Information Technology Indicators
Residential Survey

City of Seattle

Conducted For

City of Seattle

Department of Information Technology

Conducted By

Northwest Research Group, Inc.

Section i

Executive Summary

Overview

This report presents the results of the first Seattle residential survey on technology. This survey is one component of the City of Seattle's Information Technology Indicators. In May 2000, the City of Seattle's Department of Information Technology completed development of a set of Information Technology indicators, marking the first time that a comprehensive effort has been made to look at the full range of impacts that technology is having on our region. These indicators were developed as a joint effort between the Department of Information Technology and the Citizens Telecommunications and Technology Advisory Board along with significant public input and the help of a broad-based Technical Advisory Group.

The objective of the residential survey discussed herein is to obtain current and local data on a portion of these indicators. The data from this survey will be combined with existing data to make up the first complete data set for these technology indicators.

Specifically, the objectives of this study are to measure the following:

- Residents' ownership and access to information technology.
- Residents' usage of information technology.
- Level of technology literacy in the community.
- Integration of technology into local community activities.
- Awareness and use of City services online and on cable TV.
- Residents' feelings about privacy, security and safety on the Internet.
- Residents' perceptions of the impact that technology is having on their personal time, quality of life, and the quality of life for the City.

The City of Seattle contracted with Northwest Research Group, Inc. to conduct the survey. A total of 1,011 interviews were completed. Scientific Telephone Sampling, a nationally recognized sampling company, provided the sample. A strict random sampling procedure was used and no quotas were established. However, in order to ensure equal representation of demographic groups that can sometimes be under-represented using a telephone methodology, survey data were compared to 2000 census data on key measures (age, gender, income and ethnicity) throughout data collection. It was noted that certain demographic groups (Asian and African-American groups and people with lower incomes) were under-represented in the completed interviews. To correct for this, a targeted RDD (random digit dial) sample for Asian and African-American individuals was purchased. Targeted RDD sample is randomly generated sample in zip codes that have a higher percentage than the general population of individuals meeting the target criteria.

The survey meets or exceeds generally accepted levels of reliability. The margin of error for questions asked of the total 1,011-person sample is plus or minus 3.1 percent.

Summary of Findings

Overall, Seattle residents have high access to information technology.

Seattle residents are connected to a range of information technologies. Almost all respondents (95%) have television sets at home, with three out of five (60%) subscribing to cable television. An additional five percent subscribe to satellite television. Almost half (46%) of residents have a wireless phone.

Most residents have access to a computer and, to a lesser extent, the Internet.

The majority (88%) of respondents have access to a computer at home, work, and/or some other location (e.g., school). More than three out of four (76%) residents have a computer in their home. This is significantly higher than the national average that suggests that approximately half (51%) of US households have a computer in the home.[1] Almost all (91%) Seattle residents have at least some experience with a computer.

More than four out of five (82%) residents have access to the Internet at some location, and almost three-quarters (72%) have access at home. Again, this is significantly higher than the national average that suggests that approximately two out of five (42%) households have Internet access.[2] Nearly all (93%) of those with access to a computer have Internet access.

Most residents with computer access have an e-mail address.

Three out of four (74%) Seattle residents have an email address. This is an increase from the 1999 Citywide Residential survey where only sixty-one percent of residents reported having e-mail. Those with Internet access at home are more likely than those with access elsewhere to have an e-mail address (94% to 51% respectively).

There are still significant differences in access dependent upon age, ethnicity, education and income.

There are significant differences in access to computers and the Internet based on key demographic factors.

Older respondents have less access to computers, the Internet, and other information technologies. Over half (56%) of those who do not have access to a computer are 65 years or older.

Low income and lower education levels remain significant barriers to computer access. Overall, as income and education increases, access to computers and the Internet also increases.

Asian Americans are the most likely to have access to computers and the Internet regardless of income. For African Americans and Caucasians, access to computers and the Internet increases with income. However, for all income levels, African Americans have lower access to technology than do Caucasians, and are more reliant on access outside the home.

[1] Results from a biannual study conducted by the National Telecommunications and Information Administration. *Falling Through the Net: Towards Digital Inclusion.* Released October 2000. (see http://www.digitaldivide.gov/reports)
[2] *Falling Through the Net,* October 2000.

Seattle residents have access to new computers and high speed Internet access.

More than three out of five (62%) of home computers are two years old or less, with the average age of a computer in a Seattle home at 2.42 years.

One out of four (27%) residents with Internet access have a high-speed connection using DSL or a cable modem. Nationwide, only 10.7% of online households have high speed Internet access.[3] A large number of respondents did not know the speed of their connection, giving instead the name of their service provider.

Speed of Access	Percentage
Less than 56K Modem	8%
56K Modem	32%
DSL or Cable Modem	27%
Other	9%
Don't Know	25%

Lack of interest and cost are the two largest barriers to computer access at home.

Thirty-eight percent (38%) of those without a computer at home said that they did not want to own a computer. An additional thirty percent cited cost as the reason for not having a computer at home. For those that have computers but don't have Internet access, not wanting Internet access is the reason most often stated (31%). Cost (15%) and problems with home computer (16%) were also stated as significant barriers to Internet access in the home.

The amount of time spent on the computer varies by where people have access.

Three out of four respondents (74%) use their computer at least seven hours per week, or the equivalent of one hour per day. Overall, those who use a computer spend an average of 28 hours a week on the computer.

Location of Computer Use	Average Hours per Week
Work	35
Home	7
School	3
Other Locations (library, community center, Internet café)	<1

The Internet strongly influences the amount of time spent on a computer.

On average, computer users spend about one quarter (28%) of their time on the computer using the Internet. Those with access to the Internet spend four times as many hours per week on the computer as those without – 28 hours compared with 7 hours, respectively. Residents who have computers at home spend 60 percent of their time on the computer using the Internet, while those using the computer at work only spend 10% of their computer time on the Internet.

Residents use the computer for a range of different tasks.

Respondents are most likely to use the computer for personal communications (97%), researching hobbies or personal interests (96%), gathering information about products or services (95%), finding news about travel or travel arrangements (94%), and learning about current events (93%), and doing work-related tasks (92%). Residents are least likely to use the computer for participating in chat rooms (71%), starting or maintaining a business (75%), or contacting elected officials (79%).

[3] *Falling Through the Net,* October 2000.

Seattle residents who have used a computer indicate a high level of comfort with computers.

Seattle residents who have used a computer in the past were asked to rate their comfort level using a computer on a five point scale where 1 is "not at all comfortable" and 5 is "very comfortable." Overall, residents averaged a score of 4.10. Half (50%) of those with computer experience indicate that they are very comfortable using a computer; an additional 25 percent said they are comfortable.

Distinguishing factors, such as age, education, and the amount of time spent on the computer, influence comfort level.

Comfort with computers tends to correspond with certain distinguishing factors. Younger computer users and those with higher education levels are significantly more likely to indicate a high level of comfort than those in older age groups or those with less education.

Comfort level also corresponds with the amount of time spent on the computer and the location of computer access. Those with access to a computer at work are the most likely to indicate a high level of comfort with computers, followed by those with access at home. Those that only have access at some other location besides school or work are the least likely to indicate a high level of comfort.

Residents are very comfortable with basic computer tasks and significantly less comfortable with more advanced tasks.

Respondents were asked to rate their level of comfort with a list of computer tasks on a 1 to 5 scale. On the basic computer tasks, residents scored a mean of 4.59, with 79% of respondents indicating that they are very comfortable completing these tasks. However, on the slightly more advanced tasks, residents scored a mean of 3.59, with only 22% indicating that they were very comfortable completing these tasks.

Computer Tasks	Mean Score
BASIC TASKS – OVERALL SCORE	**4.59**
Navigating using a mouse	4.58
Saving a file	4.47
Opening a saved file	4.47
Typing, editing and printing a document	4.38
ADVANCED TASKS – OVERALL SCORE	**3.59**
Installing new software	3.67
Creating a simple budget using a spreadsheet program	3.63
Adding or changing a peripheral	3.56
Creating a flyer	3.41
Setting up a new computer	3.29
Scanning and editing images	3.24

While respondents are generally comfortable using the Internet, they are slightly less comfortable than with the computer.

Using the same 5-point scale, respondents were asked to rate their overall comfort using the Internet. The mean response was a 3.98, compared to a mean of 4.10 with computers. There is a strong correlation between comfort on computers and comfort on the Internet. More than four out of five (83%) respondents who said that they are very comfortable with the computer also indicated that they are very comfortable with the Internet. Conversely, the same amount (84%) that said they were not comfortable using a computer also said they were not comfortable using the Internet.

As with computers, comfort level with the Internet increases with the amount of time spent on the computer and education level, and decreases with age. Women are less comfortable using the Internet than men, with only forty-two percent (42%) of women saying that they are very comfortable using the Internet compared to fifty-three percent (53%) of men. Also, there are differences between comfort level and ethnicity, with Asian-Americans showing the highest comfort with the Internet (a mean score of 4.12) and African-Americans showing the least highest comfort (a mean score of 3.64).

Residents are relatively comfortable with basic Internet tasks.

Respondents were asked to rate their level of comfort on a 1 to 5 scale with a number of Internet tasks. On the basic Internet tasks, residents scored a mean of 4.28, with 54% of respondents indicating that they are very comfortable completing these tasks. On the more advanced tasks, residents scored a mean of 3.19, with only 12% indicating that they were very comfortable completing these tasks.

Internet Tasks	Mean Score
BASIC TASKS – OVERALL MEAN	**4.28**
Replying to an e-mail message	4.57
Creating and sending an e-mail message	4.54
Sending and opening e-mail attachments	4.17
Finding and retrieving information on the web	4.09
Downloading files from the Internet	3.90
ADVANCED TASKS – OVERALL MEAN	**3.19**
Signing up or removing oneself from a distribution list	3.84
Setting up a new Internet connection	3.36
Creating a website	2.49

Overall, Seattle residents show a high level of "fluency" with information technology.

In 1999, the Computer Science and Telecommunications Board of the National Research Council commissioned a study to define the technology skills that citizens need to participate in the Information Age. This study found that in order to use technology effectively today and in the future, citizens must move beyond basic computer literacy and be able to acquire new skills independently after formal education is complete. "Fluency" refers to this ability to continually apply knowledge about technology to adapt to change and acquire more knowledge to effectively apply information technology to work and personal needs.[4] Fluency with information technology is a proxy for residents' ability to effectively participate in the information age, both today and in the future.

As a tool for measuring fluency, respondents were asked to indicate the number of times in the past year that they had (1) personally learned a new program or computer application, (2) helped someone else get started using computers or the Internet, and (3) helped someone else learn a new program or computer application. On average, respondents who have computer experience have learned or helped others an average of five times in the past year. More than three out of five (63%) of Seattle residents can be considered "fluent" with information technology – that is, they have personally learned a new computer application or program or have assisted others on the computer four or more times in the past year. Only sixteen percent of computer users had not personally learned a new program or application or assisted others in the past year.

Many Seattle residents are active in community groups, and many of those groups incorporate electronic participation into their work.

More than three out of five (62%) of residents participate in at least one neighborhood or community organization.

Those who participate in community groups were asked if that group has a web page or uses e-mail to communicate with members. Almost half (48%) of those surveyed indicated that at least one of the groups they participate in does use e-mail or the Internet to communicate with members. Local business associations (91%), cultural organizations (79%), community groups (77%), book clubs (75%) and school associations (75%) were the most likely to use e-mail or the Internet to communicate with members. Senior Centers (39%) were the least likely to use e-mail or the Internet to communicate with members.

Fewer respondents (39%) indicated that the community group(s) in which they participate have a web page. Local business associations (75%), local cultural organizations (67%), and school associations (65%) were the most likely to have web pages, while senior centers and neighborhood associations were the least likely.

Residents are using the Internet to find information on local businesses.

Three out of five (61%) respondents have gone online seeking information regarding local businesses in the past year. Only one-third (38%) of respondents who have sought information on local businesses are satisfied with the information that they found. Almost half (45%) are neither satisfied nor dissatisfied with the information they found. Just under one in five residents (17%) are dissatisfied with the information available on local businesses on the Internet.

[4] National Research Council: Computer Science and Telecommunications Board, *Being Fluent with Information Technology*, (Washington, D.C.: National Academy Press, 1999), 2.

Seattle residents are going online to get government information, but have mixed feelings about the Internet as a tool for civic participation.

Seattle residents are using the Internet to obtain information on government agencies. Three out of five (60%) of computer users indicate that they have used the Internet in the past year to find information from a city, county, state or federal government site.

Residents do feel that overall, the Internet and e-mail are effective ways to communicate about issues that affect them and their community (a mean score of 3.44 on a 1 to 5 scale). However, residents do not see e-mail and the Internet as very effective ways to communicate with elected officials - a mean score of 2.98 with 20 percent of respondents indicating that they think it is not at all effective.

Seattle residents have very mixed feelings about privacy, security and safety concerns.

Residents, both computer users and non-users, are evenly split in their opinion on whether or not companies and organizations on the Internet use personal information appropriately - 38 percent responded yes, while 36 percent responded no.

Nearly half (46%) of those surveyed do not feel that there are adequate precautions for children to access the web safely, with an additional twenty-six percent (26%) responding that they do not know.

Just over half (52%) of residents feel that financial transactions on the Internet are secure. However, more feel that these transactions are only "somewhat secure" as opposed to "very secure" – 40 percent versus 12 percent, respectively.

Overall Seattle residents are satisfied with the content of the World Wide Web.

Only one in ten (11%) of respondents state that they are "dissatisfied" with the content of the World Wide Web for their personal needs. Eighty five percent of respondents say that they are either "somewhat satisfied" or "very satisfied" with the content of the web. There were some differences in demographic groups and overall satisfaction with web content, with those in lower income groups, Asian-Americans, and those in households with children being the least satisfied with web content.

Information technology tools are improving the quality of life for Seattle residents.

Overall, residents feel that information technology has had a positive impact on the overall quality of life in Seattle (79%) and on their personal quality of life (76%).

The majority (60%) of residents feel that information technology tools, such as computers and the Internet, have had no impact on the amount of personal time they have available. Less than one in five (18%) feel that information technology has decreased their personal time, while just over one-fifth (22%) feel that it has increased their personal time.

Many residents are using the City's website, cityofseattle.net.

More than one-third (36%) of those with Internet access have visited the City of Seattle's website, cityofseattle.net. When responses are expanded to include those respondents without Internet access, 29 percent of all residents have accessed the City of Seattle's website over the Internet. This is an increase from the 1999 Citywide Residential survey when only 18 percent of residents had accessed cityofseattle.net.

The majority of residents visit cityofseattle.net to find specific city or city service information (83%), just to browse (68%), or to find a name, address or contact (51%). Residents also show a high interest in adding a number of online government services to the city's website.

Many residents with cable service have watched TV-Sea.

More than half (57%) of those with cable television have seen or watched TV-Sea. This would mean that one out of three (33%) adults in the city have seen or watched TV-Sea, the municipal government channel. Almost half (44%) of those who have watched TV-Sea report that they have watched City Council meetings.

Viewers are interested in additional programming with the majority asking to see local arts performances (62%) and public affairs programming about local issues (54%).

Section ii

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Section 1

Project Overview

Introduction

In May 2000, the City of Seattle's Department of Information Technology completed and published a set of Information Technology Indicators, marking the first time that a comprehensive effort has been made to look at the full range of impacts that technology is having on our region. These indicators were developed as a joint effort between the Department of Information Technology and the Citizens Telecommunications and Technology Advisory Board along with significant public input and the help of a broad-based Technical Advisory Group. The research presented here focuses on four of the major topic areas covered by the Information Technology Indicators Project.

- Access to information technology.
- Information technology literacy.
- Community building.
- Civic participation.

The objective of the residential survey discussed herein is to obtain current and local data on these topics. The data from this survey will be combined with existing data to make up the first complete data set for Seattle's technology indicators. A total of 1,011 residents were randomly contacted to complete the 18-minute telephone survey.

Methodology

The City of Seattle contracted with Northwest Research Group, Inc. to conduct the City's first survey of city residents' access to and use of information technology. A total of 1,011 residents were randomly contacted by telephone and completed a survey taking approximately 18 minutes.

The survey was conducted in November 2000. NWRG conducted the telephone interviews, tabulated the data and presented it in the form of banners, analyzed the data, and prepared a final report in conjunction with staff from the Department of Information Technology.

Questionnaire

The questionnaire contained approximately 157 questions and averaged slightly less than 18 minutes in length. The survey length varied notably by use of computers and technology, with those who had used computers in the past completing a more extensive survey.

The questionnaire used a variety of question formats, including closed single and multiple-response questions for all categorical data. In those situations where not all responses were known, an "other" category was included. These results were then reviewed and, where appropriate, postcoded into the database. All attitude and evaluation questions used scaled response formats. Scales were typically five points in length. Two open-ended questions were included to provide further clarification of qualitative data on service quality. While the primary purpose of a survey is to obtain numeric responses for analysis, open-ended questions provide considerable insight into reasons for responses to important elements of the survey. Based on a review of these responses, a code list was developed to capture

the range of responses. Results from these open-ended questions were then coded and entered into the respondent database.

The survey instrument contains the following major sections:

Screener

Trained interviewers screened respondents to ensure that they met the definition of a qualified respondent. A qualified respondent was defined as:

A resident of the City of Seattle, 18 years of age or older.

Content

The remainder of the questionnaire contained the following major sections:

Access to information technology.

Information technology literacy.

Information technology fluency.

Community building and the use of technology.

Using technology for civic participation.

Human relationships to technology.

Business and economic development and technology.

Use of Cityofseattle.net.

Demographics.

The survey was administered using computer-assisted telephone interviewing technology. A copy of the questionnaire is included in the Appendix.

Sampling Plan

Northwest Research Group completed a total of 1,011 interviews. A sample of over 10,000 telephone numbers was drawn using standard methods for developing a probability sample. A strict random sampling procedure was used and no quotas were established. However, in order to ensure equal representation of demographic groups that can sometimes be under-represented using a telephone methodology, survey data were compared to 2000 census data on key measures (age, gender, income and ethnicity) throughout data collection. It was noted that certain demographic groups (Asian and African-American groups and people with lower incomes) were under represented in the completed interviewers. To correct for this, targeted RDD (random digit dial) sample for Asian and African-American individuals was purchased. Targeted RDD sample is randomly generated sample in zip codes that have a higher percentage than the general population of individuals meeting the target criteria.

A total of 10,374 telephone numbers were attempted. Note less than 2 percent of Seattle households do not have a working telephone. Nearly two-thirds (64%) of the sample of working telephone numbers resulted in an actual contact. The remainder was not reached despite multiple (up to 5) attempts. Of those actually contacted, 61 percent agreed to complete the survey. A refusal rate of 37 percent is below the current national average where as many as 45 percent of those contacted immediately refuse to complete the survey. An additional 2 percent of those contacted began the survey but terminated during the course of the interview.

Therefore, more than three out of five (61%) households contacted agreed to complete the survey. Some of those who agreed to complete the survey were not qualified to do the survey as they lived out of the area, there was no one in the household over the age of 18, and at the end of the data collection period when the female quota was filled, there was no male in the household. In addition, 12 percent of those who agreed to complete the survey were unable to because of a language or other

communication barrier. The majority of these were of Asian descent. In non-telephone and non-English speaking households, other research techniques, such as focus groups in native languages, may be more appropriate methods to determine access levels, usage patterns and barriers to technology use. Finally, some persons agreed to complete the survey but were unable to do so at the time contacted. These households were recontacted on a regular basis. However, we were unable to reach them during the scheduled data collection period.

FIGURE 1: RESPONSE RATES

	Total Sample	% of Base
Total Sample Attempted	10,374	
Business Nonworking Numbers	4,242	41%
Usable Sample	6,632	
Usable Sample Contacted	4,262	64%
Refusal	1,557	37%
Mid-Terminate	106	2%
Willing to Cooperate	2,599	61%
Not Qualified	255	10%
Communication / Language Barrier	302	12%

Due to heavy targeted calling in certain zip codes with higher proportions of under-represented groups (see Sampling Frame for discussion) data were weighted following data collection to reflect actual population. The following table shows weighted and unweighted sample sizes by zip code.

FIGURE 2: SAMPLE SIZE

City of Seattle Zip Codes	Unweighted Sample Size	Weighted Sample Size
98101	9	12
98102	40	34
98103	53	71
98104	7	18
98105	42	61
98106	46	36
98107	24	32
98108	54	34
98109	14	25
98112	40	35
98115	55	73
98116	26	36
98117	44	52
98118	177	66
98119	20	34
98121	1	9
98122	68	47
98125	42	57
98126	22	35
98133	27	73
98134	1	3
98136	18	25
98144	70	43
98177	16	33
98178	77	37
98199	18	34
Total	1,011	1,011

A random sample does not necessarily guarantee a representative sample. Therefore, when interpreting survey findings, it is important to know the characteristics of the population. The more the survey sample reflects the characteristics of the population from which the survey is taken, the more likely it is that the survey results are representative of that population. Care was taken throughout data collection to insure that the sample was representative of the population on key demographic characteristics – gender, age, income, and ethnicity. However, when the data was weighted geographically as discussed above, it was noted that the sample was not completely representative of the population on two key demographic characteristics – income and ethnicity. Therefore, the data was further weighted to insure that the sample population is representative of the general population. This was done in two stages. The data was first weighted to adjust for income and then weighted again to adjust for ethnicity.

The following table presents the demographic profile of the residents interviewed for this survey compared with 2000 updated census statistics and the results of the weighting process.

FIGURE 3: SAMPLE POPULATION CHARACTERISTICS

	2000 Census Data Population	Unweighted Sample Population	Sample Population Initial Weighting	Sample Population Final Weighting
Gender				
Male	49%	49%	50%	50%
Female	51	51	50	50
Age				
18 to 25	12%	13%	13%	13%
26 to 35	19	20	21	21
36 to 50	33	34	34	33
51 to 64	18	18	19	18
Over 65	18	15	14	14
Income				
< $20K	20%	12%	11%	20%
$20K-$40K	24	35	34	24
$40K-$60K	19	36	37	19
> $60K	37	17	18	36
Ethnicity				
White	70%	73%	80%	70%
African-American	9	10	7	9
Asian/Pacific Islander	8	9	7	8
Hispanic	6	4	3	6
Other*	7	4	6	7

** Other includes Native American as well as other groups of mixed race. There was insufficient sample size to draw significant conclusions for these distinct populations groups.*

All results in this report are based on the weighted sample data. Weighted cell sizes are shown. Unweighted cell sizes, however, are used when inferring statistical reliability.

Statistical Significance

In interpreting survey results, it should be kept in mind that all surveys are subject to sampling error. Sampling error is the extent to which the results may differ from what would be obtained if the whole population were surveyed. The size of such sampling error depends largely on the number of interviews conducted; the larger the sample, the smaller the sampling error.

The overall margin of sampling error for this survey is plus or minus 3.1 percent for questions asked of all respondents.

The following table provides greater detail of the sampling error for different sample sizes or respondent bases at different proportions.

FIGURE 4: ERROR ASSOCIATED WITH DIFFERENT PROPORTIONS AT DIFFERENT SAMPLE SIZES

Sample Size	10% / 90%	20% / 80%	Estimate 30% / 70%	40% / 60%	50% / 50%
50	8.3%	11.1%	12.7%	13.6%	13.9%
100	5.9%	7.8%	9.0%	9.6%	9.8%
200	4.2%	5.5%	6.4%	6.8%	6.9%
300	3.4%	4.5%	5.2%	5.5%	5.7%
400	2.9%	3.9%	4.5%	4.8%	4.9%
500	2.6%	3.5%	4.0%	4.3%	4.4%
1000	1.9%	2.5%	2.8%	3.0%	3.1%
1,200	1.7%	2.3%	2.6%	2.8%	2.8%

Data Analysis and Notes for Report

Extensive analysis of the data was completed. This report summarizes the major findings for each of the topics and reports on demographic variations that yielded statistically and practically significant differences from what would be expected in a random sample. If a particular difference is large enough to be unlikely to have occurred due to chance or sampling error, then the difference is statistically significant. If results or numbers are different to the extent that the difference would matter from a managerial perspective, the difference is practically significant. To be practically significant, the difference must be statistically significant. However, a statistically significant difference may not always be practically significant. The following notes describe reporting conventions used in the report:

- Information about the overall results for each question is presented first, followed by relevant, statistically and practically significant differences between major demographic groups. The probability level for determining statistical significance is $\leq .05$.
- Except where noted, tables and charts provide information among respondents who offered opinions to a question. Non-opinions, refusals to answer, and responses such as "don't know" were treated as equivalent and recorded as "no answer." The "no answer" category is not included in the analysis generating the graphics.
- Detailed responses and breakdowns of responses for all questions are included separately in the form of banners. These banners are useful in providing easy-to-use documentation of the results of all questions broken out for important subgroups of the sample – for example, residents of different areas, ages, genders, incomes, etc.

Section 2

Access to Information Technology

Access to Information Technologies

Some studies suggest that people are more likely to have meaningful access to computers and the Internet when the technology is available in their home. A primary objective of this study was to determine the extent to which Seattle residents have access to different information technologies and to create an indicator that can be used over time to measure personal access to information technology.

Incidence of Access to Information Technologies

To determine the extent to which Seattle residents have access to different information technologies in their home, respondents were asked a series of questions to determine their access to various types of information technologies within their own household. The technologies measured include:

- Telephone
- Television
- Cable and/or satellite television
- Wireless telephone
- Overall access to a computer
- Computer at home
- Overall access to the Internet
- Internet access at home
- High-speed (DSL or cable modem) Internet access at home
- E-mail address

As only those households with telephones were interviewed, all respondents surveyed have access to a telephone in their home. Note approximately 98 percent of all households in the Seattle metropolitan region have a telephone in their home.[5]

- Nearly half (46%) of respondents surveyed have a wireless telephone.

Nearly all (95%) respondents surveyed have a television in their home.

- Moreover, the majority has cable (60%) and/or satellite (5%) television. A total of 62 percent of all respondents have access to cable and/or satellite television in their home – some (3%) have access to both cable and satellite television.

Eighty-eight percent (88%) of all respondents have access to a computer in some location – home, work, school, public library, community center, or some other location.

- More than three out of four (76%) respondents surveyed have access to a computer in their home. This is significantly higher than the national average that suggests that approximately half (51%) of all US households have a computer in their home.[6]

More than four out of five (82%) respondents have access to the Internet; 72 percent of respondents have Internet access at home. Again, this is significantly higher than the national

[5] Statistics provided by Scientific Telephone Samples

[6] Results from a biannual study conducted by the National Telecommunications and Information Administration show that as of 2000 51 percent of US households have a computer in their home. For further statistics, see www.ntia.doc.gov.

average that suggests that approximately two out of five (42%) households have Internet access.[7]

- Only 7 percent of those with a home computer do not have Internet access.
- Nearly one out of five (18%) have high-speed (DSL or cable modem) Internet connections in their homes.

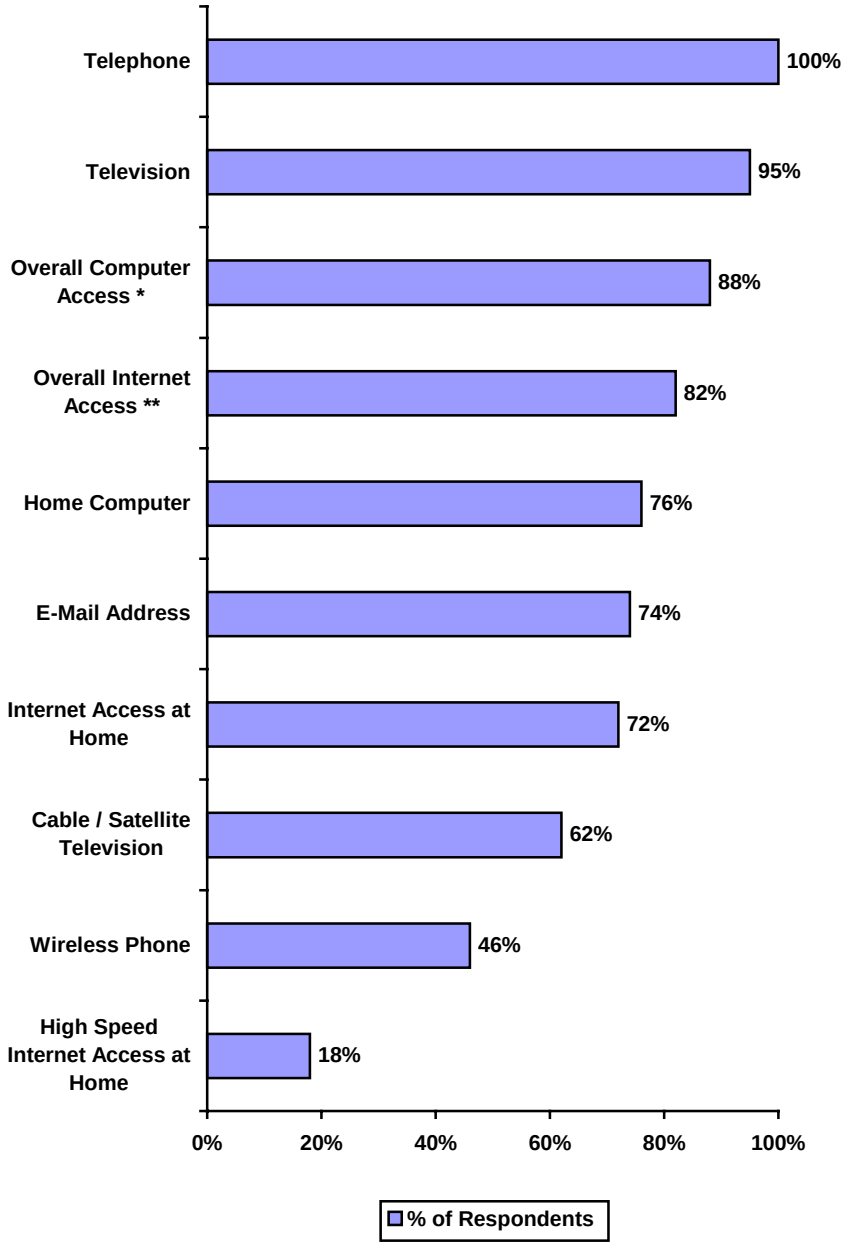
Nearly three out of four (74%) respondents have an e-mail address.

- Nearly all (89%) respondents with a computer at home have an e-mail address.
- Seventy percent (70%) of those with limited access to a computer (that is, outside the home only) have an e-mail address.

[7] Results from a biannual study conducted by the National Telecommunications and Information Administration show that as of 2000 42 percent of US households have Internet access. For further statistics, see www.ntia.doc.gov.

Nearly all Seattle residents have access to the most basic technologies. Moreover, there is a high incidence of in-home computer access and corresponding Internet access among Seattle residents.

FIGURE 5: ACCESS TO INFORMATION TECHNOLOGIES
(BASE: All Respondents)



** Overall access to a computer includes respondents have access to a computer at home, work, school, library, community center, Internet café, and/or some other location.*

*** Overall access to the Internet includes respondents who have access to a the Internet at home, work, school, library, community center, Internet café, and/or some other location*

Technology Access Indicator

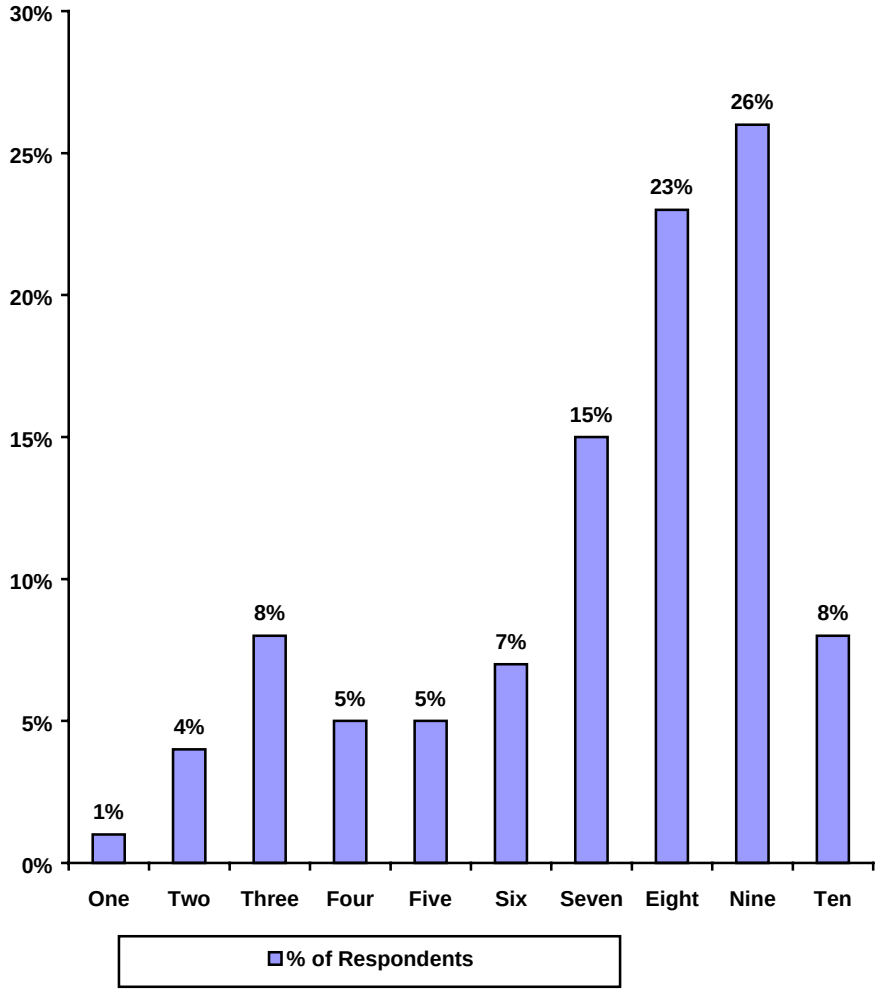
A "technology access indicator" was created by simply counting the number of technologies each respondent has available. The technologies counted include: telephone, wireless telephone, television, cable or satellite, overall computer access, computer access at home, overall Internet access, Internet access at home, high speed Internet access at home, and access to e-mail.

As there were ten different technologies measured, this indicator could range from "0" meaning "no technologies available" and "10" meaning "ten or all technologies available." However, as all respondents have a telephone available, the indicator runs from "1" meaning "one technology (telephone) available and "10" meaning "ten or all technologies available." Note the list of technologies included in this survey is not all-inclusive - e.g., PDAs, digital cable, and other relatively new technologies are not included. Moreover, additional technologies may be added to this index over time as they become available.

On average, respondents are currently using seven different technologies. Less than 1 percent of those surveyed have only one of the ten technologies available – that is, they only had a telephone. Eight percent (8%) of the respondents surveyed have all ten technologies available.

FIGURE 6: NUMBER OF TECHNOLOGIES TO RESPONDENTS
(BASE: All Respondents)

On average, respondents are currently using seven different technologies, with more than half (57%) using eight or more of the most common technologies**.**



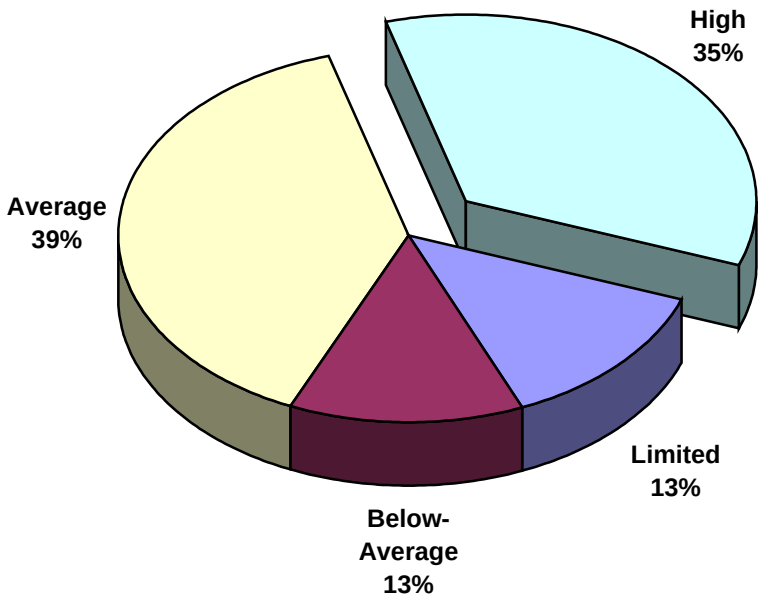
A grouped variable was then created from this index, as follows. Those respondents who have access to three or fewer technologies are grouped together and are considered to have "limited" access to technology. Those respondents who have access to four, five, or six of the technologies are grouped together and are considered to have "below-average" access to technology. Those respondents with access to seven or eight technologies available have "average" access. Finally, those respondents with access to nine or more technologies are considered to have "high" access to technology.

Seattle residents have high access to available technology, with more than one-third (35%) of all those surveyed having access to nine or more distinct technologies. An additional 39 percent have average access to technology – that is, having access to seven or eight technologies.

- One out of eight (13%) respondents surveyed have limited access to technology. The same number has below-average access to technology.

FIGURE 7: TECHNOLOGY INDICATOR
(BASE: All Respondents)

Seattle residents have high access to available technology with more than one-third (35%) of all those surveyed having access to nine or more distinct technologies.



The Divide in Access to Technologies

While the penetration of technologies has reached a large portion of our population, key demographic groups continue to have lower access to technology in their homes.

Age is clearly a factor that discriminates those with different levels of access to technology. However, gender is also a moderating factor when combined with age.

- Half (50%) of those with limited access to different technologies are 65 years of age and older. This is notable for women. Three out of five (60%) women with limited access to different technologies are 65 years of age and older compared with only 34 percent of men in that age bracket.
- Almost half (47%) of those with below-average access to technology are younger – between the ages of 18 and 35. This is notable for men. Three out of five (59%) men with below-average access to different technologies are between 18 and 35 compared with only 32 percent of women in that age bracket. On the other hand, 26 percent of women with below-average access to different technologies are 65 and older compared with 16 percent of men in that age bracket.

As educational achievement increases so does access to different technologies.

- Thirty-six percent (36%) of those with limited or below-average access to technology have a high school education or less. To compare, only 10 percent of those with average or high access to technology have a high school education or less.
- More than three out of five (63%) of those with average or high access to technology are college graduates compared with 32 percent of those with limited or below-average access.

The presence of children in the household is related to technology access.

- Those with average or high access to technology are nearly twice as likely as those with limited access to technology to have children in the household – 29 percent compared with 16 percent, respectively.

There is a moderate correlation between income and access to technology.

- More than two-thirds (68%) of those with limited access to technology have low / extremely low household incomes. One-third (34%) of those with below-average access to technology have low / extremely low household incomes.
- Surprisingly, an above-average number (30%) of those with below-average access to technology have upper/high upper incomes. This is notable among men with below-average access to technology. Forty-three percent (43%) of men with below-average access to technology have upper / high upper household incomes.

Those with limited or below-average access to technology are more likely to be African Americans.

- Nearly one out of five (18%) of those with limited access to technology and 13 percent of those with below-average access to technology are African-American.

FIGURE 8: DEMOGRAPHIC CHARACTERISTICS OF TECHNOLOGY ACCESS SEGMENTS
(BASE: All Respondents)

	All Respondents	Limited Access	Below-Average	Average Access	High Access
Gender					
Male	50%	38%	**58%**	48%	**54%**
Female	50	**62**	42	52	46
Age					
18 to 25	13%	3%	**22%**	**14%**	**13%**
26 to 35	21	7	**25**	**25**	**18**
36 to 50	33	22	21	**36**	**37**
51 to 64	18	18	11	17	**23**
65 and Older	14	**50**	**20**	7	9
Mean	44.4 yrs.	62.7 yrs.	42.4 yrs.	40.9 yrs.	43.4 yrs.
Education					
High School or Less	17%	**51%**	**30%**	12%	6%
Some College	29	27	**40**	25	30
College Graduate	27	11	14	**29**	**36**
Post Graduate Work / Degree	27	10	17	**34**	**28**
Children in Household					
No	73%	**84%**	76%	71%	71%
Yes	27	16	24	**29**	**29**
Income					
Low / Extremely Low	22%	**68%**	**34%**	17%	7%
Moderate	11	17	19	11	6
Middle	10	6	8	11	8
Upper Middle	11	4	8	14	11
Upper / High Upper	47	4	**30**	**47**	**68**
Ethnicity					
White	70%	67%	51%	**72%**	**77%**
African-American	9	**18**	**15**	7	4
Asian / Pacific Islander	8	6	14	9	5
Hispanic	6	6	12	5	5
Other	7	3	8	7	8

Computer Experience

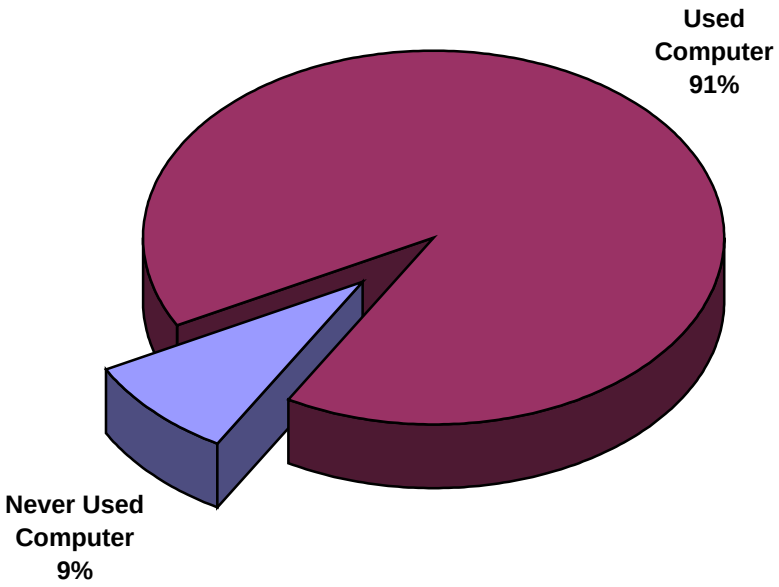
Overall Computer Experience

Respondents were asked if they have ever used a computer, even if they currently do not have access to a computer.

Less than one out of ten (9%) respondents surveyed have never used a computer.

FIGURE 9: OVERALL COMPUTER EXPERIENCE
(BASE: All Respondents)

Nearly all (91%) Seattle area residents have at least some experience with a computer.



The Divide in Overall Computer Usage

Nowhere is the "digital divide" more evident than in the differences between those who have used a computer and those who have never used a computer.

Women are significantly more likely than men to have never used a computer.

- Three out of five (61%) of those who have never used a computer are women compared with 49 percent of computer users. Conversely, only 39 percent of those who have never used a computer are men compared with 51 percent of computer users.

Seniors are much less likely to have used a computer.

- Respondents who are 65 and older are five times less likely to have used a computer than those who are 51 to 64 and more than twenty times less likely to have used a computer than those between 18 and 50.

The presence of children in the household is also related to computer use. This may reflect age of the respondent as well.

- Ninety-one percent (91%) of those who have never used a computer do not have children in the household compared with only 72 percent of those who have used a computer.

There is also a relationship between education and computer use.

- Half (63%) of those who have never used a computer have a high school education or less.
- Three out of five (58%) of those who have used a computer have a college degree and/or post-graduate educations.

There is also a relationship between income and overall computer use.

- Eighty-five percent (85%) of those with no computer experience have household incomes in the low / extremely low or moderate-income brackets compared with only 29 percent of those with computer experience.

There is no relationship between computer experience and ethnic background.

FIGURE 10: DEMOGRAPHIC CHARACTERISTICS OF COMPUTER USERS / NONUSERS
(BASE: All Respondents)

	All Respondents	Never Used Computer	Used Computer
Gender			
Male	50%	39%	**51%**
Female	50	**61**	49
Age			
18 to 25	13%	2%	**14%**
26 to 35	21	4	**23**
36 to 50	33	11	**35**
51 to 64	18	17	18
65 and Older	14	**65**	9
Mean	44.4 yrs.	68.9 yrs.	42.0 yrs.
Education			
High School or Less	17%	**63%**	13%
Some College	29	22	29
College Graduate	27	10	**29**
Post Graduate Work / Degree	27	5	**29**
Children in Household			
No	73%	**91%**	72%
Yes	27	9	**28**
Income			
Low / Extremely Low	22%	**68%**	18%
Moderate	11	**17**	11
Middle	10	5	10
Upper Middle	11	5	12
Upper / High Upper	47	6	**50**
Ethnicity			
White	70%	67%	70%
African-American	9	12	9
Asian / Pacific Islander	8	9	8
Hispanic	6	7	6
Other	7	5	7

Access to a Computer

Overall Access to a Computer

Respondents were asked if they have access to a computer at home, work, school, a public library, community center, Internet café, and/or some other location.

Nearly all (88%) Seattle area residents have access to a computer. Nearly two-thirds (65%) have access to a computer in multiple locations.

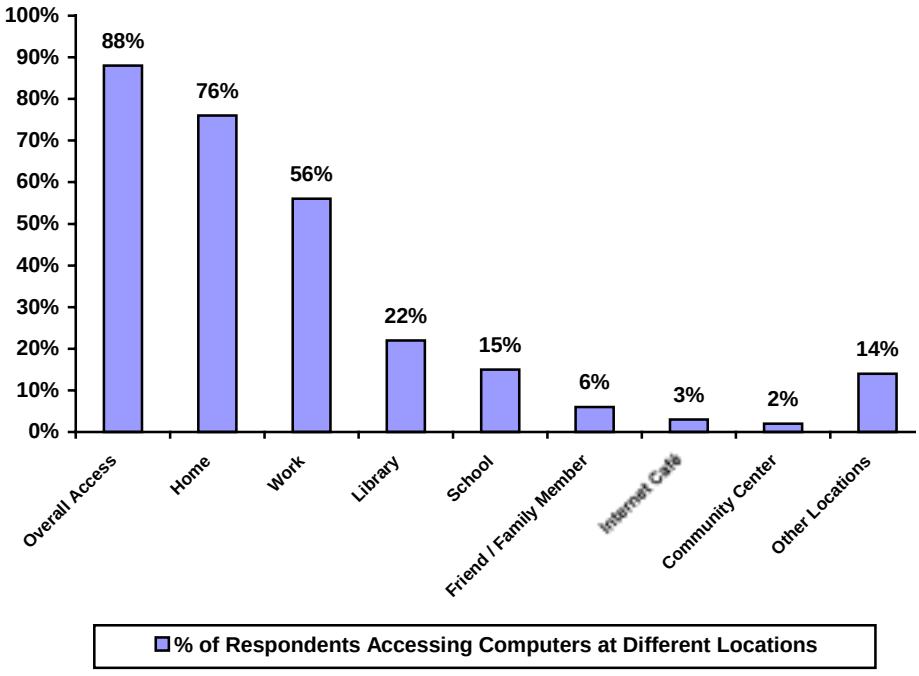
- More than three out of four (76%) Seattle residents have a computer in their home. Of those with computers in their home, 20 percent stated this as their only computer access.
- Over half (56%) of all respondents use a computer at work. Of those using computers at work, only 9 percent identified this as their only computer access.

Over half (56%) of residents use a computer at some place in addition to home or work.

- Twenty-two percent (22%) indicated using a computer at a public library and 15 percent at school. Note 42 percent of those between the ages of 18 and 25 use a computer at school. Only 8 percent of those using a computer at a public library and 3 percent of those using a computer at school have access to a computer just in this location.
- While not originally included in the questionnaire as a separate location, 6 percent of those surveyed indicated that they used a friend's or family member's computer. Thirty-one percent (31%) of those who access a friend's or family member's computer said this is their only computing location.

FIGURE 11: OVERALL COMPUTER ACCESS
(BASE: All Respondents)

Nearly all (88%) Seattle area residents have access to a computer with two out of three respondents (65%) having access to computers in multiple locations. Three out of four (76%) Seattle area residents have access to a computer at home.



The Divide in Computer Access

As with access to technology generally, access to a computer, notably access to a computer in the home, is related to age and gender.

- Over half (56%) of those who do not have access to a computer anywhere are 65 and older. This is notable among women who do not have access to a computer. Sixty-three percent (63%) of women with no access to a computer are 65 and older compared with 48 percent of men in this age bracket.

Those with access to a computer, and specifically those with access to a computer in their home, have higher levels of education than do those without access to a computer.

- More than three out of five (62%) of those with access to a computer in their home have a college and/or post-graduate education compared with 44 percent of those with limited access (outside the home only) to computers and only 18 percent of those with no access.
- On the other hand, more than half (56%) of those with no computing access have a high school education or less. Eighty-two percent of those with no computing access have not graduated from college.

While those with a computer in the home are more likely to have children in the household, this relationship appears to be less of a factor than do other demographic characteristics such as age, gender, and education.

- Three out of ten (29%) respondents who have access to a computer at home have children in the household. Somewhat fewer (24%) of those who have limited access to a computer (outside the home only) have children in the household. This number is not statistically significant.
- On the other hand, an above-average number (85%) of those with no access to computers do not have children in the household. In this case, however, it is likely the age of the respondent that is most strongly related to computer access rather than the presence of children, in that older respondents are less likely to have children living at home.

Those with access to a computer, notably those with access to a computer at home, are more affluent than those without access to a computer.

- Nearly two-thirds (64%) of those with no access to a computer have low / extremely low household incomes.
- Over half (56%) of those with access to a computer at home have high / high upper household incomes.

Those with no or limited computer access are more likely to be African-American.

- Only half (52%) of African-American respondents have access to a computer in their home compared with 80 percent of Asian American and 70 percent of Caucasian respondents. One out of five (19%) African-Americans do not have any access to a computer; 30 percent have access outside their homes only.

FIGURE 12: DEMOGRAPHIC CHARACTERISTICS OF COMPUTER ACCESS SEGMENTS
(BASE: All Respondents)

	All Respondents	No Computer Access	No Home Access	Access in Home
Gender				
Male	50%	38%	48%	**53%**
Female	50	**62**	52	47
Age				
18 to 25	13%	1%	**18%**	**14%**
26 to 35	21	8	**27**	**22**
36 to 50	33	17	25	**36**
51 to 64	18	16	20	18
65 and Older	14	**56**	10	8
Mean	44.4 yrs.	65.1 yrs.	41.0 yrs.	41.7 yrs.
Education				
High School or Less	17%	**56%**	20%	11%
Some College	29	26	36	28
College Graduate	27	12	21	**31**
Post Graduate Work / Degree	27	6	**23**	**31**
Children in Household				
No	73%	**85%**	76%	71%
Yes	27	15	24	**29**
Income				
Low / Extremely Low	22%	**64%**	**36%**	14%
Moderate	11	19	19	9
Middle	10	6	11	10
Upper Middle	11	6	9	12
Upper / High Upper	47	5	**25**	**56**
Ethnicity				
White	70%	**68%**	52%	**73%**
African-American	9	**14**	**21**	6
Asian / Pacific Islander	8	8	5	9
Hispanic	6	6	12	5
Other	7	3	9	7

Barriers to Computer Access at Home

In order to measure the major barriers to computer access in the home, respondents who do not have a computer at home were asked why they do not.

Thirty-eight percent (38%) of respondents without a computer at home state that they did not want one. Therefore, it is unlikely that computer access at home will reach 100 percent in the near future, as many of those people who currently do not have a computer at home do not want one.

- Men are more likely than women (47% compared to 30%, respectively) to indicate the reason they do not have a computer at home is because they do not want one, as are respondents over the age of 65 when compared to those age 35 and under.

An additional 30 percent cite the cost of a computer as their reason for not having a computer at home. As the cost of personal computers continues to decrease, it is likely that there will be some increase in the number of households with computers in their homes. However, as noted above, it is unlikely that this number will reach 100 percent in the near future.

- Women cite cost (35%) and no need (30%) as the major barriers to having a computer at home. While women are more likely than men to cite cost as a factor – 35 percent compared with 24 percent, respectively – this difference is not statistically significant.
- Cost is a greater barrier to younger respondents – those 35 and younger. Nearly half (46%) of those 35 and younger cite cost as the reason for not having a computer at home compared with only 17 percent of those over 50. Cost is also more likely to be mentioned as a reason by those respondents between 36 and 50.
- Cost is still a barrier for low to moderate-income respondents. This group is more than three times more likely to state cost as a barrier than those without computers at home in the upper income bracket – 36 percent of low / extremely low income households without a computer at home and 34 percent of moderate income households without a computer at home cited cost as a barrier compared with 11 percent of high / high upper income bracket.

One out of ten (9%) of those who do not have access to a computer at home say the reason they don't have a computer at home is because they have access elsewhere.

- Respondents between the ages of 26 and 35 and those between 51 and 64 are more likely than other age groups to say they have adequate access to computers elsewhere.

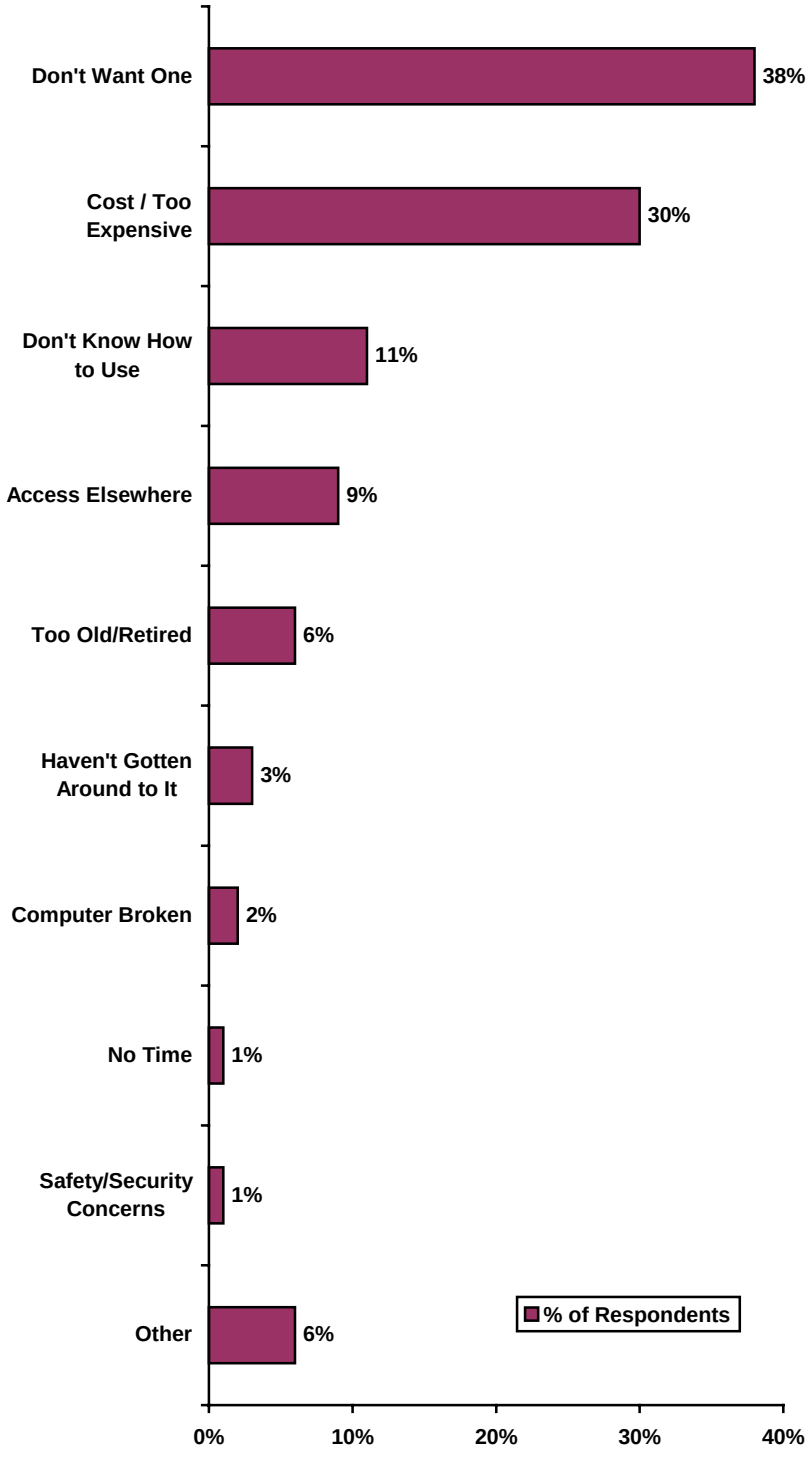
Eleven percent (11%) of those who do not have a computer at home say they don't know how to use one; 6 percent say they are too old. Not knowing how to use a computer and/or being too old are reasons more likely to be cited by those 65 and older.

- Seventeen percent (17%) of those who are 65 and older say they do not know how to use a computer and hence don't have one at home; 16 percent of those who are 65 and older say they are too old to get a computer.

There are no differences in barriers between ethnic groups.

FIGURE 13: BARRIERS TO COMPUTER ACCESS AT HOME
(BASE: Respondents Who Do Not Have Computer at Home [n = 231])

Cost (30%) and simply no desire to own a computer (38%) are the primary barriers to purchasing a computer for the home.



Barriers to Computer Access at Other Locations

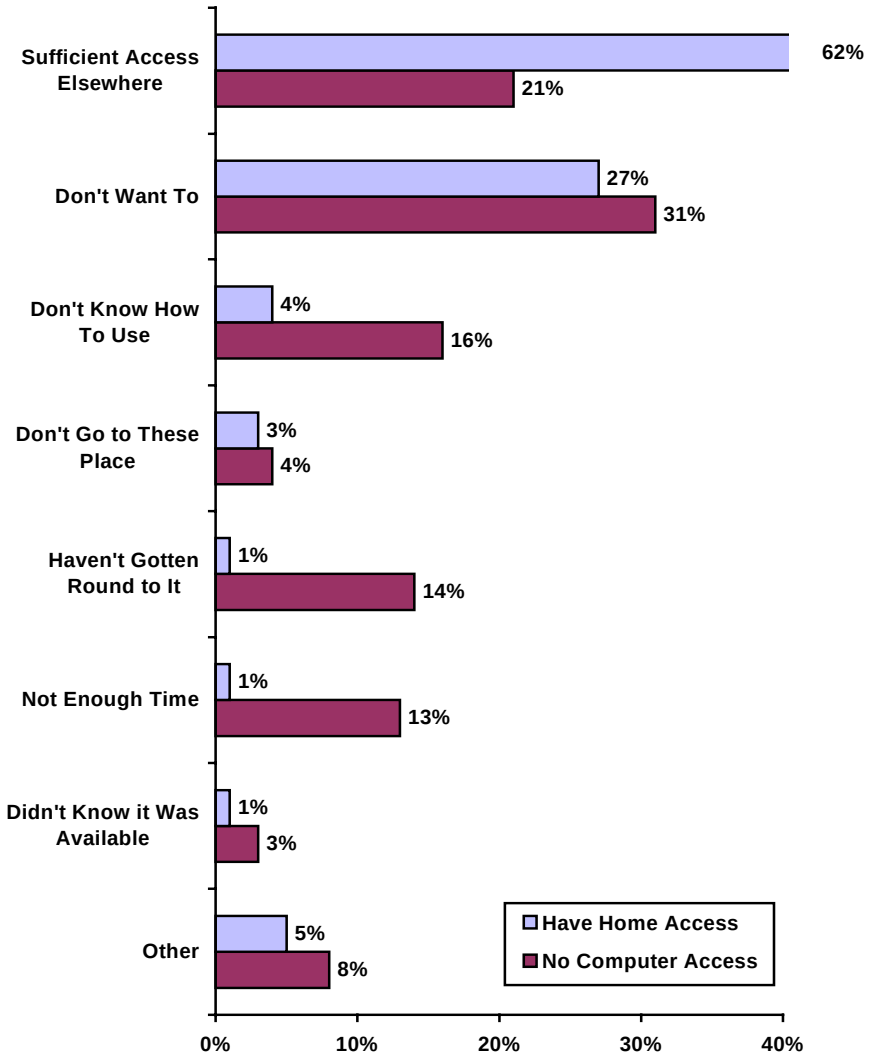
Those respondents who have used a computer in the past but currently do not use a computer at locations outside their home (work, school, the library, community center, Internet café) were asked why they do not use computers or the Internet at these locations.

Over half (55%) of those who have used a computer in the past but do not use a computer at locations outside their home cite sufficient access somewhere else as the reason they do not use the computer at locations outside their home.

- Not surprisingly, those with access to a computer in their home are more likely than those with no access to a computer at all to say they have sufficient access elsewhere – 62 percent compared with 21 percent, respectively.
- While cell sizes are too small to draw a definitive conclusion, not knowing how to use a computer may be a barrier for those with no computer access to using computers at other locations.

FIGURE 14: BARRIERS TO COMPUTER ACCESS AT OTHER LOCATIONS
(BASE: Have Used Computer But Have Not Used It Outside Home [n = 156])

Sufficient access elsewhere is cited by most (55%) who have used a computer but do not use a computer at all or at locations outside the home as the reasons they do not access a computer at these locations.



Age of Computer at Home

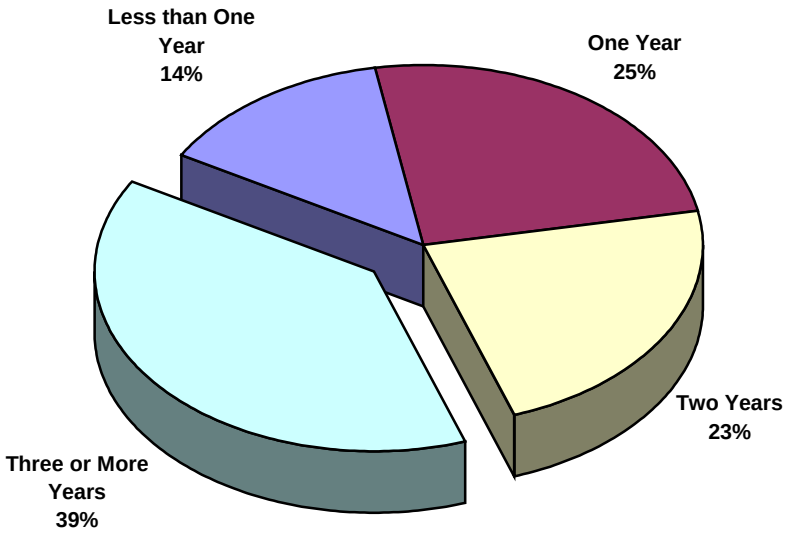
The age of the computer in the home is often considered as an indicator of both the growth of computer access at home and the quality of computer technology to which residents have access.

The average age of the computer that is in the home is 2.42 years. More than three out of five (62%) home computer users are using computers that are two years old or less.

- Age, ethnicity, education and gender are not significant factors when looking at the age of the computer in the home. However, income does seem to be a significant factor. Three out of ten (30%) households with older computer technology (i.e., more than 2 years old) have low / extremely low household incomes compared with 12 percent of those having newer technology. On the other hand, over half (55%) of those households with new computer technology have upper / high upper household incomes. This low-income gap parallels general access to computers.

FIGURE 15: AGE OF HOME COMPUTER TECHNOLOGY
(BASE: Respondents who Have Computer at Home)

The majority (62%) of home computer owners have access to relatively new – less than three years old – technology.



Computer Sharing at Home

Families share their computers. In multi-person households with a computer, the computer is shared in three out of four (75%) of these households.

- In nearly half (48%) of multi-person households, the respondent shares the computer with a spouse.
- In households with children, 54 percent of the respondents share the computer with a spouse; 60 percent also share the computer with their children.

FIGURE 16: COMPUTER SHARING AT HOME
(Base: Multi-person households)

	Total Multi-Person Households	Households w/o Children	Households w/ Children
Do Not Share	25%	33%	11%
Share With Spouse	48	44	54
Share With Children	26	6	60
Share w/ Friend / Housemate	10	13	6

- Those who do not share a computer with others spend significantly more time on the computer at home than do those who have to share with others – 14.9 hours per week compared with 10.9 hours, respectively.
- There is no relationship between the need to share a computer with others and satisfaction with the amount of time spent on the computer (as measured by whether an individual would like to spend more time on the computer).

FIGURE 17: DESIRE TO USE COMPUTER MORE BY COMPUTER SHARING AT HOME
(Base: Multi-person households)

	Total Share Computers	Share Computer w/ Others	Do Not Share w/ Others
Would like to use computer more	25%	24%	28%
Would not like to use computer more	75	76	72

Access to the Internet

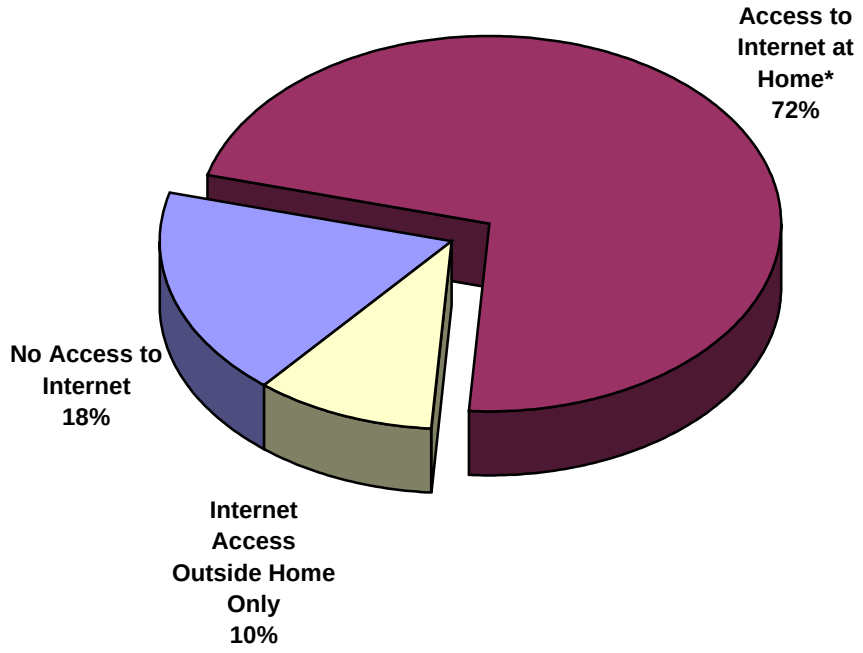
Overall Access

More than four out of five (82%) of all respondents surveyed have access to the Internet. Seventy-two percent (72%) have access to the Internet at home, while 10 percent only have Internet access outside the home.

- Nearly all (93%) of those with access to a computer have access to the Internet as well. Similarly, 93 percent of those with access to a computer at home have access to the Internet at home.
- Those with access to the Internet at home also access the Internet at other locations where they use a computer: work (81%), school (76%), public library (34%), community center (39%), or Internet café (62%),
- Of the 10 percent who have access to the Internet outside the home only, 79 percent who use a computer at work access the Internet at work; 98 percent who use a computer at school access the Internet at school; 70 percent who use a computer at the library access the Internet at a public library; 81 percent who use a computer at a community center access the Internet at the community center; and 93 percent of those who use a computer at an Internet café access the Internet at that location.

FIGURE 18: OVERALL INTERNET ACCESS
(BASE: All Respondents)

More than four out of five (82%) area residents have access to the Internet, with 72 percent having access to the Internet at home.



** Those with access to the Internet at home may also have access to the Internet outside the home.*

The Divide in Access to the Internet

In general, the characteristics of those with and without Internet access parallel the characteristics of those with computer access. However, there are some notable differences.

As with access to computers, men are more likely than women to have access to the Internet.

- Over half (52%) of all men surveyed have access to the Internet compared with 48 percent of women.
- Three out of five (59%) of those with no Internet access are women.

Those with access to the Internet are significantly younger than those with no access.

- Nearly half (45%) of those with no access to the Internet are 65 years of age or older compared with 7 percent of those with access to the Internet at home or in some other location.
- Those with access to the Internet outside the home only are younger than those with access to the Internet at home. One out of four (25%) of those with access to the Internet outside the home only are between the ages of 18 and 25, compared with only 14 percent of those with access in the home.

Those with access to the Internet have higher levels of educational achievement than do those with no access.

- Half (49%) of those with no access to the Internet have a high school education or less, compared with only 9 percent of those with access to the Internet.
- Conversely, nearly two thirds (64%) of those with access to the Internet have graduated from college and/or attended graduate school, compared with 18 percent of those with no access to the Internet.

As with computers, those respondents with children in the household are more likely than those without children at home to have access to the Internet.

- Twenty-eight percent (28%) of those surveyed with Internet access have children in the household compared with only 18 percent of those with no Internet access.
- There is no relationship between the presence of children in the household and access to the Internet at home as opposed to access to the Internet outside the home only.

There is a moderate relationship between income and access to the Internet.

- Three out of five (59%) respondents with no access to the Internet have low / extremely low household incomes compared with only 15 percent of those with access to the Internet.
- In addition, more than one out of four (26%) respondents with limited access to the Internet – that is, outside the home only – have low / extremely low household incomes compared with 13 percent of those with access to the Internet at home.

African-Americans are significantly less likely to have access to the Internet than other ethnic groups.

- More than one out of three (35%) African-Americans surveyed do not have access to the Internet compared with 16 percent of the Caucasians surveyed and only 11 percent of Asian-Americans surveyed.
- Moreover, African-Americans are more likely than other groups to have access to the Internet outside their home only. One out of five (21%) African-Americans surveyed have limited access the Internet (outside their home only) compared with 14 percent of Asian-Americans and only 8 percent of Caucasians surveyed.

FIGURE 19: DEMOGRAPHIC CHARACTERISTICS OF INTERNET ACCESS SEGMENTS
(BASE: All Respondents)

	All Respondents	No Internet Access	Access Outside Home Only	Access at Home
Gender				
Male	50%	41%	54%	**52%**
Female	50	**59**	46	48
Age				
18 to 25	13%	6%	**25%**	**14%**
26 to 35	21	8	**25**	**24**
36 to 50	33	22	30	**36**
51 to 64	18	19	12	19
65 and Older	14	**45**	5	8
Mean	44.4 yrs.	59.9 yrs.	37.6 yrs.	41.7 yrs.
Education				
High School or Less	17%	**49%**	17%	9%
Some College	29	33	31	27
College Graduate	27	10	**25**	**32**
Post Graduate Work / Degree	27	8	**27**	**32**
Children in Household				
No	73%	**82%**	69%	72%
Yes	27	18	31	**28**
Income				
Low / Extremely Low	22%	**59%**	**26%**	13%
Moderate	11	15	**23**	9
Middle	10	8	13	9
Upper Middle	11	5	8	12
Upper / High Upper	47	14	**30**	**56**
Ethnicity				
White	70%	65%	52%	**73%**
African-American	9	**18**	**18**	5
Asian / Pacific Islander	8	5	11	8
Hispanic	6	8	8	6
Other	7	3	11	7

Barriers to Internet Access at Home

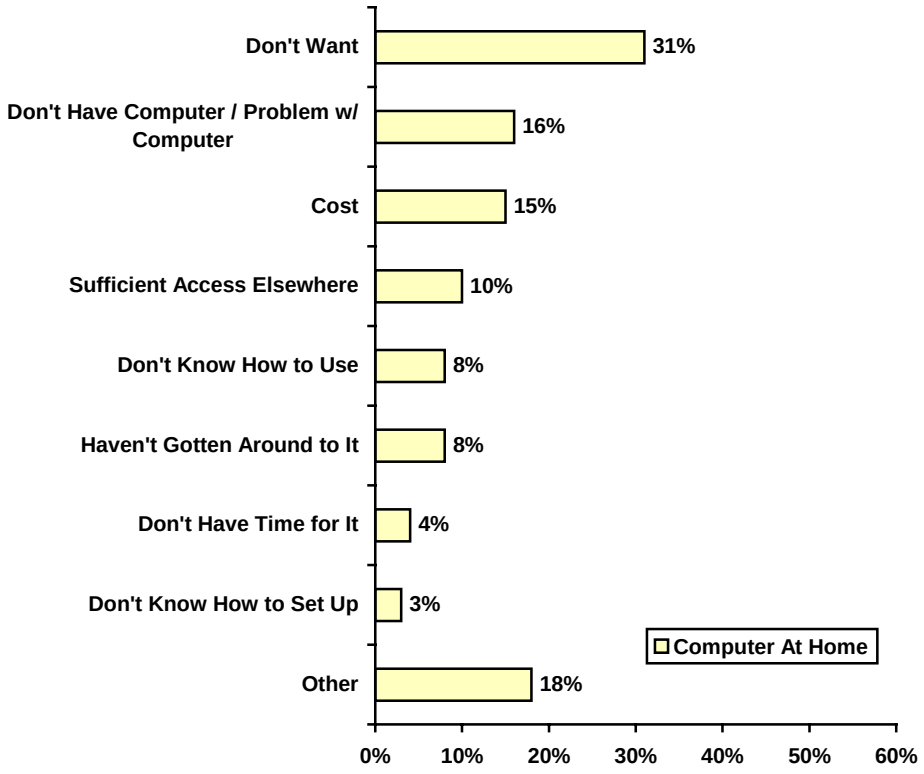
Respondents who currently do not have Internet access at home were asked why they do not have Internet access in their home.

For those with a computer at home simply not wanting Internet access is the reason mentioned most often (31%) when asked why they don't have access at home.

- In addition, cost (15%) and problems with home computer (i.e., not working, not powerful enough, not available for personal use) (16%) are cited.
- Lack of knowledge – either not knowing how to set the computer up for Internet access (3%) or not knowing how to use the Internet once it is set up (8%) – are other identified problems.

Most (31%) of those who have a computer at home but do not have Internet access at home simply do not want access.

FIGURE 20: BARRIERS TO INTERNET ACCESS AT HOME
(Base: Respondents who Have No Internet Access at Home)



Sums to more than 100 percent; multiple responses allowed.

For those who do not have a computer at home, this lack of a computer is the reason mentioned most often (51%) as to why they do not have Internet access at home.

Speed of Internet Connection at Home

Of those residents who have Internet access at home, the majority (59%) has a connection of 56K or greater. One out of four (27%) have a high-speed connection using DSL or cable modem.

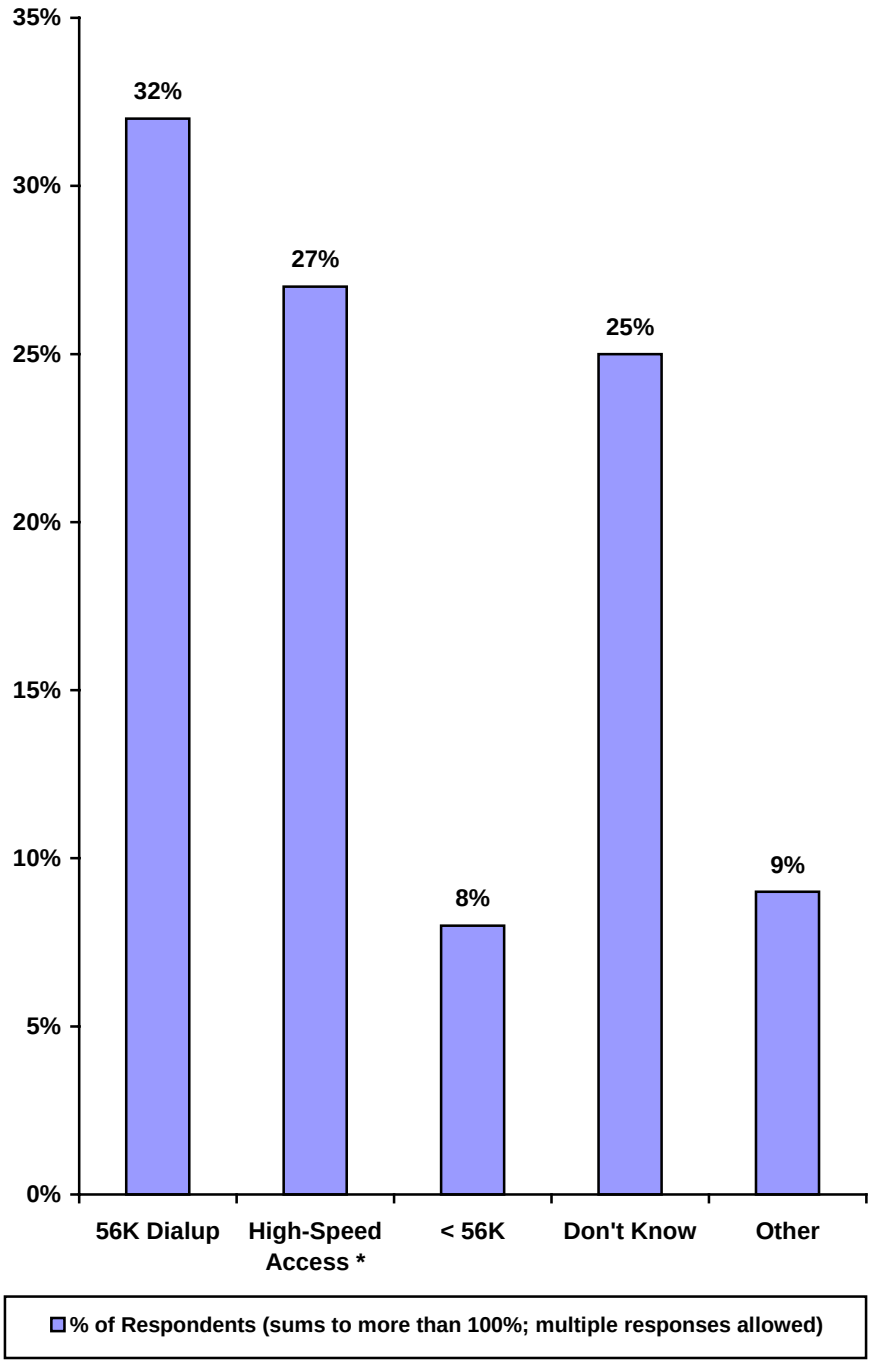
- Men are more likely than women to connect at 56K – 37 percent compared with 26 percent, respectively – or to have a high speed connection – 30 percent compared with 21 percent, respectively.
- Younger respondents – notably those between the ages of 18 and 25 – are more likely than older respondents to have high-speed Internet access. More than one out of three (36%) respondents between the ages of 18 and 25 with Internet access at home have high-speed access compared with 26 percent of those between the ages of 26 and 35 and only 20 percent of those 65 and older.
- Higher income households are more likely to have high-speed connections. Thirty-two percent (33%) of those in the upper / high upper income categories have a high-speed connection at home compared with 21 percent of those in the upper middle and moderate / middle brackets and only 17 percent of those in the low / extremely low brackets.
- Higher income households are more likely to have DSL access, while access to a cable modem is more evenly spread across the different income segments. For example, 15 percent of those with high / upper high incomes have access to DSL compared with 9 percent in the upper middle / moderate / middle brackets and only 3 percent of those in the low / extremely low brackets. On the other hand, 18 percent of those with high / upper high incomes have high-speed access with a cable modem compared with 14 percent of those with low / extremely low incomes. This may reflect the greater access to cable among lower income households and hence possible access to cable modems. On the other hand, this may reflect the aggressiveness of the telephone companies in providing DSL access in targeted, generally higher income, neighborhoods.

Note many (25%) respondents did not know the speed of their Internet connection. Those giving "other" responses (9%) most often provided the name of their Internet service provider rather than connection speed, suggesting a possible lack of knowledge regarding the difference between service provider and the speed with which one connects to the Internet.

- Women are significantly more likely than men – 34 percent compared with 18 percent, respectively – to say they do not know the speed of their Internet connection.
- Older respondents – notably those 65 and older – are more likely than younger respondents to say they do not know the speed of their access. Nearly half (44%) of those 65 and older do not know their access speed compared with between 20 percent and 28 percent of younger respondents. Moreover, older respondents – those over 50 – are more likely to provide an "other" response suggesting a lesser degree of literacy among these segments.

FIGURE 21: SPEED OF INTERNET CONNECTION AT HOME
(BASE: Respondents who Have Internet Access at Home)

The majority (59%) of those with Internet access connect at speeds of 56K or greater. However, a significant number (25%) do not know the speed of their connection.



** High speed access includes those with DSL and/or cable modem access.*

Satisfaction with Speed of Internet Connection

Almost half (49%) of all respondents report the Internet connection they use for personal purposes is fast enough for their needs.

- However, as would be expected, those with high-speed connections are significantly more likely to suggest that their Internet connection is fast enough – 75 percent compared with 28 percent, respectively. Note high-speed connection includes DSL and cable modem..

One out of four (25%) report that their Internet connection is slow, with 7 percent saying their Internet access at home is so slow it's hard to use.

- Those with dialup speeds less than 56K are the most likely to suggest that their Internet speed is slow. However, 37 percent of those with a 56K dialup also report their Internet connection speed is slow.

FIGURE 22: SATISFACTION WITH SPEED OF INTERNET ACCESS BY CONNECTION SPEED
(BASE: Respondents who Have Internet Access at Home or Use the Internet at Other Locations)

	Total	Dialup < 56 K	56K Dialup	High Speed Connection
Fast Enough	49%	24%	29%	**75%**
Almost Fast Enough	25	24	34	20
Slow	26	**53**	37	5

Access to E-Mail

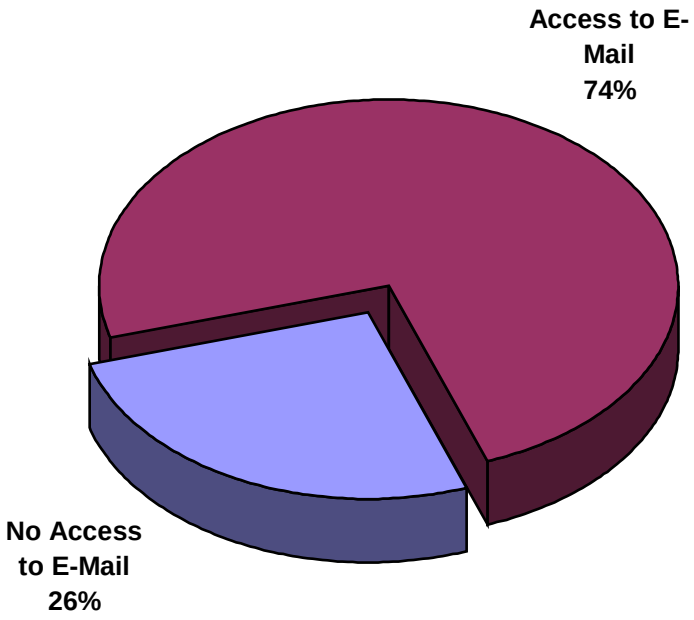
Overall Access

Three out of four (74%) Seattle residents have an e-mail address.

- This is an increase from the 1999 Citywide Residential Survey, where only 61% of respondents reporting having an e-mail address.
- Ninety-four percent (94%) of those with Internet at home have an e-mail address, while only 51 percent of those that can only access the Internet elsewhere have an e-mail address.

FIGURE 23: OVERALL E-MAIL ACCESS
(BASE: All Respondents)

Three out of four (74%) respondents have access to e-mail.



The Divide in Having E-Mail

Unlike other computer technologies – overall computer access and Internet access – there are no differences between men and women in terms of having an e-mail address.

Like other computer technologies, age is a factor that clearly differentiates those with e-mail from those without.

- The majority (60%) of those with e-mail addresses are between the ages of 26 and 50. On the other hand, 34 percent of those without e-mail are 65 and older.

Education and income are the two characteristics that most clearly distinguish those who use a computer and have e-mail from those who use computers but do not have e-mail.

- Two thirds (66%) of those with e-mail have graduated from college compared with 11 percent of those without an e-mail address.
- Nearly half (49%) of those with e-mail have upper middle or upper / high upper household incomes compared with 18 percent of those who do not have e-mail. On the other hand, 62 percent of this latter group have low / extremely low or moderate household incomes.

Finally, a disproportionate number of African-Americans and Hispanics do not have an e-mail address.

- While 79 percent of Caucasians surveyed have an e-mail address, only 57 percent of Hispanics and 51 percent of African-Americans have an e-mail address.

FIGURE 24: DEMOGRAPHIC CHARACTERISTICS OF THOSE WITH / WITHOUT E-MAIL
(Base: All Respondents)

	All Respondents	Have E-Mail	No E-Mail
Gender			
Male	50%	46%	52%
Female	50	54	48
Age			
18 to 25	13%	13%	15%
26 to 35	21	**24**	14
36 to 50	33	**36**	23
51 to 64	18	20	14
65 and Older	14	7	**34**
Mean	44.4 yrs.	41.9 yrs.	52.0 yrs.
Education			
High School or Less	17%	8%	**45%**
Some College	29	27	35
College Graduate	27	**33**	10
Post Graduate Work / Degree	27	**33**	1
Children in Household			
No	73%	74%	73%
Yes	27	26	27
Income			
Low / Extremely Low	41%	29%	62%
Moderate	11	9	17
Middle	10	9	10
Upper Middle	18	**21**	12
Upper / High Upper	20	**28**	6
Ethnicity			
White	70%	**74%**	57%
African-American	9	6	**17**
Asian / Pacific Islander	8	7	11
Hispanic	6	5	**11**
Other	7	8	4

Access to Computing Technology by Race and Income

There has been significant discussion regarding the differences in access to computing technology among different racial groups. Moreover, much of these differences have been attributed to differences in incomes between these groups. This research, however, suggests that other factors combined with income may be contributing to the fact that African-Americans are less likely to have access to computing technology in their homes.

Asian-Americans are the most likely to have access to computing and Internet technology regardless of income. Four out of five (80%) Asian-Americans surveyed have access to a computer at home; 74 percent have Internet access at home. [8]

- Eighty-three percent (83%) of Asian-Americans with low or extremely low incomes have access to a computer at home compared with 49 percent of Caucasians and only 37 percent of African-Americans.

For African-Americans and Caucasians, access to computing and Internet technology increases with income. However, for all income levels African-Americans have lower access to technology than do Caucasians.

- More than three out of four Caucasian households surveyed have access to a computer (79%) and/or Internet (76%) at home. Half (51%) of African-American households surveyed have access to a computer at home. Even fewer (45%) have Internet access at home.
- As incomes increase, the proportion of Caucasian and African-American households with computers at home increases. However, even affluent African-American households are less likely to have computers at home compared with comparable Caucasian households. For example, 69 percent of Caucasian households with moderate or middle incomes have access to a computer at home compared with 47 percent of African-American households. Nearly all (90%) Caucasian households with incomes in the upper middle or upper / high upper categories have a computer at home, compared with only 61 percent of African-American households.

FIGURE 25: ACCESS TO COMPUTING TECHNOLOGY BY RACE* AND INCOME

	African-American	Asian-American	Caucasian
% w/ Access to Computer at Home			
Overall	51%	80%	79%
Low / Extremely Low	37	83	49
Moderate / Middle	59	78	71
Upper Middle / Upper / High Upper	65	89	93
% w/ Internet Access at Home			
Overall	45%	74%	76%
Low / Extremely Low	31	74	49
Moderate / Middle	47	78	69
Upper Middle / Upper / High Upper	61	85	90

** Hispanics are not included in this analysis as the number of Hispanics interviewed (n = 36) is too small to allow for further breakdowns with this groups.*

[8] While this is true for those surveyed, our results do not include a small sample of Asian-Americans and others for whom language was a barrier for completing the survey.

Section 3

Usage of Information Technology

Computer Usage

Time Spent Using the Computer

Respondents were asked the amount of time they spend each week using a computer at home, work, school, and other locations. All results are presented in hours spent per week.

The number of hours spent on a computer per week varies widely, ranging from less than one hour per week to more than 100 hours per week.

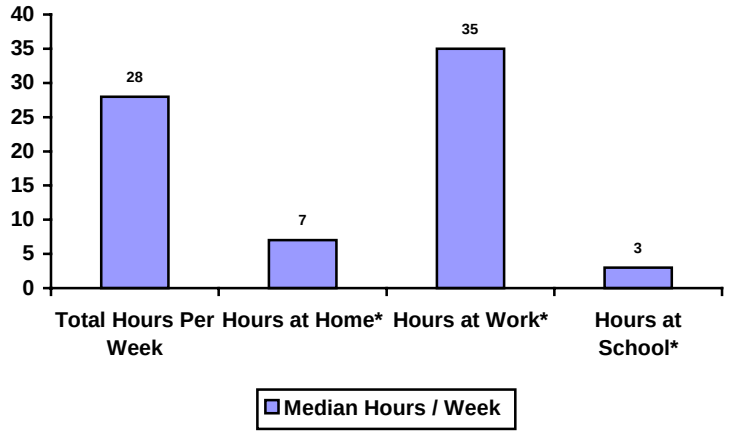
- On average, those respondents who use a computer spend an average of 28 hours per week (as measured by the median) on the computer in all locations. Note because of the wide variance in time spent on a computer, the median is a better measure of central tendency.

Location of usage greatly affects the average amount of time spent using the computer.

- Those who have a computer at home use that computer an average of seven hours per week, or the equivalent of one hour per day.
- Those who use a computer at work average 35 hours per week on that computer.
- Those who use a computer at school use that computer an average of three hours per week.
- Those accessing a computer at other locations – e.g., the library, community center, or Internet café – access these locations infrequently and typically average less than one hour per week on the computer in these respective locations. Note these sites are more likely to either have time limits or additional costs associated with more use.

FIGURE 26
OVERALL COMPUTER USAGE
(BASE: Respondents who Have Used Computer)

On average, computers users spend 28 hours per week on the computer at all the locations where they use a computer.



** Hours at home, work, and school are based only on those respondents who use computers in these respective locations – i.e., hours at home is based on those with a computer at home, hours at work is based on those who use a computer at work, and hours at school is based on those who use a computer at school.*

Computer User Segments

Computer users were grouped into five segments based on the number of hours they use the computer per week as follows:

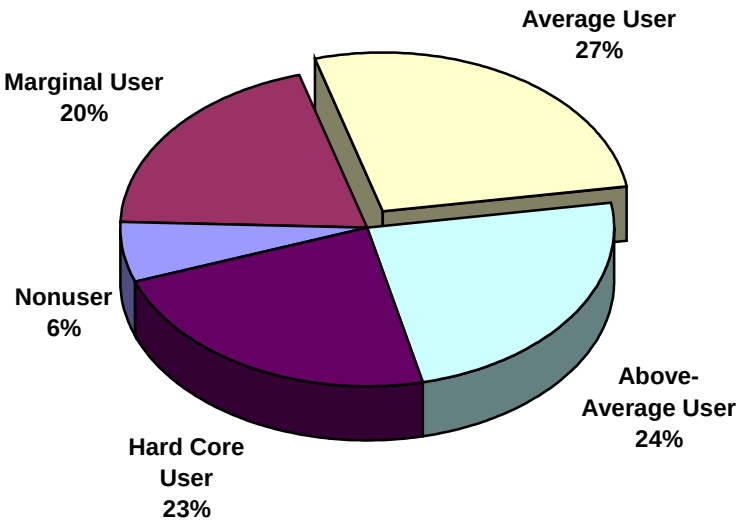
- **Nonusers**: This segment has access to a computer but averages less than .5 hours per week on the computer.
- **Marginal Users**: This segment uses a computer up to 7 hours per week.
- **Average Users**: This segment uses a computer between 8 and 28 hours per week. Note 28 is the median number of hours used per week for all users.
- **Above-Average User**: This segment uses a computer more between 29 hours up to 56 hours per week.
- **Hard Core User**: This segment uses a computer more than 56 hours per week.

The majority of respondents (74%) use their computer at least seven hours per week – or the equivalent of one hour per day. A significant number (47%) use the computer more frequently.

- A surprisingly large number (6%) of those persons with access to a computer use the computer infrequently – that is, less than one-half hour per week.
- One out of five (20%) computer users use the computer up to seven hours per week. These marginal users average five hours per week on the computer.
- More than one out of four (27%) respondents with access to a computer use a computer between 8 and 28 hours per week – or approximately one to four hours per day. On average, the Average User segment uses a computer 18 hours per week.
- One out of four (24%) respondents with access to a computer use a computer between 29 and 56 hours weekly. These Above-Average Users average 42 hours per week on the computer.
- Nearly the same number (23%) of respondents with access to a computer use a computer more than 56 hours per week – or the equivalent of 8 or more hours daily. These Hard Core Users average 70 hours per week on the computer – or the equivalent of 7 hours daily.

FIGURE 27: COMPUTER USE SEGMENTS
(BASE: Computer Users)

The majority of respondents (74%) use their computer at least seven hours per week – or the equivalent of one hour per day. A significant number (47%) use the computer more frequently.



Characteristics of Computer Users

Men average more time on the computer than do women – 29 hours compared with 21 hours, respectively.

- Three out of ten (31%) women with access to a computer are in the Average User segment compared with 24 percent of men who have access to a computer.
- Twenty-eight percent (28%) of men are in the Above-Average User segment compared with 20 percent of women computer users.

Those between the ages of 26 and 35 log the most hours (45 hours per week) on the computer per week, while those 65 and older use the computer the least often – averaging seven hours per week.

- Twenty-nine percent (29%) of those between the ages of 26 and 35 are Above-Average Users while 34 percent are Hard Core Users.
- Fourteen percent (14%) of those 65 and older with access to a computer do not use the computer at all – that is, they are Nonusers. Two out of five (41%) are Marginal Users.

The amount of time spent using a computer increases with education.

- Those respondents with access to a computer who have a 4-year college degree average 29 hours per week on the computer. Three out of ten (30%) are Hard Core Users.
- Computer users who have completed post-graduate work or degrees average even more hours – 34 hours per week. However, fewer (24%) are Hard Core Users. Three out of ten (30%) computer users with post-graduate educations are Above-Average Users.
- Those with high school educations or less average the least amount of time on the computer – 20 hours weekly. Fifteen percent (15%) of those with high school educations or less with access to a computer are Nonusers – i.e., they do not use a computer with any regularity. One out of four (24%) are Marginal Users – using the computer up to seven hours weekly.

Similarly, the amount of time spent on the computer increases with income.

- Those with household incomes in the middle or higher categories spend three to four times as much time on the computer as those with low / extremely low incomes. For example, those with upper middle incomes spend four times as much time on the computer as those with low / extremely low incomes – 42 hours per week compared with 10 hours, respectively. Those with middle incomes spend nearly three times as many hours on the computer – 28 hours per week compared with 10 hours, respectively.

There are no differences in the amount of time spent on the computer between computer users of different ethnic backgrounds.

FIGURE 28: DIFFERENCES IN AMOUNT OF TIME SPENT ON THE COMPUTER BY DEMOGRAPHIC SEGMENTS

(BASE: Computer Users)

	Average Time Per Week (Median)
Overall Average	28
Gender	
Male	29
Female	21
Age	
18 to 25	15
26 to 35	45
36 to 50	30
51 to 64	21
65 and Older	7
Education	
High School or Less	20
Some College	22
College Graduate	29
Post Graduate Work / Degree	34
Income	
Low / Extremely Low	10
Moderate	14
Middle	28
Upper Middle	**42**
Upper / Higher Upper	**34**

The Relationship Between Access to Computers and Internet on Computer Usage

The amount of time spent using a computer is related to one's access to computers at home and at work.

- Those with access to a computer at home average three times as many hours on the computer as those that do not – 28 hours compared with 9 hours, respectively. One out of four (25%) of those with computers at home are Hard Core Users compared with only 13 percent of those without home access. On the other hand, 19 percent of those without a computer at home are Nonusers and 26 percent are Marginal Users.
- Use of a computer at work has the most significant impact on the number of hours spent computing. On average, those who use a computer at work spend a total of 45 hours per week on the computer compared with only 7 hours for those who do not use a computer at work. One out of three (34%) respondents who use a computer at work are Above-Average Users; an additional 35 percent are Hard Core Users.

The amount of time spent using a computer is also related to one's access to the Internet.

- Those computer users with access to the Internet average four times as many hours per week on the computer as do those without – 28 hours compared with 7 hours, respectively. Nearly one out of three (32%) computer users with no access to the Internet are Nonusers; 29 percent are Marginal Users.
- Those with access to the Internet at home spend more hours on the computer than do those with more limited access (i.e., outside the home only) – 29 hours compared with 21 hours, respectively. One out of four (25%) of those with access to the Internet at home are Hard Core computer users.

FIGURE 29: DIFFERENCES IN AMOUNT OF TIME SPENT ON THE COMPUTER BY ACCESS TO COMPUTERS AND INTERNET
(BASE: Computer Users)

	Average Time Per Week (Median)
Overall Average	28
Have Computer at Home	
Yes	**28**
No	9
Use Computer at Work	
Yes	**45**
No	7
Have Internet Access	
Yes	**28**
No	7
Have Internet Access at Home	
Internet Access at Home	**29**
Internet Access Outside Home Only	21

Satisfaction with the Amount of Time Spent Using the Computer

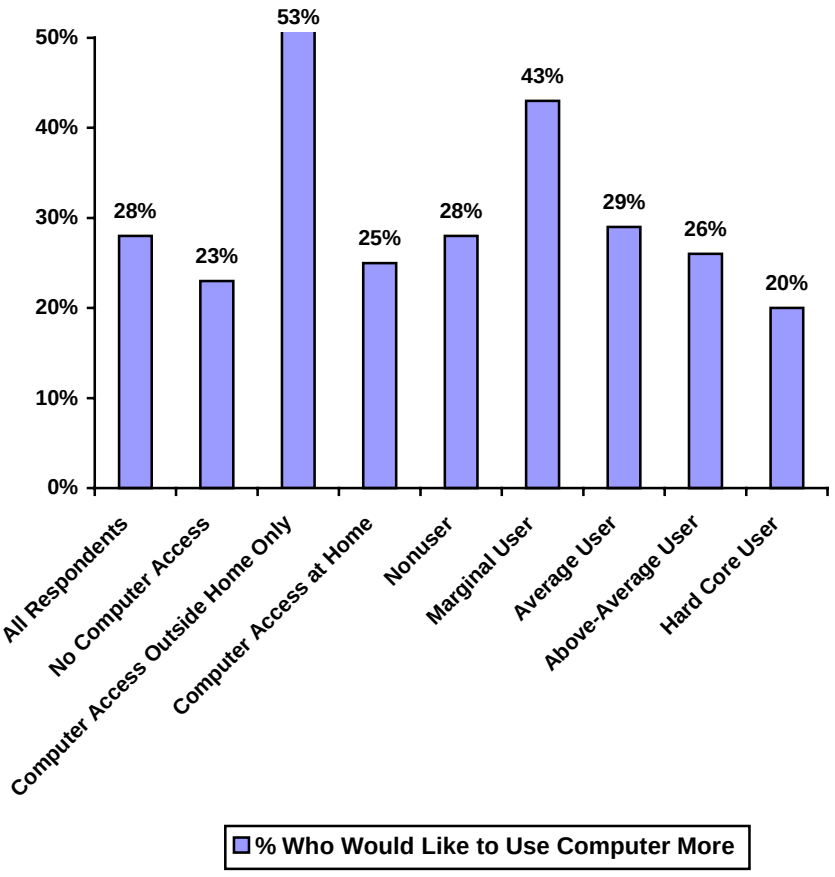
Respondents were asked if they would like to use the computer more than they currently do. Those who said they would like to use their computer more can be considered to be "dissatisfied" with the amount of time they spend on the computer.

The majority (72%) of those surveyed appear satisfied with the number of hours they spend on the computer – that is, they say they do not want to use the computer more than they currently do. One quarter (28%) of residents indicate they would like to use the computer more than they currently do, suggesting some dissatisfaction with the amount of time they currently use the computer.

- Those who currently have access to a computer on a limited basis – that is outside the home only – are the most likely to want to use the computer more often. Over half (53%) of those without computer access at home but who currently use a computer would like to use the computer more often.
- Those who use the computer on a limited basis are more likely than those who use the computer frequently and/or those who do not use the computer at all to say they would like to use the computer more. More than two out of five (43%) Marginal Users and 28 percent of Nonusers would like to use a computer more often.

The majority (72%) of respondents surveyed appear to be satisfied with the number of hours they spend on the computer.

FIGURE 30: CHARACTERISTICS OF THOSE WHO WOULD LIKE TO USE THE COMPUTER MORE
(BASE: All Respondents)



Characteristics of Those Who Want to Use the Computer More

The previous analysis showed a key group – current Marginal Users (i.e., those who use the computer up to seven hours per week) – that would like to use the computer more. Additional analysis was completed to gain a better understanding as to which Marginal Users are most interested in using the computer more.

Women are more likely than men to suggest they would like to use the computer more. Over half (52%) of women surveyed would like to use the computer more.

- Notably, women between the ages of 36 and 50 would like to use the computer more. Seven out of ten (70%) women between 36 and 50 would like to use the computer more. Women between the ages of 18 and 25 are the least likely to say they would like to use the computer more – 85 percent of women in this younger age bracket say they would not like to use the computer more.
- Women with 4-year college degrees are also more likely to want to use the computer more. Three out of four (76%) women with 4-year degrees would like to use the computer more.

African-Americans and Hispanic minorities are more likely than Caucasians to suggest they would like to use the computer more.

- Two thirds (67%) of African-Americans and Hispanics say they would like to use the computer more.
- African-American men are more likely than African-American women to say they would like to use the computer more – 80 percent compared with 50 percent, respectively. Hispanic men and women are equally likely to say they would like to use the computer more.

FIGURE 31: DEMOGRAPHIC CHARACTERISTICS OF MARGINAL USERS WHO WOULD LIKE TO USE COMPUTER MORE
(BASE: Marginal Users)

	% of Marginal Users Who Would Like to Use More
Gender	
Male	33
Female	**52**
Age	
18 to 25	17
26 to 35	48
36 to 50	**57**
51 to 64	47
65 and Older	37
Education	
High School or Less	39
Some College	29
College Graduate	**58**
Post Graduate Work / Degree	45
Ethnicity	
White	30
African-American	**67**
Asian-American	33
Hispanic	**67**

Internet Usage

Respondents were asked the amount of time they spend each week using the Internet at home, work, school, and other locations. Time spent using the computer at home was reported as hours in a specified time period. Time spent using the Internet at locations other than home was reported as a percent of the time spent on the computer and was converted to hours. All hours are reported in hours per week.

The number of hours spent on the Internet per week varies widely, ranging from less than one hour per week to more than 100 hours per week.

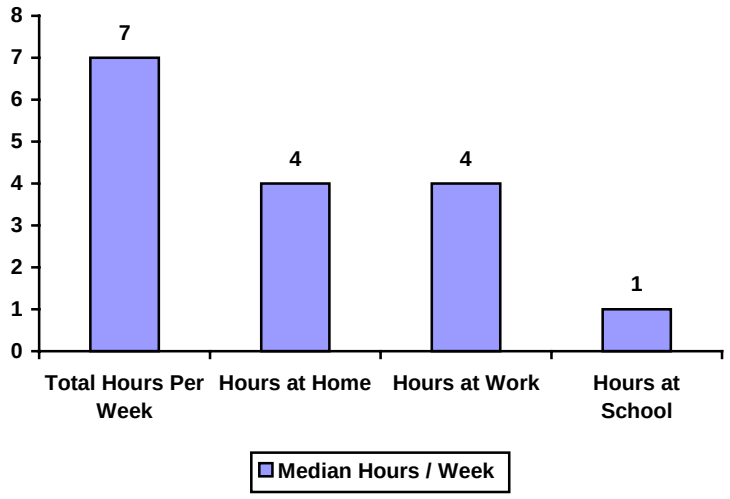
- On average, those respondents who use the Internet spend an average of seven hours per week on the Internet in all locations. This is approximately one-fourth (28%) of the time they spend on the computer.

As with computers, location of usage greatly affects the average amount of time spent using the Internet.

- Those who have access to the Internet at home average four hours per week on the Internet. This is equivalent to approximately 60 percent of the time they spend on the computer at home.
- Similarly, those who use the Internet at work average four hours per week on the Internet on that computer. This is equivalent to approximately 10 percent of the time they spend on the computer at work. Therefore, while those who use the computer at work spend a significant amount of time per week on the computer – on average 35 hours per week – a relatively small amount of that time is spent using the Internet, suggesting that businesses may place limitations on access to the Internet and/or that there is little use for the Internet in many positions.
- Those who use the Internet at school use the Internet an average of one hour per week or approximately 18 percent of the time spent using the computer at school.

FIGURE 32
OVERALL INTERNET USAGE
(BASE: Have Internet Access at Home or Use the Internet at Other Locations)

On average, computers users spend seven hours per week – or approximately one-fourth of the time they spend on the computer -- on the Internet at all the locations where they access the Internet.



** Hours at home, work, and school are based only on those respondents who use the Internet in these respective locations – i.e., hours at home is based on those with Internet access at home, hours at work is based on those with Internet access at work, and hours at school is based on those with Internet access at school.*

Internet User Segments

Internet users were grouped into segments based on the percent of time they spend on the computer using the Internet per week. Percent of time spent on the Internet was used as it provides a better representation of Internet usage than the number of hours. For example, a Hard Core computer user may spend only a small amount of time on the Internet. Conversely, an Average computer user may spend virtually all their time on the Internet. Five segments were created as follows:

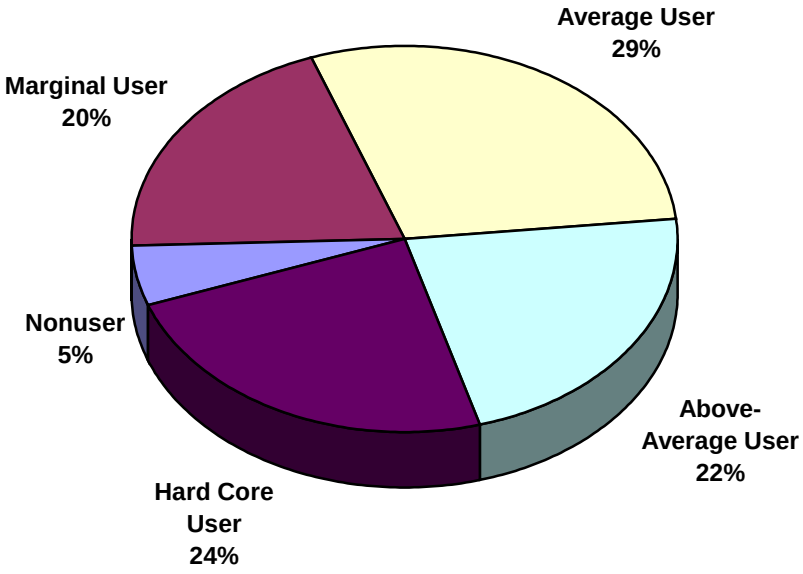
- **Nonusers**: Computer users who spend no time on the Internet.
- **Marginal Users**: Spend less than 10 percent of the time on the computer on the Internet.
- **Average Users**: Spend between 10 and 29 percent of the time on the computer on the Internet.
- **Above-Average Users**: Spend between 30 and 63 percent of the time they spend on the computer on the Internet
- **Hard Core Users**: Spend 63 percent or more of their time on the computer on the Internet.

Five percent (5%) of computer users with Internet access do not spend any time on the Internet. One out of five (20%) computer users with Internet access spend less than 10 percent of their time on the Internet.

On the other hand, one out of four (24%) computer users spend two-thirds or more of their time on a computer on the Internet.

FIGURE 33: INTERNET USER SEGMENTS
(BASE: Computer Users)

Only a small percentage (5%) of those with Internet access do not use the Internet, while almost half (46%) spend a third or more of their computer time on the Internet.



Men and women spend an equal percent of their time on the computer on the Internet. However, men spend more time on the computer than do women.

Those between the ages of 18 and 25 spend the greatest amount (50%) of time on the computer on the Internet.

There are some surprising results in terms of Internet usage compared with computer usage in terms of education and income groups.

- While those with lower levels of educational achievement spend less time on the computer (on average 22 hours per week), those with some college education spend the greatest percentage (33%) of their time on the computer on the Internet.
- Similarly, while those with lower income levels spend less time on the computer – those with low / extremely low income levels spend an average of 10 hours per week on the computer – they spend the greatest amount (46%) of their time on the computer on the Internet.

While no differences were found in the amount of time spent on the computer between computer users of different ethnic backgrounds, ethnic minorities who are not African or Asian-American spend a significantly greater amount of their time on the computer on the Internet.

FIGURE 34: DIFFERENCES IN AMOUNT OF TIME SPENT ON THE INTERNET BY DEMOGRAPHIC SEGMENTS
(BASE: Internet Users)

	Percent of Time Spent on Internet (Median)
Overall Average	28
Gender	
Male	29
Female	28
Age	
18 to 25	**50**
26 to 35	29
36 to 50	21
51 to 64	29
65 and Older	31
Education	
High School or Less	20
Some College	**33**
College Graduate	25
Post Graduate Work / Degree	29
Income	
Low / Extremely Low	**46**
Moderate	28
Middle	33
Upper Middle	23
Upper / Higher Upper	28
Ethnicity	
Caucasian	28
African-American	24
Asian-American	29
Other	**40**

The Relationship Between Access to Computers and Internet on Internet Usage

These segments are clearly differentiated by location of access to a computer and/or the Internet.

- Those who have a computer at home spend three times as much time on the computer using the Internet than do those who do not have access to a computer at home – 30 percent compared with 10 percent, respectively. Note those who have a computer at home spend three times as much time on the computer, as do those who do not. Therefore, home access to a computer increases the time spent computing – from 9 to 28 hours. Moreover, the amount of computing time spent on the Internet increases – from approximately one hour to more than eight hours.
- Similarly, those who have Internet access at home spend three times as much of the time on the computer using the Internet as do those who can only access the Internet outside the home – 30 percent compared with 10 percent, respectively.
- Similarly, those who access the Internet at work also spend a greater percent of their computer time using the Internet than do those who do not access the Internet at work – 22 percent compared with 9 percent, respectively.

FIGURE 35: DIFFERENCES IN AMOUNT OF TIME SPENT ON THE INTERNET BY ACCESS TO COMPUTERS AND INTERNET
(BASE: Internet Users)

	Percent of Time Spent on Internet (Median)
Overall Average	28
Have Computer at Home	
Yes	30
No	10
Have Internet Access at Home	
Internet Access at Home	30
Internet Access Outside Home Only	10
Use Internet at Work	
Yes	22
No	9

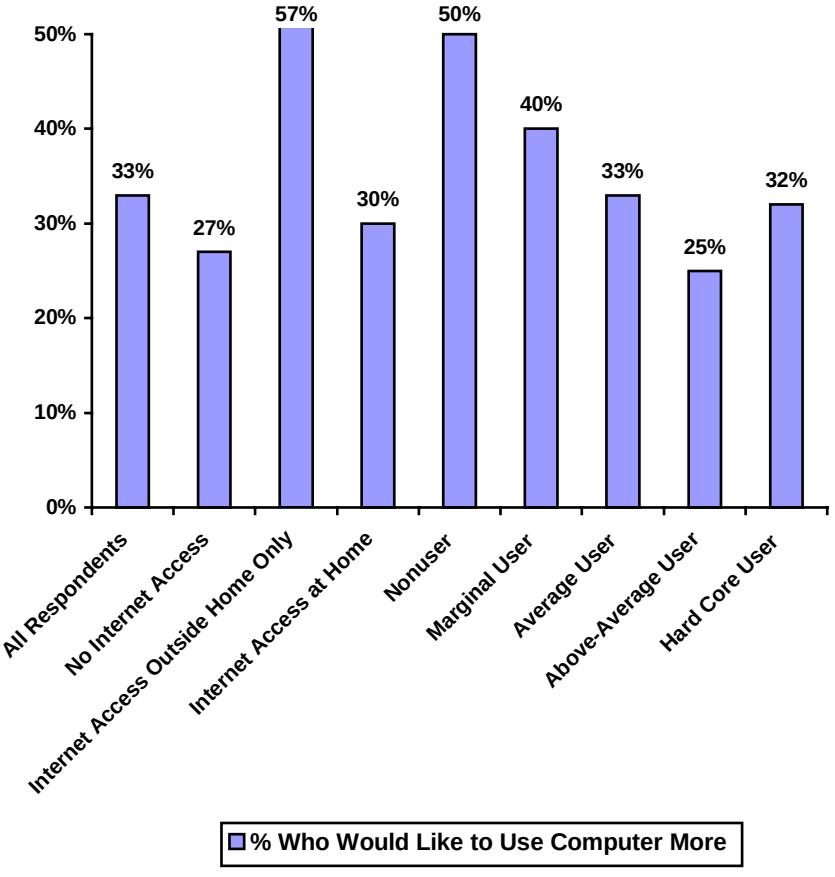
Satisfaction with the Amount of Time Spent Using the Internet

One-third (33%) of all survey respondents would like to use the Internet more.

- Those who have limited access to the Internet – that is, outside the home only – are more likely than those with no Internet access and those with access at home to say they would like to use the Internet more. This is the same as computer usage, which found that those with limited access to computer were the most likely to want to use a computer more.
- Those who currently do not use the Internet or who use it infrequently – that is, are Marginal Users – are the most likely to want to use the Internet more. As with computer use, Marginal Users are interested in increasing use of the Internet. However, where non-computer users were not highly interested in increasing their use of computers, nonusers of the Internet (i.e., they have access to a computer but do not use the Internet) are the most likely to want to increase their use of the Internet. While a relatively small segment, this is important.

One-third (33%) of all survey respondents would like to use the Internet more.

FIGURE 36: CHARACTERISTICS OF THOSE WHO WOULD LIKE TO USE THE INTERNET MORE
(BASE: All Respondents)



Characteristics of Those Who Want to Use the Internet More

The previous analysis identified two groups – Nonusers and Marginal Users – who would like to use the Internet more. Additional analysis was completed to gain a better understanding as to which Marginal Users are most interested in using the computer more. Because of small cell sizes, the Marginal and Nonusers were combined for this analysis.

Unlike computer usage, few characteristics distinguish those who would like to use the computer more. Adjusting for other demographic factors, the presence of children in the household is the only statistically significant characteristic that this survey identified that clearly distinguishes those Marginal and Nonusers who would like to use the Internet more.

- Marginal and Nonusers of the Internet with children living at home are nearly twice as likely as those with no children to say they would like to use the Internet more – 61 percent compared with 34 percent, respectively.

FIGURE 37: DEMOGRAPHIC CHARACTERISTICS OF NONUSERS AND MARGINAL USERS WHO WOULD LIKE TO USE INTERNET MORE
(BASE: Non- and Marginal Internet Users)

	% of Nonusers / Marginal Users Who Would Like to Use Internet More
Overall	42
Gender	
Male	36
Female	47
Age	
18 to 25	53
26 to 35	63
36 to 50	61
51 to 64	47
65 and Older	67
Education	
High School or Less	52
Some College	38
College Graduate	46
Post Graduate Work / Degree	38
Ethnicity	
White	55
African-American	39
Asian-American	40
Other	46
Children in Household	
No	34
Yes	**61**

Types of Computer or Internet Tasks

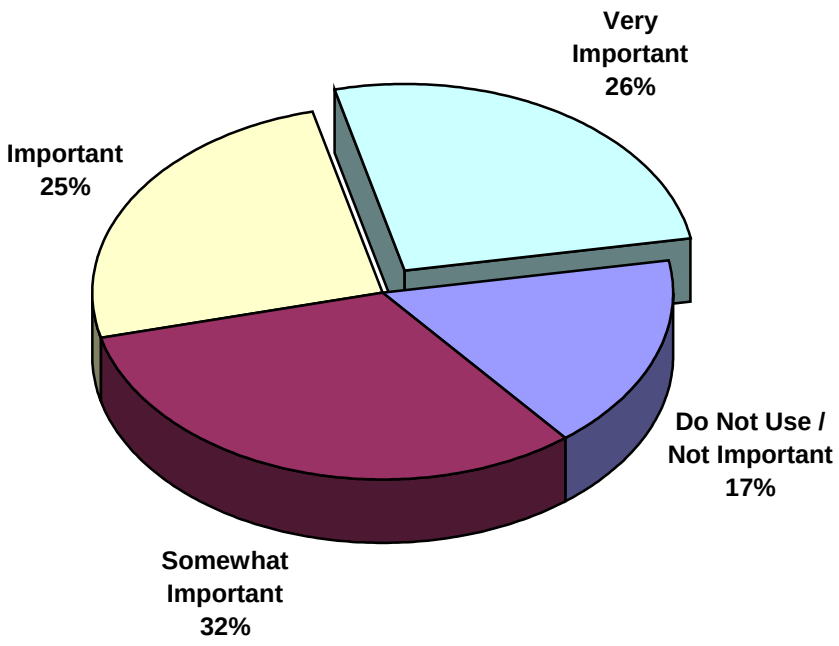
Respondents who use a computer were asked to rate a series of tasks one performs on a computer as to their importance on a five point scale where '1' meant 'not at all important' and '5' meant 'very important'. In addition, they indicated which of the tasks they do not perform on the computer.

Virtually all (99%) computer users use the computer for at least some of the tasks listed. More than half (54%) uses the computer for all of the 18 tasks listed. On average, computer users use their computer to complete 16 of the 18 tasks listed.

- More than one out of four (26%) computer users say the computer is very important for them to complete routine tasks – saying the computer is important for eight or more tasks. An additional 25 percent say the computer is important – saying the computer is important for five to seven distinct tasks.

FIGURE 38: IMPORTANCE OF COMPUTER FOR ROUTINE TASKS
(BASE: Have Access to Computer at Home or at Other Locations)

More than half (51%)of those with computer access say that the computer is "important" for daily tasks, with 26 percent saying the computer is "very important" for daily tasks.



Respondents are most likely to use the computer for personal communications (97%), researching about hobbies or personal interest (96%), gathering information about products or services (95%), finding news about travel or travel arrangements (94%), learning about current events (93%), getting health or medical information (92%), and/or doing work-related tasks (92%). Respondents are least likely to use the computer for participating in chat rooms (71%), starting or maintaining a business (75%), or contacting elected officials (79%).

- The computer is seen as an important communication medium with 97 percent using the computer for e-mail or instant messaging. Moreover, this is rated as the most important task performed on the computer.
- Other important uses include doing work-related tasks, research for hobbies or other personal interests, education, information regarding travel or travel arrangements, learning about current events, and managing finances. Note this last task is used less often than other important tasks; however, among users it is rated as a relatively important task.
- Participation in chat rooms is the least important of the tasks listed. It is also the least used task. Other tasks that are used by fewer respondents are also relatively unimportant. Surprisingly, among those who did use the computer to start or maintain a business, this is rated as a relatively unimportant task.

FIGURE 39: IMPORTANCE OF COMPUTERS FOR PERFORMING SPECIFIC TASKS (BASE: Have Access To Computer)

Task	Mean Rating	% Very Important	% Do Not Use
E-mail or instant messaging	4.13	53%	3%
Do work-related tasks	3.97	53	8
Research or gather information about hobbies or other personal interests	3.55	29	4
Educational purposes or homework for school	3.38	29	15
Find news about travel or make travel arrangements	3.31	24	6
Gather information about products or services you might wish to purchase	3.28	21	5
Learn about current events	3.17	22	7
Manage finances	2.70	17	15
Get health or medical information	2.63	12	8
Search for jobs	2.59	14	19
Purchase products or services	2.57	11	13
Create graphics or view and edit photos	2.55	13	14
Start or maintain your own business	2.50	19	25
Entertainment or sports	2.36	7	11
Participate in community or political activities	2.06	5	18
Contact elected officials	2.05	7	21
Play games	2.03	7	17
Participate in chat rooms	1.37	2	29

A factor analysis was conducted to determine what major dimensions of computer tasks respondents feel are important. Factor analysis is a statistical method for reducing data based on the correlations between individual variables and a broader dimension. This analysis shows that respondents use the computer for five (5) primary types of tasks: research, personal business, work, civic involvement, and entertainment. The following table illustrates the variables contained in each of these dimensions and the extent to which the individual variables correlate to the overall dimension.

FIGURE 40: FACTOR ANALYSIS TO IDENTIFY CATEGORIES OF TASKS (BASE: Have Access to Computer)

	Research	Personal	Work	Civic	Entertainment
Learn about current events	.660				
Learn about current events	.660				
Research / gather information about hobbies or other personal interests	.641				
Research / gather information about hobbies or other personal interests	.641				
Get health or medical information	.595				
Get health or medical information	.595				
Search for jobs	.477				
Search for jobs	.477				
Personal communication like e-mail or instant messaging		.747			
Personal communication like e-mail or instant messaging		.747			
Find news about travel or make travel arrangements		.571			
Find news about travel or make travel arrangements		.571			
Manage finances		.566			
Manage finances		.566			
Purchase products or services		.564			
Purchase products or services		.564			
Gather information about products / services to purchase		.555			
Gather information about products / services to purchase		.555			
Start / maintain your own business			.724		
Start / maintain your own business			.724		
Do work-related tasks			.679		
Do work-related tasks			.679		
Education / homework for school			.585		
Education / homework for school			.585		
Create graphics / view / edit photos			.371		
Create graphics / view / edit photos			.371		
Contact elected officials				.800	
Contact elected officials				.800	
Participate in community / political activities				.751	
Participate in community / political activities				.751	
Playing games					.716
Playing games					.716
Participate in chat rooms					.693
Participate in chat rooms					.693
Entertainment or sports					.537
Entertainment or sports					.537

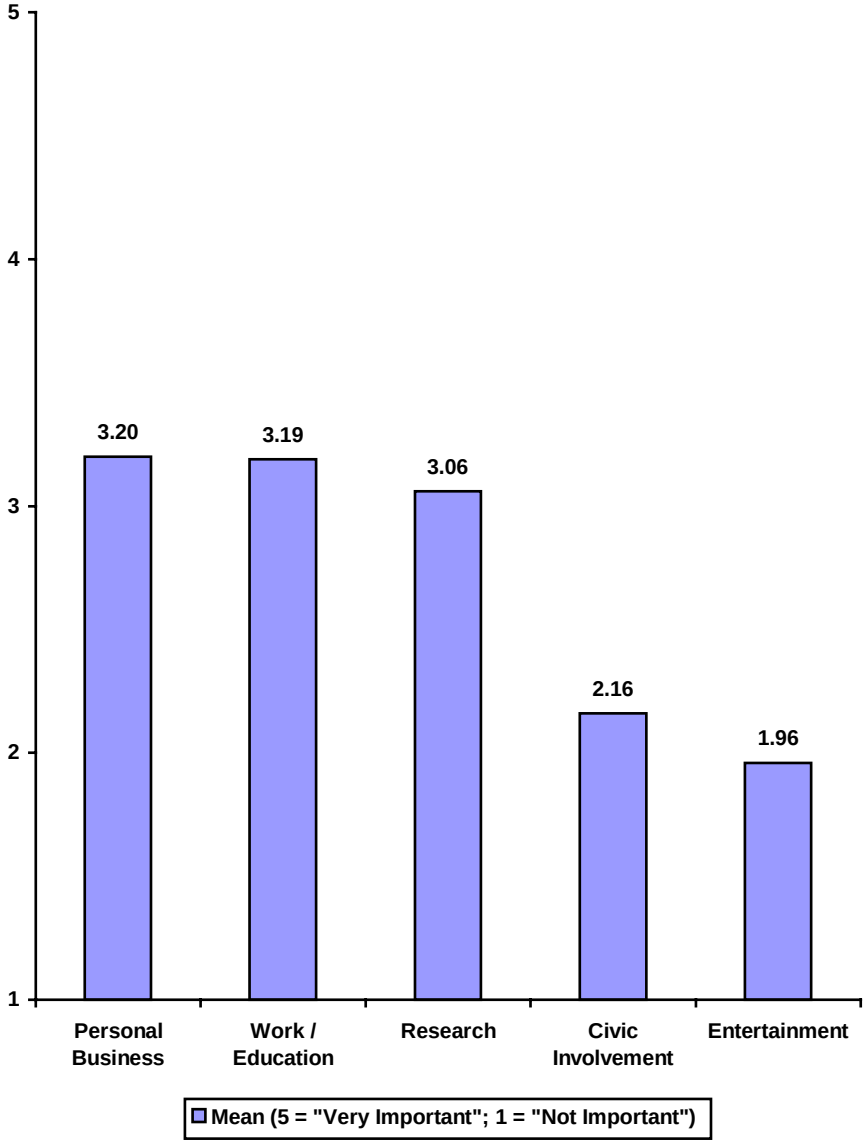
A variable was created to represent each of these dimensions. This variable measures the importance of the set of related tasks. As with the individual variables, the scale is a 5-point scale where "1" means "not at all important" and "5" means "very important."

Respondents place nearly equal importance on using the computer for personal business and work or education related activities. Also, the computer is seen as a relatively important source for research.

- Those between the ages of 26 and 35 place significantly higher importance on using the computer for personal business than do other age groups. Also, those with higher household incomes and/or higher levels of education are more likely to say the computer is important for conducting personal business.
- Those respondents between the ages of 18 and 50 are more likely than older respondents to say the computer is important for work or education-related tasks. Those with college educations are more likely than less-educated respondents to say the computer is important for work or education-related tasks. Not surprisingly, those households with children are more likely to say the computer is important for work / education purposes. Finally, African-American respondents with access to a computer place greater importance on using the computer for work or education tasks than do Caucasians.
- Women rate the computer as more important for research than do men. Younger respondents, notably those between the ages of 26 and 35, are more likely to say the computer is important for research than older respondents (notably those 65 and older). Again, African-Americans are more likely than Caucasians to say the computer is important for research.
- While relatively unimportant, use of the computer for civic participation is more important to some segments. Notably, women are more likely than men to say that the computer is important for civic involvement activities.
- Similarly, use of the computer for fun or entertainment is relatively unimportant. However, it is more important to some segments, notably men, those between the ages of 18 and 24, those with high school educations or less, and African-Americans. Surprisingly, there is no relationship between the importance of a computer for fun or entertainment and the presence of children in the household.

FIGURE 41: IMPORTANCE OF MAJOR COMPUTER TASKS
(BASE: Have Access to Computer at Home or at Other Locations)

The computer is most important for conducting personal business and/or for performing work or school-related tasks.



Section 4

Comfort and Fluency with Information Technology

Comfort with Computers

Overall Comfort

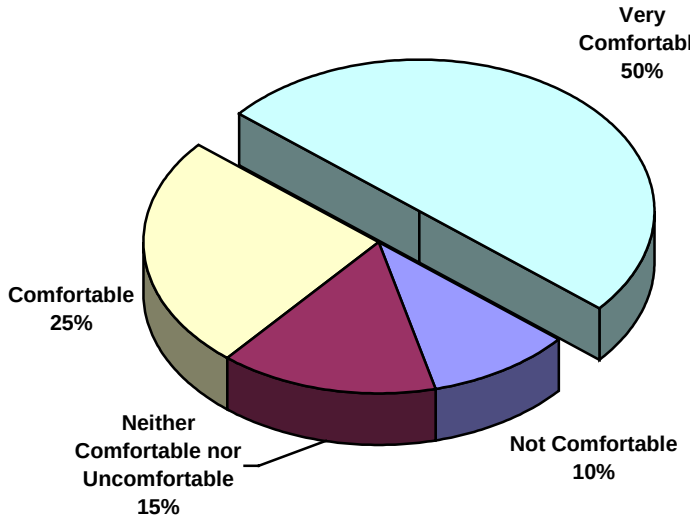
Respondents who have used a computer in the past were asked to rate their comfort level with using a computer on a 1 to 5 scale where "1" means "not at all comfortable" and "5"' means "very comfortable."

Overall, residents indicate a high level of comfort with using a computer. Half (50%) of all respondents who have used a computer in the past indicate they are very comfortable using a computer. An additional 25 percent said they are comfortable.

- Mean comfort using the computer is 4.10 on a five-point scale where "5" means "very comfortable."

FIGURE 42: OVERALL COMFORT WITH COMPUTERS
(BASE: Computer Users)

The majority (75%) of computer users in Seattle are comfortable using a computer.



The Divide in Overall Comfort with Computers

There are differences in comfort levels with using a computer among different demographic groups.

Unlike overall computer use, there is no relationship between average comfort with a computer and gender.

- However, a greater number of male computer users than female users say they are "very comfortable" using a computer – 54 percent compared with 45 percent, respectively.

Younger computer users are significantly more comfortable using a computer than are older users.

- Over half (57%) of those between the ages of 18 and 35 are very comfortable using a computer compared with only 24 percent of those 65 and older. One out of four (23%) of those 65 and older say they are not comfortable using a computer.

More educated computer users are more comfortable ~~with~~ using the computer than are those ~~with~~ who have attended high school or have some college education~~s~~. Those who have a high school education or less are the least comfortable using a computer.

- Over half (54%) of those with college educations are very comfortable using a computer compared with 37 percent of those with high school educations. On the other hand, 16 percent of those with high school educations or less are uncomfortable with computers while another 24 percent say they are neither comfortable nor uncomfortable.

Hispanics are less comfortable using a computer than are the other ethnic groups.

- Only one out of four (25%) of those interviewed of Hispanic origin are very comfortable using a computer. More than one out of three (36%) say they are neither comfortable nor uncomfortable or that they are uncomfortable using a computer.

FIGURE 43: COMFORT WITH USING THE COMPUTER BY DEMOGRAPHICS
(BASE: Computer Users)

	Mean Comfort Using a Computer	% Very Comfortable
Overall	4.10	50%
Gender		
Male	4.16	54
Female	4.05	45
Age		
18 to 25	4.37	53
26 to 35	4.33	59
36 to 50	4.12	51
51 to 64	3.89	44
65 and Older	3.47	24
Education		
High School or Less	3.69	37
Some College	4.07	46
College Graduate	4.23	55
Post Graduate Work / Degree	4.20	53
Ethnicity		
White	4.11	51
African-American	4.25	56
Asian-American	4.21	49
Hispanic	3.71	25
Other	4.14	47

Comfort with using the computer is also related to computer access and the number of hours spent on a computer.

Those with access to a computer at home are more comfortable with computers than are those with more limited access – i.e., outside the home.

- Over half (53%) of those with access to a computer at home say they are "very comfortable" using a computer compared with only 32 percent of those without access at home.

Similarly, those who use a computer at work are more likely than those who do not to be comfortable with computers.

- Twice as many respondents who use a computer at work say they are "very comfortable" using a computer than those who do not use a computer at work – 61 percent compared with 32 percent, respectively.
- Those that use a computer at work are even more comfortable than those who have a computer at home to be comfortable with a computer, suggesting that the additional training received at work greatly enhances computer literacy. Nearly two-thirds (64%) of those who use a computer at both work and home say they are "very comfortable" with using a computer compared with 34 percent who use a computer at home only.

Finally, those spending more hours on the computer – notably those spending more than 28 hours per week on the computer are the most comfortable. Note those spending the most hours on the computer are more likely to have access to a computer at home and/or use a computer at work.

- Three out of four (73%) Hard Core Users (i.e., use computers more than 56 hoursper week) are "very comfortable with computers. Two-thirds of those classified as Above-Average Users (i.e., use computers 29 to 56 hours per week) are "very comfortable" with computers. On the other hand, 45 percent of Average Users (those using computers between 8 and 28 hours per week) are "very comfortable"; 21 percent of Marginal Users (those using computers up to 7 hours per week) are "very comfortable"; and only 14 percent of Nonusers are "very comfortable."

FIGURE 44: COMFORT WITH USING THE COMPUTER BY COMPUTER ACCESS & USE
(BASE: Computer Users)

	Mean Comfort Using a Computer	% Very Comfortable
Overall	4.10	50%
Have Computer at Home		
Yes	4.23	53
No	3.47	32
Use Computer at Work		
Yes	4.38	61
No	3.67	32
Hours Spent Using Computer		
Nonuser	2.88	14
Marginal User	3.49	21
Average User	4.15	45
Above-Average User	4.57	67
Hard Core User	4.59	73

Comfort with Using Computer Applications

Respondents who have used a computer in the past were asked to gauge their comfort level with ten computing tasks, using a five-point scale where "1" means "not at all comfortable" and "5" means "very comfortable." Factor analysis was used to distinguish between those tasks that might be considered "basic" computing tasks and those that might be considered to be more complex. The factor analysis identified two dimensions of tasks – those that are basic tasks and those that are more advanced.

- **Basic Tasks** include basic computer navigation – i.e., opening and closing files and/or using a mouse – and use of a word processing program.
- **Advanced Tasks** include being able to modify a computer – i.e., changing / adding peripherals, setting up a computer, installing software – graphics design tasks – i.e., scanning / editing images and creating a flyer – and surprisingly, use of a spreadsheet.

FIGURE 45: FACTOR ANALYSIS DEFINING MAJOR CATEGORIES OF COMPUTER TASKS
(BASE: Computer Users)

Task	Correlation* With Factor
Basic Tasks	
Navigating with a mouse	.849
Opening a saved file	.846
Saving a file	.842
Typing, editing, printing w/ word processor	.756
Advanced Tasks	
Changing / adding a peripheral	.794
Installing software	.768
Scanning / editing images	.737
Creating a flyer	.729
Setting up a computer	.726
Creating a budget using a spreadsheet	.642

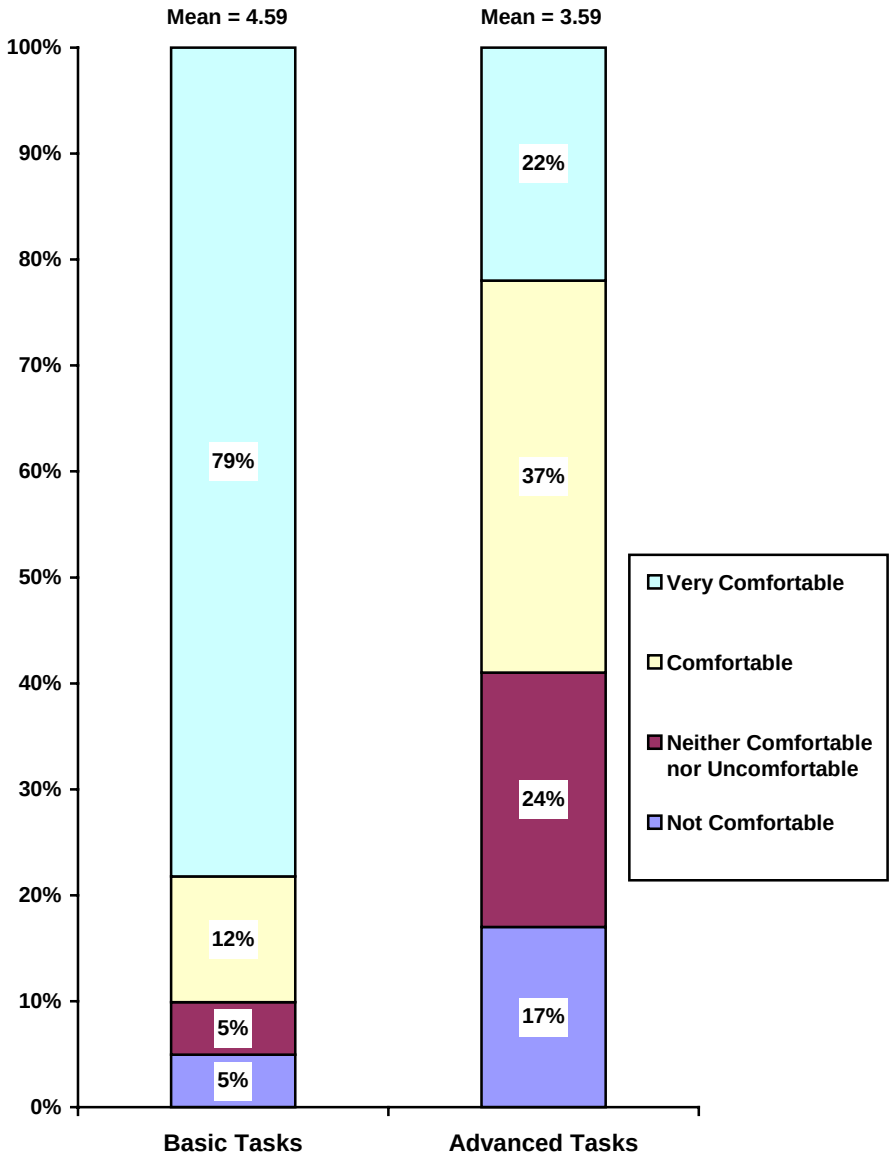
Scores are correlations (ranging from –1 to +1 and indicate the extent to which the individual tasks correlate with the broader category.

A variable was created to indicate comfort levels with each of these major tasks.

Significantly more respondents are "very comfortable" with the basic computing tasks that are "very comfortable" with the more advanced tasks – 79 percent compared with 22 percent, respectively.

FIGURE 46: COMFORT WITH DIFFERENT COMPUTING TASKS
(BASE: Computer Users)

Significantly more respondents are "very comfortable" with the basic computing tasks that are "very comfortable" with the more advanced tasks.



The Divide in Overall Comfort with Using Computer Applications

Men and women are equally comfortable with using computers for basic tasks. On the other hand, men are more comfortable with the more advanced tasks than are women.

- Twenty-eight percent (28%) of men say they are "very comfortable" with advanced computing tasks compared with 16 percent of women.

Consistent with overall comfort with computers, younger respondents are more likely to say they are comfortable with both basic and advanced computing tasks.

- More than four (81%) out of five computer users between 18 and 50 are very comfortable with basic computing tasks.
- Those 65 and older are the least comfortable with basic computing tasks with only 68 percent saying they are "very comfortable."
- Those between the ages of 26 and 35 are the most comfortable with the more advanced computing tasks. Thirty-four percent of those between the ages of 26 and 35 are "very comfortable" with the more advanced computing tasks for an overall mean score of 3.82 on a five-point scale where "5" means "very comfortable."

Those with more education are more likely to be comfortable with both basic and advanced computing tasks.

- In general, those with college educations are more comfortable than those who have not graduated from college to be comfortable with the basic computing tasks. Four out of five (82%) of those with college educations are very comfortable with the basic computing tasks; 28 percent of those with college educations are very comfortable with the more advanced tasks.

Caucasians and, to a lesser extent, Asian-Americans are more likely than African-Americans and Hispanics to say they are comfortable with basic computing tasks. Hispanics are the least comfortable with using the computer for advanced computing tasks.

- African-Americans and Hispanics less likely than other ethnic groups to say they are "very comfortable" using the computer for the basic computing tasks. Only 57 percent of African-Americans and 63 percent of Hispanics surveyed said they are very comfortable using the computer for basic tasks compared with 78 percent of Caucasians and 74 percent of Asian-Americans.
- Only 4 percent of the Hispanics surveyed who have used a computer are very comfortable using the computer for the more advanced tasks compared with 26 percent of Caucasians, 21 percent of African Americans, and 19 percent of Asian-Americans.

FIGURE 47: COMFORT WITH COMPUTER TASKS BY DEMOGRAPHICS
(BASE: Computer Users)

	Mean Comfort With Basic Tasks	% Very Comfortable w/ Basic Tasks	Mean Comfort With Advanced Tasks	% Very Comfortable w/ Advanced Tasks
Overall	4.59	77%	3.59	22
Gender				
Male	4.57	75	3.72	28
Female	4.61	81	3.45	16
Age				
18 to 25	4.75	82	3.76	24
26 to 35	4.75	83	3.82	34
36 to 50	4.58	81	3.55	24
51 to 64	4.52	71	3.49	20
65 and Older	4.30	68	3.27	2
Education				
High School or Less	4.46	73	3.56	15
Some College	4.41	71	3.44	17
College Graduate	4.73	83	3.68	27
Post Graduate Work / Degree	4.72	82	3.66	29
Ethnicity				
White	4.60	78	3.64	26
African-American	4.40	57	3.36	21
Asian-American	4.60	74	3.58	19
Hispanic	4.40	63	3.02	4
Other	4.55	84	3.67	39

Comfort with computer tasks is also related to access to computers and the amount of time spent on the computer.

Those with access to computers at home are more comfortable using a computer for basic and advanced tasks than are those that have more limited access to a computer.

- Four out of five computer users with access to a computer at home say they are very comfortable with basic computing tasks compared with 72 percent of those without home access.
- More pronounced is the distinction between those with access at home in terms of comfort with advanced tasks. Seven times as many computer users with a computer at home say they are very comfortable with the more advanced computing tasks than those with more limited access – 28 percent compared with 4 percent, respectively.

Those who use a computer at work also are more comfortable with computing tasks than are those who do not use a computer at work.

- Nearly all (86%) computer users who use a computer at work are very comfortable with the basic computer tasks compared with 60 percent of those who do not use a computer at work.
- Three times as many users who use a computer at work say they are very comfortable with the advanced tasks – 33 percent compared with 11 percent, respectively.

Finally, comfort with a computer is related to the number of hours spent using a computer.

- Those that use a computer more often – at least 7 hours per week – are more comfortable than Nonusers or Marginal Users with completing basic tasks.
- Those that use a computer more than average – more than 28 hours per week – are more comfortable than less frequent computer users with completing the more advanced tasks.

FIGURE 48: COMFORT WITH COMPUTING TASKS BY COMPUTER ACCESS AND USE
(BASE: Computer Users)

	Mean Comfort With Basic Tasks	% Very Comfortable w/ Basic Tasks	Mean Comfort With Advanced Tasks	% Very Comfortable w/ Advanced Tasks
Overall	4.59	77%	3.59	22
Have Computer at Home				
Yes	4.65	80	3.67	28
No	4.39	72	3.30	4
Use Computer at Work				
Yes	4.78	86	3.80	33
No	4.19	60	3.16	11
Hours Spent Using Computer				
Nonuser	3.83	55	2.92	2
Marginal User	4.21	55	2.84	5
Average User	4.63	77	3.49	18
Above-Average User	4.86	87	3.89	34
Hard Core User	4.87	91	4.16	46

Comfort with the Internet

Overall Comfort

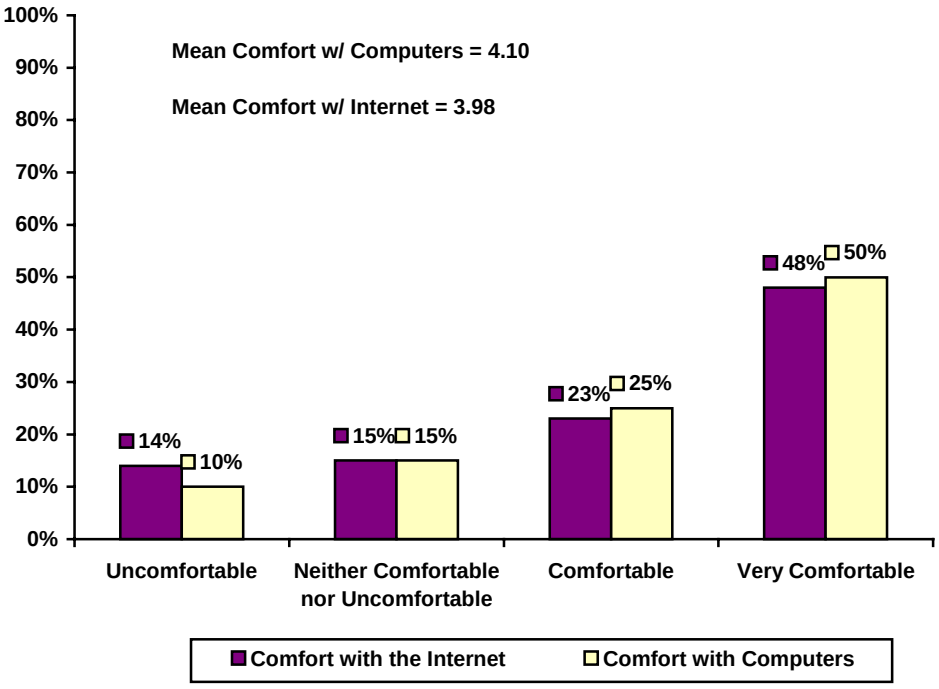
Respondents with Internet access at home and/or other locations were asked to rate their comfort level with using the Internet on the same 5-point scale, where "5" means "very comfortable and "1" means "not at all comfortable."

While respondents are generally comfortable using the Internet, they are more comfortable using the computer than the Internet.

- Overall, almost half (48%) of all respondents with Internet access at home and/or other locations indicate they are very comfortable using the Internet.
- Whereas 75 percent of those surveyed are comfortable using a computer, only 71 percent are comfortable using the Internet. Fourteen percent of those surveyed are uncomfortable using the Internet compared with only 10 percent uncomfortable using the computer. This equates to a mean comfort score of 4.10 on a computer and 3.98 on the Internet. A paired comparison of means shows that this difference is statistically significant – that is, the same person is less comfortable using the Internet than the computer.
- There is a strong correlation (p = .771) between comfort with a computer and comfort with the Internet. For example, 83 percent of those who said they are very comfortable using a computer also say they are very comfortable using the Internet. On the other hand, 84 percent of those who said they were not comfortable using a computer also said they are not comfortable using the Internet.

FIGURE 49: COMFORT WITH COMPUTERS AND THE INTERNET
(BASE: Have Internet Access at Home and/or Other Locations)

While respondents are generally comfortable using the Internet, they are somewhat more comfortable using the computer than the Internet.



The Divide in Overall Comfort with the Internet

Women are less comfortable using the Internet than are men.

- Where over half (53%) of men are very comfortable using the Internet, only 42 percent of women are that comfortable. One out of three (32%) women say they are neither comfortable nor uncomfortable using the Internet (16%) or are uncomfortable using the Internet (16%) compared with 26 percent of the men surveyed.

In general, comfort with the Internet is highest among younger respondents and lowest among the older respondents.

- Those between the ages of 26 and 35 are the most comfortable with the Internet – mean score of 4.41.
- Those 65 and older are the least comfortable – mean score of 2.93. Only 16 percent of those 65 and older say they are very comfortable with the Internet, while 41 percent say they are uncomfortable using the Internet.

Comfort with the Internet also increases with education.

- Those who have graduated from college have the highest comfort with using the Internet, with a mean score of 4.14 where "5" means "very comfortable." Those who have graduated from high school or less are the least comfortable – mean score of 3.43. Twenty-seven percent (27%) of those with a high school education or less say they are uncomfortable using the Internet.

Finally, there is a relationship between comfort with the Internet and race.

- Asian-Americans are clearly the most comfortable using the Internet – mean score of 4.12, with over half (51%) saying they are very comfortable.
- Caucasians are also generally comfortable with nearly half (49%) saying they are very comfortable.
- African-Americans are less comfortable using the Internet – mean score of 3.64, with only two out of five (42%) saying they are very comfortable. One out of five (21%) of African Americans say they are uncomfortable using the Internet; an additional 22 percent say they are neither comfortable nor uncomfortable. African-American women are the least comfortable – 28 percent of African-American women saying they are not comfortable with the Internet compared with 16 percent of African-American men.
- Hispanics are the least comfortable using the Internet with only 25 percent saying they are very comfortable.

FIGURE 50: COMFORT WITH USING THE INTERNET BY DEMOGRAPHICS
(BASE: Internet Users)

	Mean Comfort Using the Internet	% Very Comfortable
Overall	3.98	48%
Gender		
Male	4.10	53
Female	3.84	42
Age		
18 to 25	4.27	54
26 to 35	4.41	64
36 to 50	3.95	46
51 to 64	3.75	42
65 and Older	2.93	16
Education		
High School or Less	3.43	36
Some College	3.89	43
College Graduate	4.13	54
Post Graduate Work / Degree	4.14	51
Ethnicity		
White	3.99	49
African-American	3.64	42
Asian-American	4.12	51
Hispanic	3.65	25
Other	3.99	40

Comfort with using the Internet is also related to access to a computer and/or the Internet and the number of hours spent on a computer and, to a lesser extent, time spent on the Internet.

Those with access to a computer at home are more likely than those without access to a computer at home to be very comfortable using the Internet – 52 percent compared with 27 percent very comfortable, respectively.

- More notable, however, is the impact on access to the Internet at home on comfort with the Internet. Whereas mean comfort with the Internet increases from 3.19 for those with no home access to a computer to 4.13 for those with home access – or a 29 percent increase in overall comfort – comfort with the Internet increases from 3.15 for those with no home access to the Internet to 4.20 for those with home access to the Internet – or a 33 percent increase.

Use of the Internet at work also has an impact on comfort using the Internet. Nearly twice as many respondents who use the Internet at work than those who do not say they are very comfortable with the Internet – 64 percent compared with 35 percent, respectively.

Finally, the amount of time spent on the computer is related to comfort with the Internet.

- Whereas 73 percent of Hard Core computer users and 64 percent of Above-Average computer users are very comfortable using the Internet, only 16 percent of Nonusers and 24 percent of Marginal computer uses have similar comfort levels.

Surprisingly, time spent on the Internet has a somewhat lesser impact on comfort.

- Marginal users of the Internet are almost equally comfortable with using the Internet as are those who spend a greater proportion of their time on the Internet. Only Nonusers of the Internet express a significant lack of comfort using the Internet.

FIGURE 51: COMFORT WITH THE INTERNET BY COMPUTER / INTERNET ACCESS AND USE
(BASE: Internet Users)

	Mean Comfort Using the Internet	% Very Comfortable
Overall	3.98	48%
Have Computer at Home		
Yes	4.13	52
No	3.19	27
Have Internet at Home		
Yes	4.20	53
No	3.15	28
Use Internet at Work		
Yes	4.49	64
No	3.46	35
Hours Spent Using Computer		
Nonuser	2.83	16
Marginal User	3.38	24
Average User	4.03	42
Above-Average User	4.42	64
Hard Core User	4.56	73
Proportion of Time on Computer on Internet		
Nonuser	2.72	17
Marginal User	4.05	47
Average User	4.30	56
Above-Average User	4.35	56
Hard Core User	4.20	53

Comfort with Using Internet Applications

Respondents who have used a computer in the past or have Internet access at home were asked to gauge their comfort level with eight Internet-related tasks, using a five-point scale where "1" means "not at all comfortable" and "5" means "very comfortable." Factor analysis was used to distinguish between those tasks that might be considered "basic" Internet tasks and those that might be considered to be more complex. The factor analysis identified two dimensions of tasks – those that are basic tasks and those that are more advanced.

- **Basic Tasks** include completing e-mail tasks – creating / sending / replying to e-mail messages and sending / opening attachments to e-mail – finding / retrieving information on the web, and downloading files from the Internet.
- **Advanced Tasks** include creating a web site, setting up a new Internet connection, and handling distribution lists.

FIGURE 52: MAJOR TYPES OF INTERNET TASKS
(BASE: Internet Users)

Tasks	Correlation* With Factor
Basic Tasks	
Replying to an e-mail message	.899
Creating / sending e-mail messages	.890
Sending / opening e-mail attachments	.764
Finding / retrieving information on web	.691
Downloading files from the Internet	.583
Advanced Tasks	
Creating a web site	.857
Setting up a new Internet connection	.791
Signing up / removing oneself from distribution list	.568

** Scores are correlations (ranging from –1 to +1 and indicate the extent to which the individual tasks correlate with the broader category.*

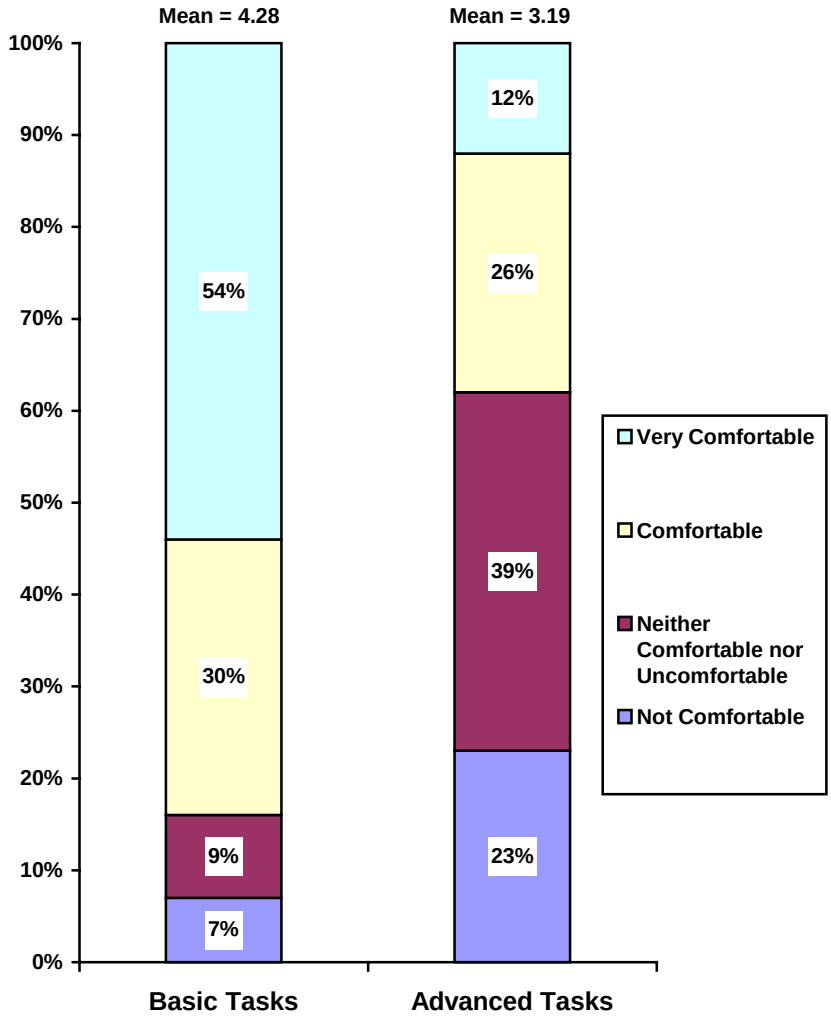
A variable was created to indicate comfort levels with each of these major tasks.

Significantly more respondents are very comfortable with the basic Internet tasks than are very comfortable with the more advanced Internet tasks. Over half (54%) of respondents who use the Internet are very comfortable with the basic Internet tasks compared with 12 percent of those who are very comfortable with the advanced tasks.

- In addition, respondents are more comfortable with the basic computing tasks than with basic Internet tasks. Four out of five (79%) respondents who use a computer are very comfortable with basic computing tasks. Only half (54%) are very comfortable with the basic Internet tasks.
- Similarly more respondents are very comfortable with the more advanced computing tasks than are very comfortable with the advanced Internet tasks – 22 percent compared with 12 percent, respectively. These findings are consistent with the overall higher level of comfort with the computer than the Internet.

FIGURE 53: COMFORT WITH DIFFERENT INTERNET TASKS
(BASE: Internet Users)

Significantly more respondents are "very comfortable" with the basic Internet tasks that are "very comfortable" with the more advanced tasks.



The Divide in Overall Comfort with Using Internet Applications

Men and women are equally comfortable with using the Internet for basic tasks. On the other hand, men are more comfortable with the more advanced tasks than are women. This distinction may explain why men indicated a higher level of overall comfort with the Internet than did women.

- Twice as many men say they are "very comfortable" with advanced computing tasks than do women – 16 percent compared with 7 percent, respectively. A nearly equal number of men and women say they are uncomfortable with completing the advanced Internet tasks – 23 percent compared with 24 percent, respectively.
- A greater number of women than men say they are neither comfortable nor uncomfortable with these advanced tasks – 45 percent compared with 33 percent, respectively.

Consistent with overall comfort with the Internet, those 65 and older are less comfortable with the specific tasks than younger respondents.

- Those between the ages of 26 and 35 are the most comfortable with the basic Internet tasks – 73 percent very comfortable.
- On the other hand, the youngest respondents – those between the ages of 18 and 25 – are the most comfortable with the more advanced tasks – 19 percent very comfortable.
- Only 20 percent of those 65 and older state that they are very comfortable with the basic Internet tasks. None said they were very comfortable with the advance Internet tasks.

Those with college educations are the most comfortable with both the basic and advanced Internet tasks.

As with computing tasks, Hispanics are less comfortable with the specific Internet tasks – notably the advanced Internet tasks.

FIGURE 54: COMFORT WITH INTERNET TASKS BY DEMOGRAPHICS
(BASE: Internet Users)

	Mean Comfort With Basic Tasks	% Very Comfortable w/ Basic Tasks	Mean Comfort With Advanced Tasks	% Very Comfortable w/ Advanced Tasks
Overall	4.28	54%	3.19	12%
Gender				
Male	4.30	57	3.31	16
Female	4.26	51	3.06	7
Age				
18 to 25	4.31	52	3.40	19
26 to 35	4.62	73	3.53	10
36 to 50	4.29	56	3.13	10
51 to 64	4.22	46	3.06	6
65 and Older	3.44	20	2.49	0
Education				
High School or Less	3.75	28	2.88	7
Some College	4.19	52	3.15	10
College Graduate	4.42	60	3.28	13
Post Graduate Work / Degree	4.47	63	3.28	14
Ethnicity				
White	4.32	57	3.20	12
African-American	4.12	40	2.99	5
Asian-American	4.14	48	3.15	11
Hispanic	3.93	42	2.60	5
Other	4.40	60	3.48	31

Comfort with Internet tasks is also related to access to computers and the Internet and the amount of time spent on the computer and Internet.

Those with access to computers and/or the Internet at home are more comfortable using the Internet for basic and advanced tasks than are those that have more limited access to a computer and/or the Internet.

Similarly, those who use the Internet at work also are more comfortable with both basic and advanced Internet tasks than are those who do not use the Internet at work.

- Having access to a computer at work appears to have the greatest impact on respondents comfort with the advanced Internet tasks. Use of the Internet at work increases comfort levels with basic tasks from 3.98 to 4.67 – a 17 percent increase in comfort level. Use of the Internet at work increased comfort levels with advanced tasks from 2.77 to 3.51 – a 27 percent increase in comfort level.

Comfort with Internet tasks is related to the number of hours spent using a computer.

- Those that use the computer more than average – i.e., more than 28 hours per week – are the most comfortable with the basic Internet tasks. Hard Core computer users – i.e., use the computer more than 56 hours per month – are the most comfortable with advanced Internet tasks.
- Those that use a computer more than average – more than 28 hours per week – are more comfortable than less frequent computer users with completing the more advanced tasks.

Finally comfort with Internet tasks is related to the proportion of time using the computer that is spent on the Internet.

- All users who spend an average or greater portion of time on the Internet are generally comfortable with the basic Internet tasks – achieving a mean score greater than the overall mean for these tasks. Interestingly those that are Hard Core Internet users are less comfortable with these basic tasks than are the Average and Above-Average Internet users.
- Similarly, those that spend an average or greater portion of their time on the Internet are also more comfortable with the advanced Internet tasks. In this case, Hard Core Internet users are equally comfortable with these tasks as are the Average and Above-Average Internet users.

FIGURE 55: COMFORT WITH INTERNET TASKS BY COMPUTER ACCESS AND USE
(BASE: Internet Users)

	Mean Comfort With Basic Tasks	% Very Comfortable w/ Basic Tasks	Mean Comfort With Advanced Tasks	% Very Comfortable w/ Advanced Tasks
Overall	4.28	54%	3.19	12%
Have Computer at Home				
Yes	4.42	60	3.27	13
No	3.64	28	2.78	4
Have Internet at Home				
Yes	4.45	62	3.30	14
No	3.67	29	2.76	3
Use Internet at Work				
Yes	4.67	72	3.51	18
No	3.98	41	2.77	7
Hours Spent Using Computer				
Nonuser	3.44	16	2.58	4
Marginal User	3.78	29	2.71	2
Average User	4.31	52	3.15	8
Above-Average User	4.66	73	3.43	12
Hard Core User	4.67	75	3.67	28
Proportion of Time on Computer on Internet				
Nonuser	3.60	18	2.76	6
Marginal User	4.32	50	3.08	8
Average User	4.54	67	3.34	12
Above-Average User	4.51	67	3.42	16
Hard Core User	4.37	56	3.35	16

Fluency with Information Technology

In 1999, the Computer Science and Telecommunications Board of the National Research Council commissioned a study to define the technology skills that citizens need to participate in the Information Age. This study found that in order to use technology effectively today and in the future, citizens must move beyond basic computer literacy and be able to acquire new skills independently after formal education is complete. "Fluency" refers to this ability to continually apply knowledge about technology to adapt to change and acquire more knowledge to effectively apply information technology to work and personal needs.[9] Fluency with information technology is a proxy for residents' ability to effectively participate in the information age, both today and in the future.

As a tool to measure fluency, respondents were asked to indicate the number of times they had (1) personally learned a new computer program or application in the past year, (2) helped someone else get started using computers or the Internet in the past year, and (3) helped someone learn a new computer program or application in the past year. Responses to these three questions give us an indication of residents' ability to apply knowledge of information technology in a new situation or to acquire a new technological skill. On average, respondents who use the computer had learned or helped others an average of five times (as measured by the median).

The majority of Seattle residents are showing a very high level of fluency by learning new programs and helping others an average of five times in the past year (as measured by the median).

- Sixteen percent (16%) of computer users had not personally learned a new program or application in the past year or assisted others.
- On the other hand, 27 percent of computer users had assisted others or personally learned something new 12 or more times.

[9] National Research Council: Computer Science and Telecommunications Board, *Being Fluent with Information Technology*, (Washington, D.C.: National Academy Press, 1999), 2.

A fluency variable was created to reflect overall fluency as follows:

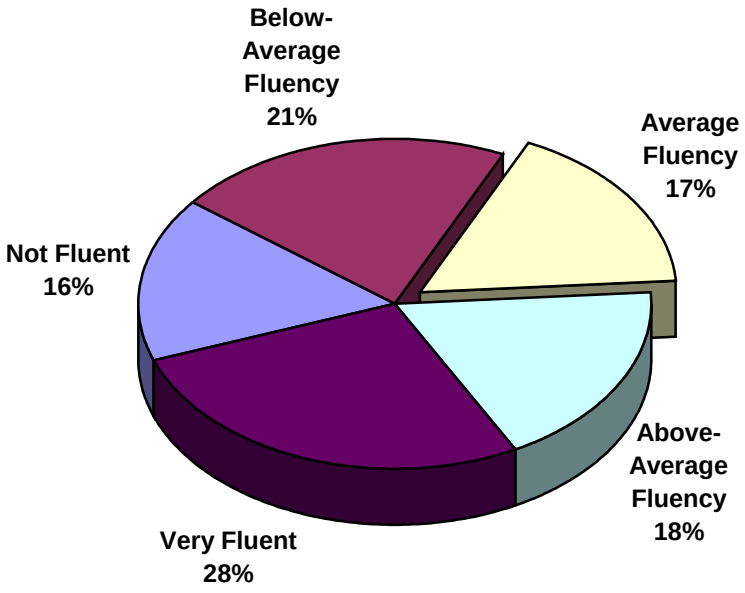
- **Not Fluent**: Did not personally learn a new program or application in the past year or assist others with computers / programs / applications.
- **Below-Average Fluency**: Assisted others or personally learned something one to three times in the past year.
- **Average-Fluency**: Assisted others or personally learned something on the computer four to six times in the past year.
- **Above-Average Fluency**: Assisted others or personally learned seven to 11 times in the past year.
- **Very Fluent**: Assisted or others or personally learned more than 11 times in the past year.

Almost two-thirds (63%) of computer users can be considered fluent on the computer. However, a significant number (37%) are not very literate.

- Those that are Very Fluent have personally learned a new program or application or helped others from as few as 12 times in the past year to nearly 300 times. The average (as measured by the median) is 23.
- Those that are Above-Average Fluency have learned or helped others an average of 8 times.
- Those that are Average Fluency have learned or helped others an average of 5 times, while those that are Below-Average Fluency have only learned or helped others an average of 2 times.

FIGURE 56: FLUENCY SEGMENTS
(BASE: Computer Users)

Almost two-thirds (63%) of computer users can be considered fluent on the computer. However, a significant number (37%) are not very literate.



The Divide in Fluency

While the average number of times men and women have helped others or learned something new is nearly the same, men are significantly more likely to be very fluent or above-average in fluency – 49 percent compared with 36 percent, respectively. On the other hand, more than two out of five (42%) women are not fluent or below-average in fluency.

Fluency increases with age with those between the ages of 18 and 25 being the most fluent.

- Three out of five (61%) of those between the ages of 18 and 25 are very or above-average fluency. On the other hand, those 65 and older are the least fluent. Also those between the ages of 51 and 64 have a lower-than average fluency level.

Those who have never attended college are the least fluent. Over half of those who have a high school education or less are not fluent or below average in fluency.

Similarly those with low / extremely low incomes are the least fluent. Nearly half (47%) of those with low / extremely low incomes are not fluent or below average in fluency. On other hand, all other income segments have average or greater fluency.

Interestingly, minority groups are more likely than Caucasians to have above-average computer fluency. This may suggest that given access to a computer, minorities make a greater effort to learn and help others.

FIGURE 57: DIFFERENCES IN FLUENCY BY DEMOGRAPHIC SEGMENTS
(BASE: Computer Users)

	Average Fluency (Median)	% Very / Above-Average Fluency	% Not / Below-Average Fluency
Overall Average	5	46%	37%
Gender			
Male	6	**49**	33
Female	5	36	**42**
Age			
18 to 25	9	61	24
26 to 35	6.5	50	32
36 to 50	6	48	36
51 to 64	5	40	**41**
65 and Older	1	11	**73**
Education			
High School or Less	3	37	**54**
Some College	6	**47**	33
College Graduate	6	**46**	34
Post Graduate Work / Degree	5	**45**	37
Income			
Low / Extremely Low	4	37	**47**
Moderate	6	**45**	39
Middle	6	**48**	36
Upper Middle	6	**47**	35
Upper / Higher Upper	6.5	**50**	20
Ethnicity			
Caucasian	5	43	**40**
African-American	7	**53**	28
Asian-American	7	**54**	33
Other	5	45	36

Computer fluency is strongly related to access to a computer and amount of time spent using the computer.

- Nearly (48%) half of those who have a computer at home are very fluent or above-average fluency. On the other hand, three out of five (60%) of those without access to a computer at home are not fluent or below average.
- This difference is even more evident between those who use a computer at work versus those who do not. Twice as many computer users who use a computer at work are very fluent or above-average fluency as those who do not – 55 percent compared with 28 percent, respectively. This would suggest that many computer users receive additional training in programs and applications at work. In addition, many may help others at work to learn new programs and applications.

Finally, the amount of time spent on the computer is highly correlated with fluency.

- Those that spend an above-average amount of time on the computer – more than 28 hours per week – have a higher than average level of fluency. Those that spend 7 or fewer ours per week on the computer have a relatively low level of fluency.

FIGURE 58: DIFFERENCES IN FLUENCY BY COMPUTER ACCESS AND USE
(BASE: Computer Users)

	Average Fluency (Median)	% Very / Above-Average Fluency	% Not / Below-Average Fluency
Overall Average	5	46%	37%
Have Computer at Home			
Yes	6	**48**	33
No	2	30	**60**
Use Computer at Work			
Yes	7	**55**	27
No	3	28	**56**
Amount of Time Using Computer			
Nonuser	.5	14	**80**
Marginal User	2	15	**62**
Average User	5	45	34
Above-Average User	9	**66**	19
Hard Core User	9	**64**	19

Section 5

Community Building

Extent of Participation

Number of Groups

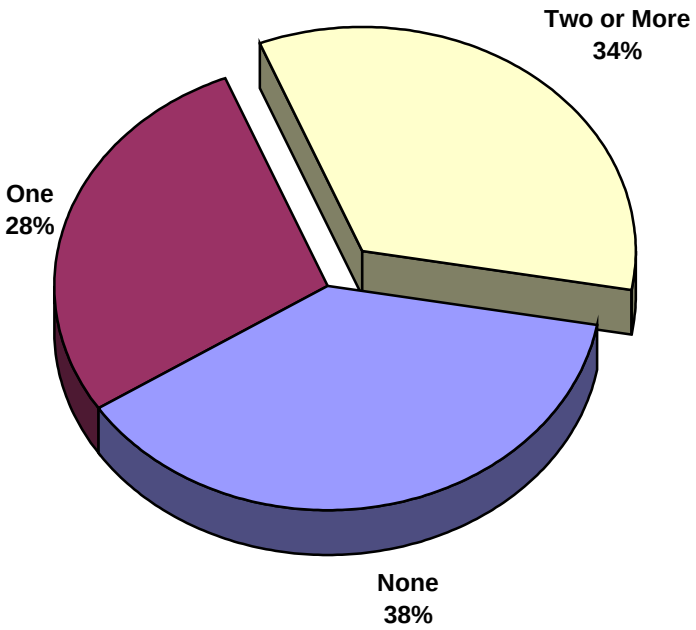
Residents were asked a series of questions to measure the extent to which they participate in neighborhood and community organizations, their awareness of neighborhood and community organizations' electronic communication and on-line presence, the accessibility of information on these organizations online, and their satisfaction with the information provided by these organizations online.

Sixty-two percent of respondents participate in at least one community group.

- Twenty-eight percent participate in one activity while the remaining one-third (34%) participates in two or more activities.

FIGURE 59: PARTICIPATION IN COMMUNITY BUILDING ACTIVITIES
(BASE: All Respondents)

More than three out of five (62%) respondents participate in at least one community group.

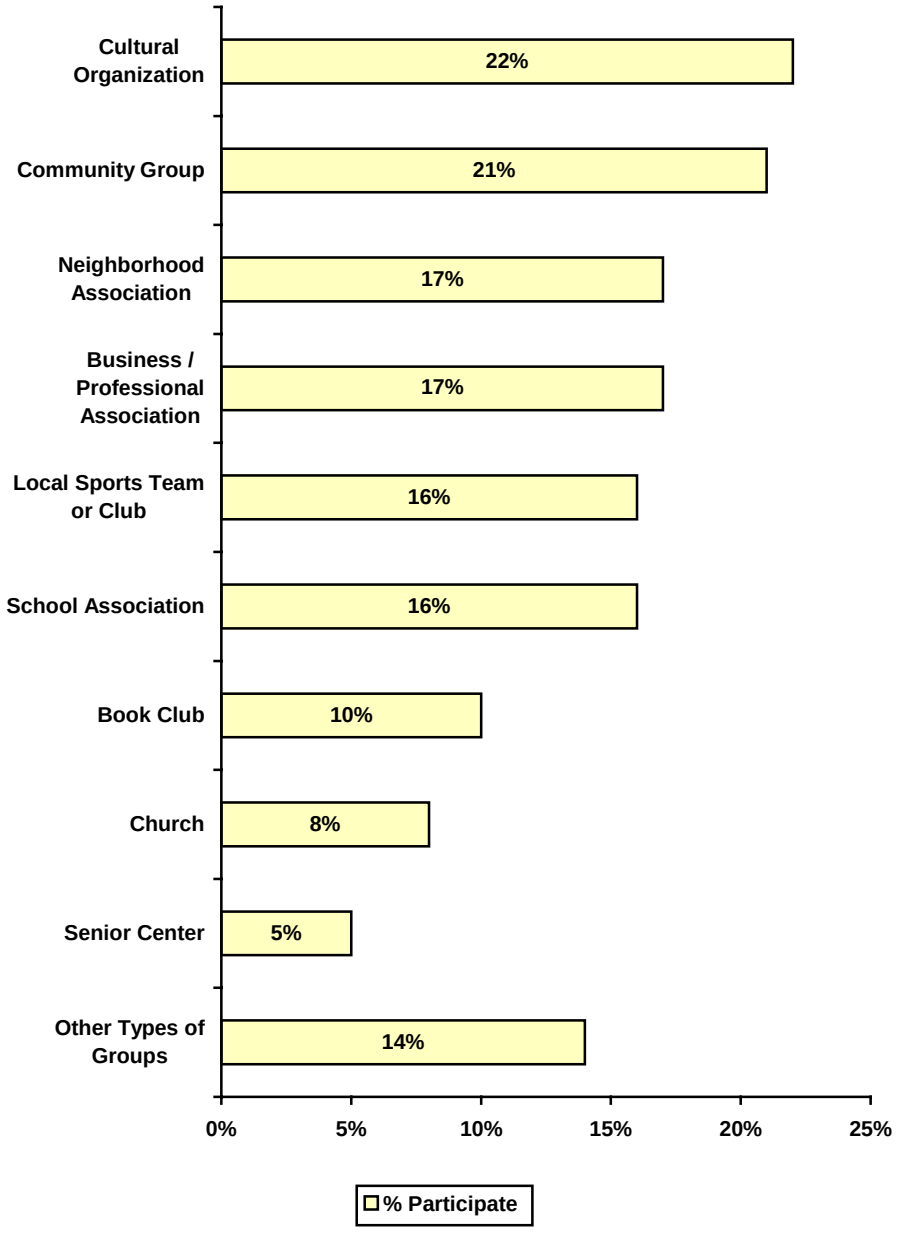


Types of Groups

The top four local organizations in which Seattle residents participate are cultural organizations (22%), community groups (21%), neighborhood associations (17%), and local business or professional associations (17%).

FIGURE 60
EXTENT OF PARTICIPATION IN LOCAL COMMUNITY GROUPS
(BASE: All Respondents)

Respondents are most likely to participate cultural organizations, community groups, neighborhood associations, and/or local business or professional associations.



Who Participates / Who Does Not

Women and men are equally likely to participate in community building activities.

Those between the ages of 36 and 50 are the most likely to participate in multiple activities, while those who are younger are the least likely to participate in any activities.

- Two out of five (39%) respondents between the ages of 36 and 50 participate in two or more community activities.
- Nearly half (48%) of those between the ages of 18 and 35 do not participate in any community building activities.

There is a relationship between participation in community abilities and education and income.

- The majority (62%) of those who do not participate in any community-building activities have not graduated from college. Conversely, more than three out of five of those who participate in at least one activity have graduated from college. Sixty percent of those who participate in one activity have graduated from college; 69 percent of those who participate in two or more activities are college graduates.
- Those who participate in two or more community activities have upper middle (16%) or upper / high upper (52%) household incomes.

Those who participate in community building activities are more likely than those who do not to have children in the household.

- Notably, two out of five (39%) of those who participate in two or more activities have children in their household. To some extent, this may reflect the nature of the community activities used – e.g., school associations or a local sports team or club, many of which are child-oriented activities.

FIGURE 61: DEMOGRAPHIC CHARACTERISTICS OF THOSE WHO PARTICIPATE IN COMMUNITY ACTIVITIES

(BASE: All Respondents)

	All Respondents	None	One	Two or More
Gender				
Male	50%	54%	48%	47%
Female	50	46	52	53
Age				
18 to 25	13%	16%	12%	11%
26 to 35	21	25	22	15
36 to 50	33	30	28	**41**
51 to 64	18	16	20	20
65 and Older	14	12	**19**	12
Mean	44.4 yrs.	42.7 yrs.	46.0 yrs.	45.4 yrs.
Education				
High School or Less	17%	**28%**	12%	9%
Some College	29	**34**	28	23
College Graduate	27	20	25	**39**
Post Graduate Work / Degree	27	19	**35**	**30**
Children in Household				
No	73%	**83%**	74%	61%
Yes	27	17	26	**39**
Income				
Low / Extremely Low	22%	**28%**	**27%**	9%
Moderate	11	9	12	12
Middle	10	10	8	10
Upper Middle	11	7	9	**16**
Upper / High Upper	47	45	44	**52**
Ethnicity				
White	70%	67%	**71%**	**72%**
African-American	9	7	11	9
Asian / Pacific Islander	8	10	9	5
Hispanic	6	9	2	7
Other	7	7	6	7

Extent of Online Communication by Local Community Groups

Those residents who indicate participation in a local organization were asked if the organization uses e-mail or the Internet to communicate with members and if these organizations had a Web site.

Nearly half (48%) of those surveyed said that at least one of the organizations in which they participate use e-mail or the Internet to communicate with its members.

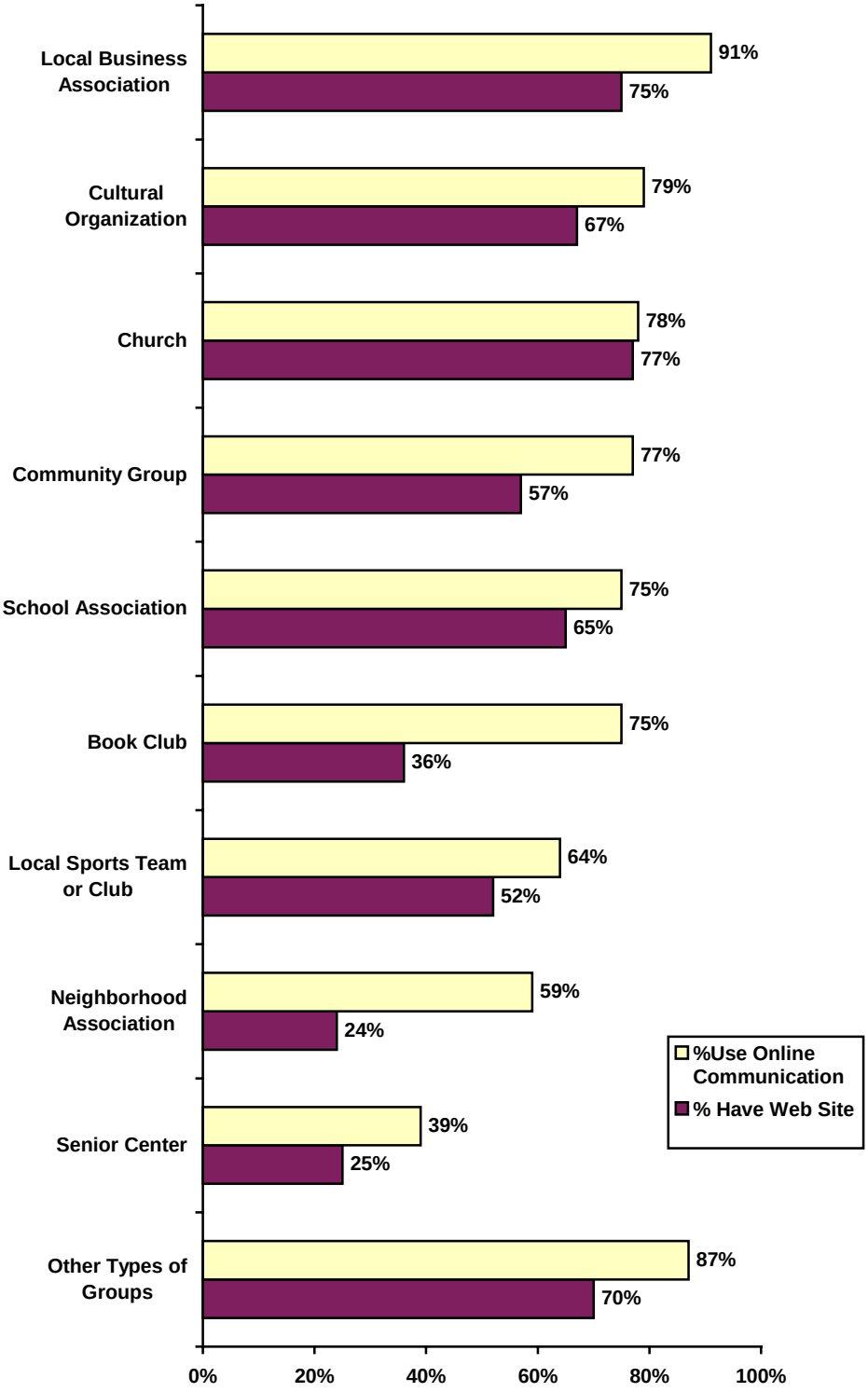
- Almost all (91%) local business associations to which Seattle residents are members communicate with their membership via e-mail or the Internet, as do seventy-nine percent (79%) of local cultural organizations, seventy-seven percent (77%) of community groups, and seventy-five percent (75%) of both book clubs and school associations.
- Relatively few (39%) senior centers communicate with their members via E-mail or the Internet, possibly reflecting the lower use of the Internet by their target audience.

Somewhat fewer (39%) of those surveyed said that at least one of the community organizations in which they participate have a Web site of which they are aware. Again, local business associations lead the way in having a web presence.

- Three-quarters (75%) of local business associations to which Seattle residents are members have a web page, as do sixty-seven percent (67%) of local cultural organizations, and sixty-five percent of (65%) school associations.
- Senior centers and neighborhood associates are the least likely organizations to have a Web site of which their members are aware.

FIGURE 62
EXTENT TO WHICH MEMBERS REPORT THE LOCAL COMMUNITY GROUPS THEY PARTICIPATE IN USE ON-LINE COMMUNICATIONS
(BASE: Respondents who Participate in Local Community Groups)

The majority of community groups that residents participate in are incorporating electronic communication and participation.



Use of the Internet to Find Information on Local Businesses

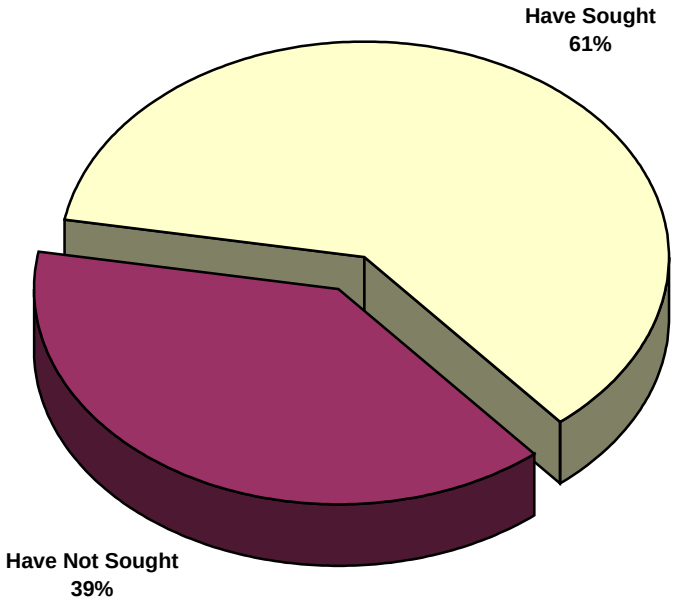
Extent of Use of the Internet to Find Information on Local Businesses

In order to gauge the accessibility and availability of information about local businesses on the Internet, residents who have used a computer or have Internet access at home were asked if they had tried to find information on local businesses on the Internet in the past year.

Three out of five (61%) residents with a computer or Internet access have sought information regarding local businesses online in the past year.

FIGURE 63
EXTENT OF USE OF THE INTERNET TO FIND INFORMATION ON LOCAL BUSINESSES
(BASE: Computer and/or Internet Users)

Residents are using the Internet to find information on local businesses.



Men and women are equally likely to have sought information on local businesses on the Internet.

Younger respondents are more likely than older respondents to have sought information on local businesses on the Internet.

- Residents ages 26 to 35 and, to a lesser extent, those between 36 and 50 are the most likely age groups to have sought information regarding local businesses online.
- Conversely, respondents aged 65 and over are the most likely age group to indicate they have not sought such information online.

There is also a relationship between education and income with use of the Internet to find information on local businesses.

- Nearly two thirds (64%) of those who have sought information on local businesses on the Internet are college graduates compared with half (50%) of those who have not sought information.
- Nearly three out of five (57%) respondents who have sought information on local businesses on the Internet have upper / high upper household incomes compared with only two out of five (40%) respondents who have not sought this kind of information.

Whereas 65 percent of all Caucasians who use a computer and over half (56%) of Asian-Americans have sought information on local business on the Internet, significantly fewer Hispanics (44%) and African-Americans (39%) use the Internet for this kind of information.

FIGURE 64: DEMOGRAPHIC CHARACTERISTICS OF THOSE WHO USE THE INTERNET FOR INFORMATION ON LOCAL BUSINESS
(BASE: Computer and/or Internet Users)

	All Respondents	Have Sought Information	Have Not Sought Information
Age			
18 to 25	15%	13%	17%
26 to 35	23	**28**	16
36 to 50	35	**37**	32
51 to 64	19	18	19
65 and Older	9	4	**17**
Mean	41.9 yrs.	40.0 yrs.	44.9 yrs.
Education			
High School or Less	13%	9%	**19%**
Some College	29	28	31
College Graduate	29	**32**	25
Post Graduate Work / Degree	29	**32**	25
Income			
Low / Extremely Low	18%	13%	**27%**
Moderate	11	10	**13**
Middle	10	9	10
Upper Middle	11	12	10
Upper / High Upper	50	**57**	40
Ethnicity			
White	70%	**75%**	62%
African-American	9	6	**14**
Asian / Pacific Islander	8	7	9
Hispanic	6	4	9
Other	7	8	6

Use of a computer / the Internet to get information on local businesses is also related to access to computers and the Internet as well as comfort with computers and the Internet.

- Respondents with computer access at home and/or work are more likely than those with more limited access to indicate they have sought information regarding local businesses online. The same relationship holds true with access to the Internet.
- Respondents who are very comfortable with computers and the Internet are more likely than respondents with lower levels of comfort to indicate they have sought information regarding local businesses online.

FIGURE 65: COMPUTER CHARACTERISTICS OF THOSE WHO USE THE INTERNET FOR INFORMATION ON LOCAL BUSINESS
(BASE: Computer and/or Internet Users)

	All Respondents	Have Sought Information	Have Not Sought Information
Access to Computers			
At Home	83%	**89%**	73%
At Work	62	**72**	46
Access to Internet			
At Home	79%	**88%**	65%
At Work	76	**84**	16
Comfort w/ Computers			
Very Comfortable	50%	**62%**	30%
Comfortable	26	25	26
Neither Comfortable nor Uncomfortable	15	10	**22**
Not Comfortable	10	3	**22**
Comfort w/ Internet			
Very Comfortable	48%	**62%**	27%
Comfortable	23	25	20
Neither Comfortable nor Uncomfortable	15	10	**24**
Not Comfortable	14	3	**30**

Satisfaction with Local Business Information found on the Internet

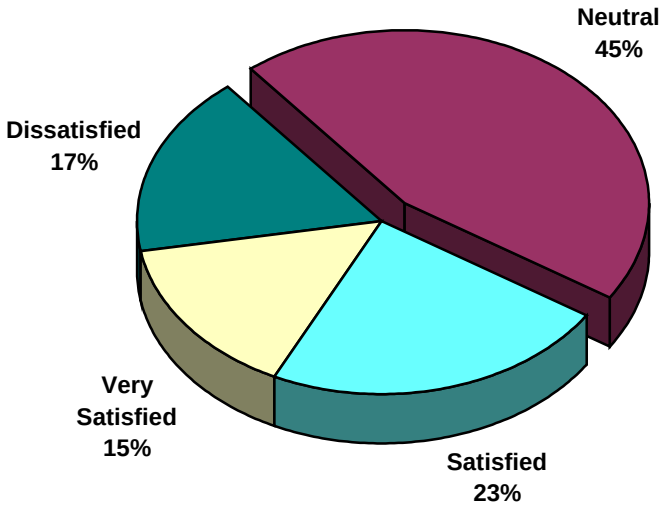
Respondents who have tried to find information about local businesses on the Internet were asked to rate their satisfaction with the information they found on a five point scale, where '1' means they are not at all satisfied and '5' means they are very satisfied.

Most (45%) respondents have neutral opinions regarding the information on local businesses available on the Internet. More respondents are satisfied with the information than are dissatisfied – 38 percent compared with 17 percent, respectively – resulting in an overall mean score slightly above the midpoint – 3.33 on a five-point scale.

- Respondents with household incomes in the extremely low category are more likely than those in the upper income category to rate their satisfaction with the information they found higher on the five-point scale – with average ratings of 3.69 compared to 3.26, respectively.

FIGURE 66
SATISFACTION WITH LOCAL BUSINESS INFORMATION FOUND ON THE INTERNET
(BASE: Respondents who Have Sought Information on the Internet)

Most (45%) respondents have neutral opinions regarding the information on local businesses available on the Internet.



Mean = 3.32

Women are more satisfied with the information available from local businesses on the Internet than are men – mean scores 3.44 compared with 3.23, respectively.

Those with some college education or a 4-year college degree are the most satisfied with the business information on the Internet. On the other hand, those with high school degrees or less or who have attended graduate school are the least satisfied.

Those with low / extremely low household incomes are the most satisfied with the type of information on local businesses found on the web while those in the highest income category are the least satisfied – mean scores 3.73 compared with 3.28, respectively.

There are no differences in satisfaction between different age segments or between different ethnic groups.

FIGURE 67: DIFFERENCES IN SATISFACTION WITH BUSINESS INFORMATION ON INTERNET BY DEMOGRAPHIC SEGMENTS

(BASE: Respondents who Have Sought Information on the Internet)

	Satisfaction (Mean)
Overall Average	3.33
Gender	
Male	3.23
Female	**3.44**
Education	
High School or Less	3.16
Some College	**3.45**
College Graduate	**3.37**
Post Graduate Work / Degree	3.20
Income	
Low / Extremely Low	**3.73**
Moderate / Middle	3.34
Upper Middle	3.35
Upper / Higher Upper	**3.28**

Section 6

Civic Participation

Information Technology to Access Government Services

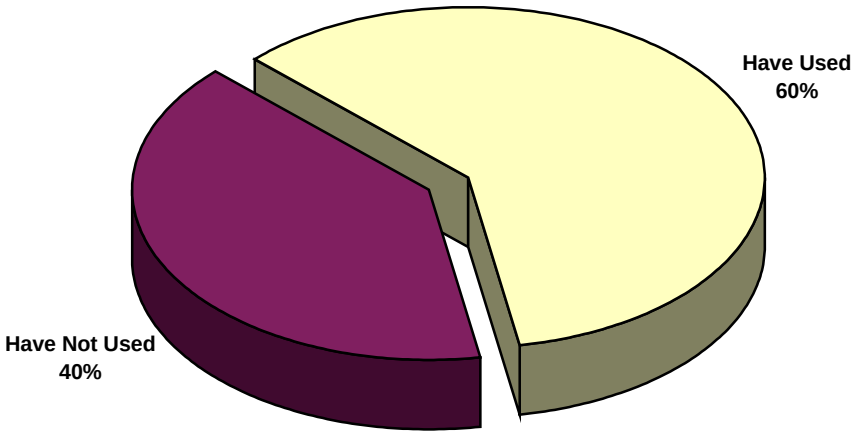
Extent of Using the Internet

Residents who have used a computer or have Internet access at home were asked if they have, in the past year, used the Internet to obtain information from a city, county, state, or federal government.

Three out of five (60%) Seattle residents have used the Internet to obtain information on some government agency.

FIGURE 68
USE OF THE INTERNET TO OBTAIN INFORMATION ON GOVERNMENT AGENCIES
(BASE: Computer and/or Internet Users)

Three out of five (60%) Seattle residents have used the Internet to obtain information on government agencies.



Who is Using Internet to Get Information from Government Agencies

The highest percentage of those who have sought information from government agencies are between the ages of 36 and 50.

- Over half (51%) of those using the Internet to obtain information from government agencies are between the ages of 36 and 50 compared with only 27 percent of those who have not sought information.
- Those least likely to be seeking information from government agencies on the Internet are those between the ages of 18 and 25 and those 65 and older. For the former group, it may be lack of interest rather than lack of access, while for the latter group, lack of access and/or knowledge may be the issue.

Those with college educations are more likely to seek information from government agencies on the Internet than are those who have not graduated from college.

- Two thirds (68%) of those who have sought information from government agencies on the Internet have graduated from college compared with 43 percent of those who do not use the web for information on government agencies.

A similar relationship holds true for different income groups.

- Three out of five (61%) households who have sought information from government agencies on the Internet have upper / high upper household incomes compared with 34 percent who have not. Nearly three out of five (58%) households who have not sought information on government agencies have low / extremely low or moderate / middle household incomes.

Finally, African-Americans and Asian-Americans are less likely than Caucasians to say they have not sought information from government agencies on the Internet.

- Whereas two thirds (66%) of Caucasians surveyed have sought information from government agencies on the Internet, only 38 percent of African-Americans and Asian Americans respond similarly. Only 30 percent of Hispanic respondents have sought information from government agencies on the Internet.

FIGURE 69: DEMOGRAPHIC CHARACTERISTICS OF THOSE WHO USE THE INTERNET FOR INFORMATION FROM GOVERNMENT AGENCIES

	All Respondents	Have Sought Information	Have Not Sought Information
Age			
18 to 25	15%	11%	**21%**
26 to 35	23	25	20
36 to 50	35	**51**	27
51 to 64	19	19	18
65 and Older	9	5	**15**
Mean	41.9 yrs.	41.5 yrs.	42.5 yrs.
Education			
High School or Less	13%	7%	**21%**
Some College	29	24	**36**
College Graduate	29	**33**	22
Post Graduate Work / Degree	29	**35**	21
Income			
Low / Extremely Low	18%	8%	**34%**
Moderate / Middle	11	18	**24**
Upper Middle	11	13	8
Upper / High Upper	50	**61**	34
Ethnicity			
White	70%	**77%**	60%
African-American	9	5	**13**
Asian / Pacific Islander	8	5	**13**
Hispanic	6	3	**11**
Other	7	10	4

Respondents with a computer and Internet access at both home and work are more likely than respondents with access at home or work only to have used the Internet to obtain information from a government agency in the past year.

- More than four out of five (82%) respondents with access to the Internet at both work and home have used the Internet to obtain information from a government agency in the past year compared with only 52 percent of those who have access to a computer at home only or at work only.

Respondents with medium or high levels of comfort with computers and the Internet are more likely than respondents with lower comfort levels to indicate they have used the Internet for this purpose.

- Ninety-four percent of those who have sought information from government agencies on the Internet are comfortable with using a computer compared with 56 percent of those who have not sought this information.
- Similarly, 86 percent of those who have sought information from government agencies on the Internet are comfortable using the Internet compared with 50 percent of those who have sought such information using this medium.

FIGURE 70: COMPUTER CHARACTERISTICS OF THOSE WHO USE THE INTERNET FOR INFORMATION FROM GOVERNMENT AGENCIES

	All Respondents	Have Sought Information	Have Not Sought Information
Access to Computers			
At Home	83%	**93%**	67%
At Work	62	**75**	42
Access to Internet			
At Home	79%	**89%**	64%
At Work	76	**84**	55
Comfort w/ Computers			
Very Comfortable	50%	**66%**	33%
Comfortable	26	**28**	23
Neither Comfortable nor Uncomfortable	15	9	**23**
Not Comfortable	10	2	**22**
Comfort w/ Internet			
Very Comfortable	48%	**59%**	32%
Comfortable	23	**27**	18
Neither Comfortable nor Uncomfortable	15	11	**22**
Not Comfortable	14	4	**29**

Effectiveness of E-mail and Internet to Communicate Civic Issues

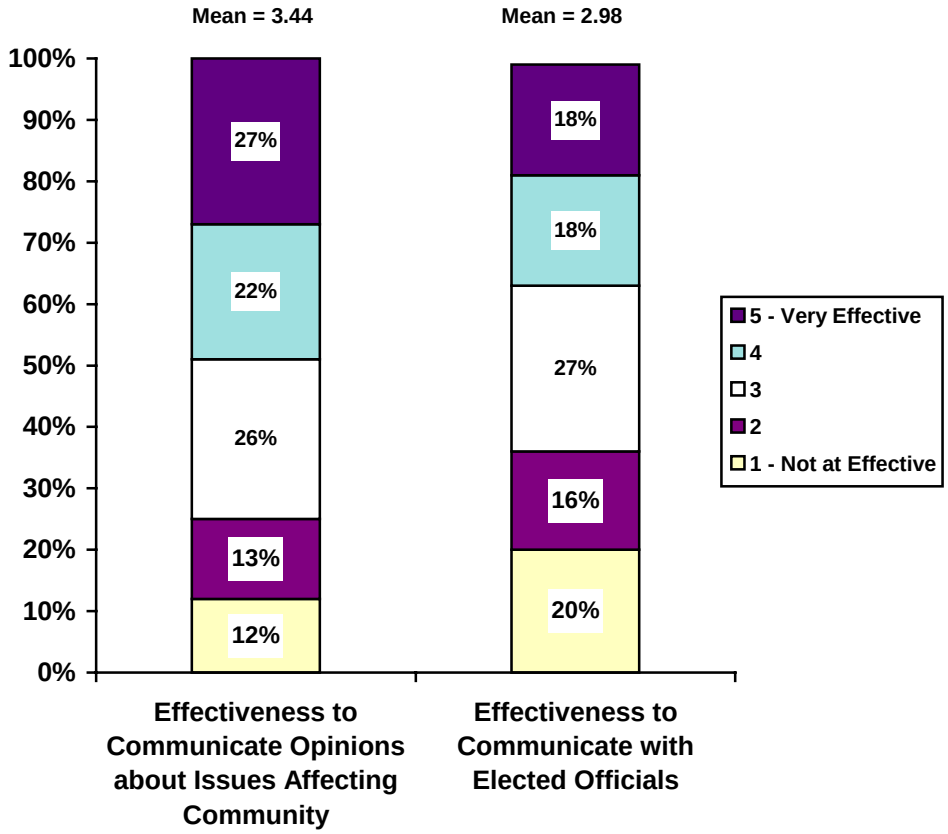
Residents who have used a computer or have Internet access at home were asked to rate the effectiveness of e-mail and the Internet as ways to communicate opinions about issues that affect them in their community and as ways to communicate with elected officials. Effectiveness was rated on a five point scale, where '1' means not at all effective and '5' means very effective.

Overall, Seattle residents are moderate in their opinion that e-mail or the Internet is an effective means of communication about community issues or with elected officials. Residents were more positive about the effectiveness of using the Internet and e-mail generally to communicate opinions about community issues than they were about the use of the Internet and e-mail specifically for communicating with elected officials.

- Seattle residents rated both measures at the mid-point on the scale of effectiveness, with a mean rating of 3.44 for effectiveness to communicate about issues that affect them in their community and a rating of 2.98 as a way to communicate with elected officials.
- Almost half (49%) of all respondents who indicated in previous questions that using e-mail and the Internet to communicate with elected officials is very important also indicate that this method of communication is very effective.

FIGURE 71
EFFECTIVENESS OF E-MAIL AND INTERNET TO COMMUNICATE CIVIC ISSUES
(BASE: Computer and/or Internet Users)

Seattle residents believe the Internet and e-mail is more effective to communicate opinions about issues rather than communicating with elected officials.



Men and women feel that the Internet is equally effective in communicating opinions on local issues. Women are more likely than men to feel the Internet or e-mail is effective in communicating directly with local government officials – 3.09 compared with 2.87, respectively

Those between the ages of 51 and 64 feel the Internet is most effective in both communicating opinions on issues and communicating with elected officials.

- Those 65 and older give the lowest rating for using the Internet to communicate opinions regarding issues and slightly below average ratings for communicating with elected officials.
- Those between the ages of 18 and 25 rate the Internet the lowest in terms of effectiveness in communicating with elected officials.

Those with college educations give the Internet higher ratings for both communicating opinions about issues and communicating with elected officials.

Caucasians rate the Internet higher in terms of its effectiveness in communicating with elected officials than did other ethnic groups.

- African-American, Asian-Americans, and Hispanics did not rate the Internet significantly lower in terms of its effectiveness in communicating their opinions on issues. They did rate the Internet significantly lower in terms of its effectiveness in communicating with elected officials.

Finally, those who have used the Internet to see information from local governments rate the Internet as more effective on both measures than did those who have not.

FIGURE 72: DIFFERENCES IN EFFECTIVENESS OF INTERNET IN COMMUNICATING ABOUT ISSUES AND WITH ELECTED OFFICIALS BY DEMOGRAPHIC SEGMENTS

(BASE: Computer and/or Internet Users)

	Effectiveness in Communicating Opinions (Mean)	Effectiveness in Communicating w/ Elected Officials (Mean)
Overall Average	3.40	2.98
Have Used Internet to Seek Information on Local Governments		
Yes	**3.57**	**3.18**
No	3.12	2.62
Gender		
Male	3.34	2.87
Female	3.46	**3.09**
Age		
18 to 25	3.25	2.26
26 to 35	3.49	2.80
36 to 50	3.22	2.98
51 to 64	**3.93**	**3.49**
65 and Older	2.98	2.92
Education		
High School or Less	3.37	2.66
Some College	3.22	2.81
College Graduate	**3.57**	**3.13**
Post Graduate Work / Degree	**3.41**	**3.11**
Ethnicity		
Caucasian	3.46	**3.09**
African-American	3.39	2.69
Asian-American	3.32	2.70
Hispanic	3.26	2.45
Other	3.13	3.12

Section 7

Human Relationships to Information Technology

Privacy, Security, and Safety Concerns

Companies Use of Personal Information

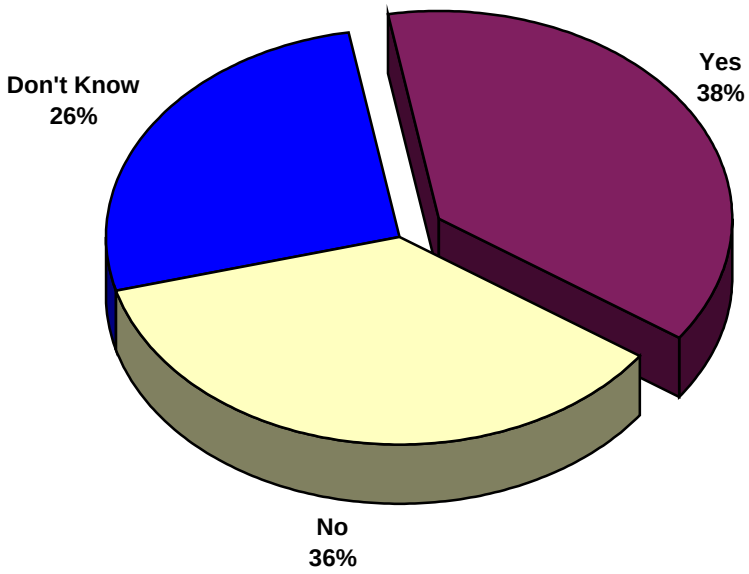
All residents were asked if they feel that companies and organizations that are accessible via the Internet use personal information appropriately.

Respondents are almost equally split in their opinion as to whether companies use their personal information appropriately – 38 percent "yes" and 36 percent "no."

- One quarter (26%) of respondents are unsure as to whether companies and organizations that are accessible via the Internet use personal information appropriately. This would suggest that more respondents feel that the way in which companies and organizations use their personal information may be inappropriate rather than appropriate.

FIGURE 73
COMPANIES ON THE INTERNET USE PERSONAL INFORMATION APPROPRIATELY
(BASE: All Respondents)

Seattle residents are almost equally split in their opinion as to whether companies use their personal information appropriately – 38 percent "yes" and 36 percent "no."



Safe Web Access for Children

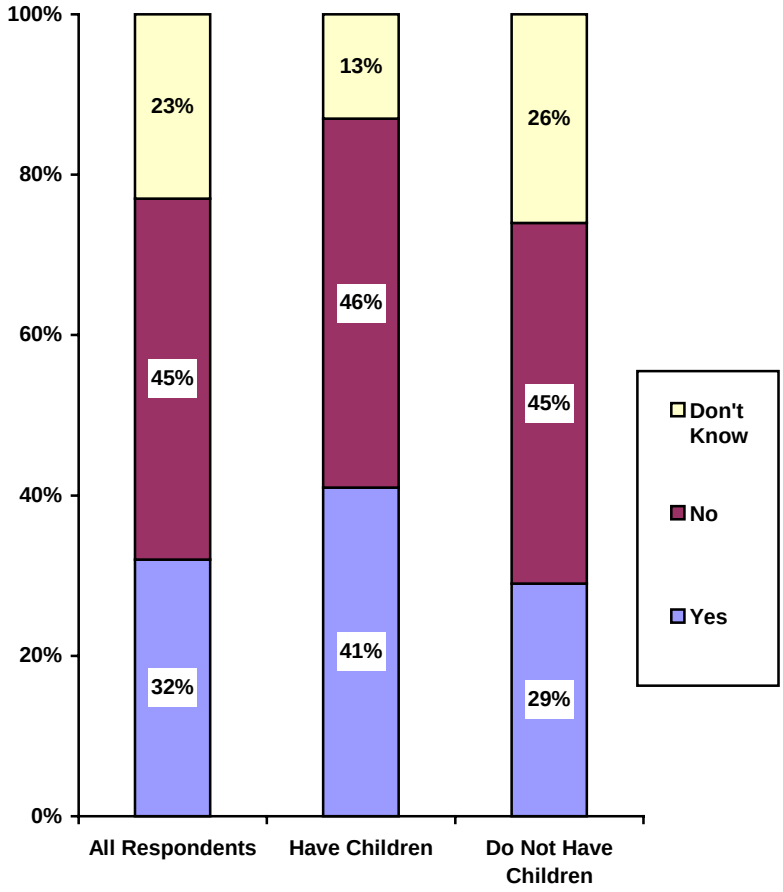
Residents were also asked if they feel there are adequate precautions for children to access the web safely.

Nearly half (45%) of all respondent surveyed do not feel there are adequate precautions for children to access the web safely. An additional 23 percent do not know.

- Those with children are more likely than those without to feel there are adequate safeguards for children – 41 percent compared with 29 percent, respectively. However, the majority of those with children also feel that security for children is inadequate (46%) or are not sure (13%).

FIGURE 74
ARE THERE ADEQUATE PRECAUTIONS FOR CHILDREN TO ACCESS THE WEB SAFELY
(BASE: All Respondents)

Those with children living at home have mixed feelings as to whether there are adequate precautions so their children can use the Web safely.



Confidence in Privacy and Security of Financial Transactions on the Internet

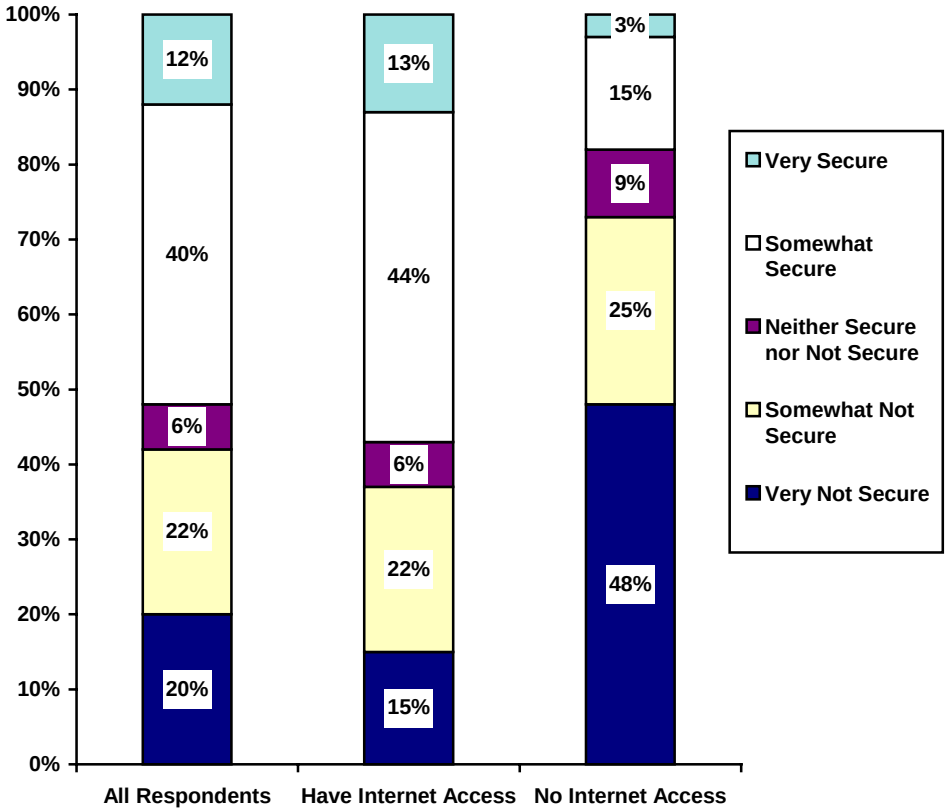
Residents were then asked to rate their confidence that financial transactions on the Internet are private and secure. The rating was conducted on a five-point scale where '1' indicates 'very not secure' and '5' indicates 'very secure'.

While the majority (52%) of all respondents surveyed feel that their financial transactions are private and secure on the Internet, very few feel that they are "very secure" and a large number do not feel secure.

- More respondents feel only "somewhat secure" as opposed to "very secure" – 40 percent compared with 12 percent, respectively. Moreover, 44 percent do not feel secure and 6 percent are neutral.
- Those with Internet access feel more secure than do those without access – 57 percent compared with 18 percent, respectively. Again, however, fewer of those with Internet access feel "very secure" as opposed to "somewhat secure" – 13 percent compared with 44 percent, respectively. Also, 37 percent of those with Internet access do not feel secure.

FIGURE 75
CONFIDENCE IN PRIVACY AND SECURITY OF FINANCIAL TRANSACTIONS ON THE INTERNET
(BASE: All Respondents)

The majority (52%) of respondents feel the Internet is safe for financial transactions. However, more feel only "somewhat secure" than "very secure."



Overall Security Measure

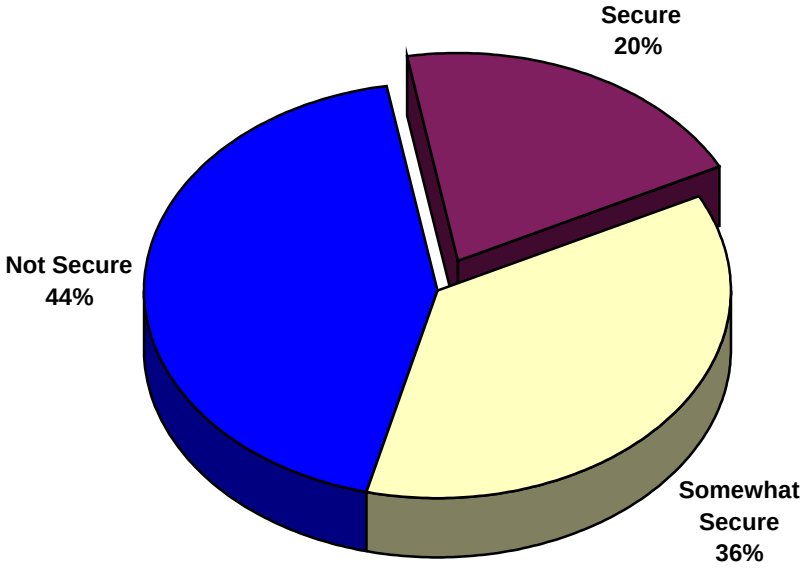
An overall measure of security was computed by counting the number of times respondents said they felt "secure" with these three measures – that is, they said they felt companies / businesses used their personal information appropriately, that there are adequate precautions for children when using the web, and that they felt very secure when using the Internet for financial transactions. Three groups were identified:

- Secure: To be considered secure one must have responded yes or "very secure" to two out of the three questions.
- Somewhat Secure: To be considered somewhat secure, one must have responded yes or "very secure" to one of the three questions.
- Not Secure: To be considered "not secure," one must have responded no and less than very secure to all three questions.

Only one out of five (20%) Seattle residents feel completely secure with the Internet. An additional 36 percent feel "somewhat secure."

FIGURE 76
OVERALL SECURITY WHEN USING INTERNET

Only one out of five (20%) Seattle residents feel completely secure with the Internet. An additional 36 percent feel "somewhat secure."



Men are more likely than women to feel secure using the web. On the other hand, women are more likely to feel only somewhat secure or not secure.

Older residents feel less secure with the web than do younger residents.

- Nearly half (48%) of those who feel secure about using the web are between the ages of 18 and 35 compared with only 36 percent of those who feel somewhat secure and 27 percent of those who feel not secure.
- On the other hand, 23 percent of those who do not feel secure about using the web are 65 and older.

FIGURE 77: DEMOGRAPHIC CHARACTERISTICS OF THOSE WITH DIFFERENT FEELINGS OF SECURITY REGARDING THE INTERNET

	All Respondents	Not Secure	Somewhat Secure	Secure
Gender				
Male	50%	47%	48%	**60%**
Female	50	**53**	**52**	40
Age				
18 to 25	13%	10%	14%	**18%**
26 to 35	21	17	22	**30**
36 to 50	33	30	**37**	32
51 to 64	18	20	18	15
65 and Older	14	**23**	9	5
Mean	44.4 yrs.	49.3 yrs.	42.1 yrs.	38.3 yrs.
Education				
High School or Less	17%	**22%**	14%	14%
Some College	29	28	31	27
College Graduate	27	23	**28**	**35**
Post Graduate Work / Degree	27	27	28	25
Income				
Low / Extremely Low	22%	**28%**	**22%**	11%
Moderate / Middle	21	20	21	21
Upper Middle	11	11	9	14
Upper / High Upper	47	42	**49**	**54**
Ethnicity				
White	70%	69%	67%	**75%**
African-American	9	11	9	6
Asian / Pacific Islander	8	9	7	10
Hispanic	6	6	6	6
Other	7	5	11	3

Increased access to computers and/or the Internet as well as comfort using the computer and/or Internet is related to how secure one feels on the Internet.

- Nearly all (97%) of those who feel secure with the Internet have access to a computer; 86 percent have access at home and 75 percent use a computer at work. To compare 81 percent of those who do not feel secure have computer access; only 68 percent have access at home and only 54 percent use a computer at work.
- The same relationship holds true with access to the Internet overall as well as at home. There is little difference between those using the Internet at work, potentially because the Internet is not used for the types of tasks studied here.
- Finally, those who feel secure on the Internet are more likely to be "very comfortable" using a computer and/or the Internet than are those who do not feel secure.

FIGURE 78: COMPUTER CHARACTERISTICS OF THOSE WITH DIFFERENT FEELINGS OF SECURITY REGARDING THE INTERNET

	All Respondents	Not Secure	Somewhat Secure	Secure
Access to Computer				
Has Computer Access	88%	81%	91%	97%
Has Computer At Home	76	68	79	86
Uses Computer At Work	62	54	73	75
Access to Internet				
Has Internet Access	82%	72%	87%	96%
Has Internet At Home	72	63	76	86
Uses Internet At Work	76	71	79	79
Comfort Using Computers				
Very Comfortable	50%	38%	**55%**	**62%**
Comfortable	26	28	24	24
Neither Comfortable nor Uncomfortable	15	**21**	11	12
Not Comfortable	10	**13**	11	2
Comfort Using Internet				
Very Comfortable	48%	36%	**52%**	**63%**
Comfortable	23	23	23	24
Neither Comfortable nor Uncomfortable	15	**21**	11	11
Not Comfortable	14	**20**	14	2

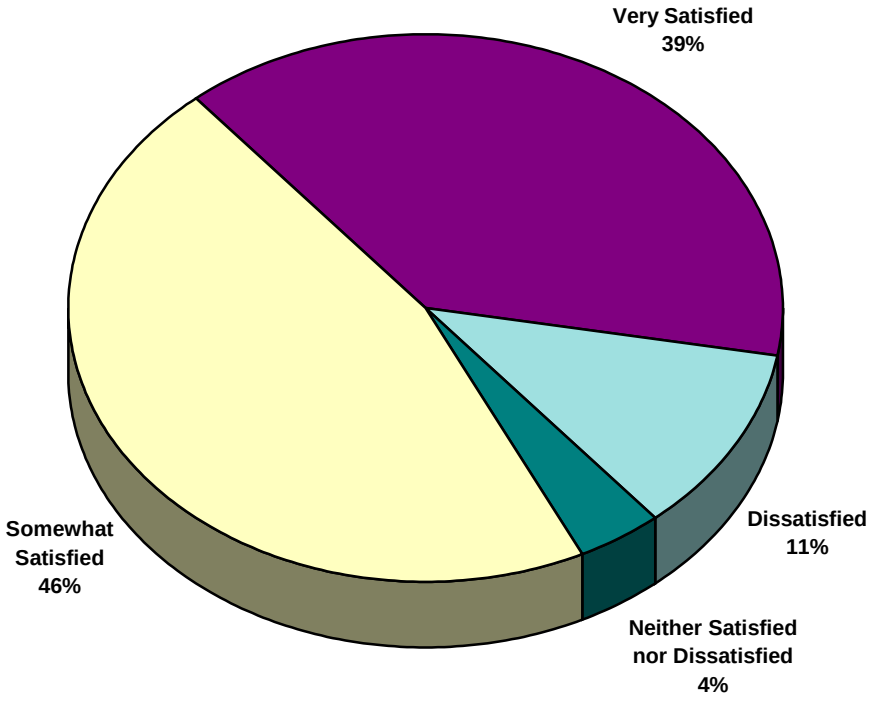
Satisfaction with Content of the World Wide Web

Residents were then asked to rate their satisfaction with the content of the World Wide Web. The rating was conducted on a five-point scale where '1' indicates 'very dissatisfied and '5' indicates 'very satisfied'.

Overall Seattle residents are satisfied with the content of the World Wide Web – 39 percent are very satisfied; 46 percent are somewhat satisfied, for an overall mean of 4.10.

FIGURE 79
SATISFACTION WITH THE CONTENT OF THE WORLD WIDE WEB
(BASE: Respondents who Have Used Computer)

Overall Seattle residents are satisfied with the content of the World Wide Web.



There are no differences in satisfaction with the content on the web between men and women or among the different age groups. In addition, there is no relationship between satisfaction with web content and education.

- Those with higher household incomes are more satisfied with the web than are those with low / extremely low and moderate / middle incomes, suggesting that the content of the web may be targeted to higher income households, notably retail sites.
- Caucasians are the most satisfied with the content on the World Wide Web; Asian-Americans are the least satisfied.
- Finally those households without children are significantly more satisfied with the content on the web than are those households with children.

FIGURE 80: DIFFERENCES IN SATISFACTION WITH CONTENT ON WORLD WIDE WEB BY DEMOGRAPHIC SEGMENTS

(BASE: Respondents who Have Used Computer)

	Satisfaction (Mean)
Overall Average	4.10
Income	
Low / Extremely Low	3.88
Moderate / Middle	3.89
Upper Middle	4.00
Upper / Higher Upper	**4.28**
Ethnicity	
Caucasian	4.16
African-American	4.06
Asian-American	3.85
Hispanic	3.96
Other	4.00
Children In Household	
Yes	3.99
No	**4.15**

Impact of Information Technology on Personal Time

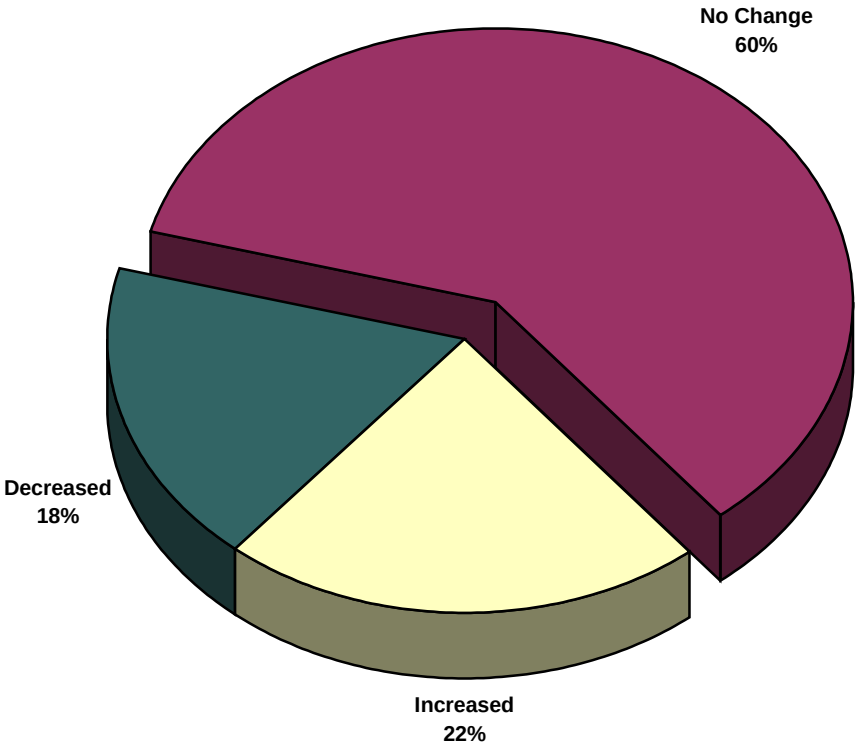
Respondents were asked to indicate the extent to which information technology – tools such as computers, software, and Internet – has impacted their personal time.

Three out of five (60%) Seattle residents say that information technology has had no impact on their personal time.

- There are no differences between different demographic groups.

FIGURE 81
IMPACT OF INFORMATION TECHNOLOGY ON PERSONAL TIME
(BASE: All Respondents)

For the majority (60%) of Seattle residents, information technology has had no impact on their personal time.



Impact of Information Technology on Quality of Life

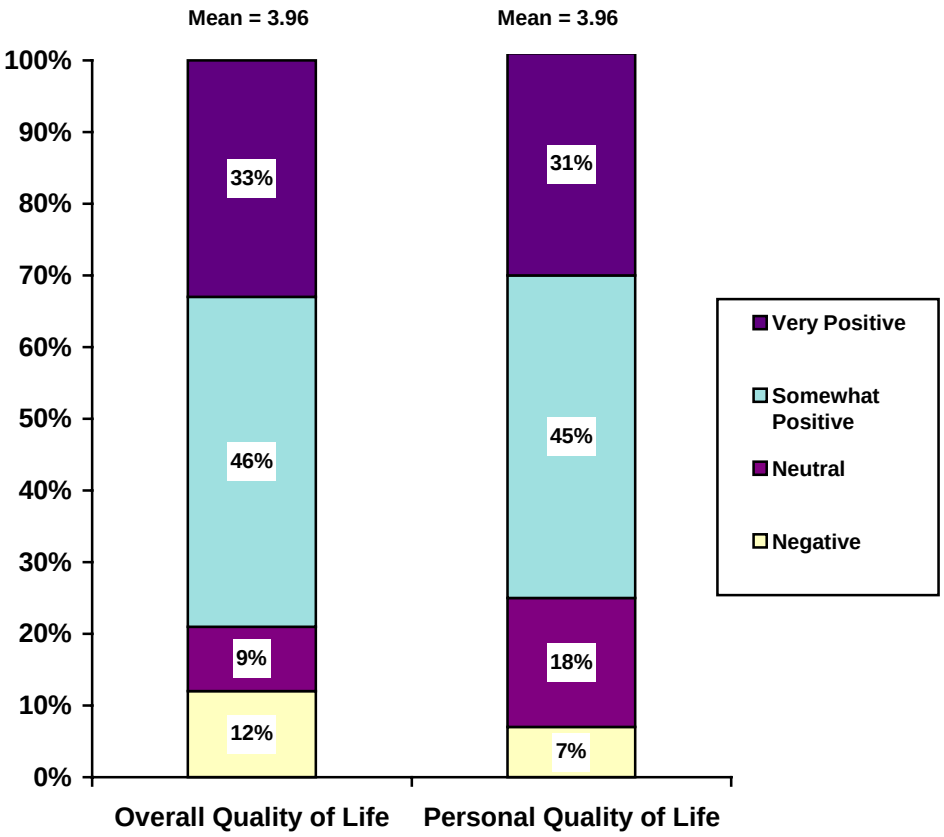
Residents were asked to rate the impact of computers and the Internet on their personal lives and on the overall quality of life in Seattle. The rating was conducted on a five-point scale where '1' indicates 'very negative impact' and '5' indicates 'very positive impact'.

The majority of Seattle residents feel that information technology has had a positive impact on the overall quality of life in Seattle (79% positive) and on their personal quality of life (76% positive).

- However, more feel somewhat positive than very positive.

FIGURE 82
IMPACT OF INFORMATION TECHNOLOGY ON QUALITY OF LIFE
(BASE: All Respondents)

Overall, Seattle residents are positive about the impact of information technology on the quality of life.



Men and women feel equally that information technology has had a positive impact on the overall quality of life in Seattle.

- Men are more likely than women to be strongly positive about the impact of information technology on their personal quality of life – mean scores 4.03 compared with 3.91, respectively.

Younger respondents – those between the ages of 18 and 35 – are more likely to have strongly positive attitudes about the impact of information technology on the overall quality of life and their personal quality of life than are older respondents – those 65 and older.

- Notably, those 65 and older give the lowest rating for the impact of information technology on their personal quality of life. Nearly half (46%) of those 65 and older said it had had no impact and 9 percent said it had had a negative impact.

Those respondents with college educations are more likely to say information technology had had a positive impact on the overall quality of life as well as their personal quality of life than are those with less education.

- Thirty-five percent (35%) of those who have graduated from college and 40 percent of those with post-graduate educations say that information technology has had a positive impact on their personal quality of life compared with only 19 percent of those with a high school education or less.
- Two out of five (40%) of those with a high school education or less say that information technology has had no impact, perhaps reflecting the lower access to technology among this segment.

While there are no differences in opinions between different ethnic groups regarding the impact on technology on overall quality of life, there is a difference in their opinions regarding the impact of technology on their personal lives.

- More than three out of four (77%) Caucasians surveyed said that information technology has had a positive impact on their personal lives compared with 62 percent of African-Americans and 66 percent of Asian-Americans. Those interviewed of Hispanic descent were the least positive with only 11 percent saying that it had a very positive impact; however 67 percent said it had a somewhat positive impact.

FIGURE 83: DIFFERENCES IN IMPACT OF INFORMATION TECHNOLOGY ON QUALITY OF LIFE BY DEMOGRAPHIC SEGMENTS

(BASE: All Respondents)

	Overall Quality of Life (Mean)	Personal Quality of Life (Mean)
Overall Average	3.96	3.96
Gender		
Male	3.94	4.03
Female	3.97	3.91
Age		
18 to 25	4.10	4.20
26 to 35	4.08	4.13
36 to 50	3.86	4.01
51 to 64	3.99	3.88
65 and Older	3.80	3.50
Education		
High School or Less	3.75	3.59
Some College	3.96	3.91
College Graduate	4.01	4.12
Post Graduate Work / Degree	4.03	4.14
Ethnicity		
Caucasian	3.98	4.00
African-American	4.12	3.82
Asian-American	3.93	3.78
Hispanic	3.83	3.84
Other	3.77	4.26

Those with greater access to technology – computers or the Internet – are more positive towards the impact of information technology on the quality of life – overall and for themselves personally.

- For example, 37 percent of those with a computer at home feel that information technology has had a strongly positive impact on their personal quality of life; an additional 48 percent feel it has had some positive impact.
- Nearly half (48%) of those with no computer access at home feel that information technology has had no impact – positive or negative – on their personal quality of life.

FIGURE 84: DIFFERENCES IN IMPACT OF INFORMATION TECHNOLOGY ON QUALITY OF LIFE BY COMPUTER / INTERNET ACCESS

(BASE: All Respondents)

	Overall Quality of Life (Mean)	Personal Quality of Life (Mean)
Overall Average	3.96	3.96
Has Computer Access		
Yes	4.01	4.08
No	3.52	3.11
Computer Access at Home		
Yes	4.08	4.14
No	3.54	3.42
Uses Computer at Work		
Yes	4.02	4.14
No	3.99	3.91
Has Internet Access		
Yes	4.07	4.13
No	3.37	3.20
Has Internet Access at Home		
Yes	4.09	4.15
No	3.59	3.50
Uses Internet at Work		
Yes	4.06	4.26
No	3.87	3.77

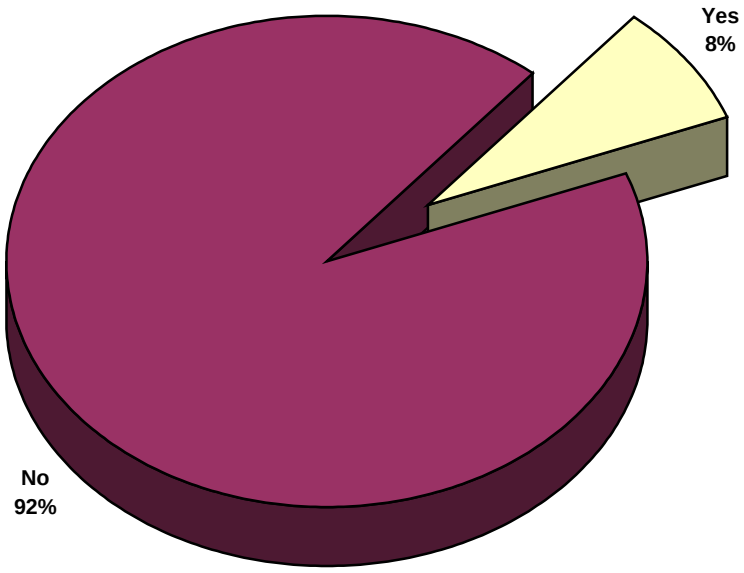
Use of Internet to Sell Goods or Services from Home

Residents with Internet access in their home were asked to indicate if they use the Internet to sell goods or services from their home.

Eight percent (8%) of those Seattle residents with Internet access at home have used the Internet to sell goods or services from their home.

FIGURE 85
USE OF INTERNET TO SELL GOODS OR SERVICES FROM HOME
(BASE: Respondents who Have Internet Access at Home)

A small number (8%) of Seattle residents with Internet access at home use the Internet to sell goods or services from their home.



Section 9

Use of cityofseattle.net

Visited cityofseattle.net

Percent Who Have Visited

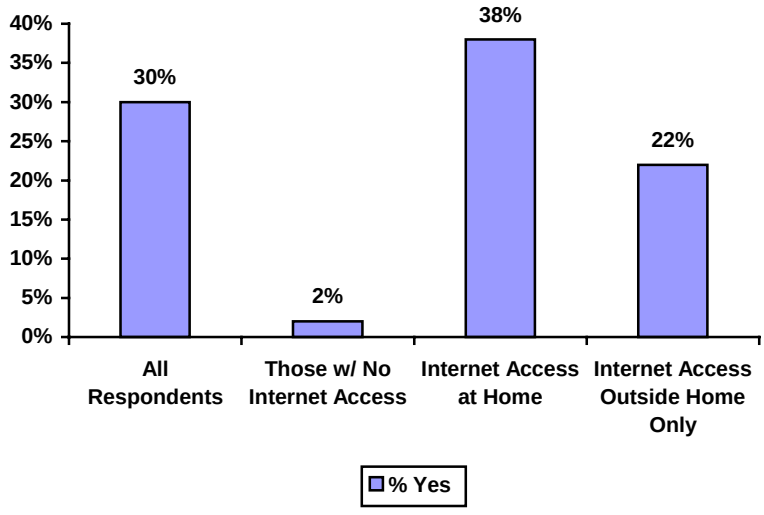
Respondents were asked if they have ever visited the City of Seattle web site; sometimes called the Public Access Network or cityofseattle (dot) net.

Three out of ten (30%) of all Seattle residents have visited the City of Seattle web site. Thirty-six percent (36%) of those with Internet access have visited the City of Seattle web site.

- Those with Internet access at home are significantly more likely to have visited the city's web site than those with more limited access (i.e., outside the home only) – 38 percent compared with 22 percent, respectively.
- Those visiting the city's web site are more likely to be between the ages of 36 and 50 (43 percent of those between the ages of 36 and 50 have visited) and, to a lesser extent, between the ages of 26 and 35 and 51 and 64 (38 percent of those who have visited). Those least likely to have visited are 65 and older (only 20 percent those 65 and older have visited) and between the ages of 18 and 25 (23 percent of those 18 to 25 have visited).
- Those visiting the city's web site are better educated – 40 percent of those who have visited the city's web site have a post graduate education compared with 31 percent of those who have graduated from college and only 7 percent who have a high school education or less.

FIGURE 86
VISITED CITYOFSEATTLE.NET
(BASE: All Respondents)

More than one out of three (36%) city residents with access to the internet have visited the City of Seattle's web site.



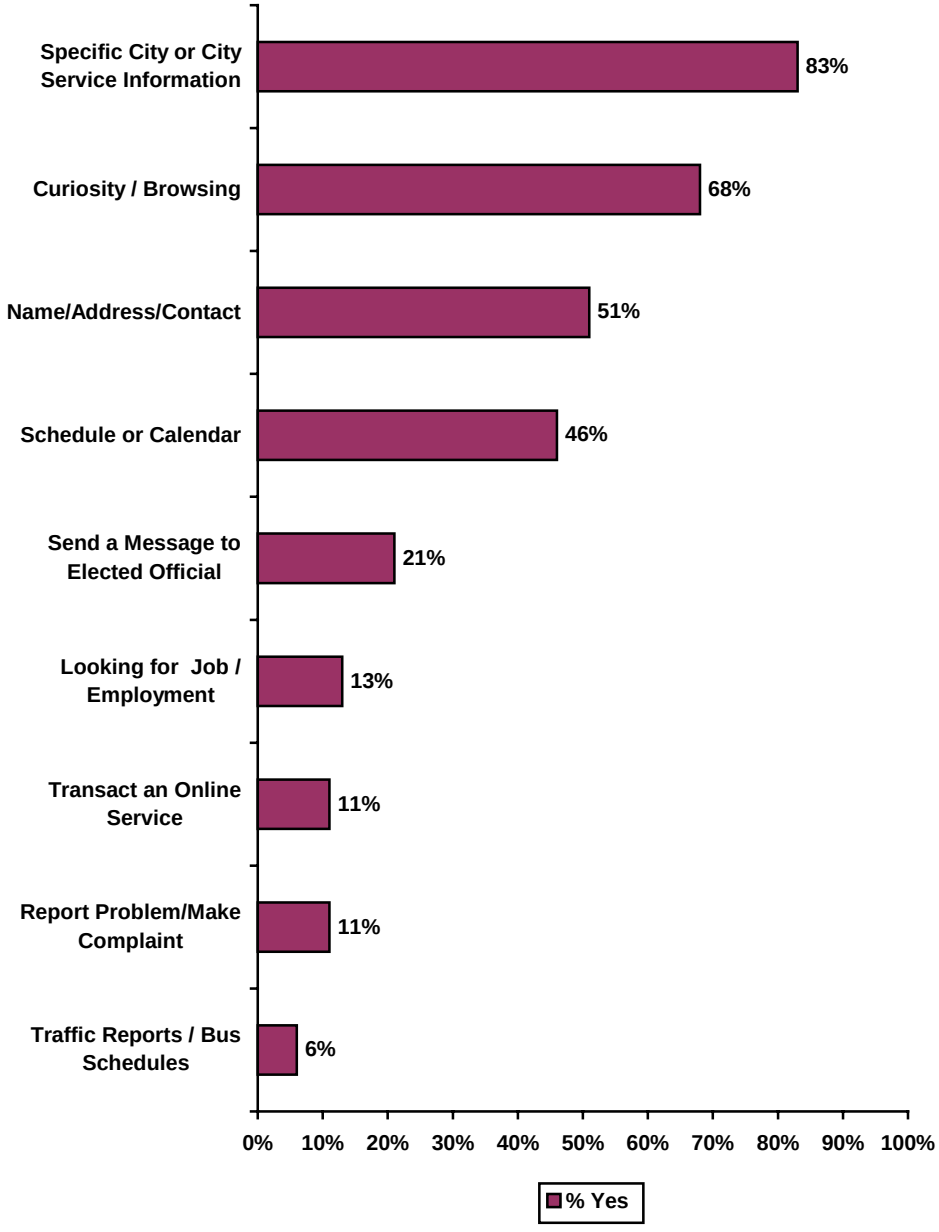
Purpose of Visit to cityofseattle.net

Visitors to cityofseattle.net visit the site to find City of Seattle or City service information (83%), are curious or just browsing (68%), are looking for specific contact information (51%), or are looking for a schedule or calendar (46%).

- Additional visit purposes include: looking for jobs or employment (13%) and looking at traffic patterns or bus schedules (6%).

FIGURE 87
PURPOSE OF VISIT TO CITYOFSEATTLE.NET
(BASE: Respondents who Visited CITYOFSEATTLE.NET)

The majority (83%) of those visiting the city's web site are looking for specific service information. However, a significant number (68%) are simply browsing.



Success of Search on cityofseattle.net

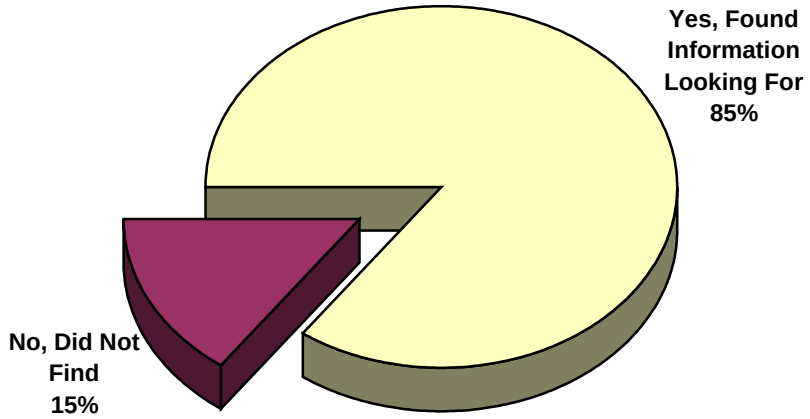
Respondents who had visited the city's web site were asked if they had found what they were looking for.

The majority (85%) of residents who visit cityofseattle.net find what they are looking for.

- Residents who indicate they did not find what they were looking for indicate they sought: rental / apartment listings (15%), laws or codes (8%), information on WTO (5%), information on transportation / traffic / bus schedules (5%). Three out of ten (31%) couldn't remember what they were looking for.

FIGURE 88
SUCCESS OF CITY OF SEATTLE WEB SITE
(BASE: Respondents who Visited CITYOFSEATTLE.NET)

The majority of those who have visited the city's web site are satisfied with their visit – having found the information they were looking for.



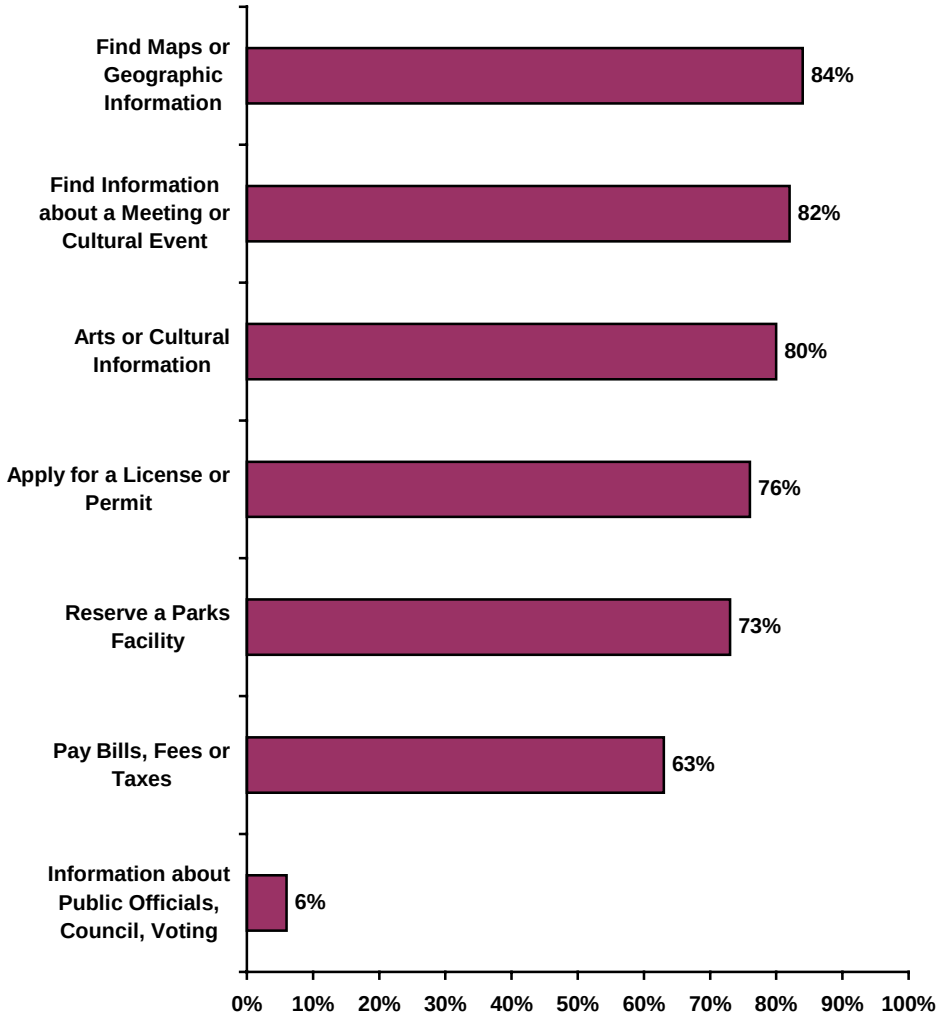
Interest in New Content and Features on cityofseattle.net

Residents who have visited the site were asked to indicate their interest in seeing several new features and information on cityofseattle.net.

Residents would like to see maps or geographic information, information about meetings and events, arts or cultural information, a feature to apply for a license or permit, a feature to reserve a parks facility, and a feature allowing bill, fee or tax payment on cityofseattle.net.

FIGURE 89
INTEREST IN NEW CONTENT AND FEATURES ON CITYOFSEATTLE.NET
(BASE: Respondents who Visited CITYOFSEATTLE.NET)

Residents are most interested in finding maps or geographic information, information about meetings or cultural events, or information about arts or culture.

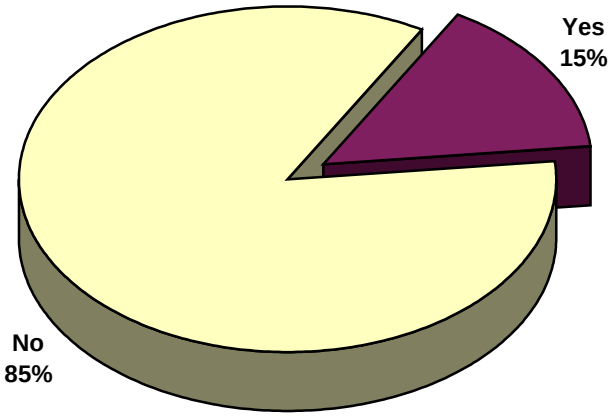


Support for Advertising on cityofseattle.net

The overwhelming majority (85%) of residents who visit cityofseattle.net think the City should <u>not</u> have advertising on its web site.

FIGURE 90
SUPPORT FOR ADVERTISING ON CITYOFSEATTLE.NET
(BASE: Respondents who Visited CITYOFSEATTLE.NET)

There is virtually no support for advertising on the City of Seattle's web site.



Section 10

Use of TV-Sea

TV-Sea Viewing

Who Watches

Of those respondents with cable television, over half (57%) have seen or watched the City of Seattle's Government cable channel – TV-Sea. This is the same as in the 1999 City of Seattle residential survey, which found that 58 percent of those with cable television had seen or watched TV-SEA.

- Those most likely to watch TV-Sea are men, between the ages of 51 and 64, well educated (post-graduate degrees), affluent (upper middle / upper / high upper), and African-American.

FIGURE 91: DEMOGRAPHICS OF THOSE WHO WATCH TV-SEA
(BASE: Respondents who Watch TV-Sea)

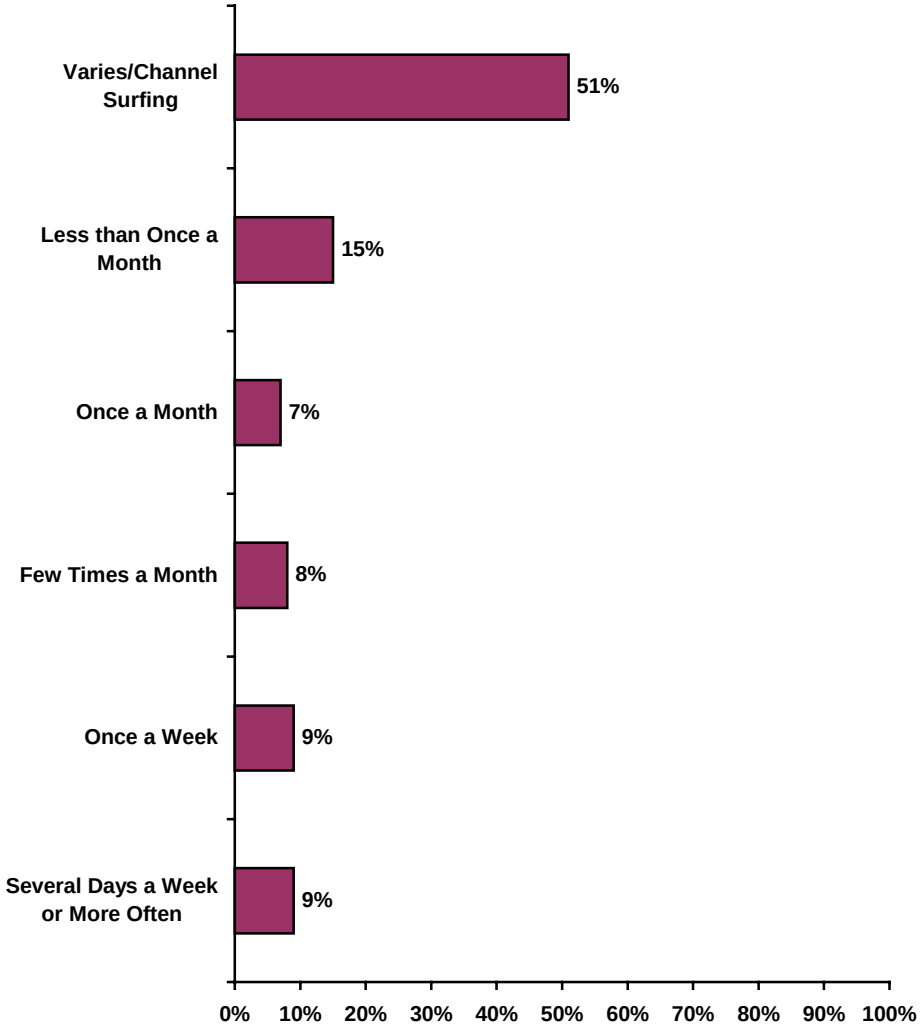
	% Watch TV-Sea
Overall	57%
Gender	
Male	**67%**
Female	47
Age	
18 to 25	41%
26 to 35	50
36 to 50	**62**
51 to 64	**66**
65 and Older	57
Education	
High School or Less	45%
Some College	56
College Graduate	48
Post-Graduate Degree	**69**
Income	
Low / Extremely Low	42%
Moderate / Middle	52
Upper Middle	**63**
Upper / High Upper	**63**
Ethnicity	
Caucasian	57%
African-American	**71**
Asian-American	44
Hispanic	23
Other	77

Frequency of Viewing

Half (51%) of those respondents who report watching TV-Sea report that their viewing of the channel varies or they see it when they are "channel surfing."

FIGURE 92
TV-SEA VIEWING – FREQUENCY OF VIEWING
(BASE: Respondents who Watch TV-Sea)

The majority of those who have watched TV-SEA do so infrequently.

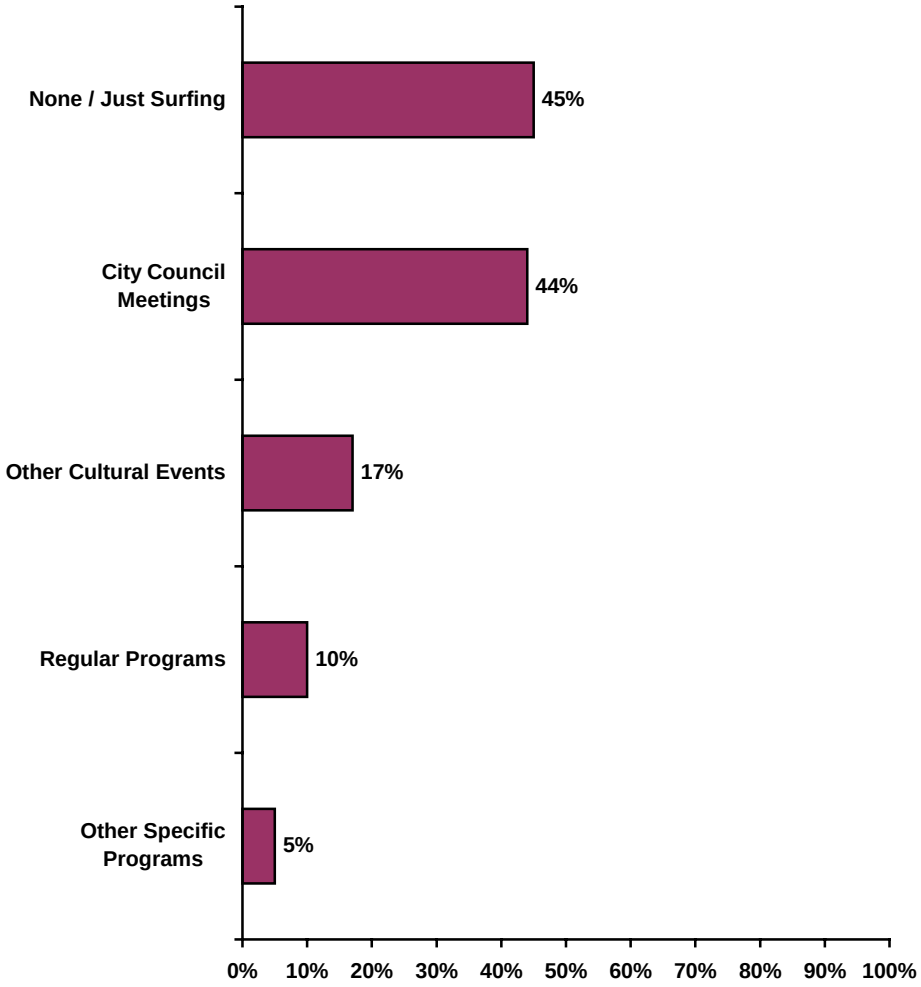


Programs Viewed

Forty-four percent (44%) of respondents who have watched TV-Sea report that they have watched City Council meetings. This is somewhat lower than in the 1999 City of Seattle Residential Survey where 53 percent of those who have watched TV-Sea had watched City Council meetings.

FIGURE 93
TV-SEA VIEWING – PROGRAMS VIEWED
(BASE: Respondents who Watch TV-Sea)

As in the 1999 City of Seattle Residential Survey, those watching TV-Sea are most often watching the City Council meetings.



Interest in Future Programming

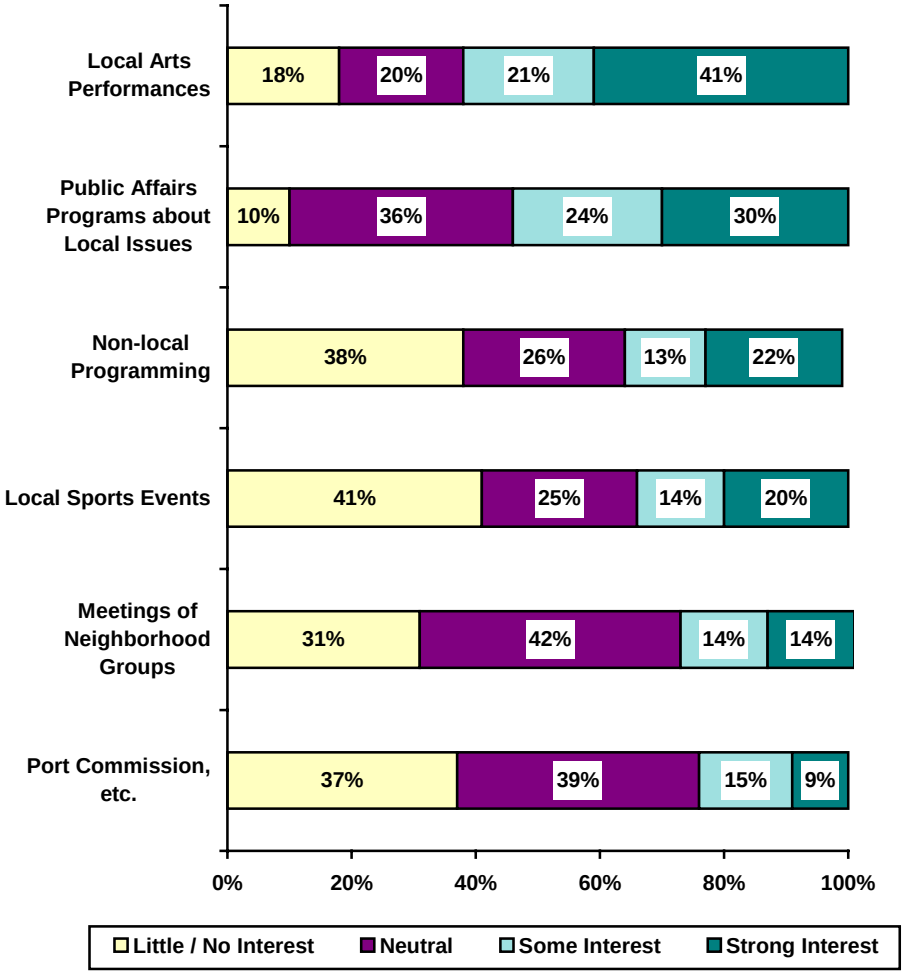
Respondents who have seen TV-Sea were asked to rate their interest in viewing a series of programming options on TV-Sea. Responses were rated on a five point scale where a '5' indicated they would like to see the program, a '3' indicated neutrality and a '1' indicated they do not want to see the program.

Viewers are most interested in local arts performances and public affairs programming. They are least interested in meetings.

- Local arts performances and public affairs programs about local issues ranked the highest in interest. Sixty-two percent (62%) of viewers want to see local arts programming while 54 percent are interested in public affairs program.
- Port Commission, Parks Board and other official meetings ranked the lowest. Nearly two out of five (37%) viewers say they do not want to see official meetings.
- There was also little interest in local sporting events.

FIGURE 94
TV-SEA VIEWING – INTEREST IN FUTURE PROGRAMMING
(BASE: Respondents who Watch TV-Sea)

Viewers are most interested in local arts performances and public affairs programming. They are least interested in meetings.



Appendix

Questionnaire

INTRODUCTION / SCREENER

INTRO Hello, this is _____ with Northwest Research Group. Today we are conducting a study for the City of Seattle about issues pertaining to your community, and would like to include the opinions of your household. This call may be monitored for quality control purposes. For this survey, we are interested in speaking with someone who lives in this household and is 18 years of age or older. Would that be you?

[IF NECESSARY: Let me assure you that this is not a sales call and everything you say will be kept strictly confidential.]

[PRESS ANY KEY TO CONTINUE]

S1 What is your home zip code?

_____ ENTER ZIP CODE
99999 DON'T KNOW / REF **[SKIP TO THANK9 DISPOSITION = 8]**

S2 To verify, the zip code I entered was [SHOW ZIP CODE ENTERED IN S1]. Is this correct?

1 YES
2 NO [SKIP TO S1]
9 DON'T KNOW / REF **[SKIP TO THANK9 DISPOSITION = 8]**

[IF ZIP CODE NOT IN CITY OF SEATTLE SKIP TO THANK1 DISPOSITION = 12]

S3 [IF ZIP CODE = 98133 OR 98177] Do you live North or South of 145th Street?

[IF NECESSARY, PROBE: 'North or South of the Seattle Golf and Country Club?]

1 NORTH OF 145TH STREET **[SKIP TO THANK1 DISPOSITION = 18]**
2 SOUTH OF 145TH STREET
9 DON'T KNOW / REF **[SKIP TO THANK9 DISPOSITION = 8]**

GENDER ENTER RESPONDENTS GENDER

1 MALE
2 FEMALE

ACCESS TO INFORMATION TECHNOLOGY

A1 Do you have a cell phone available for your own personal use?

1 YES
2 NO
9 DON'T KNOW / REFUSED

A2 Do you have a pager available for your own personal use?

1 YES
2 NO
9 DON'T KNOW / REFUSED

A3 Do you have a working television in your household?

1 YES
2 NO **[SKIPTO A9]**
9 DON'T KNOW / REFUSED **[SKIPTO A9]**

A4 Do you currently subscribe to cable television?

1 YES
2 NO
3 DON'T KNOW
9 REFUSED

A5 Do you currently have satellite service for your television?

1 YES
2 NO
3 DON'T KNOW
9 REFUSED

A6 **[IF A4 = 1]** Have you ever seen or watched the City of Seattle Government cable Channel, TV-Sea on channel 21?

[TV-SEA IS PRONOUNCED TV-SEE],

1 YES
2 NO **[SKIP TO A9]**
9 DON'T KNOW / REF **[SKIP TO A9]**

A7 How often do you typically watch TV-Sea / Channel 21? If you do not watch regularly, please just tell me that.

[READ AS NECESSARY]

[IF DON'T WATCH REGULARLY ENTER CHOICE 6]

1 (Several days a week or more often)
2 (Once a week)
3 (A few times a month but less often than once a week)
4 (Once a month)
5 (Less often than once a month)
6 VARIES / JUST CHANNEL SURFING
9 DON'T KNOW / REFUSED

A8 Which specific programs, if any, do you watch on TV-Sea? Do you watch…

[READ EACH RESPONSE ONE AT A TIME. WAIT FOR RESPONSE BEFORE GOING ON.]

1 Regular Programs, such as Seattle Citizen, Beyond the Badge, or Book Talk
2 City Council Meetings
3 Other cultural events, such as Clay Jenkinson's Living History Series
4 Other specific programs [SPECIFY]
5 NONE / JUST SURFING
6 DON'T KNOW / REFUSED / NO MORE APPLY

A8INT TVSea is going to expand it's programming. We want feedback from viewers on what they'd like to see. Please rank your interest in the following possible options. For each, please use a 5-point scale where a "5" indicates you would like to see this, a "3" is neutral and a "1" is don't want to see this. Consider each one independent of the others.

[ROTATE A8A TO A8F]

A8A (IF NECESSARY: Would you like to see…)

Local arts performances

[PROBE: Please use a 5-point scale where a "5" indicates you would like to see this, a "3" is neutral and a "1" is you do not want to see this. Please consider each one independent of the others. They can all be high, medium or low.]

1 DON'T WANT TO SEE
2
3 NEUTRAL
4
5 WANT TO SEE
8 DON'T KNOW
9 REFUSED

A8B Public affairs programs about local issues

A8C Port Commission, Parks Board, or other official meetings

A8D Meetings of neighborhood groups

A8E Local sports events, such as high school football

A8F Other non-local programming, such as old films

A9 Do you have a working computer at your house that is available for your own personal use?

1 YES
2 NO **[SKIPTO A10B]**
3 DON'T KNOW **[SKIPTO A10B]**
9 REFUSED **[SKIPTO A10B]**

A10A How many years old is that computer?

[IF LESS THAN ONE YEAR ENTER 0]

[IF MORE THAN ONE COMPUTER: Please think about the newest computer.]

__ ENTER NUMBER OF YEARS
99 DON'T KNOW / REFUSED
[SKIPTO A11]

A10B For what reasons do you **not** have a computer available for your use at your home?

1 COST / TOO EXPENSIVE
2 DON'T KNOW HOW TO USE IT
3 SUFFICIENT ACCESS ELSEWHERE
4 SAFETY / SECURITY CONCERNS
5 DON'T WANT ONE
6 OTHER1 [SPECIFY]
7 OTHER2 [SPECIFY]
8 OTHER3 [SPECIFY]
9 DON'T KNOW
10 REFUSED / NO MORE APPLY

A10C Have you ever used a computer?

1 YES **[SKIPTO A12]**
2 NO **[SKIPTO A12]**
9 DON'T KNOW / REFUSED **[SKIPTO A12]**

A11 How much time do you personally use your computer(s) at home?

[PROBE: Please answer in hours per day, per week, or per month.]

[ENTER ZERO IF DON'T USE COMPUTER]

___ ENTER NUMBER OF HOURS
999 DON'T KNOW / REFUSED

A11A ENTER BASE

1 PER DAY
2 PER WEEK
3 PER MONTH

A12 Do you have Internet access at home?

[IF NECESSARY: Please remember that you can access the Internet in ways other than from a computer, for example WebTV.]

1 YES **[SKIPTO A13]**
2 NO
3 DON'T KNOW **[SKIPTO A15]**
9 REFUSED **[SKIPTO A15]**

A12A For what reasons do you not have Internet access at your home?

1 COST / TOO EXPENSIVE
2 DON'T KNOW HOW TO SET IT UP
3 DON'T KNOW HOW TO USE IT ONCE IT IS SET UP
4 SUFFICIENT ACCESS ELSEWHERE
5 SAFETY / SECURITY CONCERNS
6 DON'T HAVE COMPUTER OR OTHER INTERNET DEVICE
7 DON'T WANT
8 OTHER1 [SPECIFY]
9 OTHER2 [SPECIFY]
10 OTHER3 [SPECIFY]
11 DON'T KNOW
12 REFUSED / NO MORE APPLY

[SKIPTO A15 UNLESS A10C > 1 THEN SKIPTO A24]

A13 What speed or type of Internet connection do you use at home to access the Internet?

[SELECT ALL THAT APPLY]

1 14.4 MODEM
2 28.8 MODEM
3 36K MODEM
4 56K MODEM
5 WIRELESS
6 DSL
7 CABLE MODEM (SUCH AS @HOME SERVICE)
8 WEB TELEVISION
9 HAS MODEM – DON'T KNOW SPEED
10 OTHER1 [SPECIFY]
11 OTHER2 [SPECIFY]
12 OTHER3 [SPECIFY]
13 DON'T KNOW
14 REFUSED / NO MORE APPLY

A14 How much time do you personally spend using the Internet at home?

[PROBE: Please answer in hours per day, per week, or per month.]
[ENTER ZERO IF DO NOT USE INTERNET]

___ ENTER NUMBER OF HOURS
999 DON'T KNOW / REFUSED

A14A ENTER BASE

1 PER DAY
2 PER WEEK
3 PER MONTH

A15 Do you have an e-mail address?

1 YES
2 NO **[SKIPTO A17]**
3 DON'T KNOW **[SKIPTO A17]**
9 REFUSED **[SKIPTO A17]**

[IF A10C > 1 SKIPTO A24 INSTEAD OF A17]

A16 **[IF A15 = 1]** How much time do you spend writing, reading and sending e-mail messages for personal purposes (that is, not for work or school reasons)?

[PROBE: Please answer in hours per day, per week, or per month.]

[IF NONE ENTER ZERO]

___ ENTER NUMBER OF HOURS
999 DON'T KNOW / REFUSED

A16A ENTER BASE

1 PER DAY
2 PER WEEK
3 PER MONTH

A16B How much time do you spend writing, reading and sending e-mail messages for work or school purposes?

[PROBE: Please answer in hours per day, per week, or per month.]

[IF NONE ENTER ZERO]

___ ENTER NUMBER OF HOURS
999 DON'T KNOW / REFUSED

A16C ENTER BASE

1 PER DAY
2 PER WEEK
3 PER MONTH

A17 **[IF A9 = 1]** Besides yourself, who else uses your home computer?

1 FRIEND
2 PARENT
3 HOUSEMATE
4 PARTNER/SPOUSE
5 CHILDREN
6 SIBLINGS (BROTHER/SISTER)
7 OTHER (SPECIFY)
8 NOBODY OTHER THAN RESPONDENT
9 DON'T KNOW / REFUSED / NO MORE APPLY

A17INT I am going to read you a short list of other places that you might use a computer. For each one, please tell me if you use a computer at that place. The first one is…

[ROTATE A17A TO A17E BLOCKS]

A17A (IF NECESSARY: Do you use a computer at…)

Work?

1 YES
2 NO
9 DON'T KNOW / REFUSED

A17B School?

A17C Public Library?

A17D Community Center?

A17E Internet café?

A17F Some other place that I have not mentioned?

1 YES [SPECIFY]
2 NO
9 DON'T KNOW / REFUSED

[IF A17A-F ALL > 1 SKIPTO A21]

A18A-F **[FOR EACH YES IN A17]** How much time do you spend using the computer at [RECALL PLACE IN A17]?

[PROBE: Please answer in hours per day, per week, or per month.]

[IF LESS THAN ONCE A MONTH ENTER 0]

___ ENTER NUMBER OF HOURS
999 DON'T KNOW / REFUSED

A18A1-F ENTER BASE

1 PER DAY
2 PER WEEK
3 PER MONTH

A19A-F **[FOR EACH YES IN A17]** Do you use the computer at [RECALL PLACE IN A17] to access the Internet?

1 YES
2 NO
9 DON'T KNOW / REFUSED

A20A-F **[FOR EACH YES IN A19]** Of the time you spend on this computer [RECALL PLACE IN A19], what percentage is spent on the Internet?

[PROBE: Please answer in hours per day, per week, or per month.]

[IF LESS THAN ONCE A MONTH ENTER 0 AND THEN MONTHS]

___ ENTER PERCENT
999 DON'T KNOW / REFUSED

A21 **[A17A TO A17F ALL > 1 AND A10C = 1]** Why do you not use computers or the Internet at other locations such as at the library, community center or an Internet café?

1 DIDN'T KNOW IT WAS AVAILABLE
2 DON'T KNOW HOW TO USE IT
3 DON'T WANT TO
4 SUFFICIENT ACCESS ELSEWHERE
5 OTHER1 [SPECIFY]
6 OTHER2 [SPECIFY]
7 OTHER3 [SPECIFY]
8 DON'T KNOW
9 REFUSED / NO MORE APPLY

A22INT**[IF HAS COMPUTER AT HOME OR SOME OTHER PLACE]** I am going to read you a list of things you might use your computer for. For each one I read, please tell me how important it is to you personally to use a computer for this purpose. Please use a five point scale where "5 " means it is "very important" and a "1" means it is "not at all important." You may also use any number in between. If you don't use your computer for this purpose, you can also tell me that. Please also keep in mind that this could be a computer that you have at home, work, school, or some other place.

[PRESS ANY KEY TO CONTINUE]

[ROTATE A21A TO A21S]

A22A (IF NECESSARY: How important is it to you to use a computer for…)

Personal communication like e-mail, or instant messaging

[PROBE: Please use a five point scale where "1" means it is "not at all important" and a "5" means it is "very important." You may also use any number in between. If you do not use your computer for this purpose, please just tell me that]

1 NOT AT ALL IMPORTANT
2
3
4
5 VERY IMPORTANT
6 DON'T USE FOR THIS PURPOSE
8 DON'T KNOW
9 REFUSED

A22C To get health or medical information

A22D To manage your finances

A22E To learn about current events

A22F For entertainment or sports

A22G To start or maintain your own business

A22H To create graphics or view and edit photos

A22I To gather information about products or services you might wish to purchase

A22J To purchase products or services. By purchase, I mean actually entering your credit card into the computer.

A22K To search for jobs

A22L To do work-related tasks

A22M For researching or gathering information about hobbies or other personal interests

A22N For playing games

A22O To contact elected officials

A22P To participate in chat rooms

A22Q To find news about travel or make travel arrangements

A22R For education purposes or homework for school

A22S To participate in community or political activities

A22T What other things, that I have not mentioned, do you use your computer for?

1 SPECIFY TASK#1
2 SPECIFY TASK#2
3 SPECIFY TASK #3
4 NONE / NO OTHER TASKS
5 DON'T KNOW / REFUSED

A23 **[IF A12 = 1 OR A19A-F HAS ONE OR MORE = 1]** Overall, is the Internet connection that you use for personal purposes…

1 Fast enough for your needs
2 Almost fast enough
3 Slow, or
4 So slow its hard to use?
9 DON'T KNOW/REFUSED

A24 **[ALL]** Would you like to use a computer more than you currently do?

1 YES
2 NO
3 DON'T KNOW
9 REFUSED

A25 **[ALL]** And the Internet? Would you like to use the Internet more than you currently do?

1 YES
1 NO
2 DON'T KNOW
9 REFUSED

LITERACY

IF NEVER USED A COMPUTER AND NO INTERNET ACCESS AT HOME [A10C <> 1 AND A12 <> 1] SKIPTO DINT

IF NEVER USED A COMPUTER BUT HAS INTERNET ACCESS AT HOME (A10C <> 1 AND A12 = 1) ASK B1B AND B2J TO B2Q THEN SKIPTO DINT

B1A Overall, how comfortable are you using a computer? Please use a five point scale where "5" means you are "very comfortable" and a "1" means you are "not at all comfortable" using a computer. You may also use any number in between.

1 NOT AT ALL COMFORTABLE
2
3
4
5 VERY COMFORTABLE
8 DON'T KNOW
9 REFUSED

B1B And overall, how comfortable are you using the Internet? Please use a five point scale where "5" means you are "very comfortable" and a "1" means you are "not at all comfortable" using the Internet. You may also use any number in between.

1 NOT AT ALL COMFORTABLE
2
3
4
5 VERY COMFORTABLE
8 DON'T KNOW
9 REFUSED

B2INT I am going to read you a list of computer tasks. For each one I read, please tell me how comfortable you are completing that task on the computer. Again, please use a five point scale where "5" means you are "very comfortable" and a "1" means you are "not at all comfortable" completing that task. If you have never done this task, please just tell me that.

[PRESS ANY KEY TO CONTINUE]

[ROTATE LIST B2A TO B2I]

B2A (How comfortable are you…)

Navigating using a mouse

[PROBE: How comfortable are you completing that task on the computer. Please use a five point scale where "5" means you are "very comfortable" and a "1" means you are "not at all comfortable" completing that task. If you have never done this task, please just tell me that. You can also use any number in between.]

1	NOT AT ALL COMFORTABLE
2	
3	
4	
5	VERY COMFORTABLE
6	NEVER DONE THIS TASK
8	DON'T KNOW
9	REFUSED

B2B Typing, editing and printing using a word processing program

B2C Saving a file

B2D Opening a saved file

B2E Creating a flyer that includes color, simple pictures, and graphics

B2E1 Scanning and editing images

B2F Creating a simple budget using a spreadsheet program

B2G Adding or changing a peripheral (for example, a printer, external drive, scanner)

B2H Installing new software

B2I Setting up a new computer

[ROTATE B2J TO B2Q]

B2J Downloading files from the Internet

B2K Setting up a new Internet connection

B2L Creating and sending a message using email

B2M Replying to an email message

B2N Sending and opening attachments in an email

B2O Signing up and removing yourself from an email distribution list (or listserve)

B2P Finding and retrieving information on the web

B2Q Creating a web site

FLUENCY

C1 How many new computer programs or applications have you learned to use, if any, in the past year?

[PROBE: Just your best estimate is fine.]

__ ENTER NUMBER
98 DON'T KNOW
99 REFUSED

C2 How many times, if any, have you helped someone else to get started using computers or the Internet in the past year?

[PROBE: Just your best estimate is fine.]

__ ENTER NUMBER
98 DON'T KNOW
99 REFUSED

C3 How many times, if any, have you helped someone learn a new computer program or application in the past year?

[PROBE: Just your best estimate is fine.]

__ ENTER NUMBER
98 DON'T KNOW
99 REFUSED

COMMUNITY BUILDING

DINT I am going to read you a list of groups and organizations. For each one I read, please tell me if you currently participate in that group.

[PRESS ANY KEY TO CONTINUE] -- **[ROTATE D1A-D3H2 BLOCKS]**

D1A (Do you currently participate in…)

A neighborhood association?

1 YES
2 NO
3 DON'T KNOW
9 REFUSED

D1C A school association (like the PTSA)

D1D A local sports team or club

D1E A cultural organization

D1F A local business association

D1G A book club

D1H A community group

D1H2 A senior center

D1I Do you participate in any other type of group or organization I have not mentioned?

1 YES [SPECIFY WHAT]
2 NO
3 DON'T KNOW
9 REFUSED

D2A-I **[IF D1A-I = 1]** To the best of your knowledge, does this group use email or the Internet to communicate with its members?

1 YES
2 NO
3 DON'T KNOW
9 REFUSED

D3A-I **[IF D1A-I = 1]** To the best of your knowledge, does this group have a web page?

1 YES
2 NO
3 DON'T KNOW
9 REFUSED

D4 **[IF NEVER USED COMPUTER OR INTERNET (A10C = 1AND A12 <> 1) SKIPTO F1]** In the past year, have you tried to find information about local businesses on the Internet, either in a directory or on the business' web site?

1 YES
2 NO **[SKIPTO E1]**
3 DON'T KNOW **[SKIPTO E1]**
9 REFUSED **[SKIPTO E1]**

D5 How satisfied are you with the information about local businesses that is currently available on the Internet? Please use a five point scale where "5" means you are "very satisfied" and a "1" means you are "not at all satisfied." You may also use any number in between.

1 NOT AT ALL SATISFIED
2
3
4
5 VERY SATISFIED
8 DON'T KNOW
9 REFUSED

CIVIC PARTICIPATION

E1 In your opinion, how effective are email and the Internet as ways to communicate your opinions about issues that affect you in your community? Please use a 5-point scale where 1 is "not at all effective" and 5 is "very effective." You may also use any number in between.

1 NOT AT ALL EFFECTIVE
2
3
4
5 VERY EFFECTIVE
9 DON'T KNOW / REFUSED

E2 In your opinion, how effective are email and the Internet as ways to communicate with elected officials? Please use a 5-point scale where 1 is "not at all effective" and 5 is "very effective." You may also use any number in between.

1 NOT VERY EFFECTIVE
2
3
4
5 VERY EFFECTIVE
9 DON'T KNOW / REFUSED

E3 In the past year, have you used the Internet to obtain information from a city, county, state, or federal government?

1 YES
2 NO
3 DON'T KNOW
9 REFUSED

HUMAN RELATIONSHIPS TO TECHNOLOGY

F1INT **[IF NEVER USED COMPUTER]** These next questions are going to ask about the ways that computers and the Internet affect people's life. While I understand that you do not use this technology, we are still interested in your opinions about these issues. You can base your answers on anything you might have heard, seen or read.

[PRESS ANY KEY TO CONTINUE]

F1 Do you feel that companies and organizations that you can visit on the Internet use personal information appropriately?

[IF NEEDED: Please base your response on anything you might have seen, read or heard.]

1 YES
2 NO
3 DON'T KNOW / DEPENDS
9 REFUSED

F2 Do you feel that there are adequate precautions for children to access the web safely?

[IF NEEDED: Please base your response on anything you might have seen, read or heard.]

1 YES
2 NO
3 DON'T KNOW / DEPENDS
9 REFUSED

F3 How confident are you that financial transactions on the Internet are secure and private? Would you say that they are very secure, somewhat secure, neither secure nor not secure, somewhat not secure, or very not secure?

[IF NEEDED: Please base your response on anything you might have seen, read or heard.]

1 VERY NOT SECURE
2 SOMEWHAT NOT SECURE
3 NEITHER SECURE NOR NOT SECURE
4 SOMEWHAT SECURE
5 VERY SECURE
8 DON'T KNOW / DEPENDS
9 REFUSED

F4 **[IF NEVER USED COMPUTER (A10C = 1) SKIPTO F5]** Are you satisfied or dissatisfied with the content of the World Wide Web for your needs?

Would you say that you are very or somewhat satisfied / dissatisfied?

1 VERY DISSATISFIED
2 SOMEWHAT DISSATISFIED
3 NEITHER SATISFIED NOR DISSATISFIED
4 SOMEWHAT SATISFIED
5 VERY SATISFIED
8 DON'T KNOW / DEPENDS
9 REFUSED

F5 How has information technology – that is tools such as computers, software, and the Internet – impacted your personal time? Would you say that it has increased, decreased, or made no difference in the amount of personal time that you have?

[PROBE: Would that be greatly or somewhat increased / decreased your personal time?]

1 GREATLY DECREASED
2 SOMEWHAT DECREASED
3 NO DIFFERENCE
4 SOMEWHAT INCREASED
5 GREATLY INCREASED
8 DON'T KNOW
9 REFUSED

F6 How have computers and the Internet changed your life? Would you say they have had a very positive impact, a somewhat positive impact, no impact, a somewhat negative impact, or a very negative impact?

[PROBE: By information technology I mean tools including personal computers, computer software, and the Internet.]

1 VERY NEGATIVE IMPACT
2 SOMEWHAT NEGATIVE IMPACT
3 NO IMPACT
4 SOMEWHAT POSITIVE IMPACT
5 VERY POSITIVE IMPACT
8 DON'T KNOW
9 REFUSED

F7 How has information technology changed the quality of life in Seattle? Would you say it has had a very positive impact, a somewhat positive impact, no impact, a somewhat negative impact, or a very negative impact on the quality of the life in Seattle?

[PROBE: By information technology I mean tools including personal computers, computer software, and the Internet.]

1 VERY NEGATIVE IMPACT
2 SOMEWHAT NEGATIVE IMPACT
3 NO IMPACT
4 SOMEWHAT POSITIVE IMPACT
5 VERY POSITIVE IMPACT
8 DON'T KNOW
9 REFUSED

BUSINESS AND ECONOMIC DEVELOPMENT

I1 **[IF A12 = 1]** Have you used the Internet to sell goods or services from your home?

1 YES
2 NO
3 DON'T KNOW
9 REFUSED

PAN USAGE

[IF A12 <> 1 SKIPTO KINT]

J1 Have you ever visited the City of Seattle web site; sometimes called the Public Access Network or cityofseattle (dot) net?

1 YES
2 NO **[SKIPTO KINT]**
8 DON'T KNOW **[SKIPTO KINT]**
9 REFUSED **[SKIPTO KINT]**

J2INT Did you visit the City of Seattle web site for any of the following reasons…?

[PRESS ANY KEY TO CONTINUE]

[ROTATE J2A TO J2G]

J2A (IF NECESSARY: Did you visit the web site to…)

Look for a schedule or calendar?

1 YES
2 NO
9 DON'T KNOW / REFUSED

J2B Look for a name, address or contact?

J2C Curiosity, looking around, or browsing?

J2D Looking for specific information about a city service or the City of Seattle?

J2E Send a message to an elected official?

J2F Reporting a problem/making a complaint

J2G Transact an on-line service (pay parking ticket; check permit status, etc.)

J2HFor what other reasons did you visit the City of Seattle web site?

[OPEN ENDED QUESTION]

J3A Did you find what you were looking for on the City of Seattle's web site (CityofSeattle.net?)

YES **[SKIPTO J4]**
NO
DON'T KNOW /REFUSED **[SKIPTO J4]**

J3B What were you looking for?

[OPEN ENDED QUESTION]

J4 What features, services and/or information should be added to the City of Seattle's web site?

[READ LIST ONE AT A TIME AND SELECT IF YES]

1 Pay Bills, Fees Or Taxes
2 Reserve A Parks Facility (Tennis Court, Ball Field, Etc.)
3 Apply For A License Or Permit
4 Find Maps Or Geographic Information
5 Find Information About A Meeting Or Event
6 Arts Or Cultural Information
7 Any other feature I have not mentioned?(Specify)
8 NONE
9 DON'T KNOW / REFUSED / NO MORE APPLY

J5 The City of Seattle currently does not have advertising on its web site. Do you think there should be advertising on the city government's web site?

1 YES
2 NO
3 DON'T KNOW/DON'T CARE
9 REFUSED

DEMOGRAPHICS

KINT Now I just have a few final questions to help us group your answers with others. Let me assure you that all of your responses will be kept strictly confidential.

[PRESS ANY KEY TO CONTINUE]

K4 How many people, including you, live in your house?

__ ENTER NUMBER IN HOUSEHOLD
99 REF

K5 **[IF K4 > 1]** How many children under the age of eighteen live in your household?

__ ENTER NUMBER OF CHILDREN
99 REF

K6 What is your age?

__ ENTER AGE
99 REFUSED

K7 **[IF K6 = 99]** Are you between?

1 18 to 25,
2 26 to 35,
3 36 to 50,
4 51 to 64, or
5 65 years of age or older?
9 REFUSED

K8 What is the last year of schooling you completed?

[IF COLLEGE DEGREE PROBE: Would that be a two year or four year degree?]

1 Grade School or Some High School,
2 High School Graduate,
3 Some College, Technical or Vocational School or Two Year Degree,
4 Four Year College Graduate, or
5 Post Graduate Work or Graduate Degree?
9 REFUSED

K9 What is the primary language spoken at your home?

1 ENGLISH
2 SPANISH
3 OTHER [SPECIFY]
9 REFUSED

K10 What race or ethnicity do you consider yourself?

1 African American,
2 Asian / Pacific Islander,
3 Caucasian,
4 Hispanic / Latino, or
5 Native American / American Indian
6 OTHER [SPECIFY]
9 REFUSED

K11 Is your total household income above or below *[SHOW AMOUNT3]* a year?

1 BELOW *[AMOUNT3]*
2 *[AMOUNT3]* OR ABOVE **[SKIPTO K13]**
9 REFUSED **[SKIPTO K14]**

K12 Would that be…

1 *[AMOUNT1]* or Less, or
2 *[AMOUNT1]* to *[AMOUNT2]*, or
2 *[AMOUNT2]* to *[AMOUNT3]*?
9 REF

K13 Would that be…

1 *[AMOUNT3]* to *[AMOUNT4]*,
2 *[AMOUNT4]* to *[AMOUNT5]*, or
3 *[AMOUNT6]* or More?
9 REF

INCOME QUESTION AMOUNTS BY HOUSEHOLD SIZE TABLE

Category	**Household Size (K4)**							
	1	2	3	4	5	6	7	8 or More
Extremely Low / Amount1	$13,150	$15,000	$16,900	$18,800	$20,300	$21,800	$23,300	$24,800
Low / Amount2	$21,900	$25,050	$28,150	$31,300	$33,800	$36,300	$38,800	$41,300
Moderate / Amount3	$33,450	$38,250	$43,000	$47,800	$51,600	$55,450	$59,250	$63,100
Middle / Amount 4	$41,650	$47,600	$53,500	$59,450	$64,250	$69,000	$73,750	$78,500
Upper Middle / Amount5	$55,000	$60,000	$65,000	$70,000	$74,000	$78,000	$82,000	$86,000
Upper / Amount6	$75,000	$80,000	$85,000	$90,000	$94,000	$98,000	$102,000	$106,000

[BASED UPON 1999 HUD GUIDELINES AT 30%/50%/80% AND 95% PMSA LEVELS]

K14 Those are all the questions we have at this time. The City of Seattle is interested in how your community is changing over the years. Would you be willing to let us contact you again with similar questions in the future?

[Note: This would not be more than once a year]

1 YES
2 NO / DON'T KNOW / REF **[SKIP TO THANK]**

K15 May I please have your first name?

[OPEN-ENDED RESPONSE]

THANK Thank you very much for your time and the useful information you have shared. Have a good evening.

[PRESS ANY KEY TO END INTERVIEW]

INTNUM ENTER INTERVIEWER NUMBER

___ ENTER NUMBER

THANK1 Thank you for your time, but we today we are interviewing residences located within the City of Seattle boundaries.

[PRESS ANY KEY TO CONTINUE]

THANK9 Thank you for your time, but we cannot continue without that information.

[PRESS ANY KEY TO CONTINUE]

DISP #	DISPOSITION	DISPLAY TYPE	PROPERTY	INCIDENCE
		P/S/I/H	A/B/C/N/R/F	D/B/I
1	No Answer	P	N	D
2	Busy	P	B	D
3	Answering Machine	P	N	D
4	Disconnected / Nonworking	P	F	D
5	Soft Refusal (Callback To Convert)	P	R	D
6	Hard Refusal	P	F	D
7	Never Call	P	F	D
8	Screener Refusal	H	F	D
9	Communication Barrier (not due to Language)	P	F	D
10	Language Barrier (Spanish)	P	F	D
11	Language Barrier (Asian)	P	F	D
12	Language Barrier (Other)	P	F	D
13	Language Barrier (Not Determined)	P	F	D
14	Callback Introduction	P	C	D
15	Callback Interview	I	C	I
16	Mid-Terminate	I	F	I
17	NQ – Under the age of 18	H	F	B
18	NQ – Out Of Area (not Seattle resident)	H	F	B
40	Complete	H	F	I