surveys over 1,400 companies worldwide from every continent (80 percent of Dow Jones Industrials, 66 percent of the Fortune 100, and 33 percent of the Fortune 500). Seventy-five percent of companies surveyed are goods producing, 25 percent are service-oriented ranging from \$30 million to \$44 billion in annual sales. IT staffs range from 13 to 5,000 employees. We assumed that the 2000 Book of Numbers used 1999 data and inflated the reported data by 7 percent (CPI) to obtain Year 2001 dollars:
  - After inflating values to 2001 dollars, average cost of IT services per end-user is \$9,807. Average cost per end-user, excluding one-time investments in application software and infrastructure development, is \$7,900 in 2001 dollars.
  - Median IT cost per end-user: \$8,036 in 2001 dollars.
  - IT costs between the 25th and 75th percentile are \$5,762 to \$12,174 in 2001 dollars.

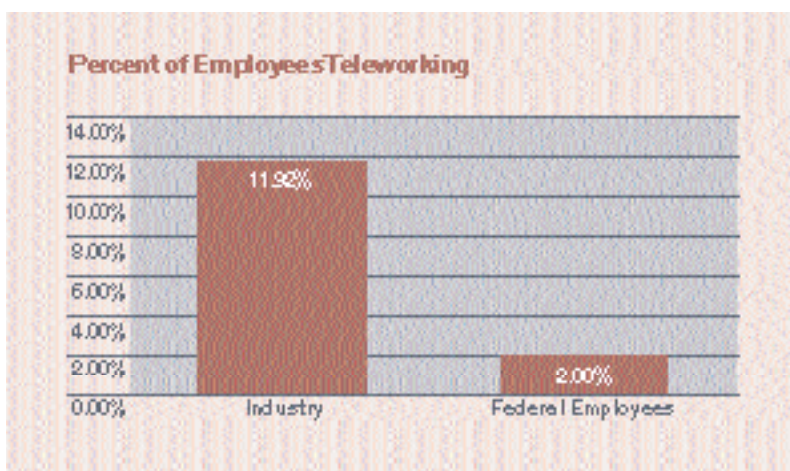


# Appendix B: Special Study of Private Sector Benchmarks for Cost per Person



## Workstation Furniture Cost Per Person

- The numbers reflect 2001 dollars per workstation.
- Estimates are derived from the prices listed in the June 2000 price book of a national furniture workstation vendor. Prices were inflated by 3.28 percent to obtain 2001 dollars.
  - Estimates were based on an average cost for typical modular and freestanding workstations plus a chair for the workstation.
  - Service charges, shipping fees, and taxes are not included in the estimate.



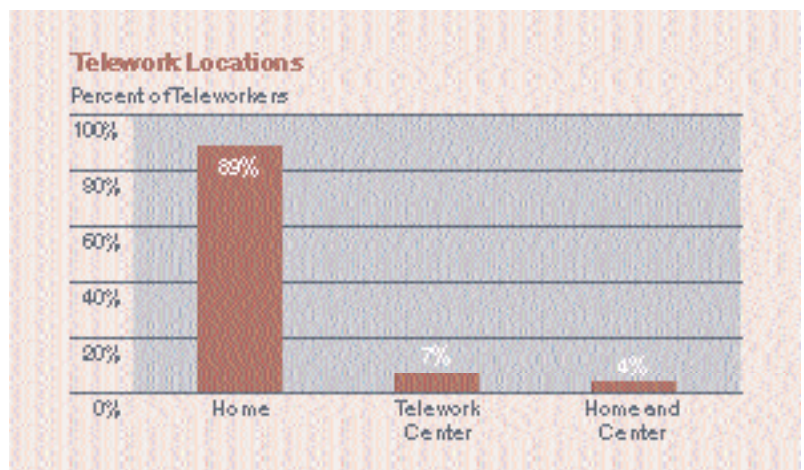
## Percent of Employees Teleworking

- The sources for the industry percent of employees teleworking are the 2000 Telework America survey results and the U.S. Census Bureau.
- According to the 2000 Telework America survey, 16.5 million U.S. workers telework.
- The source for the Federal percent of employees teleworking is Federal Telework Topics by Dr. Wendell Joice.

# Appendix B: Special Study of Private Sector Benchmarks for Cost per Person

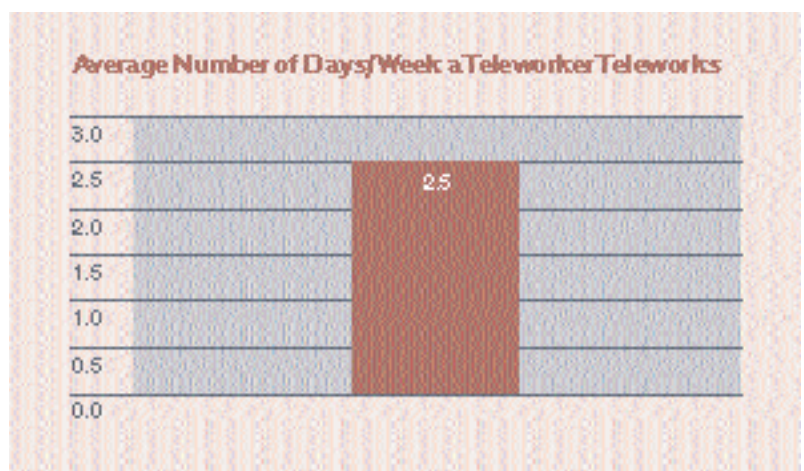
## Telework Locations

- The source for the percent of home and center-base teleworkers is the Key Findings report from the 2000 Telework America survey.

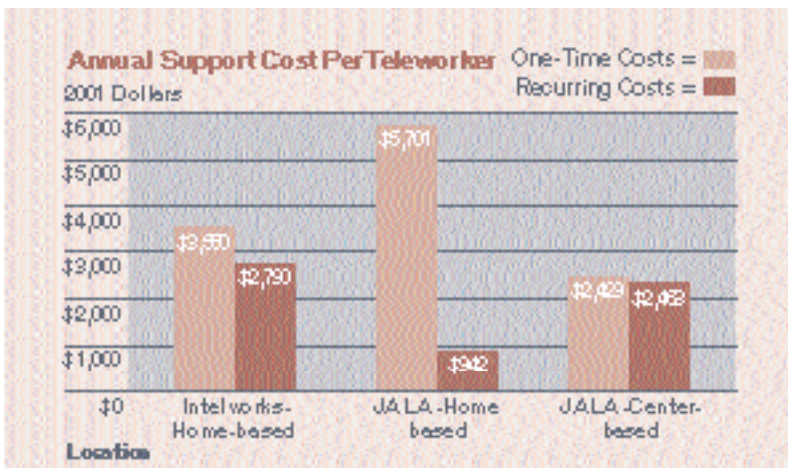


## Average Number of Days Per Week a Teleworker Teleworks

- The source for the average number of days a teleworking employee teleworks is the Key Findings report from the 2000 Telework America survey.
- The report indicates that teleworkers telework an average of 20 hours per week. This hourly figure is divided by eight hours to obtain the average number of days per week a teleworker teleworks.



# Appendix B: Special Study of Private Sector Benchmarks for Cost per Person



## Annual Support Costs Per Teleworker

- The source is Inteleworks Cost Benefit Analysis Worksheets for Part-Time and Full-Time Home-Based Teleworkers. The chart represents annual costs to support home-based teleworkers. This analysis can be found on their website: [www.inteleworks.com](http://www.inteleworks.com)
- We used an average of the recurring costs for full-time and part time teleworkers to derive the \$2,790 used in the Inteleworks recurring cost per person measure.
- The source for the JALA annual cost to support home-based teleworkers is the JALA International, Inc., Home-based Telecommuting Cost-Benefit Analysis available on the JALA website: [www.jala.com](http://www.jala.com).
  - We escalated JALA home-based cost per person numbers by a CPI factor of 3.28 percent to obtain 2001 dollars.
  - The analysis assumed that the average annual salary is \$26,000 and that the employee would telework an average of 1.5 days per week.

- One-time costs consist of training, installation of ISDN phone line, computer purchases and installation, furniture and equipment costs, and performance evaluation costs.
- Telecommunications and local tariffs were the only recurring costs indicated on the Cost-Benefit Analysis worksheet for home-based teleworkers.
- The source for the JALA annual cost to support center-based teleworkers is the JALA International, Inc., Telework Center Cost-Benefit Analysis available on the JALA website: [www.jala.com](http://www.jala.com).
  - We escalated JALA telework center cost per person numbers by a CPI factor of 3.28 percent to obtain 2001 dollars.
  - The analysis assumed that the average annual salary is \$26,000 and that the employee would telework an average of 1.5 days per week.
  - One-time costs consist of training, installation of ISDN phone line, computer purchases and installation, and performance evaluation costs.
  - The cost of facility leasing was the primary recurring cost indicated on the Cost-Benefit Analysis worksheet for center-based teleworkers. Telecommunications and local tariffs were also classified as recurring costs for the center-based teleworker.
  - For more information on telecenters (or telework centers), please contact the Innovative Workplaces Division (Appendix C).

# 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 Planning and Measures, other major programs in the Division are Telework, the Integrated Workplace, and Sustainable Development.

In 2001, we published the following studies:

- Productivity and the Workplace
- People and the Workplace
- Real Property Performance Results 2001
- Numerous telework studies available exclusively on the Web ([www.telework.gov](http://www.telework.gov))

In 2002, we plan to publish the following studies:

- Technology Barriers to Home-Based Telework
- Strategic Planning Review Study
- The Sustainable Workplace
- The Virtual Workplace
- Real Property Performance Results 2002
- Interagency Telework Issues Working Group Report and Recommendations

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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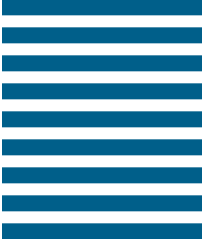
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