

DIGITAL DIVIDE IN BERKELEY AND THE US

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INTRODUCTION

This report helps define the issue of “digital divide” and focuses on whether a “digital divide” exists in Berkeley. It offers general definitions and summarizes public policy issues related to the matter. It also compares certain findings from our Berkeley residential telephone survey to national findings tracked by federal agencies¹

DEFINING DIGITAL DIVIDE ISSUES:

What is the Digital Divide: Initially, in the mid 90’s the matter surfaced in public policy circles as a question of whether certain geographic segments of cities were lacking infrastructure and were effectively being ignored by telecommunications providers. Accordingly, researchers investigated whether portions of society were being ignored in the deployment of the “information super highway”. Research at this time looked at differences in deployment of telecommunication facilities, such as relative placement in communities of copper facilities, fiber facilities, switches, internet portals, etc., between broad groups of the population (e.g. urban vs. rural²; business vs. residential; and low-income areas vs. affluent, etc.). Another research approach is represented by a Cal Berkeley research project which studies the geographic location or presence of web-site owners³. This research is discussed later in this report

Subsequent research turned to examining economic factors which may also affect the deployment of technology and research focused on whether specific classes or groups of our populations were being “priced-out” of the equation. Public policy attention was focused on whether special governmental protections

¹ Department of Commerce, National Telecommunication and Information Administration and Federal Communications Commission.

² Snapshot from Geographical Regions as found by Department of Commerce: The West continues to be the most on-line region of the country, with household Internet access of 46.6%, followed by the Northeast (43.0%), Midwest (40.9%), and South (37.9%). Rural areas in the Northeast registered the highest access rate (49.9%), followed by urban areas in the West (47.2%). Northeast central city regions had the lowest household access rate (33.1%), followed by rural regions in the South (33.8%). Computer Ownership by Geography Nationally, just over half (51%) of households own computers, up from 42.1% in December 1998. Urban areas had the highest rate of ownership (51.5%), increasing 8.6 points in the last 20 months. Rural areas, tracking the growth in Internet access, increased 9.7 percentage points, to reach a household ownership level of 49.6%. Central cities had a 46.3% ownership rate.

³ See http://socrates.berkeley.edu/~zook/domain_names

(such as universal service) should be afforded the public to assure that every American had lifeline access to basic telecommunications and the Internet.

Later yet, digital divide research was further focused on social and cultural biases inherent to the matter. Specifically, research looked at cultural and age related factors that may restrict or partition the use of advanced telecommunications by special segments of our population.

Now, as the world wide web positions itself and its users to be the omnipresent delivery system for advanced telecommunications and information services (IP Voice, video streaming, e-commerce, data exchange, intranet, and internet etc.) much recent public policy concern in the digital divide debate has centered on availability of broadband high speed internet access. Broadband in this case centers on DSL, cable modems, T1, and other digital private line services in excess of 384 kb per second.

So the broad “digital divide” question basically boils down to the following key issues:

- Availability – does infrastructure exist in the community (lines, portals, switches, internet service providers, etc.)?
- Accessibility – is the public purchasing the necessary terminal hardware exists (phones, computers, modems, wireless personal communications devices, etc.) and/or are similar facilities being made available to citizens in public facilities?
- Affordability – are information services priced in a manner which enables all residents to participate or are price points such that certain segments are unable to participate?
- Variations of Use – do differences exist between populations or cultures in how they embrace or value advanced telecommunications services and what can be done to address these differences?

Matthew Zook, a researcher from the Department of City and Regional Planning at the University of California-Berkeley, has done extensive analysis of the geographic distribution of Internet use and its relationship to local economies (see http://socrates.berkeley.edu/~zook/domain_names/). One measurement he tracks is the number of domains registered per thousand businesses in a city.

Zook states: “The largest concentrations of Internet users and producers are located in urban areas and many of the most innovative firms in the Internet space are housed in downtowns. There should be nothing surprising about this since, cities have always been the primary source of innovation and will continue to play this role in the future. Although the power of the Internet opens up new possibilities for long-range collaboration and even new spaces of interaction within cyberspace, it also exhibits much of the traditional unevenness that has characterized urban and economic development throughout history. The fact that

information can be easily and widely distributed is often mistaken for an indication that the production of this information is also diffused. In fact, there is a much more complicated dynamic involving the connection of specific places to global networks resulting in a system of production that is both place-rooted and networked at the same time.”

DIGITAL DIVIDE IN BERKELEY BASED ON THE SURVEY DATA:

In November 2000, the City of Berkeley contracted with Communications Support Group, Inc. and its subcontractor, the Social Science Research Center (SSRC) at California State University, Fullerton to assess the telecommunications needs, concerns, and interests of its residents. To investigate these issues, the SSRC conducted a Random Digit Dial (RDD) survey, completing 803 telephone interviews with residents in randomly selected households in the City of Berkeley.

These data are utilized here to investigate the digital divide in Berkeley. Detailed descriptions of the survey results and methodology were previously reported. The telephone survey conducted in November and December 2000 queried heads of households or their spouses or domestic partners. It was designed as a household survey, and the sample produced accurate estimates of the attributes of the population of Berkeley households (e.g. total annual household income, zip code, number of computers and internet connections in the household). The relationships between individual attributes though, (e.g. race/ethnicity, highest educational attainment) and the use of information technology cannot be estimated quite as accurately.

Precise observations about the relationship between individual attributes of the adult population of Berkeley and access to and use of IT require a slightly different sampling strategy than the one employed in this study. Rather than deliberately selecting the head of household or her or his spouse or domestic partner, in such research one respondent would be randomly selected from among all persons in the household 18 years of age and older. This extra sampling stage distinguishes a population from a household survey. The random selection of an adult within the randomly selected households would have better supported investigation of the relationships between attributes of individuals and access to and use of IT. Nevertheless, the data reported here are highly indicative of the use of information and communication technology.

One further limitation of these data arises from the fact that the population of inference is Berkeley residents in households with at least one telephone line. The information and communication technology needs of those residing in households without telephones, the homeless, and those residing in institutions including jails and hospitals are not addressed by the present study.

Finally, a special note regarding Berkeley's student population. The digital divide is generally understood to be a function of the distribution of wealth. That is, economically disadvantaged groups typically have less access to information

technology, and less training in its use. This convention does not apply to the City of Berkeley, however, because approximately one third of the adult population consists of students, and students report very low incomes. For example, about 77% of students compared to 22.8% of non-students report a total annual household income less than \$25,000.

Results indicate that students clearly differ from other low-income residents of Berkeley with regard to the digital divide. Students' access to and use of information technology is high. Because they comprise a standing subgroup and permanent demographic feature of the City's overall population, they need to be included in telecommunication policy and planning. It is important, though, that students are considered separately in analyses of the relationship between income and information technology.

Personal Computer Use and Internet Access

In the November and December 2000 survey, all respondents were asked how many personal computers (both desktop and laptop) they had at home. One hundred nine (13.9%) of the 784 that provided an answer said none. The largest proportion of survey respondents (302, or 38.5%) reported having one computer, 197 (25.1%) two, 105 (13.4%) three, 46 (5.9%) four, 17 (2.2%) five, seven (.9%) six, and one respondent (.1%) reported that the members of his household had eight computers at home.

Students report a pattern of computer ownership that is significantly different than among non-students. The proportion of students that do not have at least one computer at home (4.6%) is lower than this proportion among non-students (18.5%). The proportions of students and non-students that report owning one (about 38%) and two computers (about 25%) are quite similar. A larger proportion of students, though, (29%) report residing in households with three or more computers than do non-students (20%).

In summary, about one of every seven households (13.9%) in Berkeley with a telephone does not have a computer in the home, but six out of seven, or 86.1% do. One out of every five and one half (18.5%) non-student households does not have a computer in the home, but four and one half out of five and one half, or 81.5% do. One out of every 22 (4.6%) student households with a telephone does not have a computer at home, but 21 out of 22 (95.4%) do.

Internet Access

Six hundred forty (92.2%) of the 694 respondents that reported having at least one computer at home reported that they also had an Internet connection at home, 48 (6.9%) do not, and six (.9%) did not respond. One way to investigate the digital divide is to categorize respondents into three groups: those with no computer at home, those with a computer at home but no internet access, and

those with an Internet-connected computer at home. Table 1 below indicates that these computing and connectivity categories are highly related to student status.

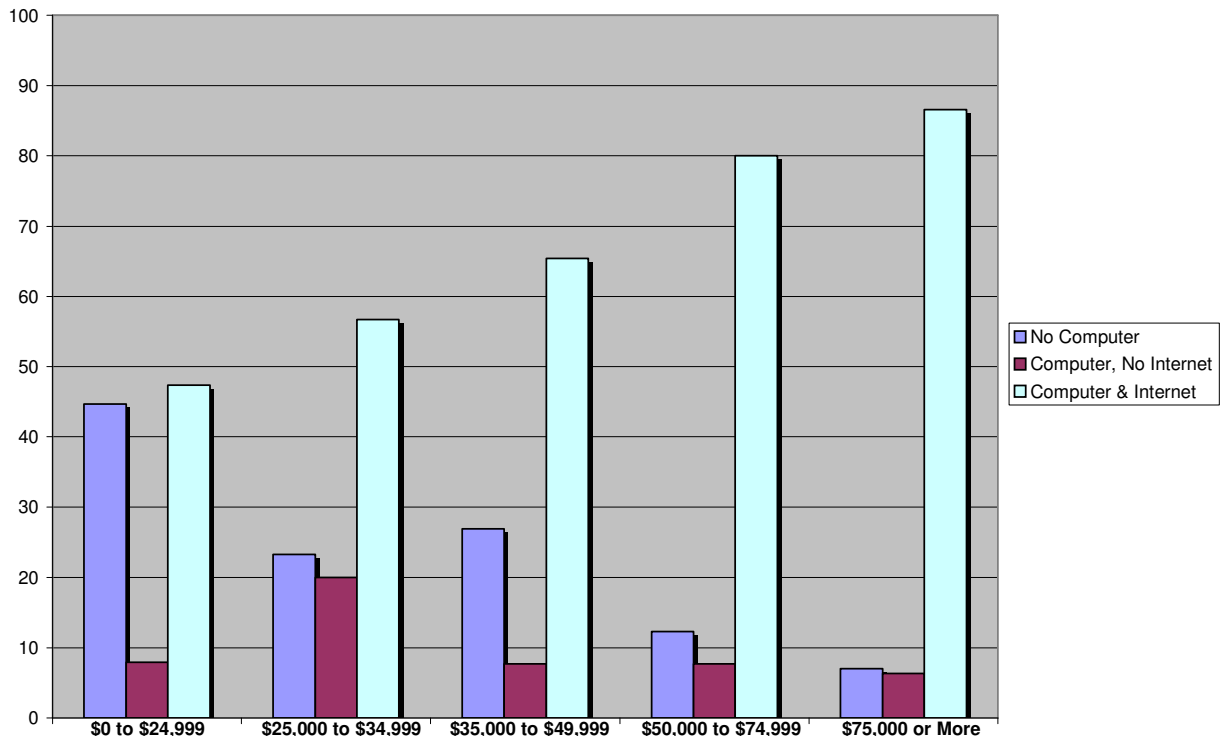
Table 1

Home Computer and Internet Access	Students	Non-Students	Total Sample
No computer at home	12 (4.5%)	95 (18.2%)	107 (13.6%)
Computer, no Internet Connection	11 (4.2%)	37 (7.1%)	48 (6.1%)
Computer and Internet Connection	241 (91.3%)	390 (74.7%)	631 (80.3%)
Total	264 (100.0%)	522 (100.0%)	786 (100.0%)

Home Computer & Internet Access by Income

We know that students have low incomes and Table 1 indicates that they have great access to information technology. When students are excluded, though, as indicated by the chart below, the relationship between total annual household income and home access to information technology is highly significant. Though the category including those reporting a total annual household income

Computer Ownership and Internet Access by Income, Excluding Students



less than \$25,000 is small (it includes just 11.6% of the entire non-student sample, or 38 cases), 44.7% of this group do not have a computer at home. Note the way that the first bar in each series “staircases” downward. Conversely, the proportion with both a computer and Internet access at home (the third bar in each series) rises along with income category, viewed from the left to the right side of the chart. About 47% of those earning less than \$25,000 per year have at least one internet-connected computer at home; a proportion that rises steadily to 86.6% among those reporting an income of \$75,000 or more.

Just 327 of the 803 cases in the sample database can be employed in this analysis, however. First, students are excluded (N=266), and secondly, 37.6% of Berkeley residents that are not students declined to report their income. Despite the relatively small number of cases, however, the strength of the relationship depicted by these sample data is likely to characterize the City’s population. That is, 40 to 50% of those in households with a total annual income of less than \$25,000 do not have a computer at home, and counting those, 50% to 60% in this income category do not have a home Internet connection.

As common sense suggests and these data confirm, low-income non-student residents are at greatest risk of limited access to information technology. The location of the 17 non-students that report a total annual household income less than \$25,000 and that have no computer at home was examined. These individuals are dispersed in the city across eight zip codes. Six reside in 94703, three in 94704, two each in 94707 and 94710, and one each in 94702, 94705, 94708 and 94709.

Just three of the 38 (7.9%) in this non-student low-income category have computers at home that aren’t Internet-connected. Again, 21 of 38 (47.4%) do have Internet-connected computers at home. Among these three individuals, cost and a lack of knowledge are cited by just one as the reasons. Both of the others reply that they don’t have an Internet connection at home because they use the Internet at work.

Clearly, with more than nine out of every ten student households including an Internet-connected computer, by this index, they are not excluded from access to information technology. Among non-students, though, 47% of households with a total annual income below \$25,000 do not have an Internet-connected computer at home. How extensive is this evidence of a digital divide?

If the proportion of Berkeley residents that declined to report their total annual household income is equally distributed across income categories, then about 12% of non-student households earn less than \$25,000 per year. Given that Internet-connected computers are found in 53% of these very low-income households, then these data suggest that about 5.6% (.47 without Internet connected computers X .12 of the sample in this income category= .0564), of the city’s households with telephones are at risk of exclusion from access to

information technology. This represents just less than one third of the 19.7% of households in Berkeley that are not Internet-connected

High-Speed Connection to the Internet

Of the 640 respondents with home Internet access, 195 (30.5%) have at least one computer in their household with a high-speed connection, that is, a speed above 56 KBPS. Two hundred sixty-seven (41.7%) have a low speed connection, and 178 (27.8%) of the residents did not know at what speed they connect to the Internet. These proportions are nearly identical among both students and non-students. In fact, there is no significant relationship between student status, total annual household income, nor between level of educational attainment and speed of Internet connection.

Zip Code, Presence of a Computer, Internet Connection and Connection Speed among Non-students

Table 2 on the following page depicts the proportion of non-students in each zip code area that:

- do not have a computer at home;
- have one or more computers, but do not access the Internet from home;
- have one or more computers, access the Internet from home, but do not know the speed of that connection;
- have one or more computers, have Internet access at home, and do not have a high speed connection;
- and finally, that have one or more Internet-connected computers at home, at least one of which has a high-speed connection.

The differences in the percentage of internet-connected computers with a high-speed connection between zip codes are not statistically significant. Because of the small number of cases in many of these zip code areas, though, these proportions are not too reliable and should be interpreted with caution.

Table 2

Zip Code	No Computer	Computer, No Access to Net at Home	Computer, Net at Home, Don't Know Speed	Computer, Net at Home, Low Speed	Computer, Net at Home, High Speed	Total
94530	1 (50%)		1 (50%)			2 (100%)
94701	1 (50%)			1 (50%)		2 (100%)
94702	18 (25.4%)	6 (8.5%)	16 (22.5%)	22 (30.1%)	9 (12.7%)	71 (100%)
94703	24 (23.5%)	8 (7.8%)	20 (19.6%)	32 (31.4%)	18 (17.6%)	102 (100%)
94704	10 (18.2%)		12 (21.8%)	21 (38.2%)	12 (21.8%)	55 (100%)
94705	8 (12.3%)	5 (7.7%)	19 (29.2%)	15 (23.1%)	18 (27.7%)	65 (100%)
94706	1 (11.8%)	3 (23.5%)	1 (9.1%)	2 (18.2%)	4 (36.4%)	11 (100%)
94707	5 (11.9%)	2 (4.8%)	7 (16.7%)	17 (40.5%)	11 (26.2%)	42 (100%)
94708	12 (17.9%)	5 (7.5%)	19 (28.3%)	15 (22.4%)	16 (23.9%)	67 (100%)
94709	8 (12.5%)	5 (7.8%)	8 (12.5%)	20 (31.3%)	23 (35.9%)	64 (100%)
94710	5 (15.6%)	2 (6.3%)	7 (21.9%)	12 (37.5%)	6 (18.8%)	32 (100%)
Total	93	36	110	157	117	513

Although these data do not support precise estimates, they suggest that residents in the 94702 and 94703 zip code areas are most affected by the digital divide.

Residents' Rating of the Importance of the Internet at Home

Just 18.8% (19 out of 101) of Berkeley residents in households without computers report the opinion that having access to the Internet at home is "Very Important", compared to 41.7% (20 out of 48) of those in households with computers, but without an Internet connection, and to 78.7% (503 out of 639) of those that do have an Internet-connected computer at home. Do these data suggest that those who find it important to do so manage to connect from home, or that those without computers or without Internet connections at home simply don't understand the importance of what they're missing?

To make a judgment about the extent of the digital divide in Berkeley, it is critical to distinguish those who eschew access to information technology at home upon the basis of informed choice from those who want such access, but can't afford it. Among the 72 survey respondents that are not Internet-connected at home, but that rate home access to the Internet as "Very Important", 43 reported a total annual household income. Among these, just 12 or 27.9% earn less than \$25,000 per year. In contrast, 41.9% earn \$50,000 per year or more, and 25.6% earn \$75,000 or more per year. While the number of cases in this analysis is small, the conclusion is that very few Berkeley residents that value a home Internet connection may not be able to afford one.

HOW DOES BERKELEY'S DATA COMPARE TO NATIONAL NORMS?

The U.S. Department of Commerce, Economics and Statistics Administration, National Telecommunications and Information Administration's *Falling Through the Net: Toward Digital Inclusion*, October 2000⁴ study shows conclusively that not everyone is moving at the same speed toward utilizing technology, and certain segments of society are definitely lacking behind others in the pursuit of information.

Berkeley earns high marks when compared to the over-all US population:

- The share of households with Internet access in the US rose to 41.5% in August 2000. Berkeley's share is 81.6%.
- More than half of all households (51.0%) have computers, 86.1% of Berkeley residences do.
- E-mail remains the Internet's most widely used application. Nationally, 84.8% of Internet users reported using the Internet for email vs. 98.6% in Berkeley.
- On-line shopping and bill paying were used nationally by only 33.6% of Internet users, where as in Berkeley, 65.4% reported shopping online and 39.4% reported banking on-line in 2000.
- The percentage of those who went online to check news, weather, or sports, was 46% nationally, while those who indicated they web browsed for services, travel and personal health information in Berkeley was 90.6%
- Those using the Internet to search for information hovered around 59%, and those using the Internet for job-related tasks remained about 28%. Berkeley's survey did not sample this type of use.

⁴ See last page of this report for a description of methodology. For a complete copy of the survey results go to <http://www.esa.doc.gov/fttn00.wpd>

The rapid uptake of new technologies is occurring among most groups of Americans, regardless of income, education, race or ethnicity, location, age, or gender, suggesting that digital inclusion is a realizable goal. *Nationally, groups that have traditionally been digital "have nots" are now making dramatic gains:*

- Americans at every income level are connecting at far higher rates from their homes, particularly at the middle-income levels. Internet access among households earning \$35,000 to \$49,000 rose to 46.1% in August 2000. Today, nationally, more than two-thirds of all households earning more than \$50,000 have Internet connections (60.9% for households earning \$50,000 to \$74,999 and 77.7% for households earning above \$75,000). In Berkeley, Internet connections were found in 47% of homes with incomes less than \$25,000 and in 86.6% of homes with incomes above \$75,000.00.

Due to the fact that our Berkeley survey focused upon household attributes, we are unable to make comparisons to each of the following individual national statistics.

- Access to the Internet is expanding nationally across every education level, particularly for those with some high school or college education. Households headed by someone with "some college experience" showed the greatest expansion in Internet penetration of all education levels, rising from 30.2% in December 1998 to 49.0% in August 2000.
- The disparity in Internet usage between men and women has largely disappeared. In December 1998, 34.2% of men and 31.4% of women were using the Internet. By August 2000, 44.6% of men and 44.2% of women were Internet users.
- Individuals 50 years of age and older -- while still less likely than younger Americans to use the Internet -- experienced the highest rates of growth in Internet usage of all age groups: 53% from December 1998 to August 2000, compared to a 36% growth rate for individual Internet usage nationwide.

Nonetheless, according to the NTIA study, a national digital divide remains or has expanded slightly in some cases, even while Internet access and computer ownership are rising rapidly for almost all national groups studied. For example, the federal government's most recent data show that divides still exist between those with different levels of income and education, different racial and ethnic groups, old and young, single and dual-parent families, and those with and without disabilities. These differences were not as noticeable in the Berkeley study, and in some cases were not studied at all.

- People with a disability are only half as likely to have access to the Internet as those without a disability: 21.6% compared to 42.1%. And while just under 25% of people without a disability have never used a personal computer, close to 60% of people with a disability fall into that category. Disabilities were not sampled in the Berkeley study.
- Large gaps also remain regarding Internet penetration rates among households of different races and ethnic origins. Asian Americans and Pacific Islanders have maintained the highest level of home Internet access at 56.8%. Blacks and Hispanics, at the other end of the spectrum, continue to experience the lowest household Internet penetration rates at 23.5% and 23.6%, respectively.
- Large gaps for Blacks and Hispanics remain when measured against the national average Internet penetration rate.
 - The national divide between Internet access rates for Black households and the national average rate was 18 percentage points in August 2000 (a 23.5% penetration rate for Black households, compared to 41.5% for households nationally). That gap is 3 percentage points wider than the 15 percentage point gap that existed in December 1998.
 - The Internet divide between Hispanic households and the national average rate was 18 percentage points in August 2000 (a 23.6% penetration rate for Hispanic households, compared to 41.5% for households nationally). That gap is 4 percentage points wider than the 14 percentage point gap that existed in December 1998.
 - With respect to individuals, while about a third of the U.S. population uses the Internet at home, only 16.1% of Hispanics and 18.9% of Blacks use the Internet at home.
 - Differences in income and education do not fully account for this facet of the digital divide. Estimates of what Internet access rates for Black and Hispanic households would have been if they had incomes and education levels as high as the nation as a whole show that these two factors account for about one-half to two-thirds of the differences.
 - Nation-wide, with regard to computer ownership, the divide appears to have stabilized, although it remains large.
 - The August 2000 divide between Black households and the national average rate with regard to computer ownership was 18

percentage points (a 32.6% penetration rate for Black households, compared to 51.0% for households nationally).

- Americans 50 years of age and older are among the least likely to be Internet users. The Internet use rate for this group was only 29.6% in 2000. However, individuals in this age group were almost three times as likely to be Internet users if they were in the labor force than if they were not.
- Two-parent households are nearly twice as likely to have Internet access as single-parent households (60.6% for dual-parent, compared to 35.7% for male-headed households and 30.0% for female-headed households). In central cities, only 22.8% of female-headed households have Internet access.
- Even with broadband services, a relatively new technology used by only 10.7% of online households, there are disparities. Rural areas, for example, are now lagging behind central cities and urban areas in broadband penetration at 7.3%, compared to 12.2% and 11.8%, respectively.

The Department of Commerce's August 2000 data show that schools, libraries, and other public access points continue to serve those groups that do not have access at home. For example, certain groups, such as the unemployed, Blacks, and Asian Americans and Pacific Islanders, are far more likely to use public libraries to access the Internet.

CONCLUSION

The role of information technology in the nation's productivity and economic growth has accelerated dramatically over the past decade. An economy driven by goods and services has given way to a "new economy", based upon information and ideas. In this environment, access to technology and training in its use are essential elements of preparation for higher education and employment. Information technology has transformed even basic life skills like banking and paying bills.

Berkeley's Telecommunications Task Force and government researchers are of the opinion that Internet access is no longer a luxury item, but a necessity to maintain a connection to modern society. The City's telecommunications survey found that computer ownership and Internet access subscriptions in Berkeley are significantly ahead of national averages and that issues of a digital divide in Berkeley are less evident.

However, the data from the City's survey is not sufficient to make determinations between groups of the population that have historically been digital "have nots"—

individuals who come from low-income households, individuals with low levels of education, minority groups (particularly Blacks and Hispanics), and older people. Although persons from these groups have been found on a national basis to be participating in a dramatic increase in Internet usage, their use rates remain below the national average. The City should consider whether additional cross-tabulation of data from the City survey could be performed to better understand digital divide issues within these groups in Berkeley or whether additional survey research is needed to be performed to make statistically accurate observations.

The City could also conduct follow-up research. For example, the City could compile and compare data from other cities resembling Berkeley's size and social economic strata. Included in this group might be the follow 14 cities:

Ann Arbor, MI	Ft. Collins, CO	Provo, UT
Austin, TX	Santa Monica, CA	Santa Barbara, CA
Santa Cruz, CA	Portland, OR	Tempe, AZ
Eugene, OR	Madison, WI	Fremont, CA
Boulder, CO	Norman, OK	

These cities all have populations of well-educated individuals, have a major institution of higher learning, and have a high relative concentration of technology companies and infrastructure. The Department of Commerce studies done in 2000 show that most people who used the Internet from outside their homes reported using it at work or at school. Unemployed individuals were more likely to use it from another person's computer or from libraries. In the national study, black Internet users were more likely than other Internet users to rely exclusively on Internet access from outside their homes.

IT literacy is also required now to access many types of opportunities and appears increasingly necessary to maintain a connection to society. Although 87.3% of the survey respondents think the City should provide greater accessibility to the Internet using public facilities, such as libraries, senior centers, and others" the data from our survey fail to suggest a compelling justification. Because of the limitations of this study as noted in the introduction, however, additional information may be required before City policy is established. An excellent place to start is to monitor public sites where Internet access is currently provided. For example, if public libraries show long waiting lists, or that non-student patrons seeking Internet access are routinely turned away because the available computers are in use, justification may exist to fund additional public points of access.

Additionally, the Berkeley survey could not determine statistically significant distributions between zip codes for presence of at least one computer in the home. However, the survey indicated that two zip codes, 94702 and 94703, had the highest percentage of homes without computers (25.4% and 23.5% respectively). The City has already funded 10 non-profit groups to provide computer training to low-income persons. The Task Force has learned that in June this past year, funding to these efforts was cut. The City's

Telecommunications Task Force may decide it necessary to consider recommendations to the City Council stipulating that more funding for computer access at public buildings (libraries, senior centers, recreation centers) may help shore up the gap in Internet use within these zip codes and other areas targeted by the City to represent information “have-nots”.

The City’s Telecommunications Task Force is concerned about providing adequate services to underserved areas of Berkeley. The City can also look to the efforts of other local governments who have created public projects resulting in broadband training activities. Berkeley’s leadership can learn from the information the federal government and states have compiled at the FCC National Regulatory Research Institute.⁵ There, the City can learn more about community efforts from across the country. These efforts include the Montana Terrace Smart Home Community in Washington, DC. Once a public housing project in need of revitalization, Montana Terrace is now a mixed-income community with state-of-the-art broadband connections to the Internet. Other broadband deployment efforts are also underway in Orange City and Hawarden, Iowa, the Forks in Washington State, the communities of Sitka, Kake, Kotzebue and Noatak in Alaska, the Berkshires, and on Cape Cod, Massachusetts.

⁵ For viewing data base findings see web page www.nrri.ohio-state.edu/broadbandquery.php For inputting data, see web site at <http://www.nrri.ohio-state.edu/programs/telcom/broadbandsurvey.php>

Bibliography and Suggested Reading:

FALLING THROUGH THE NET: TOWARD DIGITAL INCLUSION, A Report on Americans' Access to Technology Tools, October 2000, U.S. Department of Commerce, Economics and Statistics Administration, National Telecommunications and Information Administration. This report is the fourth in the Department of Commerce's *Falling Through the Net* series that surveys trends in Americans' access to new technologies.⁶ As in our previous reports, we utilize data from the Department of Commerce's U.S. Census Bureau. The household data in Part I (including the category of high speed Internet access), and the individual access and usage data in Part II of this report come from the Census Bureau's August 2000 Current Population Survey (CPS) of approximately 48,000 sample households. For the first time in this series, we also report on access to new technologies by people with disabilities (in Part III), using data from the Census Bureau's Survey of Income and Program Participation (SIPP). In collecting household and individual data for the CPS, the Census Bureau interviewed approximately 48,000 sample households. These households were selected from the 1990 Decennial Census files continually updated to account for new residential construction after 1990. The CPS sample is representative of all fifty states and the District of Columbia. For each household, Census Bureau interviewers spoke to a person (called the "respondent") who was at least 15 years old and was considered knowledgeable about everyone in the household. The respondent provided information for the entire household including the demographics (such as education level, race, and age) of each household member and the income level for the household. The "householder" or "reference person" is an adult in the household who either owns or has signed for the rent on the residence. The respondent provided responses for him or herself and proxy responses for all other members of that household. The survey, therefore, provided information on 121,745 individuals (including children). All statistics are subject to sampling error, as well as non-sampling error such as survey design flaws, respondent classification and reporting errors, data processing mistakes and under coverage. See link: <http://www.esa.doc.gov/fttn00.wpd>

Zook, M.A. (1999). Internet Cities of the United States and the World: Understanding New Geographies. Paper presented at the Cities in the Global Information Society Conference. Newcastle upon Tyne, UK. November 22-24th, 1999

Michael D. Fleisher, CEO of Gartner Group, Inc. announced the findings of Gartner's Digital Divide and American Society Report at the House Subcommittee on Government Management, Information and Technology. Gartner's Digital Divide and American Society Report provides detailed analysis on the digital divide and its social and economic implications for the U.S. nation and its citizens. To view this report, please visit www.gartner.com.

Community Technology Centers' Network (CTCNet) envisions a society in which all people are equitably empowered by technology skills and usage. CTCNet is committed to achieving this end. CTCNet shares with Playing To Win, its founding organization, a recognition that, in an increasingly technologically dominated society, people who are socially and/or economically disadvantaged will become further disadvantaged if they lack access to computers and computer-related technologies. <http://www.ctcnet.org/mission.html>

⁶The first report, *Falling Through the Net: A Survey of the "Have Nots" in Rural and Urban America* (July 1995), surveyed household telephone, computer, and modem ownership. *Falling Through the Net II: New Data on the Digital Divide* (July 1998), presented updated data on household access to telephones, computers, and the Internet. *Falling Through the Net: Defining the Digital Divide* (July 1999) provided new data on household access to these technologies, and also provided new information on individual Internet access and usage.

U.S. Department of Education's [PT3](#) Digital Equity Task Force
The portal is hosted by [MC Squared](#) and the [National Institute for Community Innovations](#)
<http://www.digital-equity.org/>

About the Digital Divide Network

The Digital Divide Network website offers a range of information, tools and resources that help practitioners stay on top of digital divide developments. It also serves as forum where practitioners can share their experiences with colleagues around the world. We look at the causes and effects of the divide from four distinct angles: technology access, literacy and learning, content, and economic development. As a nonprofit leader in addressing the digital divide, the Benton Foundation serves as producer and coordinator of the Digital Divide Network. Strong industry partnerships have helped foster an environment in which strategic integration of digital divide initiatives is possible with nonprofits and governments. DDN serves as a catalyst for developing new, innovative digital divide strategies and for making current initiatives more strategic, more partner-based and more outcome-oriented, with less duplication of effort and more learning from each others' activities. The shared knowledge base that emerges from DDN will go a long way toward establishing the right benchmarks for judging the effectiveness of digital divide initiatives.

<http://www.digitaldividenetwork.org/content/sections/index.cfm>

Digital Divide Basics Fact Sheet

by Digital Divide Network Staff, Benton Foundation

These statistics are presented to provide a current snapshot of the developing story of the digital divide. These figures, drawn from a range of commercial and governmental sources, are intended to give a broad overview of the nature and extent of computer and Internet use in the U.S. and globally.