



**Broadband Non-Infrastructure Application
Submission to NTIA – Sustainable Broadband Adoption**

Submitted Date: 3/13/2010 9:28:18 AM	Easygrants ID: 5131
Funding Opportunity: Sustainable Broadband Adoption	Applicant Organization: CENTRAL IOWA HOSPITAL CORPORATION
Task: Submit Application - Sustainable Broadband Adoption	Applicant Name: Ms. Tracy D Warner

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A. General Application Information

1. Applicant Information	
Name and Federal ID for Applicant	
DUNS Number	075844548
CCR # (CAGE)	3W2J3
Legal Business Name	CENTRAL IOWA HOSPITAL CORPORATION
Point of Contact (POC)	KARA DUNHAM 5152416578 Ext. dunhamkl@ihs.org
Alternate POC	JAY QUICK 5152415472 Ext. quickjr@ihs.org
Electronic Business POC	JOSEPH CORFITS 5152416470 Ext. corfitjf@ihs.org
Alternate Electronic Business POC	KARA DUNHAM 5152416578 Ext. dunhamkl@ihs.org

2. Name and Contact Information of Person to be Contacted on Matters Involving this Application:	
Prefix	Ms.
First Name	Tracy
Middle Name	D
Last Name	Warner



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Suffix	
Telephone Number	515-263-2487
Fax Number	
Email	WarnerTD@ihs.org
Title	Director, Rural Health Resources

3. Additional Contact Information of Person to be Contacted on Matters Involving this Application:

Project Role	Name	Phone	Email
Secondary Point of Contact	Ms. Connie , Karloff	5152635657	karlofcs@ihs.org

4. Other Required Identification Numbers

Easygrants ID	5131
Funding Opportunity Number	500001
Catalog of Federal Domestic Assistance Number	BTOP CFDA Number: 11.557 BTOP CFDA Title: Broadband Technology Opportunities Program

5. Organization Classification

Type of Organization	Non-profit Institution
Is the organization a small business?	No
Does the organization meet the definition of a socially and economically disadvantaged small business concern?	No

6. Authorized Organizational Representative



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AOR	CORFITS, JOSEPH
Result	<Select>

7. Project Title and Project Description

Project Title: Rural Iowa Telehealth Initiative

Project Description: The Rural Iowa Telehealth Initiative seeks to promote sustainable broadband adoption in our rural communities through implementation of a telehealth program that seeks to deliver affordable healthcare and education in our most rural and medically underserved communities. The Central Iowa Hospital Corporation will lead this project with four rural hospitals representing the rural communities

8. Other Applications

Is this application being submitted in coordination with any other application being submitted during this round of funding?

- No

Easygrants ID	Project Title

If YES, please explain any synergies and/or dependencies between this project and any other applications.

9. Is the Applicant exempt from the Department of Commerce requirements regarding individual background screening in connection with any award resulting from this Application?

- No, Applicant is subject to these requirements

If the answer to the above question is "No," please identify each key individual associated with the Applicant who would be required to complete Form CD-346, "Applicant for Funding Assistance," in connection with any award resulting from this Application:

Name	Title	Employer



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Eric Crowell	CEO	CENTRAL IOWA HOSPITAL CORPORATION
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B. Executive Summary, Project Purpose and Benefits

Essay Question

10. Executive Summary of the proposed project:

Recent data from Iowa State University show while few Iowa communities have escaped job-losses and layoffs in the past year, the current recession has hit jobs harder in rural towns than in metro areas. Residents in rural Iowa often have lower incomes and higher poverty rates. Further, a recent study by The Iowa Policy Project estimates that 1.2 million rural residents in Iowa “need increased access to affordable, quality health insurance”, usually due to a job loss or lack of employer-sponsored health insurance.

According to the USDA Economic Research Service, rural per-capita income lagged at \$32,225 compared to urban per-capita income. Estimates from 2008 indicate a poverty rate of 11.6% exists in rural Iowa. Data from 2000 reports 15.7% of the rural population has not completed high school, while only 12.3% of the urban population lacks a high school diploma. The unemployment rate in rural Iowa is at 4.5% (USDA-ERS, 2008).

The leading cause of death in Iowans under the age of 40 is trauma, and there is a strong correlation between traumatic injuries and the use of heavy farm machinery and equipment. In 2008 alone, there were over 2,000 farm related injuries and 287 people died in farm-related accidents. And, despite the large number of trauma cases, only 12.5% of Iowa hospitals have certified trauma centers.

The health provider workforce in rural communities reflects difficulties in recruitment and retention. Rural physicians are physically and often professionally isolated. This isolation results in inadequate access to information and services more readily available in secondary and tertiary level institutions. Such conditions create a barrier to optimal patient care and to the professional



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satisfaction that could potentially keep physicians and other health care providers such as nurses and ancillary providers from practicing in the rural primary care setting.

The Rural Iowa Telehealth Initiative seeks to create jobs, deliver workforce development opportunities and provide access to quality affordable healthcare in the most rural and medically underserved communities through implementation of a telehealth program. The Central Iowa Hospital Corporation will lead this project with four rural hospitals and 81 community anchor institutions representing the rural communities and whole-heartedly supporting this initiative.

The challenges to rural residents in Iowa make the development of the Rural Iowa Telehealth Initiative a promising focus for utilization in the state of Iowa. Health care reform measures currently under discussion, such as managed competition, will put additional responsibility on the rural health care provider to become the requisite gate-keeper for such systems. This has the potential to create ripple effects in economic regeneration in rural communities with the demand for a qualified and skilled workforce, needs for quality education and training, and the requirements for outreach programs for the residents in the communities. The availability of telecommunications technologies and the statewide fiber-optic infrastructure have the potential to play an important role in optimizing delivery of services to rural residents and to preserve and strengthen the rural communities through a sustainable broadband adoption initiative such as the Rural Iowa Telehealth Initiative.

The total federal funding requested for this initiative is \$8,321,815 with a combined cash and in-kind match of \$5,445,104 which equates to 40% of the federal funding requested. This project will impact approximately 871,000 out of the 1.2M rural residents of Iowa. The cost effectiveness of this project is evident from the \$10 in Federal funding requested per rural resident.

The project will connect our partnering sites, providing telemedicine consultations, clinical mentoring and collaboration, and patient education and training over high-speed secure IP-network in Iowa. The network is a seamless innovative integration of three core layers, each of which is critical for successful adoption and utilization of the network by the end-user sites. The three-layer architecture comprises of the following layers:

1. Layer 1 consists of the secure Internet Protocol (IP)-based broadband network.
2. Layer 2 consists of the hardware conferencing and server core that is technological hub of the Network.



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3. Layer 3 consists of the telemedicine systems at the distributed end-points where the telemedicine and distance learning applications are routinely used.

The partners of this Initiative have found multiple innovative ways to reach the most rural and under-served counties by understanding the healthcare and educational needs of residents, and by reducing the geographic, cultural and language barriers they currently face. Adopting health information technology (HIT) is the next step toward creating a virtual medical home for a population that lacks stability and continuity in the care they can access. Through this Initiative, we plan to:

- Increase local access to health care for uninsured residents by developing outreach models for facilitated enrollments at the telehealth points of presence.
- Create new opportunities for education and development of health care professionals locally that would otherwise have to leave the rural setting for like opportunities.
- Connect community colleges and other universities to rural communities to deliver distance learning options for rural citizens to train and become part of the local infrastructure of health care professionals.
- Connect a critical access hospital to area high schools to teach nurse aide and medical terminology courses, in order to grow nurse aides for positions at the hospital, while preparing them to seamlessly move into nursing and other healthcare professional roles.
- Develop a model of education for health-related issues via teleconferencing in schools and other community locations to provide consistent communication and information in times of need, like pandemic influenza outbreak, as well as community education on topics such as healthy living and chronic disease support.
- Provide tools through telemedicine applications that are indispensable for home health care, remote patient monitoring, and disease management, to improve access to healthcare services.
- Link the correctional facilities to hospitals to provide local access to services when warranted without an escape risk of the inmate.
- Provide community emergency department physicians immediate access to specialty physician consultations to assist with patient examination and initiation of treatment allowing patients in rural communities' access to the same standards of care delivered in urban emergency department.
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- Enable hospitals to partner with area community colleges to offer certified nursing assistant classes and college-level curriculum for healthcare career students in an effort to "grow their own workforce".
- Connect rural anchor institutions in a virtual unified command center with the state departments of health and homeland security for response to, mitigation, and recovery from disasters.

The ultimate objective of the Rural Iowa Telehealth Initiative is to bring economic regeneration in our rural communities that have been battered in the recent downturn in economy. We plan to do this by leveraging technology and broadband adoption that will provide the workforce with training and educational opportunities that will prepare them for high-tech jobs, expose the school-going and community college students to high demand careers and related skills, equip the rural residents with healthcare and ancillary services that improve their overall quality of life, provide public safety workers with the best of training and tools to keep their communities safe, all of which will develop a thriving and sustainable model of economic development in rural Iowa.

11. Project purpose:

Significance of the problem:

Recent data from Iowa State University show while few Iowa communities have escaped job-losses and layoffs in the past year, the current recession has hit jobs harder in rural towns than in metro areas. Residents in rural Iowa often have lower incomes and higher poverty rates. Further, a recent study by The Iowa Policy Project estimates that 1.2 million rural residents in Iowa "need increased access to affordable, quality health insurance, usually due to a job loss or lack of employer-sponsored health insurance. According to the USDA Economic Research Service, rural per-capita income lagged at \$32,225 compared to the urban per-capita income. Estimates from 2008 indicate a poverty rate of 11.6% exists in rural Iowa. Data from 2000 reports 15.7% of the rural population has not completed high school, while only 12.3% of the urban population lacks a high school diploma. The unemployment rate in rural Iowa is at 4.5% (USDA-ERS, 2008).

The leading cause of death in Iowans under the age of 40 is trauma, and there is a strong correlation between traumatic injuries and the use of heavy farm machinery and equipment. In 2008 alone, there were over 2,000 farm related injuries and 287 people died in farm-related



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accidents. And, despite the large number of trauma cases, only 12.5% of Iowa hospitals have certified trauma centers.

Access to advanced technology, specialty care services, emergency trauma centers, and mental health is limited in Iowa's rural communities. Despite the large elderly population, only 10% of Iowa hospitals provide geriatric health programs, dementia units, or respite and hospice care. Mental health programs such as psychiatric care, hospital-based social services, and substance abuse counseling are also difficult to staff and support.

The health provider workforce in rural communities reflects difficulties in recruitment and retention. Rural physicians are professionally, and often physically, isolated. This isolation results in inadequate access to information and services available in secondary and tertiary level institutions. Such conditions create a barrier to optimal patient care and to the professional satisfaction that could potentially keep physicians practicing in the rural primary care setting.

Effectiveness of Proposed Solution

The challenges to rural residents in Iowa combined with other variables to make the development of the Rural Iowa Telehealth Initiative a promising focus for utilization in the state of Iowa. Health care reform measures currently under discussion, such as managed competition, will put additional responsibility on the rural health care provider to become the requisite gate-keeper for such systems. This has the potential to create ripple effects in economic regeneration in rural communities with the demand for a qualified and skilled workforce, needs for quality education and training, and the requirements for outreach programs for the residents in the communities. The availability of telecommunications technologies and the statewide fiber-optic infrastructure have the potential to play an important role in optimizing delivery of services to rural residents and to preserve and strengthen the rural communities through a sustainable broadband adoption initiative such as the Rural Iowa Telehealth Initiative. We believe this program will be successful if the following objectives are achieved:

- Jobs are created and the local economy in the rural areas is positively impacted.
- Access to health care is improved for uninsured and under-insured residents and increased utilization is demonstrated among this population leading to improved health outcomes.



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- Critical access hospitals are connected with area high schools and teach nurses' aid courses and healthcare core curriculum to prepare students to move seamlessly into nursing or other healthcare professional roles. Rural communities are able to “grow” their own workforce.
- Rural workforces are sustained as community colleges and universities deliver distance learning and professional development options for rural healthcare professionals.
- Healthcare professionals educate and communicate with schools and various community agencies in times of need, like a pandemic influenza outbreak. Community education and healthy living topics are offered routinely.
- Rural emergency department physicians are connected to tertiary care physicians and specialists to assist with patient assessment, initiation of treatment, and transfer to a higher level of care.
- Rural community institutions and agencies are connected to state departments of health and homeland security in a virtual unified command center to respond to, mitigate and recover from disasters.
- Tertiary pharmacists supervise pharmacy technicians at rural hospitals through use of video conferencing.
- Hospital-based nurses are linked to schools to provide advice about student care coordination and medication administration.
- Nurses are connected with correctional facilities to provide healthcare services without risking escape of an inmate.
- It is unnecessary for elderly or rural residents to travel to metropolitan areas to receive specialty care.
- Rural hospital inpatients are also able to receive specialty physician care without being transferred to tertiary facilities.

12. Recovery Act and Other Governmental Collaboration:

The Iowa Health System has used Universal Services Funds (USF) funding for HealthNet Connect which is a fiberoptic highway to transmit health data across county and state lines in Iowa through a secure broadband network. All partners are connected to HealthNet Connect.

13. Technology Strategy:

The proposed project will connect our partnering sites, providing telemedicine consultations, clinical mentoring and collaboration, and patient education and training over high-speed secure IP-network in Iowa. Each location has a specialized PC-based patient examination workstation connected to the network through a dedicated switch and router. The specialist physicians



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located at the major medical centers are connected through either a patient workstation or a specialist workstation. Video conferencing uses H.323 IP video conferencing standard and typically operates at 768 Kbps for high quality video between patient and doctor. The examination workstations can capture several modalities of diagnostic information and transmit this information in real time or as stored data files to specialist physicians at any site on the network. The network is a seamless integration of three core layers - each of which is critical for successful adoption and utilization of the Network by the end-user sites. The three-layer architecture comprises of the following layers:

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3. Layer 3 consists of the telemedicine systems at the distributed end-points where the telemedicine and distance learning applications are routinely used.

The Layer 1 and 2 network systems will use a combination of Internet Protocol and H.323 IP-based video conferencing standard for interactive videoconferencing, telemedicine and distance learning applications. The Internet Protocol (IP) has emerged as the dominant networking protocol over the past few years. The IP protocol provides highly granular quality of service (QoS) characteristics which allow for (1) prioritization of the different types of data packets, such as video, voice and data, are allowed to flow over the network; (2) real-time interactive video conferencing, especially for clinical applications, is assigned a higher priority than less time sensitive store and forward transmissions.

A centralized network Layer 2 core will comprise of a Border Controller and a Gatekeeper for firewall traversal, a Network Management System providing centralized monitoring, configuration, trouble-shooting and support of all hub and end-user systems connected to the network, a multi-media Content Recording, Archiving and Distribution system, and a PC-based video conferencing server. The Layer 3 of our model consists of video-conferencing, telemedicine and distance learning end-points at our partner facilities. These end-points range from high-end large-sized video conferencing systems to PC-based web-cams. However, these systems use the H.323 and Session Initiation Protocol (SIP) standards that are universally adopted.

14. Innovative Approach:

The partners of this Initiative have found multiple innovative ways to reach the traditionally most rural and under-served counties by understanding the healthcare and educational needs of residents, and by reducing the geographic, cultural and language barriers they currently face.



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15. Is the applicant seeking a waiver of the Buy American provision pursuant to section x.Q of the NOFA?

- No

16. Is the applicant delinquent on any federal debt?

- No

If Yes, justification for delinquency:

- .

17. Are you seeking a waiver of any requirement set forth in the NOFA that is not mandated by statute or applicable law?

- No

C. Partners

18. Are you partnering with any other key institutions, organizations, or other entities for this project?

- Yes

If YES, key partners are listed below:

Project Role: Sub-recipient Name: Evans, Brian Email: bevans@clarkehosp.org Address 1: 800 South Fillmore Address 2: Address 3: City: Osceola State: Iowa Zip Code: 50213 Organization: Clarke County Hospital Organization Type: Non-profit Institution Small business: No Socially and economically disadvantaged small business concern: No
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Project Role: Sub-recipient Name: Bossard, Karen Email: karen.bossard@gcmchealth.com
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Address 1: 1000 West Lincolnway
 Address 2:
 Address 3:
 City: Jefferson
 State: Iowa
 Zip Code: 50129
 Organization: Greene County Medical Center
 Organization Type: Non-profit Institution
 Small business: No
 Socially and economically disadvantaged small business concern: No

Project Role: Sub-recipient
 Name: Neal, Jerry
 Email: geraldn@gcho.org
 Address 1: 710 North 12th Street
 Address 2:
 Address 3:
 City: Guthrie Center
 State: Iowa
 Zip Code: 50115
 Organization: Guthrie County Hospital
 Organization Type: Non-profit Institution
 Small business: No
 Socially and economically disadvantaged small business concern: No

Project Role: Sub-recipient
 Name: Delegardelle, Pam
 Email: delagapk@ihs.org
 Address 1: 201 East J Avenue
 Address 2:
 Address 3:
 City: Grundy Center
 State: Iowa
 Zip Code: 50638
 Organization: Grundy County Hospital
 Organization Type: Non-profit Institution
 Small business: No
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19. Description of the involvement of the partners listed above in the project.



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The Central Iowa Hospital Corporation (CIHC) doing business as Iowa Health-Des Moines, along with its four partners: Greene County Medical Center, Guthrie County Hospital, Grundy County Memorial Hospital, and Clarke County Hospital seek to develop a robust telehealth network through the Rural Iowa Telehealth Initiative. CIHC already works with these rural hospitals in their region to expand care offerings, provide operational resources, and supplement management needs. As the project lead, CIHC will provide the overall project leadership, management, and implementation support for its partners. Each of the four partners will equally support CIHC at a leadership level through representation of the CEO in the project advisory board, and at an operational level by providing cross-functional project implementation teams to work closely with CIHC project manager.

All partners have conducted extensive outreach into their respective communities to secure the support of key community anchor institutions for this project. Working closely with these institutions, the partners have identified the critical areas of need that can be addressed by developing programs and applications through broadband adoption and technology implementation for this project. The partners have consistently underscored the need to provide job creation and generate economic regeneration in the rural Iowa communities served through this proposal. The letters of support submitted in this proposal provide a snapshot of the overwhelming support for this initiative in the partners' communities throughout the State.

This proposal has the potential for bringing far-reaching and long-lasting benefits to the partners and their communities in rural and underserved Iowa counties. Typical benefits include, but are not limited to: creation of jobs in the health technology sector supporting rural healthcare providers, improving health outcomes in medically underserved communities, delivering education and training to a rural workforce that is otherwise inaccessible, developing a platform for health education outreach for school children, senior citizens, and minority vulnerable populations in the State, safely providing medications to patients through 24/7 access to registered pharmacists, and providing infrastructure for a virtual unified command system in the response to, mitigation of, and recovery from disasters.

D. Congressional Districts

20. Applicant Headquarters

- Iowa



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21. Project Service States

Iowa

22. Project Service Areas

Iowa - 3

Iowa - 4

Iowa - 5

23. Will any portion of your proposed project serve federally recognized tribal entities?

➤ No

24. Indicate each federally recognized tribal entity your proposed project will serve.

25. Have you consulted with each of the federally recognized tribal entities identified above?

No

E. Community Anchor Summary

26. Community Anchor Institution	
Schools (k-12)	25
Libraries	4
Medical and Healthcare Providers	20
Public Safety Entities	18
Community Colleges	8



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Public Housing	0
Other Institutions of Higher Education	0
Other Community Support Organization	0
Other Government Facilities	6
TOTAL COMMUNITY ANCHOR INSTITUTIONS	81
27. Minority Serving Institutions	
Historically Black colleges and Universities	0
Tribal Colleges and Universities	0
Alaska Native Serving Institutions	0
Hispanic Serving Institutions	0
Native Hawaiian Serving Institutions	0
TOTAL MINORITY SERVING INSTITUTIONS	0

F. Demographics

28. Will your proposed project be specifically directed to serve vulnerable population groups?

- Yes

If "Yes" which vulnerable population groups will your proposed project serve? Check as many as apply:

Hispanic

Black/African-American



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Asian

Native American or Native Alaskan

English as Second Language (ESL)

Disabled

Low Income

Unemployed

Senior Citizen (55 and over)

Youth

Other:

29. Vulnerable Populations

A number of studies examining the quality of health care in Iowa have documented major problems with quality and disparities according to patients' race and socioeconomic status. These issues are of particular concern for publicly supported healthcare providers who are responsible for caring for more than 1.1 million people in rural communities of Iowa.

Demographic change in Iowa in recent years is occurring through rapid ethnic diversification, an aging white population, low fertility rates among whites, exodus of graduates to other states, higher birth rates among ethnic minorities in Iowa, and, an influx of immigrants, refugees, and other newcomers to work in labor shortage. From 1990 to 2000, the number of foreign-born residents in Iowa has doubled to 91,000 and continues to grow.

Despite improved living standards, better technology, and higher incomes in recent years, health disparities remain stubborn in the State. Rural whites, African Americans, Hispanics, and Native Americans continue to have significantly poorer health than urban whites and Asians. Minorities



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also tend to receive less frequent medical and dental care, as well as poorer quality care, even when controlling for income and education.

In general, the more remote, smaller and poorer rural communities have greater difficulty with access to quality health services. They tend to have fewer healthcare facilities and professionals of all types, less choice and competition among them and broad variation in their availability at the local level. The technology capabilities vary widely between healthcare facilities. Because of this rural-urban separation, interactions between the primary, secondary and tertiary caregivers are limited and poorly coordinated. This contributes to a fragmented model of healthcare delivery in rural communities and often puts the burden on the patient to coordinate their care between the healthcare providers.

Rural community hospitals and clinics play a pivotal role in meeting the health care needs of rural communities in State. As isolated populations increase, their dependence on these multi-tasking and frequently over-burdened healthcare workers also increases; and providing clinical workers with the tools to do the best job possible falls to those who employ, supervise and train them. In our rural communities, training challenges include limited infrastructure, tremendous cost of travel to regional training hubs and resistance to relocating, distance from population and technological centers, cultural and social norms that sometimes resist even positive change, and the high turnover of key staff.

30. Accessibility

The Rural Iowa Telehealth Initiative seeks to improve accessibility to quality clinical care, and medical education and training to the rural residents of the State. The partnering rural hospitals will play a key role as the serving hubs that connect to community anchor institutions including community colleges, community health clinics, public safety agencies, and K-12 institutions.

Technology will play a key underlying role as broadband and telehealth technologies will be cohesively deployed to all the centers that will be providing clinical, education, and outreach services to the rural residents.

While these centers will be open to the public at large in these rural communities, there will be certain restrictions for use when the centers are reserved to provide training for certain specific segments of the rural populations, including senior citizen groups and school children. These



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centers will also deliver a wide range of computer literacy applications to the most disadvantaged constituents in our region.

For the most part, we plan to keep the general access to these centers at no cost to the users. However, we will develop a tiered pricing plan for renting the computers for institutional partners and other similar agencies that would use the facilities for specialized training programs for their staff. These types of services could become future revenue opportunities for the RITI consortium. Further, these centers will be made available to public health and public safety organizations for training personnel on health and safety issues.

31. Other Languages

As the Rural Iowa Telehealth Initiative is implemented, one of the core objectives will be to ensure that the services provided to the rural vulnerable populations will not be limited due to the language barriers and the lack of outreach content in the languages of the demographic being served.

Other than the English speaking residents, the largest block of foreign-language speaking population is the Hispanics. The Hispanic population in Iowa has doubled from 1990 to 2000. Keeping this in mind, all of the RITI programs will ensure that the services and content delivered to our under-served communities will be bilingual in English and Spanish. The clinical and learning workforce deployed in rural communities will have a percentage of the personnel who are bilingual. Through the video-conferencing capability, Spanish-speaking interpreter resources in the urban academic, educational and clinical institutions will be made available to provide interpretation services on demand from rural communities. The project will ensure that the Spanish-speaking populations, especially the children and youth in K-12 and community college settings have access to English as a Second Language training, as well as age-appropriate English language remedial training programs.

G. Project Budget

32. Project Budget	
Federal Grant Request	\$8,321,815



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Total Match Amount	\$5,445,104
Total Budget	\$13,766,919
Match Percent	39.6%

33. Projects Outside Recommended Funding Range:

- Not applicable

34. Sustainability:

The Rural Iowa Telehealth Initiative is a wrap-around initiative to other key state-wide initiatives focused on delivering broadband services in the rural under-served communities. Central Iowa Hospital Corporation, the lead applicant, and four of the largest rural hospitals in the State are committing \$5,445,104 in matching funds to this project as an expression of their commitment and support for the project's long-term sustainability.

A total of 81 community anchor institutions including community colleges, K-12 institutions, community health clinics, public safety agencies, are wholeheartedly supporting this project. These entities greatly value the prospects of this project for long-term economic development in the rural communities through job growth, work-force education and training, access to better clinical care and expansion of health insurance to the uninsured in their communities.

The deployment of the technology resources in the rural communities is supplemented by the commitment of support personnel such as telehealth and digital technology trainers, and outreach coordinators, hired within these communities, who will support our partners in delivering the proposed services.

In the long-term, this project offers opportunities to expand partnership with (1) academic tertiary care centers in the State, (2) Regional Health Information Organizations, (3) Practice improvement organizations for EMR adoption, (4) the Iowa State Department of Health as well as the State Office for Rural Health, (5) other sector partners in Life Sciences, Education, and Workforce Development, to make sure that the proposed infrastructure is available to them to develop programs and services that will further encourage the use of broadband. As a commitment to the sustainability of this project, there is a 40% matching provided by the project partners.



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The key long-term broadband adoption is through education and training of the rural populations on applications that drive job growth and economic development. The community partners, functioning independently and in combination, will bring education and training of computer-based applications to the majority of the rural residents who currently do not have such access. The courses developed at these centers will be targeted towards the different age-groups as well as customized for a variety of career paths. Given the nationwide focus on rural healthcare, there will be a special emphasis on courses related to health careers and to health information technology.

35. Matching Funds	
Applicant is providing matching funds of at least 20% towards the total eligible project costs?	Yes
Describe the matching contributions	<p>The Rural Iowa Telehealth Initiative is providing a 39.6% match totaling \$5,445,104 to the requested Federal Funding of \$8,321,815. The lead applicant and the four project partners are proving matching funds in the following categories:</p> <p>Personnel: \$754,475 matching funds to \$1,717,801 requested in Federal funds - Match to cover partial Chief Executive Officer, Chief Financial Offices, Chief Nurse Executive and Clinical Support Specialist FTEs allocated for this project</p> <p>Fringe Benefits: \$355,260 matching funds to \$312,254 requested in Federal funds - Match to cover fringe benefits for the personnel listed above</p> <p>Travel: \$18,999 in matching funds to \$129,057 requested in Federal funds - Match to cover travel by project personnel to community sites</p> <p>Equipment: \$4,149,438 in matching funds to \$5,918,321 requested in Federal funds - Match to cover EMR adjunct interfaces and systems, PACS systems, Telemetry systems, video bridge, CT Scanners, multiples network routers and systems.</p>



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	<p>Supplies: \$17,703 in matching funds to \$179,382 requested in Federal funds - Match to cover subscriptions, and clinical and office supplies</p> <p>Construction: \$85,959 in matching funds to \$0 requested in Federal funds - Match to cover construction in the four partnering rural hospitals to support the Rural Iowa Telehealth Initiative</p> <p>Other: \$63,279 in matching funds to \$65,000 requested in Federal funds - Match to cover Internet Service Provider Fees to cover broadband access costs for the project.</p>
Unjust enrichment	None
Disclosure of federal and/or state funding sources	None

36. Budget Narrative	
Budget narrative	<p>Personnel: The system will create 9 new full time jobs initially including:: 1 Central Coordinator to coordinate activities across the network, implementation timelines and education, 3 Telehealth Coordinators to plan and implement of programs in their local communities and identified end points, 3 Clinical Support positions to assist community and education partners, outpatient, inpatient, and emergency room staff, and 2 IT staff positions to coordinate technical installation, maintenance and monitoring of equipment. The salary cost for new FTE's is \$1,620,751 plus fringe benefit at an average rate of 27% bringing the total cost to \$2,058,354</p> <p>Travel: Annual ATA staff education conference at a cost of \$2900 per person x 14 staff year 1, 14 year 2 and 10 staff year 3, for a 3 year total of \$110,200. Travel to and from 127 rural sites for education, technical support etc. for a total of 7,691 miles per year or 25,231 over 3 years x 0.50 = \$37,845.68</p> <p>Supplies: \$197,085.20 in general supplies including paper, toner, equipment consumables, software, and subscription dues with</p>



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	<p>\$17703.40 of the total will be in matching dollars</p> <p>Equipment:</p> <ul style="list-style-type: none"> • Guthrie, Greene, Grundy County, and Iowa Health Des Moines Hospitals will install infrastructure at a total cost of \$768,000. Clarke, Greene and Grundy will purchase additional TMS licenses at a cost of \$42,000. • 15 of the 253 telemedicine Codec units will be placed in rural facilities for specialist consultation for outpatients, inpatients and emergency facilities totaling \$240,000. • 57 mobile carts will be in health care and community based education rooms, jails, emergency command center and ambulance services, elementary schools, high schools, colleges and other health care facilities at a cost of \$15,500 each with a total cost of \$883,500. • 55 devices (1700 MXP) will be placed at health care specialist's facilities allowing telehealth video-conferencing, education and consultation at a cost of \$10,500 each totaling \$577,500. • 29 general exam cameras at a cost of \$3835.20 each totaling \$111,220 and 44 digital stethoscopes for consultation at a cost of \$1727.04 each totaling \$138,163.20 • 2 ECG/EKG units at \$3,547.20 each, 14 ENT Cameras at \$10,500.00 each, 1 Spriometry at \$2,400.00, 15 Vital Monitoring devices at \$3,700.00 each, 2 ultrasounds at \$6,500.00 each and 2 remote pathology units at \$17,000.00 each for patient data transmission over the broadband from rural community sites to health care specialists for consultation. • 25 MOVI users at a cost of \$500/license or \$12,500 per partner. 85 Laptops at \$1,500.00 per laptop, plus 3 wireless cards at \$150.00 per card, totaling \$177,950 • 7 CapSure lite systems at a cost of \$6,000 each totally \$42,000 • Tandberg Content Server at a cost of the TCS and DVR is \$25,000.00. • Symon Digital Signage and state of the art technology from Rovion to promote community at a cost of Symon is \$45,000. The cost of Rovion is \$20,000.
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Budget reasonableness	<p>The Federal funding requested for this project is \$8,321,815 to develop a telehealth network that will cover 18 of the most rural and under-served counties and targeting a population of 871,000. The cost per capita for this project is less than \$10. Based on the job-creation model provided by the Council of Economic Advisors, this project will create 90 job-years in the the healthcare sector where there is a dire need for personnel with the skills to navigate the integration of technology in healthcare. The project partners are committing \$5,445,104 in matching funds, which is 39.6% of the Federal funding requested.</p> <p>While this proposal seeks to develop and expand the telehealth infrastructure to serve rural Iowans, the sustainability model presented will allow our rural partners can start exploring and developing telehealth applications that will create economic development opportunities in our communities through the adoption and long-term use of the broadband network.</p> <p>In developing this proposal, we have taken an approach that seeks to deploy specific components of the network by clearly evaluating needs of the targeted population, and that of the clinicians at the hub and end-user sites, and then developing the organizational partnerships and programmatic and technological applications that best meet these needs, with costs and outcomes being the key determinants.</p> <p>The end-user sites will use the core network infrastructure necessary to support the telemedicine and distance-learning applications. This core backbone network is capable of handling extremely high bandwidths. On an applications level, this network can connect to other premier healthcare facilities nationwide for telemedicine, clinical mentoring, and grand rounds.</p> <p>The specific infrastructure equipment proposed is based on a modular model; so that when systems expansion is required, it can be done by simply changing out the specific modules. Likewise, at the partnering</p>
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	<p>end-points, the telehealth equipment is upgradeable using software.</p> <p>All systems proposed have underlying technologies that are based on internationally recognized standards, and are not proprietary systems that are expensive and difficult to manage.</p> <p>The proposal identifies key personnel who will be responsible for project implementation and management, as well as for ongoing operations. Due diligence has been invested in ensuring that most job functions are addressed with existing organizational staff and adding personnel only for new job functions.</p>
Demonstration of need	<p>The goal of this initiative, comprising of rural healthcare partners, is to rejuvenate our battered rural economies by leveraging broadband and high-technology applications to create job growth, to improve the quality of the rural workforce, and to provide accessible and affordable healthcare to our rural citizens. This project covers 871,000 of the 1.2M rural residents of the State.</p> <p>The majority of our partners and community anchor institutions face financial hardship just for operating their facilities and are dependent of State and Federal grants and other forms of funding for their existence. However, to meet our objectives, it is imperative that we build successful and sustainable programs and services that will leverage the delivery of broadband to our rural communities. A project of this scale and magnitude can only be achieved by the funding provided through the BTP SBA grant opportunity.</p> <p>The project partners, though their own initiative, are committing 5,445,104 at a match to this project. However, the Rural Iowa Telehealth Initiative is in need of the significant funding from the BTOP SBA grant to further build out the core infrastructure and the rural community partner end-points for successful long term economic expansion in our rural communities through job growth, a skilled and talented workforce, and a rural community with access to affordable quality healthcare.</p>



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37. Funds to States/Territories

States	Amount of Federal Grant Request
Iowa	8,321,815

Funds to States/Territories Total: \$8,321,815

H. Historical Financials

38. Matching Funds			
	2007	2008	2009
Revenue	625,346,000	671,703,000	685,474,000
Expenditures	604,636,000	654,028,000	660,299,000
Net Assets	577,376,000	441,387,000	575,172,000
Change in Net Assets from Prior Year	46,323,000	-135,989,000	133,785,000
Bond Rating (if applicable)	Aa3	Aa3	Aa3

I. Program Benefits

39. Jobs	
How many direct jobs-years will be created from this project?	40
How many indirect jobs will be created from this project?	20
How many jobs will be induced from this project?	30

40. Methodology used to estimate jobs:



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From the US President's Council of Economic Advisors' (CEA) report:

\$92,000 in Government spending creates 1 job-year

Therefore, for our project, the \$8,321,815 Federal funding requested creates 90 job-years

The CEA report further states that 64% of the job-years represent direct and indirect effects and 36% represents induced effects.

Therefore, in our project, we project 60 direct and indirect job-years and 30 induced man years.

We further split the 60 direct and indirect job-years into 40 direct job-years and 20 indirect job-years

41. Adoption Metrics	
How many total new home subscribers (household accounts) to broadband do you expect to generate through use of BTOP funds over the entire life of the program funded?	10000
How many total new business and/or institutional subscribers to broadband do you expect to generate through use of BTOP funds over the entire life of the program funded?	900
How many total users of broadband in public computer centers or users of broadband outside the home (e.g., in a community college) do you expect to generate through use of BTOP funds over the entire life of the program funded?	21000
What is the total cost of your project per new subscriber (household, individual, or institutional) or new end-user?	\$38.17

42. Measuring Adoption Impact:

Household subscribers:

Total targeted population: 871,000

Total targeted households: $872,000/4 = 218,000$

5% of total targeted households: 10,000 households

Institutional subscribers:



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of counties targeted: 18

of institutions or businesses (targeting 50 per county): 900

Subscribers outside home (Schools, Community colleges etc)

K-12: 19

Community Colleges: 8

Libraries: 4

Total: 21

Each institution targets 1000 new subscribers - Total new subscribers: 21,000

Cost per user

Target population: 871,000

Assuming 25% of the population adopting broadband: 218,000

Federal funding requested \$8,321,815

Cost per user: \$38.17

43. Broadband Training Programs	
If you intend to provide training or education, how many people in total will your program(s) reach?	32000
How many hours of training do you expect to provide per person on average for each participant in your training program(s), through completion of training for that individual?	3
How many Full time employee (FTEs) instructors or facilitators will you employ for broadband and digital literacy training purposes?	21

44. Describe their qualifications (training and experience):

Digital Technologies Trainers:

IT trainers generally design and deliver training courses in information and communications technology (ICT) including desktop applications and specific software. IT trainers work in colleges, hospitals and within the non-profit organizations.

Community Outreach Workers:

A community outreach worker resides at the local level, offering educational programs and assistance to members of the community. This job involves overseeing workshops, programs,



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staff members and often volunteers. The job focuses on contact with community members through the first-hand delivery of programming. The position includes the planning and development of this programming, then implementation and evaluation. This position may also serve as a liaison between other organizations within the community that share similar goals.

Registered Nurses:

Registered nurses and clinicians with similiar backgrounds will reside at the local hospital clinical site and will use the equipment to assess the patient and assist the examining physician or practioner.

Telehealth Site Coordinator:

The Telehealth Site Coordinator represents their institution and the Rural Iowa Telehealth Initiative in assurance of quality telehealth activities. This person shall be responsible for scheduling telehealth consultations, video conferences, promoting video conference activities, preparing the video conference system (VCS) for events, minor troubleshooting, and contributing to records and databases.

45. Equipment Affordability Programs	
What is the total up-front cost of this equipment?	\$5,918,321.00
If you are providing an equipment purchase or loan program, for how many households, businesses and/or institutions do you expect to provide equipment or computers?	0 Households
	0 Businesses
	196 Institutions
If you are employing a loan program for purchases of service or equipment, what will be the total cost to the typical customer you assist over the life of the loan, including all interest and fees?	\$0.00
How many broadband-related equipment units (e.g. computers, wireless devices) do you intend to purchase overall?	253

46. Broadband Awareness Programs



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If you are conducting an awareness campaign, how many people do you expect your campaign will reach in total per year?	63700
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47. Awareness Campaign Methods: Briefly describe the targeting, media, and messaging strategies your awareness campaign will employ.

The media and messaging strategy would involve print, TV, radio and web media channels. The project web site will be developed with content informing the viewers about the program, the partners and about the community anchor institutions that are accessible to the public to access the services available.

Additionally, the partners and anchor institutions will develop their own information outreach programs through known and reliable media and channels, including open-houses and poster campaigns.

48. Measuring Campaign Impact: Describe how you will measure the impact of the awareness campaign.

Typically referred to as AAU (Awareness, Attitudes, and Usage), this metric is most useful when results are set against some form of comparator, that is data from a prior term (e.g. year-over-year), different markets (e.g. geographic or demographic), or with the competition. An AAU metric by itself is meaningless until you have a pivot point from which to demonstrate movement. In that light, several data sets are essential to identify valid trends and movement in AAU.

To measure impact, we will use the AAU metric. AAU looks at:

Awareness: the percentage of target audience (customers or potential customers) who recognize the program, either aided or unaided. It also measures what knowledge the target audience has about the programs.

Attitudes: this is a combination of what the target audience believes and how strongly they believe it. Measurements cover the target audiences' perceptions of quality, effectiveness, and value as they relate to the program, and also cover intention to become involved with the program.



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Usage: this is simply the target audiences' self-reported behavior as it relates to the program

Surveys can be conducted to get the AAU data from the target audience. These could be online, intercept, mail, or telephone surveys that ask a series of questions. We will use the same set of questions over time so we have data points to measure against.

Here are a few scenarios of data streams you might get and what to do:

Surveys could yield the following sets of information:

High awareness, high attitude, low usage – Know about us and think highly of us but will not engage with us. Things to do: these people may not know of ways to engage with the program. Maybe this audience does not want to engage. Go to them and find out how they want to engage and create those opportunities.

High awareness, low attitude, low usage – Know about us but don't think highly of and will not engage with us. Things to do: these people should be left alone and we should focus our energies on higher yield opportunities.

Low awareness, low attitude, low usage – Basically don't know we exist and do not engage with us. Things to do: an awareness campaign might migrate members of this group into another category. We will need to evaluate the cost of what it takes to break through the noise in the market space as we compete for attention. Make sure we have a plan in place to engage or disengage these people once we do.

J. Project Readiness

49. Licenses and Regulatory Approvals

Since this Initiative is a non-construction project, we do not anticipate the need for licenses and regulatory approvals.

50. Organizational Readiness

The partnership between the organizations in this Initiative was built based on advances in the continually evolving telecommunications and computer industries, and on successes and lessons



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learned from other similar projects. The hallmark of this partnership is the evolution of the statewide broadband network, and the creation of rural end-points to promote new opportunities to maximize broadband adoption . When fully realized, the program will enable rural Iowa communities to access a variety of innovative services and applications through these broadband end-points that will significantly enhance the overall quality of life.

The partners have already established the concept of a 3-layer model for information technology development with Layer 1 being broadband network, Layer 2 being the server and conferencing systems core, and Layer 3 being the applications and services developed as a result of Layers 1&2. The broadband Layer 1 is already in development, and work has started establish Layer 2. This funding request is focused on scaling and completing Layer 2 and to support our partners in the Layer 3 applications and services.

The partners in this Initiative have a proven track record of meeting all Iowa Department of Public Health (IDPH), Iowa Medicare Rural Hospital Flexibility (FLEX) Program, Small Rural Hospital Improvement Grant Program (SHIP), and contract reporting requirements and deadlines. In addition to successfully administering previous Bioterrorism grants, FLEX grants, SHIP grants, the leadership team successfully has administered Federal and State grants. Additionally, Area Agency on Aging, Iowa Department of Human Services Decatorization, and Iowa Empowerment Area grants are successfully maintained.

The partners have also made extensive outreach into the communities being impacted by this proposal to ensure there is community support and availability of resources to build and sustain this project in the long-run.

51. Project Timeline and Challenges

Months 1-6

- Identify implementation teams in each community
- Develop and initiate standardized curriculum for training and demonstrated competencies of implementation team members
- Develop appropriate standards, guidelines, protocols, including data collection and video conferencing education using the telehealth broadband network
- Develop talking points and standardize curriculum for provider, staff and community education related to appropriate telehealth applications
- Plan access and community awareness strategies utilizing broadband technology



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- Meet with local primary care physicians and all end point community partners to discuss implementation timing, their needs and expectations for use of broadband technology
- Coordinate planning and implementation of the integrated telehealth infrastructure at Iowa Health Des Moines, and Clarke, Guthrie, Green and Grundy county communities
- Plan and coordinate detailed implementation schedule for all end point health care and community partners.

Months 7-24

- Complete install of telehealth infrastructure at Clarke, Greene, Grundy, Guthrie, Iowa Health Des Moines
- Purchase and install 186 total telehealth systems for conference/education rooms, outpatient, emergency and inpatient consultation capabilities at community locations.
- Test the ability to efficiently link end points with health care partners and community connections over the broadband network
- Purchase diagnostic to use in conjunction with patient management telehealth system.
- Implement education and training for clinical and office staff
- Establish routine implementation team conference meetings, continued learning, data review and program modification as needed
- Initiate data collection processes
- Educate physicians, staff and community for telehealth implementations
- Review, revise guidelines, protocols, standards, educational curriculums
- Initiate community awareness and education campaign for local telehealth opportunities
- Collect data from community members and health care providers satisfaction with use of telehealth experiences
- Review and report data and evaluate community needs met through the project as well as continued needs and growth opportunities
- Develop system growth action plan to sustain and grow the telehealth initiative in all communities 25-30
- Complete installation of 10 total telehealth systems
- Assess community continued educational needs and discuss additional community educational opportunities

Months 31-36

- Implement telehealth system Growth plan to meet community needs
- Report data
- Review, revise guidelines, protocols, standards, educational curriculums



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- Continue community awareness and education campaign for local telehealth opportunities
- Identify data collection need and reporting structure
- Purchase, community telehealth infrastructure Clarke, Greene, Grundy, Guthrie, Iowa Health Des Moines

52. **SPIN Number**

K. Environmental Questionnaire

53. Does the proposed action involve the procurement of materials? If so, will the materials be installed, stored or operated in an existing building or structure? If yes, please click "Add" to include the list of equipment and peripherals to be procured.

No

54. Does the proposed action involve procurement of electronic equipment? If yes, will the equipment be disposed of in an environmentally sound manner at the end of its useful life?

Yes

55. Does the proposed action involve construction, remodeling, or renovation? If so, will these activities be limited to only minor interior renovations to a structure, facility, or installation? If yes, click "Add" to include a description of the proposed renovations with your project summary.

No

56. Does the proposed action involve the production and/or distribution of informational materials, brochures, or newsletter?

Yes



**Broadband Non-Infrastructure Application
Submission to NTIA – Sustainable Broadband Adoption**

Submitted Date: 3/13/2010 9:28:18 AM	Easygrants ID: 5131
Funding Opportunity: Sustainable Broadband Adoption	Applicant Organization: CENTRAL IOWA HOSPITAL CORPORATION
Task: Submit Application - Sustainable Broadband Adoption	Applicant Name: Ms. Tracy D Warner

57. Does the proposed action involve training, teaching, or meeting facilitation at an existing facility or structure? If yes, click "Add" to explain.

Yes

All the four partner hospitals will use their and community anchor personnel and facilities to deploy video conferencing infrastructure and end-point systems that will provide the core connectivity for training, teaching and meeting facilitation.

58. Does the proposed action involve ground or surface disturbance to accommodate new fiber optic cable? If yes, please click "Add" to include a description of the extent of service upgrade, a list of the permits required, and linear footage of underground fiber optic cabling required.

No

59. Does the proposed action involve an upgrade of broadband service to an existing facility or structure? If yes, please include a description of the extent of service upgrade, a list of the permits required, and linear footage of underground fiber optic cabling required?

No



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Uploads

The following pages contain the following uploads provided by the applicant:

Upload Name	File Name	Uploaded By	Uploaded Date
Management Team Resumes and Organization Chart	Resumes and Organizational Chart.pdf	Warner, Tracy	03/12/2010
Government and Key Partnerships	MOUs_Partners.pdf	Warner, Tracy	03/12/2010
Government and Key Partnerships	Support_Letters.pdf	Warner, Tracy	03/12/2010
Historical Financial Statements	Historical Financial Statements.pdf	Warner, Tracy	03/05/2010
Community Anchor Institutions Detail	Anchor Institutions_Total.xlsx	Warner, Tracy	03/11/2010
BTOP Certifications	BTOP Authentication and Certifications.pdf	Warner, Tracy	03/12/2010
Detailed Budget	BTOP2_Iowa_Budget Detail -Total .xlsx	Warner, Tracy	03/13/2010
SF424 A Budget	BTOP2_IOWA_SBA SF424A Form.pdf	Warner, Tracy	03/13/2010



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SF424 B Assurances - Non-Construction	424BA Assurances.pdf	Warner, Tracy	03/12/2010
Supplemental Information	BTOP Visio Rural Iowa Telehealth Initiative.pdf	Warner, Tracy	03/12/2010