

# 94022

## PROJECT NARRATIVE

### EXECUTIVE SUMMARY

**Charlotte's Web** is a model for a free access, interactive, multimedia, regional network for information, education and communication, partially funded by NTIA during its first year of operation. Year Two of the project will provide innovative new applications to an increasingly diverse community of users. A theme of "outreach/inreach" will drive the accessibility effort: outreach to rural communities ringing the greater Charlotte area, and inreach to the underserved urban poor and disenfranchised. **Web** partnerships expand this year to include a broad spectrum of human services, educational, corporate and grassroots organizations. NTIA funding is needed for Year Two of **Charlotte's Web** to help it continue to develop, test, evaluate and disseminate information nationwide on successful community networking models.

### PROBLEM/NEED

There is an urgent need for successful, cost-efficient models to address issues and problems of community networking. **Charlotte's Web** is in a unique position to create and test innovative models which can be applied in other parts of the country because its service area includes all types of communities: urban, small town and rural. **Charlotte's Web** partners have identified three critical problems that the project will address:

1) **Equity of access:** How can communities assure that all citizens have equal access to the Information Infrastructure despite barriers of socioeconomic status, rural or inner city isolation, physical handicap or language?

2) **End user training and support:** How can communities assure that all citizens have the necessary skills to navigate the Information Highway, communicate and process information in an electronic format?

3) **Service delivery in an electronic environment:** How can health and human services agencies, local government, and educational institutions best package and present their information to take full advantage of the electronic environment and interact with citizens and students?

*Goal #1: Develop a model for free and convenient access to information services to people regardless of race, sex, age, disabilities, economic or educational status or location.*

We live in a world that is increasingly dependent on technology for sending, storing and retrieving information. Citizens without access to the Information Infrastructure are cut off from a valuable and empowering resource. The National Information Infrastructure has the potential to break down barriers that separate individuals and groups in the U.S. These barriers of race, socioeconomic status, disabilities and isolation can be surmounted through establishing a national network connecting people and information. A widely available, easily accessible, low-cost community network can provide a level playing field for all citizens to achieve educational goals and receive essential information and communication services.

In Charlotte, N.C, 28% of households have computers and of these, a smaller number have modems. In the surrounding towns and rural areas and among the economically disadvantaged, even fewer computers are available. Yet every citizen needs access to these on-line resources to educate, enrich and empower his/her everyday life. Communities across the country have a responsibility to assure that citizens have access to this technology. There is a critical need for a model which successfully addresses the problem of equity of access in a community - a scalable, low-cost model that communities, large and small, can emulate as they

work to connect their own citizens.

***Goal #2: Develop a model for effective training in network use for citizens, local government, health and human services agencies and other information providers.***

Training and support are essential for citizens to take full advantage of the NII. A subclass of information disadvantaged will be created if steps are not taken to assure that every citizen has the skills necessary to receive and interact with information services electronically. How can communities meet this need in a cost-efficient and effective manner? A multi-faceted training program designed to meet the needs of users at all skill levels will be developed, evaluated and made available to other community networking projects.

Training is essential to help prepare people for jobs in the 21st century. Those without the skills to operate in an electronic environment will be unable to compete for the jobs that will be available. Training can make it possible for disadvantaged people to succeed in the expanding world of information technology. In Year One, **Charlotte's Web** developed and tested a comprehensive package of training materials. In Year Two of the project, these materials will be developed further and made available in a variety of formats to other communities nationwide.

***Goal #3: Develop practical, effective and replicable models for service delivery in the Information Age.***

Community information providers face new challenges as well as new opportunities in providing services in an electronic environment. Educational institutions, health and human services agencies, local governments and civic groups must rethink how they can communicate most effectively in the Information Age. Information and services will require repackaging to assure they take full advantage of the opportunities of this new means of dissemination. Agency staff must have additional training to provide services in new formats. An evaluation of the effectiveness of various means of transmitting data and services is needed to create truly responsive community networks nationwide.

### **IMPORTANCE OF PROBLEM/HOW PROJECT FITS TIAP**

The problems of equitable access, training and service provision are critical in developing responsive community networks. If these problems can be dealt with effectively, community networks can help assure an informed citizenry ready to participate fully in and contribute to our democratic society. People will use the community network to improve skills and find a job; to get the latest information about a health problem or a school issue; to learn how to start a small business or investigate foreign markets. Citizens can communicate with government leaders, express opinions and debate community issues.

**Charlotte's Web** is in a unique position to provide models for community networking throughout the nation. The **Web's** service area encompasses a wide range of community types - urban, small town, and rural. For each type of community, different solutions are needed to provide easy, affordable access to all. **Charlotte's Web** will develop solutions that are low-cost, effective and uniquely suited to the particular application or need. One example of an innovative and efficient solution developed in Year One of the project is the **Charlotte's Web Mini-Hub**. Donated 286 computers have been adapted to serve as routers, supporting multiple workstations. With this innovative configuration, a site can support several simultaneous logins to **Charlotte's Web** via a single modem and phone line, minimizing costs and multiplying connectivity.

In its first six months of operation, **Charlotte's Web** has served as model, mentor and consultant for dozens of developing community networks across the nation. Web staff has responded to 62 requests for information from local governments, libraries, community colleges and citizens groups in 25 states and 2 foreign countries. During the first six months, **Web** staff has made nine presentations to groups outside the primary service area. **Charlotte's Web** staff is assisting a group representing fourteen schools in Bladen County in rural eastern North Carolina by acting as consultant and providing electronic mail access for communication.

In Year Two, **Charlotte's Web** will also develop a model for community network sustainability. This model, to be developed by **Web** partners, will be based on equitable distribution of financial responsibility among **Web** institutional and corporate participants.

## METHODOLOGY

In its first year of operation, **Charlotte's Web** has established a reputation as a leader in providing innovative solutions to community networking problems. **Charlotte's Web** will continue to focus on developing practical replicable models to address the identified problems of equitable access, end user training and service provision. We believe our approach will continue to be successful because it matches appropriate technology to the specific need, looks for low-cost, sustainable solutions and emphasizes shared responsibility for service delivery.

### *Addressing Equitable Access:*

**Charlotte's Web** will target certain segments of the service area population which have been identified as at-risk for inadequate access to the Information Infrastructure: the inner city poor, rural populations, the disabled, minorities and non English-speaking groups. Although the locale is very different, inner city, poorer neighborhoods can be as isolated and remote from services and opportunities as their rural counterparts. **Charlotte's Web** will concentrate accessibility efforts on reaching out to the rural populations of counties surrounding Mecklenburg. We will also expand efforts to reach into urban neighborhoods, isolated by poverty, language barriers or lack of educational opportunities. In addition to access for citizens, the **Web** will provide a means of communication for the staffs of the human services agencies which serve them.

- In partnership with the State Library of North Carolina, **Charlotte's Web** will develop and install an innovative demonstration project which will serve as a model for providing affordable connectivity to rural counties currently without Internet access.

- A handicapped-accessible mobile unit equipped with 12 to 14 computers will be deployed to provide access, training and support for isolated rural and inner city populations.

- In partnership with the Central Carolinas Citizens Forum a model for participative consensus democracy utilizing the information infrastructure will be developed for an eight county region.

- **Charlotte's Web** will connect to the North Carolina Information Highway to provide interactive computer literacy and telecommunications training to sites across the state. Course materials and supplementary text will be distributed via the **Web's** gopher and World Wide Web service. Follow-up and ongoing discussions will also be available electronically.

- In cooperation with the Charlotte Institute of Rehabilitation, the **Web** will provide access to information and connectivity for persons with severe disabilities, their families and care givers in 25 counties surrounding Mecklenburg. **The Web** will also work with the Carolina

Computer Access Center to provide training, town meetings and outreach for physically disadvantaged clients.

- The **Web's** successful *Mini-Hub* model will be extended to additional housing projects, neighborhood centers, homeless shelters and other public locations in Charlotte's 43 disadvantaged neighborhoods. (See map in Exhibit A) The *Mini-Hub* will also be used for rural community access and for connecting institutional networks.

- In collaboration with the Regional HIV/AIDS Consortium, the **Charlotte's Web AIDS Project** will be expanded to provide HIV/AIDS information to patients, family caregivers and health professionals in 11 North and South Carolina counties.

- Access for the K-12 community will increase in Year Two of **Charlotte's Web**: 20 additional Charlotte-Mecklenburg school sites will connect adding more than 1,000 access workstations and terminals.

- Charlotte's Web** will develop a national interactive online discussion forum for Empowerment Zone/Enterprise Community sites, working in collaboration with the University of Pittsburgh's Common Knowledge project and the Department of Housing and Urban Development. The **Web** will act as the electronic conduit for grant recipients to connect with each other via the Internet. Common Knowledge will provide archiving for reports and other EZ/EC project information.

***Providing End User Training:***

- In collaboration with the Charlotte-Mecklenburg Education Foundation and Central Piedmont Community College **Charlotte's Web** will develop an online curriculum to train teachers in instructional technology and help them integrate **Charlotte's Web** resources into the classroom.

- The PLCMC's North Carolina Information Highway connection will be used to provide end user training throughout the service area. Training workshops can be transmitted to over 150 sites statewide including high schools, community colleges, prisons and hospitals.

- The Information Systems Trainer for the Charlotte-Mecklenburg Schools will continue to work directly with media center staffs and classroom teachers providing them with skill-specific training to help them utilize **Web** services and integrate information technology into lesson plans.

- WebTrain*, the **Web's** all-volunteer training unit, will continue to develop training materials and curriculum for end user training in a variety of settings.

***Creating Models for Service Delivery:***

- In collaboration with Discovery Place, a regional hands-on science museum, **Charlotte's Web** will deliver an interactive package of science education services including content in mathematics, astronomy, natural science, health sciences, physics, chemistry, computer science and early childhood science education; interactive remote experiments, virtual exhibits, and teacher education.

- Job listings have proved to be the most popular service of the **Web** in Year One. In the second year of the project, this service will be expanded to allow online applications, resume critiques and a post and read job query service. In addition, the N.C. Employment Security Commission's Charlotte Regional Office will collaborate with the **Web** in a special job training,

job readiness project using a combination of in-person workshops and online training and teaching.

- **Charlotte's Web** will provide access to the Mint Museum of Art's interactive, multimedia exhibit, *Roadside Gallery* and its Pre-Columbian art collection. One of the goals in the Mint Museum's 5-year plan is community-wide outreach and education for underserved communities. The Mint will use access to the **Web** as a teaching and training tool for regional community outreach both prior to and as follow up to museum visits.

- Interactive distance learning opportunities, to be offered statewide through the North Carolina Information Highway, will include technology training, small business seminars, book discussions and presentations by nationally recognized juvenile and adult authors.

- Central Piedmont Community College and the Charlotte-Mecklenburg Schools will use the **Web's** Connectionless Data Service network to transport computer data between institutions and provide online services to public school sites that house college night classes.

- In partnership with the Mecklenburg County Cooperative Extension Service, **Charlotte's Web** will develop a model for regional agricultural information sharing.

- **Charlotte's Web** will provide a model for low-cost rural school district access to the Internet and other educational resources through a project with Bladen County Schools. The 14-school district in eastern North Carolina ranks 91st in economic strength among 100 N.C. counties.

- In cooperation with its human service agency partners, the **Web** will develop a security model for assuring privacy of client records while creating the capacity to share confidential information across the network.

- **Charlotte's Web** will provide access to "An African American Album", an interactive, multimedia presentation documenting Mecklenburg County's African American heritage.

- **Charlotte's Web** will develop a *Community Network in a Box* -- a low-cost, turnkey prototype system, including software and manuals, to help communities start community-wide information and education systems even if they have little money and expertise. The system will be based on inexpensive, off-the-shelf hardware, freely-available software and will be fully scalable.

**Technical Description:** **Charlotte's Web's** technical systems employ a full range of telecommunications approaches that ultimately will include data, voice and video. Our goal is to provide free access to information and communication on several levels, including:

- Individual dial-up modem lines
- Network Point-to-Point Protocol (PPP) connections
- 128 KB ISDN connections for organizations
- 1.15 MB SMDS connections to Charlotte-Mecklenburg Schools
- 100 MB Category 5 Ethernet connections to selected sites such as Discovery Place
- 155 MB connections to human service agencies on a city-wide LAN
- Interactive video service over the N. C. Information Highway's ATM network

**Charlotte's Web** currently has two SPARCstation 20s (128 and 64 megabytes of RAM, respectively) with two processors each, and three additional 80486 PCs, all running on 10MB Ethernet locally and connected via a T-1 (1.54 MB) to the Internet. The **Web** has remote sites currently running ISDN, SMDS and also *Mini-Hub* networks running PPP via single voice-

grade telephone lines, linked with TCP/IP routing software running on refurbished 80286 CPUs.

The **Web's** distributed computing approach allows for easy scalability. Adherence to communications standards allows for maximum interoperability. Our innovative uses of older, donated computer equipment (the *Mini-Hub* model) breathes new life into old hardware. By utilizing free, obsolete equipment in this way, we can save equipment funds to upgrade other hardware when necessary.

**Charlotte's Web** will be working together with other developing community networks in the two Carolinas, including: Mountain Area Information Network (Asheville), the N.C. Exchange Information Broker Project, the Winthrop University (Rock Hill, S.C.) project, and the Triangle Freenet. We believe there is great potential for cooperative programming and shared services with these and other projects. See Exhibit B for network diagrams.

The Project Director will be responsible for seeing that all project tasks are completed on schedule as outlined in the project timetable, Exhibit C.

### **QUALIFICATIONS & PARTNERS**

The Public Library of Charlotte & Mecklenburg County is the most appropriate agency to serve as catalyst and lead partner institution for the project given its excellent record of support for **Charlotte's Web**, its long history of successful community partnerships and its strong background in using technology to provide innovative public access to information.

The largest public library system in the Carolinas, PLCMC serves a population of 511,433 through 23 branches with an annual budget of \$13M. In 1994, the Library took the lead in developing **Charlotte's Web** and has proved an excellent steward of 1994 grant funds, using volunteers and donated equipment extensively and effectively to expand the impact of the grant. In one three month period, an average of 55 volunteers worked each month for a total contribution of 1,064 hours, an estimated value of \$20,853.

For 100 years, the Library has successfully partnered with other local, state and regional institutions to provide enhanced services and programs for the community. In 1994-95, the Library partnered with over 60 outside institutions to provide a wide range of workshops, services and programs.

PLCMC has the technological expertise to develop a successful community network model. The Library uses local area networks, on-line services, CD ROM, personal computers, the Internet, and a newly upgraded mainframe computer to better serve our community's information needs. PLCMC is an affiliate of the State Data Center, a member of the N. C. Information Network and a designated depository for local, state and federal documents. The Library provides GIS data to the public in a pilot project with the N.C. Clearinghouse for GIS. The Virtual Library, opened in April of 1995, is a state of the art technology lab providing computer literacy training, public access to **Charlotte's Web** and the Internet, and a wide range of hands-on workshops. PLCMC has emerged as a leader among U.S. public libraries in incorporating information technology to deliver excellent public service. The Library can give **Charlotte's Web** the support and leadership it needs to create an outstanding community network.

**Charlotte's Web** partners who will both contribute to and benefit from the proposed project:

*Education Partners:*

Central Piedmont Community College, serving 15,800 students on six campuses  
Charlotte-Mecklenburg Schools (CMS), serving 85,000 K-12 students in 120 schools  
Charlotte-Mecklenburg Education Foundation - a community foundation established by corporate interests to promote educational reform and professional development in Mecklenburg County public schools  
Johnson C. Smith University, an historically black university serving 1,400 students  
University of North Carolina at Charlotte, serving 16,000 students  
WTVI, a community-owned PBS-affiliate reaching 13 counties

***Government Partners:***

Central Carolina Citizens Forum, an eight county consortium promoting citizen involvement in local government  
City of Charlotte  
Employment Security Commission of North Carolina, Region Three  
Mecklenburg County  
State Library of North Carolina, supporting library development throughout N.C.

***Health and Human Services Partners:***

Regional HIV / AIDS Consortium, representing health providers in 11 counties  
Carolina Computer Access Center, using technology to help people who have disabilities  
Charlotte Institute of Rehabilitation, serving patients with severe disabilities in Mecklenburg and 25 surrounding counties  
Homeless Services Network, a 15 agency alliance dealing with homeless and homeless issues in Charlotte & Mecklenburg County

***Grassroots Organizations:***

Anita Stroud Center, serving children in a low-income housing development  
Enterprise Community/Empowerment Zone , a national grassroots empowerment initiative  
Fighting Back Project, a coalition of neighborhood groups from underserved areas of Mecklenburg County

***Arts and Science Partners:***

Arts & Science Council of Charlotte & Mecklenburg County  
Discovery Place, an award-winning hands-on science museum, serving the region  
Mint Museum of Art, a regional art museum

***Corporate Partners:***

Chamber of Commerce  
Charlotte Convention and Visitors Bureau  
Microsoft Corporation

An advisory board, consisting of delegates from partner organizations and end user representatives, meets quarterly to set policy, address networking issues, and develop the plan for long term sustainability of the project. Resumes of key personnel associated with the project provided in Exhibit D.

**TARGET GROUP**

End users of **Charlotte's Web** are primarily residents of Mecklenburg, Cabarrus, Catawba,

Gaston, Iredell, Lincoln, Rowan, Stanly and Union counties in North Carolina and residents of York and Lancaster counties in South Carolina. Total population in this primary service area equals 1,479,768, with 62% considered urban and 38% rural. Seven of the eleven counties in the primary service area are predominately rural.

While **Charlotte's Web** services will be available to the total population, we have a prime objective to reach and serve those people with economic, educational, and/or physical disadvantages. According to the 1990 U.S. Census, 279,020 (29.2%) of our targeted users age 25 years and older do not have a high school diploma; 39,058 families (9.5%) are monthly recipients of Aid to Families with Dependent Children (AFDC); and 82,409 people (7.2%) age 16 years and older, have a mobility or self-care limitation. **Charlotte's Web** has developed specific strategies for service delivery to these groups in our mission to reduce the gulf between the information rich and poor. These services, described more fully under the "Methodology" section above, use a variety of technologies and programs to provide models for addressing the needs of the end users, including:

- assistive technology for persons with disabilities
- job skills training for the unemployed
- secure transfer of confidential client information for human services agencies
- innovative interactive and multimedia learning opportunities
- multiple approaches to end user training to assure all citizens can participate fully

End users have been actively involved in planning for and developing **Charlotte's Web** from the beginning. Policy drafts are routinely posted to the **Web** for user feed back and comment. Users offer suggestions to staff through a "Comments" section online. Security for users is a high priority; personal mailboxes are considered private.

See Exhibit A for maps of service area and Exhibit E for examples of letters of support.

## EVALUATION

A variety of methods will be used to provide feedback and continually evaluate the success of **Charlotte's Web**. Software will gather the hard statistics on network use. Online polls will help us get to know our users and discover how they use the **Web**. An online suggestion box and online focus groups will provide feedback and assist in planning.

Specifically, we will evaluate success in meeting objectives by:

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|----------------|---|
| Objective I:   | Analyzing the number of sites connected and statistics on use.                                |
| Objective II:  | Collecting and analyzing user profile data.   |
| Objective III: | Analyzing site connections, interlibrary loan statistics and school surveys.                  |
| Objective IV:  | Tracking queries from other networking initiatives nationwide and studying their development. |

In compliance with the Electronic Communications Privacy Act of 1986, none of the data collected will be used for anything other than evaluation purposes. It will not be sold, loaned or otherwise transferred to other parties for any commercial purpose. While the results will be shared freely, specific user profile information will be kept confidential.

All information will be compiled, evaluated and pro-actively shared with other community networking endeavors. In Year One, **Charlotte's Web** staff has shared information about the project with organizations in 25 states and 2 foreign countries via print, email, fax, phone, group presentations and consulting visits.