

**Top FY 2000
Project Narrative**

Digital Bridge Foundation

**Grant # 25-60-00011
Roxbury, MA**

1. PROJECT PURPOSE

Need:

Thousands of low-income families have not benefitted from Boston's strong economy. An alarming number of students are failing academically; numerous adults lack the job skills to achieve economic self-sufficiency; and many families do not take advantage of the strong network of social services and civic activities in the City.

Students are failing standardized tests. Along with many other states, Massachusetts is implementing high-stakes standardized testing in its secondary school system—by the year 2003, passing the MA Comprehensive Assessment System (MCAS) test will be a high school graduation requirement. While Boston Public School students' MCAS scores have improved in the past two years, they are still far below those of suburban students. Spring 1999 10th grade scores showed just 19% were advanced or proficient in English, 15% in Math, and 9% in Science and Technology. BPS must accomplish a dramatic turnaround in these scores in a short time frame. Improving access to technology in school and at home will be a powerful tool in this difficult challenge.

Low-income adults do not have adequate skill levels to succeed in Boston's new knowledge based economy. Nearly 20% of Boston residents over age 25 do not have a high school diploma, a minimum requirement for success in today's labor market.¹ This skills gap results in economic inequality. Boston's income gap has increased in each of the last two censuses. In 1990, the bottom 40% earned 12.7% of total income; the top 40% earned 70.9% of the total.²

Boston is home to 1,200 not-for-profits that are ideally equipped to encourage citizen participation at the most local level, thereby helping constituents see themselves as necessary to the political process.³ Yet Boston's **voter participation rate is decreasing**. In the 1997 City Council election, fewer than 30% of Boston's 235,940 registered voters cast ballots. In the 1998 state and federal elections, fewer than 50% voted—a record low.⁴

Low-income families lack information tools such as personal computers and access to the Internet which are increasingly critical to economic success and personal advancement. Less than 25% of urban households with incomes between \$25,000 and \$35,000 have a home computer.⁵ This digital divide keeps low-income families isolated from on-line opportunities, reducing their ability to succeed in school, work, and community.

A credible solution:

The Technology Goes Home Project (TGH) will equip 230 low-income families with computers, training, and linkages to each other and their communities. Through TGH, adults will access higher-paying, career-oriented jobs, children will improve academic performance, and families will begin to strengthen connections and capacity in their neighborhoods. (Appendix 1)

TGH will be implemented by four Neighborhood Technology Collaboratives (NTCs), community-based coalitions of non-profit service providers united around providing high quality services to families and improving the skill and efficiency of their organizations through the use

of technology. Each NTC has a lead organization that will recruit, train and maintain contact with TGH families and at least five partner organizations that will provide additional support. Each NTC will outreach to and enroll low-income families seeking economic and academic betterment, and provide the following for TGH families: (Appendices 2-7)

- ✓ At least 24 hours of introductory computer training; (Appendix 8)
- ✓ Support and motivation to ensure academic and economic success;
- ✓ Technical support for end users;
- ✓ Meaningful community-service requirements; and
- ✓ A continuum of career-oriented technology training opportunities.

Through the Boston Digital Bridge Foundation (BDBF) (Appendices 9, 10), TGH will **provide computer hardware, software, and DSL (Digital Subscriber Lines)** to 230 families (approximately 805 individuals) for home use. (Appendices 11-17)

Through the NTCs, TGH families will be connected on-line to over 20 community-based organizations. More than **1000 people—housing specialists, teachers, librarians, health-care providers, community activists, technology experts, small business owners, parents and children—will be connected through this on-line community.**

This community will communicate using **MUSIC** (Multi-User Sessions in Community) software (Appendices 18-21). Through MUSIC, participants will create an online community, with “buildings,” and within the buildings, “rooms.” Individuals will access information about job opportunities and job training, communicate with educators, and participate in ongoing dialogue about community issues. Families with limited computer experience can learn the easy-to-use icon-driven software and apply these computer skills to other computer applications. TGH youth and adults will participate **in long-term, continuous training in advanced technology** that will directly impact their performance in the workplace. TGH youth can participate in **TechBoston** (Appendices 22, 23), a program that trains and certifies middle and high school students in networking, Microsoft systems engineering, web design and programming, Microsoft desktop applications, and robotics/systems engineering. Adults can receive ongoing, advanced training at the **E-Commerce Academy**. (Appendix 10)

End-users will be contractually obligated to provide at least **30 hours of community service** to TGH collaborative members. City Year (Appendix 24) corps members will coordinate this service, encouraging families to participate in TGH related projects such as tutoring less-skilled TGH families, educating linguistically diverse communities about the importance of technology, and providing support services (transportation, childcare, etc.) for training classes.

Outcomes:

Students will reach their academic potential with the help of increased technology.

Technology will bring the classroom into families’ homes, extending the learning hours of students. Students will access reference material on-line, complete homework assignments on their computers, communicate with peers, mentors, and teachers, and increasingly, be able to access information provided by their teachers (homework assignments, exemplars of completed assignments, and links to websites that supplement in-school learning). Parents will communicate with other parents and teachers and increasingly, track their children’s progress by logging into their children’s electronic portfolio⁶, monitoring attendance, and retrieving models

of work that reflect the expectations of teachers and administrators. **Seventy percent of TGH youth will achieve grade level skills after one year.**

Adults will access training opportunities and job information on the Internet. Training will reduce the mismatch between the skill sets of individuals and the needs of employers. Industry groups say that as many as 300,000 IT jobs, 11,000 of them in Massachusetts, remain unfilled at US companies.⁷ TGH families will gain skills and economic opportunities by learning to use technology. Workers who use computers on the job earn wages 10-15% higher than similar workers who do not use computers.⁸ Using the DSL technology, TGH families will participate in on-line training that involves video and/or audio streaming; single parent households with limited time will benefit most from this convenient model of anytime, anywhere learning. **Seventy-five percent of adults will get new and better jobs, receive a 15% wage increase, or pursue and attain employment in the IT field.**

Participants and grassroots organizations will grow and strengthen their communities through the use of technology. MUSIC encourages deliberate, reflective, interactive dialogue between one participant and another or among many participants. This dialogue will help to create new social, economic and political groups of people. Families will have increased information about what is happening in their neighborhoods, local economic districts, and children's schools. Participants will build relationships with other families within their NTC and across the geographical boundaries of NTCs. Community service performed by the TGH families will also strengthen their neighborhoods. **The outcome of community involvement will extend benefits to a community larger than the end-users of TGH.**

2. INNOVATION

TGH will advance the past successes of local and national programs in the areas of technology, neighborhood collaboratives, pedagogy, and service delivery.

Technology:

In the Oakland Acorn Housing Project (TIIAP 1999) and the Washington D.C. Edgewood Terrace Housing Project (TIIAP 1999) residents received access to computers in their homes through thin clients rather than through off-the-shelf PCS. Many programs give low-income families refurbished or "hand-me down" computers; these computers often are not Internet-ready, compatible with school or work computers, or dependable.

TGH is the first program to give low-income families PCS and broadband DSL service in exchange for community-service. DSL will provide adults access to job-training activities that involve video and/or audio streaming. Because of the speed of DSL (12 times faster than a 56K modem), youth and adult learners will be able to cut their learning time in half and reduce the amount of frustration home-users often face.

Neighborhood Technology Collaboratives:

The NTC model ensures that grassroots organizations that understand the needs of their communities will be responsible for program implementation. NTCs will both receive and distribute resources. NTC member organizations will benefit from improved technology that

builds their efficiency in day-to-day activities. They will be able to more easily communicate with their constituents about neighborhood issues, training opportunities, and youth activities.

Although Boston has close to 250 places of access for end-users,⁹ few offer a continuum of training and most serve only as “drop-in” centers. NTCs, by pooling the resources of their member organizations, will collectively offer a comprehensive menu of training opportunities for beginning through advanced technology users in six Boston communities.

Unlike the Acorn and Edgewood projects, TGH will not restrict participation to a single housing project. Rather, **TGH will recruit families based on their income and motivation, distributing computers and facilitating communication among a wider geographic area.**

Pedagogy:

Many past programs taught youth or adults separately. **TGH teaches parents and children together** and emphasizes the assets of individuals, families and community.

In a recent national poll, a majority of adults expressed fears about children’s Internet use. Those polled described the following as major problems: the possibility of dangerous strangers making contact with their children (85%), the availability of pornography to children (84%), and information on how to build bombs (73%). More parents (76%) than children (53%) think that rules are in place about what children should be doing on the computer. The same poll exposed a generation gap: more children (85%) than adults (49%) keep up with computer technology.¹⁰

The TGH curriculum will **reduce fears about the Internet, decrease the intergenerational divide, and help families develop their own guidelines about computer use while teaching children and adults transferable computer skills.** The orientation and training phase of TGH will enable parents to openly address their fears about their children using the Internet. Families will share available solutions, including filtering software and supervision techniques. Parents and children will be encouraged to teach each other, with children teaching their parents technology skills and parents teaching their children the logic behind the technology. This mutually beneficial learning environment will create **family learning teams.**

TGH will require children and parents to pass **computer skill tests** before receiving their home PC and DSL connection.

Service delivery:

Internet access is becoming a necessity for low-income families, especially those making the transition from welfare to work. The federal Office of Management and Budget predicts that 75% of all transactions between individuals and the government including such services as delivery of food stamps, Social Security benefits, and Medicaid information will take place electronically.¹¹ TGH families will benefit greatly from their electronic links with NTCs and the time-saving ability to complete banking, higher education applications, cost-saving shopping, and bill paying on-line. DSL will decrease transaction times.

3. DIFFUSION POTENTIAL

Commonality of Problem:

TGH, by providing low-income families high-quality PCS with DSL capability through community-based organizations, combines the best practices of technology with those of grassroots organizing. TGH anticipates the universal questions that President Clinton's Digital Divide Proposal presents and proactively addresses them.

The experiences of low-income families in Boston are not unique. Insufficient job skills, low-academic achievement, and civic apathy are national problems.

Advantages and ability to replicate project:

DSL was chosen because of its current availability in Boston, the lack of availability of cable, and the inefficiency of dial-up service. Speed, given the complexity of low-income working families lives, was a major factor in this choice. In a rapidly changing, work-first environment, low-income families need the most efficient technology to access services and information to improve their quality of life.

All of the hardware is "off-the-shelf." The MUSIC software is affordable to low-income communities. This technology requires only Internet access—eliminating expensive software, hardware, and labor costs. **The per-user cost of commercially available technology is dropping and significantly less than the per-user cost of thin technology.**

NTCs reduce tensions that result when trying to distribute resources equitably. Other urban areas with similar neighborhood divisions and rural areas trying to coordinate multiple sites will learn from Boston's work. The composition of the membership of the NTC may differ in other areas but the purpose is universal. NTCs bring together resources and build capacity on the neighborhood (in urban areas) or state or county (in rural areas) level.

Using the Internet for service delivery is a practical solution for working and single-parent families. Connecting community-based organizations with families through the Internet will be as useful in rural areas where geography and the lack of mass transit are significant barriers.

Dissemination plan:

TGH will use technology as much as possible to share best practices and lessons learned. The following are planned channels of dissemination:

- ✓ **A website** which uses MUSIC will include a project history, description, curriculum material, and contact information for stakeholders;
- ✓ TGH will present at **state, regional, and national conferences** such as the US Conference of Mayors, The Council of Great City Schools, and CTCNET;
- ✓ TGH will be a featured program as the Mayor hosts 7,000 attendees at the December 2000 **National League of Cities Congress of Cities in Boston.**
- ✓ TGH will create a **documentary video** showing how technology enhances employment opportunities, improves school performance, and helps communities collaborate; this video will be digitized and available on the TGH website. (Appendix 25)

Staff time of BDBF, NTCs, and the Mayor's office (equaling .5 FTE) will be dedicated to replication of TGH.

5. PROJECT FEASIBILITY

Technical Approach:

Each home will receive a new PC configured with at least 32MB of RAM, a 300 MHZ processor, 4.3 GB hard drive, and a monitor. In addition, MUSIC, Microsoft Windows 98, and Microsoft Office 2000 will be installed on each computer. DSL will be connected to each home. NTC member organizations will also receive DSL connections. These choices respond to the needs of families (off-the-shelf high-end systems with the easy-to-learn MUSIC software and the commonly used Microsoft software), the availability of technology (DSL is the best broadband technology available in Boston), the ability to expand the project (using commercially available products makes expansion simple), and the fool-proof interoperability of the system.

Bell Atlantic will maintain the DSL lines. TechBoston Technicians, the City Year Tech Corps and the MUSIC software consultant will troubleshoot problems with TGH hardware and software. The program design (because of its simplicity and use of existing phone lines) avoids any additional costs of LAN maintenance associated with thin client technology.

Qualifications of Project Staff:

The Boston Digital Bridge Foundation has worked closely with a range of partners including representatives of the Mayor's Office, Linking Up Villages (MUSIC), TechBoston, City Year, BellAtlantic, Microsoft, HiQ Computers, 3COM, Codman Square Health Center, South Boston Neighborhood House, Allston Brighton CDC, MIT, Harvard, and numerous other not-for-profits that work daily with potential TGH families. (Appendix 26)

A full-time Executive Director with at least 10 years experience in project management, fiscal oversight, staff supervision, community organizing, and technology will be hired to manage TGH in Year 1. In addition, one new NTC (approximately 6 organizations) will be added in Year 2 of the project. (Appendix 27)

Budget summary and Timeline:

The proposed budget of \$969,264 (See pages 424A1-7) uses federal dollars mostly to provide coordination, build capacity of the community-based organizations, and support evaluation. Because of our strong corporate partnerships, this project is highly feasible with high-quality commercially available technology being donated to the 230 TGH families.

TGH has been piloted in the last year with no funds for coordination or evaluation. The proposed project will be implemented in December 2000. (Appendix 28)

Sustainability:

A TOP grant of \$395,000 will enable TGH to establish a track record that will attract private dollars for ongoing coordination and evaluation. **Our corporate partners have made long-term commitments** to leveling the Digital Divide in Boston and beyond.

In planning for this proposal, funders have expressed great interest in this project. Their motivation is a shortage of skilled workers in the technology field. Funders see TGH as a good investment that will show them a positive return of skilled-workers. The documentation of the

impact of TGH (specifically an increase in the creation of a better-prepared workforce) will increase private investment in TGH and decrease (or eliminate) the need for public dollars.

5. COMMUNITY INVOLVEMENT

For over a year, partners have met to plan for and implement TGH. Members of all three NTCs and project partners such as MUSIC and City Year participate in monthly meetings and weekly conference calls. During the planning process for this proposal they used a listserv to give constant feedback about how TGH should be implemented to reach the goals of increased employment, academic achievement, and civic participation. The partners are diverse in the services they provide (housing, health care, youth programming) but unified in their commitment. All have worked on developing and implementing TGH without any funding for planning time, selecting families, or training end-users.

End-users will receive support from community members. TGH will encourage families to build their own troubleshooting capacity and to look to other participating families for technical support. TechBoston students will staff a hotline that will provide multi-lingual support for end-users; all TechBoston students live in Boston and reflect the diversity of the targeted TGH community. The community service requirement will also strengthen the connection between TGH families, their NTCs and their communities.

MUSIC encourages participants to be who they are—not take on pseudonyms or assumed identities. MUSIC also lets end-users control the boundaries of their password protected on-line community. All data that TGH publishes (both on- and off-line) will not have any identifiers such as name, phone numbers, addresses, or email addresses. MIT will ensure that the most up-to-date technology (such as password protection, authentication and encryption) is used to maintain privacy in data collection and evaluation.

6. REDUCING DISPARITIES

The digital divide is a national problem. The gap between white and Black households grew 39.2% between 1994 and 1998. Similarly, the gap grew between households with higher and lower education levels (7.8%) and between households with the lowest and highest income levels (29%).¹²

In Boston, only 10% of BPS students have home computers; the Boston Redevelopment Authority estimates that only 5% have home Internet access. TGH will directly impact 3800¹³ families or approximately 13,300 individuals and 7,600 youth over five years increasing the amount of BPS students connected on-line at home by 12%. The goal of connecting 70% of BPS students to the Internet over the next 5 years will be reached through this direct impact, decreasing prices of PCS, and a public information campaign to create a “buzz” on the street about the importance of technology.

7. EVALUATION

Academic partner MIT (Appendix 29) brings an evaluation team that is creating some of the most cutting-edge technology in the world. Dr. Nishikant Sonwalkar is the founding Director of the **Hypermedia Teaching Facility** at MIT. He is the co-author of MIT's first Fluid Mechanics Hypercourse CD-ROM and is regarded as a leading expert in the application of computers in education. Sonwalkar will be joined by Rae Wiggins, Instructional Designer and Evaluator at the

Hypermedia Teaching Facility. Together they will coordinate a team of M.A. and Ph.D. students who will observe the first three NTCs and then establish a long-term participatory evaluation methodology which both measures the effectiveness of TGH, NTCs, the proposed technology, and the training and support provided to TGH families.

Additionally, the MIT team will be responsible for reviewing pre- and post- tests and analyzing **qualitative and quantitative data** that is collected on-line through MUSIC. MIT has been integral in developing drafts of these tests (Appendix 30, 31, 32).

MIT will survey adult end-users to determine changes in employment opportunities. TGH will collect quantitative data for the following indicators: computer skills, wages, career changes, job reclassification, and numbers of hours of advanced technology or job training received. TGH will also keep track of the number of participants achieving the following: developing a resume for the first time; upgrading a resume to include skills learned at TGH; posting a resume on the Internet, and making the transition from welfare to work. Data will also be collected on the number of interactions with their children's teachers (both on-line and off-line), awareness of social service networks, and voter participation. Qualitative data will be used to evaluate parent-child relationships and community involvement.

Youth end-users will be surveyed to determine changes in their academic achievement. Indicators will include the following: test scores, interest and/or enrollment in TechBoston, grades, homework completion rates, and attendance. Qualitative data will be collected to evaluate sibling, peer, and community relationships.

The Boston's Indicators of Progress, Change and Sustainability will measure neighborhood data, reflecting the impact on end-users *and* beneficiaries in the four NTC neighborhoods. This is a comprehensive, on-going asset-based evaluation of Boston's neighborhoods co-sponsored by Sustainable Boston/City of Boston and the Boston Community Building Network at the Boston Foundation in collaboration with Boston's community-based organizations, public agencies, civic and academic institutions and the National Neighborhood Indicators Partnership.

¹. 1990 Census.

². 1990 Census.

³. The Future of Boston Area Nonprofits, The Lincoln Filene Center for Citizenship and Public Affairs, Tufts University, 1998.

⁴. Boston's Indicators of Progress, Change and Sustainability.

⁵. Falling Through the Net: Defining the Digital Divide, July 1999.

⁶. The State of Massachusetts's VES (Virtual Educational Space) program will create on-line folders a student's cumulative work starting in kindergarten in terminating in Grade 12.

⁷. The Boston Globe, March 10, 2000.

⁸. Kruger, Alan, "Why Computers Have Changed the Wage Structure: Evidence from Microdata, 1984-1989," Quarterly Journal of Economics, Vol. 108, No. 1, February 1993.

⁹. Eighty-one community centers, 26 libraries, and 130 schools.

¹⁰. NPR/Kaiser/Kennedy School Poll, 1999.

¹¹. Goslee, Susan, "Losing Ground Bit by Bit: Low-Income Communities in the Information Age," Benton Foundation, 1998.

¹². Falling Through the Net: Defining the Digital Divide, July 1999.

¹³. Based on a projection of serving 100 families in Year 1, 130 families in Year 2, 570 families in Year 3, 1000 families in Year 4, and 2000 families in Year 5. Assumptions include an average number of 3.5 family members per family including 1.5 adults and 2 children per family.