Broadband USA

Broadband Infrastructure Application
Submission to RUS (BIP) and NTIA (BTOP)

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

Table of Contents

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

A. General Application Information

1. Applicant Information

1-A. Name, Address, and Federal ID for Applicant

i. Legal Name:	Merit Network Inc.
ii. Employer/Taxpayer Identification Number (EIN/TIN):	382210903
Street 1:	1000 Oakbrook Drive, Suite 200
Street 2:	
City:	Ann Arbor
County:	Washtenaw
State:	MI
Country	United States
Zip/Postal Code:	48104

1-B. Name and Contact Information of Person to be Contacted on Matters Involving this Application:

Prefix:	Dr.
First Name:	Donald
Middle Name:	J
Last Name:	Welch
Suffix:	
Telephone Number:	734-527-5700
Fax Number:	734-527-5790
Email:	djwelch@merit.edu
Title:	President & CEO Merit Network

Broadband Infrastructure Application
Submission to RUS (BIP) and NTIA (BTOP)

Submitted Date: 8/18/2009 1:53:59 PM	**Easygrants ID:** 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Merit Network Inc.
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Donald J Welch

1-C. Other Required Identification Numbers

i. Organizational DUNS:	615121324
ii. CCR # (CAGE):	3ZHN4
iii. Funding Opportunity Number:	1
iv. Catalog of Federal Domestic Assistance Number:	**BTOP CFDA Number:** 11.557 **BIP CFDA Number**: 10.787 **BTOP CFDA Title:** Broadband Technology Opportunities Program **BIP CFDA Title:** Broadband Initiatives Program

1-D Eligible Entities

Please classify your organization. (Note: If there are multiple organizations involved in the project, designate the lead applicant that would enter into a Loan or Grant agreement with the Agency and assume operational and financial responsibility should an award be made). **Non-Profit Corporation**

1-E. RUS Borrower Status

No

1-F. Applicant Federal Debt Delinquency Explanation

Is the Applicant Delinquent On Any Federal Debt? **No**
Federal debt delinquency Explanation:

2. Project Description & Project Title

2-A. Project Title: REACH Michigan Middle Mile Collaborative

2-B. Project Description: The REACH Michigan Middle Mile Collaborative is a partnership led by Merit-Michigan's education network-which engages Merit with 4 commercial providers to share a 955 mile extension of Merit's advanced fiber optic network to serve anchor institutions, households and businesses. This project is coordinated with 3 other middle mile applications to target underserved areas throughout Michigan.

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization**: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	**Applicant Name**: Dr. Donald J Welch

3. Application ID for Multiple Submissions for Identified Service Areas:

4. Rural Area Determination

At least 75 percent of the proposed service area to be funded falls within <u>rural areas</u> that are unserved or underserved.
 Yes

5. Applications for Rural Areas: Please choose the funding program(s) to which you are submitting this application.

a) BIP broadband infrastructure category to which you are applying:
 BIP - Middle Mile Project

b) Would you like this Application for Rural Areas to also be considered for BTOP funding?
 Yes

c) BTOP Infrastructure category for which you are applying.
 Middle Mile

6. Applications for All Other Areas: Per the NOFA, all applications to fund broadband infrastructure projects in areas that are less than 75% rural must be submitted to NTIA for consideration under BTOP.

BTOP broadband infrastructure category to which you are applying: **Middle Mile**

B. Eligibility Factors

7. Application Submission

BIP and BTOP Factors Selected By Applicant:

Applicant has submitted a completed application and provided all supporting documentation required for the application.

The Project will be substantially complete within 2nd year from the award date, and the project will be fully

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

complete by the end of the 3rd year from the award date.

For projects seeking more than $1 million funding, the Applicant agrees to submit a certification, from a Professional Engineer, that attests that a) the system will deliver the stated performance; and b) the projected project will be substantially completed within two years, and fully completed within three years.

The Applicant provides two-way data transmission with advertised speeds of at least 768 kbps downstream and 200 kbps upstream.

Applicant understands and agrees to comply with the nondiscrimination and interconnection obligations outlined in the NOFA.

Additional Factors for BIP Selected By Applicant

At least 75 percent of the proposed funded service area qualifies as unserved and underserved rural areas in accordance with the NOFA.

Applicant understands and agrees that the project will be fully funded in accordance with the requirements of the NOFA.

Applicant understands and agrees that only projects that RUS determines to be financially feasible and/or economically sustainable will be eligible under this NOFA.

Additional BTOP Factors Selected By Applicant
- **Conformity with Statutory Purposes**
- **Cost Sharing/Matching**
- **Reasonableness of Project Budget**

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization**: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	**Applicant Name**: Dr. Donald J Welch

The project advances at least one of the statutory purposes for BTOP
Applicant has provided documentation that the project would not have been implemented during the grant period without federal grant assistance.
Applicant has provided a budget that is appropriate to the proposed technical solution and only includes eligible costs.

- **Demonstration the Project Could not be Implemented But For Federal Grant Assistance**
  Applicant is providing matching funds of at least 20 percent towards the total eligible project costs?
  Yes

7-k. Cost Sharing/Matching Fund Explanation

C. Executive Summary

Executive Summary of Project for BIP and BTOP:

8. Infrastructure Projects Executive Summary
a) Opportunity proposed systems seeks to address

As Michigan seeks to recover from its significant economic challenges, broadband becomes an even more important foundation for the future. Alternative energy, next generation manufacturing and other initiatives depend not only on access to information, but on an educated populace well-versed in new technology. In many rural areas of Michigan, the high cost and lack of competition for backhaul service has limited last mile service performance, availability and affordability for homes, businesses, schools, libraries, public safety and other anchor institutions. Last mile providers in parts of Michigan have reported that up to 80% of their costs go to backhaul.

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

The project described in this proposal, "Rural, Education, Anchor, Community, Health Care: Michigan Middle Mile Collaborative" (REACH-3MC), directly addresses this problem by building 955 miles of 72-strand fiber into rural and underserved areas. Merit Network, an established non-profit provider to anchor institutions, together with four commercial service providers, will use the new infrastructure to serve all sectors of the economy. Merit's mission of serving anchor institutions, combined with the partners' business plans, ensures that households, businesses, and critical community facilities will all see major benefits from REACH-3MC.

REACH-3MC is a component of a larger plan to address underserved areas across the entire state. In the Upper Peninsula, Peninsula Fiber Network (PFN) is the lead while Merit will be a partner. Along the northeast shore of the Lower Peninsula, Allband Communications Cooperative (a Merit member) is the lead applicant and Merit will be a partner there, too. In the Thumb region, REACH-3MC has coordinated with lead applicant Air Advantage. All four projects complement each other to address the broadband shortfalls of rural Michigan.

REACH-3MC leverages the current networks operated by Merit and the partners, to deliver maximum benefit for the cost. Merit's current anchor members enjoy tremendous benefits by collaborating over its existing infrastructure. These benefits have been denied to the anchor institutions in the underserved areas because of the high backhaul costs. Not only will institutions that are newly able to connect benefit, but also current Merit members will benefit from the synergistic effect of the new anchor institutions on the extended network.

This network will bring high-performance low-cost backhaul service closer to unserved areas, to 12 completely underserved counties, and to 14 counties with significant underserved areas. The network will immediately connect 38 anchor institutions and could connect 379 more to the rest of the state's anchor institutions through Merit. REACH-3MC could serve over 50 social service sites and 44 public safety sites. Merit is participating in Northern Michigan's Emergency Services Internet (ESI) program to provide e911 services throughout rural northern Michigan. Through REACH-3MC this could be expanded to the REACH-3MC service area. REACH-3MC serves communities that will benefit the most from broadband in a state that is working hard to better engage in the knowledge economy.

This system is a fiber network that uses advanced technologies to bring high-performance, low-

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

cost and easily scalable backhaul services to underserved areas. The design allows for easy support of legacy technology common in smaller last mile providers, while providing a smooth path to newer high-performance technology. Fiber stands, wave services, transport and IP services will be offered by REACH-3MC.

Although funding in the current legislation will not immediately solve the entire broadband problem, REACH-3MC will lay the groundwork for continued progress long after project completion. Merit, as cited in over 70 letters of support, has succeeded in helping communities work together, share assets, and make real progress toward improving regional network infrastructures. Merit has a history of bringing together diverse organizations to work together for the benefit of their remote communities; thus REACH-3MC leverages a winning approach to rural broadband.

REACH-3MC is a partnership between Merit, LYNX, Iserv, Tc3Net and ACD.net. Merit is the lead applicant and the others are subrecipients. The partners have jointly designed the network and have MOUs in place. ACD.net will also make two applications for last mile projects (Berrien & Cass counties and Hillsdale & Branch counties) that rely on REACH-3MC.

On a broader scale REACH-3MC coordinates with the service projects of anchor institutions, such as the NSF-MRI Internet2 DYNES proposal, and BTOP Public Computer Center proposals Michigan State University.

b) Funded service area

The proposed funded service area includes 32 contiguous counties in Michigan's Lower Peninsula, identified as the Eastern, Western, Southern, and Central Corridors. The service area was designed to focus on underserved areas and is part of a larger plan to serve underserved areas throughout the State.

c) Number of households and businesses passed

The proposed fiber corridors will pass 886,147 households and 45,875 businesses.

d) Number of critical community faculties

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

REACH-3MC will pass 422 identified critical community facilities, of which 44 are public safety entities.

e) Proposed services for the proposed funded service areas

REACH-3MC will provide up to 10 Gbps of bandwidth to 38 anchor institutions, and will initially interconnect with 7 identified last mile providers who will offer broadband Internet, voice and video services to households and businesses. A number of other last mile providers have expressed interest in using REACH-3MC. The maximum last mile Internet service will be 18 Mbps down and 10 Mbps up, while the minimum offered will be 768kbps/200kbps.

f) Non-discrimination and interconnection obligations

REACH-3MC has developed an open model and addresses the non-discrimination and interconnection obligations. The fact that Merit and one other subrecipient are strictly middle mile providers ensures open access over the network. Two other subrecipients will expand into middle mile services, offering competitive rates. All parties have agreed to follow the obligations and have posted appropriate policies on their web sites.

g) Type of broadband system that will be deployed

REACH-3MC comprises 955 miles of 72-strand fiber. The optical system is based on dispersion shifted long haul fiber with DWDM optical transport equipment capability of delivering up to 40 DWDM waves within the ITU standard wavelength grid. The basic access rates will be 10 Gbps and 2.5 Gbps between add/drop sites at strategic locations on the network. These rates can be either Ethernet or SONET standards. Secondary regional access loop fibers will deliver 100 Mbps to 1 Gbps to the drop/add points for aggregation into the backbone network. Routers and switches on the regional access loops will operate with standard TCP/IP protocols and services. REACH-3MC is an extension of Merit's 1600-mile fiber network. Extending advanced service previously unavailable to many parts of rural Michigan.

h) Qualifications

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

Merit has built and run networks for 43 years. It was one of three partners that built the NSFNET, the forerunner of the commercial Internet. It currently operates 1600 fiber miles in its network, delivering the most advanced technology with rock-solid reliability. It is fully staffed with senior engineers, operators and management. As a 501 (c)(3) it exists to serve the public good. Merit's Board governs Merit to maximize its positive statewide impact and to ensure Merit's long-term existence.

i) Overall infrastructure cost

The total cost of this project is estimated to be $41,611,527.

j) Overall expected subscriber projections

This project will potentially serve 379 new anchor institutions. Merit is projecting that 50% will take advantage of this network within 3 years of completion. LYNX is expecting 20% of last mile providers to buy service within 3 years. The last mile partners are projecting increased subscribers of 20% for T3CNet over 5 years, 30% for Iserve within 4 years and 33% for ACD.net.

k) Number of jobs estimated to be created

Eight additional Merit staff will be hired to manage the expanded services; the four other partners are projecting 44 incremental jobs in support of their initiatives. In addition to the long-term jobs, construction will require an additional 6 contractor staff for the duration of construction.

Using the results from the report "Measuring Broadband's Economic Impact" by the U.S. Department of Commerce Economic Development Administration, we expect the addition of 660 jobs per year over what can otherwise be expected. In addition we expect the number of businesses to increase by 55 per year in the service area above the level expected without REACH-3MC.

REACH-3MC goes even further to help economic development. As the Internet2 connector in

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

Michigan, Merit will bring the most advanced information into remote Michigan and present Michigan's unique knowledge to the world. Michigan State uses Merit's current network and high definition video to teach remote medical school classes at locations around the state. Madonna University uses Merit to host Project Accessible Hollywood, which brings filmmaking talent and experience not otherwise available into Southeast Michigan. These are examples of the applications REACH-3MC will bring to rural Michigan. REACH-3MC, by serving the all needs, will help Michigan citizens engage in the digital economy.

Please reference Supplemental Information 1: Reference Map & Key Application Clarification

Description of BTOP Project Purpose (BTOP Applicants Only Next Three Questions)

9. BTOP Statutory Purpose:

Provide improved access to broadband service to consumers residing in "underserved" areas of the United States.
Provide broadband education, awareness, training, access, equipment, and support to schools, libraries, medical and healthcare providers, community colleges and other institutions of higher education, and other community support organizations by or through these organizations.
Provide broadband education, awareness, training, access, equipment, and support to organizations and agencies that provide outreach, access, equipment and support services to facilitate greater use of broadband service by low-income, unemployed, aged, and otherwise vulnerable populations.
Provide broadband education, awareness, training, access, equipment, and support to job-creating strategic facilities located within a defined economic zone, or community as designated by a State authority, Department of Commerce , HUD or USDA.
Improve access to, and use of, broadband service by public safety agencies.
Stimulate the demand for broadband, economic growth, and job creation.

10. Description of BTOP Project Purpose:
The REACH Michigan Middle Mile Collaborative (REACH-3MC) supports broadband

Broadband Infrastructure Application
Submission to RUS (BIP) and NTIA (BTOP)

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

access by building new fiber-optic network infrastructure that will provide long-term, flexible access in rural and underserved areas of Michigan. Merit Network and four commercial providers will control fiber strands that they will use to serve anchor institutions, businesses and households in 32 Michigan counties.

The project addresses the compelling problem of extending communication services to rural, unserved and underserved areas, which often lack accessible, high-quality middle mile fiber infrastructure. Without such infrastructure, organizations that wish to provide local broadband services face high costs to build lengthy last-mile fiber runs or to lease high-mileage circuits to carry backhaul traffic. This serves to drive up the costs for last-mile services for organizations, which must then go without network access or ration access. As a result, end users in such areas experience diminished ability to accomplish tasks that require broadband connectivity. Learning, productivity and economic development suffer.

In this regard Michigan faces significant challenges due to its population patterns (low population density in many counties) and geography (long distances from many counties to network interexchange points). Commercial providers in low-density areas lack the financial incentive to build costly fiber infrastructure; non-profits such as schools and service organizations lack the resources to construct networks over long distances. As a result of these factors, construction of middle mile fiber networks is limited, and non-profit and commercial organizations are challenged to acquire fiber to meet their connectivity needs.

This project concentrates on four fiber paths that together provide network access in 32 rural Michigan counties as detailed in the response to Question 18. Merit Network will construct and maintain the fiber paths. Merit and four other organizations (ACD.net, LYNX, TC3Net, and Iserv) will control fiber strands in the service areas to provide middle mile and last mile services. Access points will be made available at geographically strategic points throughout the network, allowing service providers to connect to the network at appropriate points and to pay service fees for only the miles of fiber they require. Some access points will be constructed in major telecommunication points of presence, allowing for convenient interconnection with common carriers and other organizations.

Merit Network will construct and maintain the new fiber infrastructure, which will comprise 955 miles of 72-strand fiber. Services from Merit and the other four providers will be available

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

at competitive rates. Access to the fiber resources will be consistent with the nondiscrimination and interconnection obligations of the BTOP Program.

The project directly addresses the BTOP statutory purposes of providing access to broadband service to consumers residing in unserved and underserved areas. Of the 32 counties served by the project, 12 counties are completely underserved as defined by the program. Additionally, 14 counties are partially underserved. A detailed list of these counties is given in the response to Question 18. In these areas, the middle mile fiber provided through this project will open the door to more reasonably priced backhaul connections, thus enabling new providers and services within the service areas.

Through its openness and availability, the project supports the BTOP statutory objective of providing broadband access, equipment, and support to: education, healthcare and other community support organizations; organizations that support vulnerable populations; and job-creating facilities. It is expected that all these types of organizations will be in a position to take advantage of the infrastructure provided through this project. The service area contains at least ▓ K-12 institutions; ▓ public libraries systems; ▓ major health care facilities; and ▓ higher education locations.

Michigan Renaissance Zones are within the service area counties of Grand Traverse, Manistee, Muskegon, Van Buren, Berrien, Branch, Lenawee, Clare, Gladwin, Arenac and Iosco. Clare County is the site of a HUD Rural Round II Enterprise Community. USDA Enterprise Communities are in the service areas of Lake and Clare counties.

The project will improve access to, and use of, broadband service by public safety agencies. By joining communities across a significant distance using a common infrastructure, this project encourages collaboration between public safety agencies that previously would have been hindered by network limitations. The service areas include at least ▓ public safety organizations, plus ▓ government organizations, many of which provide public safety functions. Merit is participating in Northern Michigan's Emergency Services Internet (ESI) program to provide e911 services throughout rural northern Michigan; this project could be expanded to the REACH-3MC service area.

The project will stimulate the demand for broadband, economic growth, and job creation.

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

It will have a significant impact on commerce by virtue of its openness, broad availability and pricing structure. In the service areas, business owners will have a new option for providing bandwidth for network-using applications. Internet service providers will have refreshed abilities to begin providing services in new areas, leading to better competition and improved services.

REACH-3MC is significant because of its scope, uniqueness and openness. No such middle mile fiber facility exists in the proposed service areas, and its creation will make possible far more economical broadband connections throughout the region. By changing the affordability equation for broadband, this project will inspire a new level of broadband usage. The project is designed to provide maximum flexibility, broadest technical applicability, and greatest possible usefulness in the future. It provides middle-mile infrastructure that can be used to connect to existing and future local fiber projects and to serve as linkage points for future middle mile projects. It will constitute a long-term investment with significant benefits for organizations, enterprises and individuals throughout the service areas and the rest of Michigan.

11. **BTOP Enhanced Services for Health Care Delivery, Education, and Children:**
     The REACH-3MC project will provide major assistance in improving broadband access for rural hospitals, short-term general hospitals, skilled-nursing facilities, rural health clinics, federally qualified health centers and primary care physicians located in the service areas. There are at least ██ major health care facilities located within the service areas, including hospitals, community health centers, general medical centers and regional health departments.

Telemedicine and telehealth applications will allow patients in these targeted areas to access critically needed medical specialists in a variety of practices, including cardiology, pediatrics, and radiology, without leaving their communities. This can be enabled by advanced video-conferencing technology, medical imaging, and radiology applications, making it possible to provide enhanced capabilities to rural clinics to provide X-rays, mammograms, high resolution ultrasounds, MRI and CT Scans, and a variety of new technologies emerging every day.

Two recent projects involving Merit Network's infrastructure illustrate the power of fiber-optic network availability in promoting advances in health care:

* Merit has worked with MidMichigan Medical Center in Midland over the past two years to build broadband connections to key hubs within the Medical Center's care network. The high-

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

speed network links provide the new ability to effectively use telemedicine for radiology and cardiology. This has benefited rural patients who now have greater access to these specialty services.

* To educate students at its two Southeast Michigan campuses and its main campus in East Lansing, Michigan State University College of Osteopathic Medicine uses innovative, synchronous teaching methods and telepresence technology. All three campuses are attached by fiber-optic connections to Merit Network's backbone and use high-definition videoconferencing over the network to educate students. Lectures primarily originate from classrooms in East Lansing and are available at the Southeast Michigan locations through telepresence. Professors also routinely perform their lectures at Macomb or DMC and then transmit the lectures back to the other locations. For each discipline, faculty are present in the classrooms in addition to the televised lecturers.

The applications supporting these advances are all bandwidth-intensive and cannot be implemented without a DWDM fiber-optic network. The REACH-3MC project will help make these capabilities available to rural clinics and hospitals, increasing their ability to save lives and enhance the quality of life in their communities will help make these capabilities as contemplated by The Recovery Act.

Children will benefit from improved broadband access opportunities for K-12 schools. The service area contains at least ■ K-12 institutions, including public school districts, intermediate school districts, and independent schools, each of which may comprise multiple buildings. Improved broadband service to these organizations will enable greater engagement in distance learning and videoconferencing, services that allow schools to engage with other institutions, access information remotely, engage in virtual field trips, expand curriculum content, and serve as gateways to an unlimited world of information, learning, research and collaboration.

D. Proposed Funded Service Area

12. Proposed Funded Service Area Maps:
   12-A. Service Area Map (Reference Number):   **6098-DBF0-4FD0-9D1E**
   12-B. Is the applicant is seeking a waiver for providing less than 100% coverage of a census block. **No**

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

13. **Proposed Funded Service Area (BIP - Last Mile Projects):**
    Please refer to section M at the end of document.

14. **Proposed Funded Service Area (BTOP - Middle Mile Project):**
    Please refer to section M at the end of document.

15. **Non-Funded Service Area(BIP Only):**
    Population: 8,021,384   Housing Units: 3,348,122   Businesses: 190,996   Subscribers: 372

16. **Coverage Waiver:**
    Applicant is seeking a waiver for providing less than 100% coverage of a census block.
    No
    For Response of "Yes" please refer to upload section for additional supporting documentation.

17. **Methodology for Area Status:**
    Merit Network provides services and dedicated connections for community anchor institutions, including county government offices and intermediate school districts (ISDs), which are organized by county. Therefore, REACH-3MC serves entire counties. The partner's service areas correspond well with this 32 county service area.

We first identified last mile service areas in the middle mile service area as served or underserved.

We used two methodologies to identify and validate the REACH-3MC last mile service area:

External Analysis Group: To ensure a high degree of accuracy for the determination of served and underserved status, Merit Network enlisted the services of Broadband Consultant Group (BBCGi). BBCGi describes their methodology below:

BBCGi purchased 150,000 household records from Experian Marketing Solutions to obtain a representative sample of names, addresses and demographics for the 32 counties in the Merit proposed funding service area. BBCGi processed over 38,000 active telephone numbers and corresponding addresses against public switched telephone number databases, cable and telephone franchise databases, individual provider websites, and internal databases to

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

determine availability and penetration of broadband service.

Based on BBCGi's findings, 12 of the total 32 counties were determined to be completely underserved, because they exhibit a broadband subscribership below 40% of households. For these 12 counties, the classification applied to the entire county.

Internally Conducted Market Analysis: Merit staff performed market research to substantiate BBCGi's findings and determine whether regions of the remaining counties were underserved based on NOFA provision 2: no provider advertises speeds greater than 3 Mbps. Staff used maps of each county to locate businesses identified in the Michigan Business Directory's online database. Those businesses were then checked for service availability with Digital Landing's online service locator. This rendered clear patterns of service availability which were then qualified with regard to the second criterion for underserved as listed in the NOFA. From the advertised availability of these locations, we categorized regions of 14 of the counties as underserved.

To meet the requirements of an underserved middle mile service area, the system must have one interconnection point that terminates in a last mile underserved area. REACH-3MC has █ interconnection points located in underserved last mile regions. They are located in: █████ ███ Many of the remaining interconnection points are located to serve underserved last mile service areas.

An alternate way to classify a middle mile service area as underserved is by serving community anchor institutions in underserved last mile areas. REACH-3MC serves ███ community anchor institutions located in underserved last mile service areas.

These interconnection points and anchor institutions are located throughout the middle mile service area, therefore REACH-3MC middle mile service area is underserved.

We did not classify any areas as unserved although we believe there are unserved areas that will benefit from REACH-3MC. As a middle mile project REACH-3MC can only have immediate benefit to underserved areas. In the long term, last mile providers that benefit from lower costs will be able to invest in building into unserved areas and putting better radios into

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

towers to penetrate further into unserved areas.

18. Middle Mile Benefits

Last Mile Service Areas: The REACH-3MC will deploy high-capacity fiber-optic infrastructure across 32 Michigan counties terminating in█ critical community facilities (CCF) as well as █central offices (CO) In addition there will be a splice point every 2500 feet along the route. Merit, as a CCF provider serves county-wide institutions like Intermediate School Districts. Counties also serve as a good definition of service area for the commercial partners. Counties were chosen by targeting underserved areas, leveraging Merit's existing infrastructure, sustainability and coordination with other initiatives.

Tc3Net, Iserv, and ACD.net are partners on this project and will interconnect with the network. LYNX is a REACH-3MC partner, as a middle mile provider, and their customers would automatically connect. Boardman River Communications is relying on REACH-3MC as a component of their phase 2 last mile ARRA application. Six ISP's have indicated their interest to interconnect with REACH 3MC. Other ISPs have expressed interest, but will not make a formal commitment until the network is operational. The network is designed with excess capacity (72 stands, each pair capable of 40 10 Gbps waves) with █ CO connection points to facilitate future use.

List of Service Providers and Direct Customers: Supplemental Information 2 includes complete list.

Projected End Users: The network route passes 886,147 households and 45,875 businesses in the target service area. The partners expect the combined subscription rate to be █within 3 years. This is based on their market analysis and history. The fourth partner, LYNX, an established middle mile provider, is expecting█ of ISPs to buy service within 3 years. This is based on their current relationships, and their market analysis.

The true power of REACH-3MC is that it is not just going to compete with existing services, but that there will be competition on the network itself. With 3 and up to 4 middle mile providers on each segment, competition will insure that high-performance, low-cost network service is available for ISPs for the foreseeable future.

Level of Need: There are 422 CCFs in the service area. 43 are already Merit members and

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

will immediately benefit from lower costs and higher performance. Of the other ▮ Merit expects ▮ of them to connect to REACH-3MC within 3 years based on market analysis and history. Where Merit can offer competitive prices the take rate approaches ▮ but the decision cycle is slow for anchor institutions, hence a ▮ subscription rate within 3 years.

Michigan businesses are suffering as they struggle to compete. Better Internet access will help in the short term. Long term, the workforce needs better training and more access to information as it transforms itself. Anchor institutions, households and businesses must all have broadband to transition the economy.

Merit's role as the lead applicant is a critical part of the long term value of this project. As a non-profit, Merit must and will reinvest surplus back into the community. Merit has been in existence as a network provider for 43 years and since the public universities depend on Merit they govern to insure long term success. Merit does not receive any state subsidies, and has thrived by providing high value and sound management. This project cannot be undercut by a change in funding at the state level.

Funding in the current legislation will not immediately solve the entire broadband problem. Lead by Merit, REACH-3MC will lay the groundwork for continued progress long after project completion. Merit, as cited in over 70 letters of support has succeeded in getting communities to work together, share assets, and make real progress. Merit has a history of bringing together diverse organizations to work together for the benefit of their remote communities, thus REACH-3MC leverages a winning approach to rural broadband.

E. Proposed Service Offering

19. Broadband Service Offerings for Last Mile Project:
Please refer to upload section at the end of the document.

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

20. Service Offerings for Middle Mile Project:
Please refer to upload section at the end of the document.

Competing Service Providers

21. Existing Broadband Service Providers and Services Offered:
Please refer to upload section at the end of the document.

Non-Discrimination, Interconnection

22. Description of Network Openness:

Merit Network employs standard best effort Internet delivery policy to ensure that any organization, institution or entity connected, directly or indirectly, to Merit's fiber backbone may exercise choice in lawful Internet content, web-based application and use of Merit or competitor service, including any device which is not harmful to the network. Merit Network does not favor any lawful Internet applications or content over others, and is committed to enabling competition among network providers, application and service providers, and content providers.

The compete detailed Network Openness Policy can be viewed on Merit's web site at: http://www.merit.edu/policies/network_openness.php.

Though Merit Network enables critical services such as telemedicine, public safety communications and distance learning to institutions and organizations over a dedicated connection to a Merit-owned private network to ensure the quality of such services, the Merit fiber backbone connects to the public Internet at two main geographically diverse exchange points and features 29 peering agreements.

Merit Network manages a layer 3 network with a network-neutral, best-effort policy that satisfies the non-discrimination and network interconnection obligations listed in the NOFA. Merit engineers meet weekly to confirm that networking standards and best practices are followed. By continually reviewing and documenting changes to the network infrastructure, Merit can ensure that the most current networking standards are being deployed.

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Merit Network Inc.
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Donald J Welch

Merit Network offers network interconnections where technically feasible, rates and terms are negotiated in good faith with requesting parties. Merit actively engages and encourages open settlement-free peering with providers and operators. Merit's network management policies prohibit the discrimination of legitimate or legal use of network capacity bandwidth by application, source or use of the network.

Merit Network operates both a layer 3 and layer 2 networks on a technology platform that enables Merit to support with ease the minimum non-discrimination and network interconnection obligations as listed in the NOFA. Merit deploys CWDM and DWDM systems to eliminate or minimize capacity limitations on the network. This allows for scalable and sustainable management of layer 3 services. Merit deploys layer 2 services on the same technology and management platforms. The manageable CWDM and DWDM systems enable Merit to implement additional waves as needed to incorporate and accommodate new peering and network interconnections with ISP(s) while still maintaining functional network capacity.

The award of funding and subsequent shared middle mile fiber bundle will significantly increase the feasibility of network interconnections along a greater portion of the Merit Network backbone. If awarded funding, Merit will continue to provide ███████████████ ████████████████ access at reasonable rates to any provider without exceeding functional capacity.

The REACH-3MC partners for the fiber build, ACD.net, Iserv, LYNX Networking Group, and Tc3Net, will not discriminate against any content or source, following the obligations for non-discrimination and network interconnection in the NOFA. ACD.net, Iserv and LYNX Networking Group, will participate as middle mile providers; therefore their business model is to provide services to all consumers at competitive rates. This gives consumers along the entire proposed route at least three choices for interconnection of networks.

Non-Discrimination and Interconnection (BTOP applicants only for next three questions)

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization**: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	**Applicant Name**: Dr. Donald J Welch

23. Non-Discrimination Obligations (applicable to Last Mile and Middle Mile Applicants):

Adhere to the minimum non-discrimination requirements as set forth in the NOFA.
Display the nondiscrimination practices in a prominent location on the service provider's web page, and provide notice to customers of changes to these policies.

24. Interconnection Obligations (applicable to Last Mile Applicants):

25. Interconnection Obligations Middle Mile Applicants:

Adhere to the minimum interconnection requirements as set forth in the NOFA.
Display the interconnection policies in a prominent location on the service provider's web page, and provide notice to customers of changes to these policies.
Commit to offering wholesale access to network components and services such as wavelength or fibers at reasonable rates and terms.
Commit to binding private arbitration of disputes concerning interconnection obligations.

Cost Effectiveness and Affordability

26. Cost per Household (BTOP only):

#26 applies to last mile projects, Merit is submitting middle mile project REACH-3MC

27. Affordability

The pricing model proposed in Attachment B – Proposed Middle Mile Service Offerings

Broadband Infrastructure Application
Submission to RUS (BIP) and NTIA (BTOP)

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

represents a cost structure ███
███ Merit's
pricing model for provisioning a connection to the broadband backbone network is ████████
█████████

As a 501(c)3 non-profit, Merit Network has been a pioneer in developing and provisioning service models that become catalyst for adoption in the commercial sector. Merit has taken this same approach in developing the pricing model for the services outlined in Attachment B.

For 43 years Merit has priced its service to customers ████████████████████████
Merit customers ███████████ pay the same price for service as a customer █████████
██████ Additionally, as a non-profit organization Merit has the flexibility and agility to provide a pricing model that is based on ███
████████████████████████████████

The price for Ethernet service is ██████████████████████████████████████
less than current service providers in the area. Merit's OC48 service is ████████████████████
which lowers the operational cost for Merit to provide the service over its facilities based infrastructure; compared to telecommunications providers the cost ████████████████████████
for customers subscribing to this service. For a customer to upgrade to an OC192 service the cost savings █████████████████████ than a traditional telecommunications provider. The main reason for the █████ cost savings compared to a telecommunications provider is that Merit
██
██
███ For example, when Merit provisions a 1Gbps
capacity connection ██████████████████████ typically no more than the cost of ███████████
███████████████ a traditional telecommunications carrier.

With the ██
facilities based network, anchor institutions can grow their broadband utilization without the
█████████████████████████ increases of the ███████████████████████████████████
█████████████

For Lease Fiber service, Merit Network retains ownership of the fiber strands within the fiber-

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization**: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	**Applicant Name**: Dr. Donald J Welch

optic cable. Based on a 10 year lease, Merit's price to lease a pair of fiber ███████████ ███████ traditional fiber acquisition company, e.g. Level(3), Huron River Communications, etc. Merit's price also ████████████████████████

The price for Wave service is similar to Merit's OC48 and OC192 service defined above. The ██ The cost for a typical Wave from Merit ██████████████ lower than a traditional telecommunications provider. The large cost savings is due ███████████████████ ████████████████████████████

F. Technology Strategy

28. Technology Type:

Wireline - xDSL
Wireline - Coaxial Cable
Wireline - Fiber-optic Cable
Wireless - Terrestrial Mobile

Other:

29. System Design

Network Engineering: Through the REACH-3MC initiative, Merit will deploy a 72 strand fiber optic backbone through key areas of Michigan, complementing Merit's current network. This will extend services to anchor, critical community and other institutions as well as to commercial middle mile collaborators who will secure fiber strands to extend their services to households and businesses in primarily underserved areas. Merit has engineered a hybrid CWDM (Coarse Wave Division Multiplexing) / DWDM (Dense Wave Division Multiplexing) fiber optic network that will deliver a host of broadband connectivity options in a very cost

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

effective manner.

CWDM is a technology in which wavelengths are multiplexed onto a single fiber for short haul transport. The wide availability and low cost of CWDM components make it ideal for middle mile aggregation to core sites and will allow for extensive network propagation to communities throughout the state. DWDM is a technology which multiplexes more wavelengths on a single optical fiber. By using different wavelengths, or colors of light, to carry different signals massive amounts of information can be quickly moved around the network. This allows for a multiplication in circuit capacity and facilitates high bandwidth capacity over long distances.

The network design is flexible enough to allow Merit to offer broadband Ethernet, leased fiber, and wave services. Additionally, Merit will be able to offer last mile and other middle mile providers the ability to connect OC-48/OC-192 to the Merit DWDM optical network. This will allow other networks the ability to leverage the high speed, high capacity DWDM long haul network.

At all 15 central office locations TDM equipment will be deployed to provide sub rate circuit services utilizing the current ILEC last mile infrastruture. By deploying this system TDM services from T1 to OC3 services can be provided by last mile service providers while utilizing the middle mile infrastructure.

The existing Merit Network has fiber connectivity to Chicago and Cleveland to provide access to major commercial, research and educational national networks. Including key Internet providers (AT&T, Sprint, Level(3), Qwest), Internet2, ESnet (Energy and Science Network), Starlight and the nearby state networks of Ohio, Indiana, Illinois, Wisconsin and Minnesota.

The proposed fiber plant plan provides for 72 strands to be deployed throughout the state. Six of those strands will be dedicated for Merit's use. Two of the six strands will be used to provide long haul optical transport for a 40 wave DWDM system with nodes located at strategic core sites across the state of Michigan. An additional two stands will be utilized to provide optical transport and connectivity for regional CWDM systems that will deliver access to the long haul core sites. The remaining two Merit strands are for future expansion, lease fiber offering, testing and emergency recovery. The balance of the 72 strands will be utilized by subrecipients to this application as well as allow for significant growth and expansion.

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

Ethernet Service Offerings: Merit's Ethernet service offering will cost effectively extend the reach of the DWDM core network to vast unserved and underserved communities to gain access to broadband Ethernet connectivity. Merit will use 2 strands of fiber to interconnect various communities throughout the state to the DWDM core sites. This interconnectivity will offer up to gigabit Ethernet connectivity to multiple community members throughout the Merit fiber network.

OC-48 / OC-192 Service Offering: The Merit DWDM service offering will also accommodate the need to transport of OC-48 (2.5 Gbps) / OC-192 (10 Gbps) traffic. This would allow the partner organizations to transport OC-48 / OC-192 data from one OADM (Optical Add Drop Multiplexer) core site to another OADM core site. The main objective of this service is to deliver traffic to major telecommunications central offices for voice traffic or an Internet backbone provider for TCP/IP data traffic.

Lease Fiber: To further leverage the 72 strand fiber being deployed, Merit will have the ability to offer leased fiber to 3rd parties. This would allow parties not currently coordinating with Merit the ability to access fiber resources.

Wave Service Offerings: Merit's DWDM service offering will include two solutions for partner network connectivity. The first will be a DWDM wave offering that will allow partners the ultimate in flexibility for transporting their long haul data across the state. Merit will offer partners waves or colors and allow them to add their own electronics to transport their data in a way that is most beneficial for their network. Wave options will be 2.5 Gbps and 10 Gbps. Merit will facilitate direct customer connections to the DWDM system through a 10 Gbps Layer 3 Switch at each OADM site. This will immediately accommodate up to 24 1 Gbps direct customer connections.

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

30. Network Diagram:
Please refer to upload section at the end of document.

31. Certification by Professional Engineer:
Please refer to upload section at the end of document.

32. Buy American Waiver Request:
Is the applicant seeking an individual waiver of the Buy American provision? **No**

Buy American Waiver Request – Legal Justification

33. Choice of Service Provider:
Does the project's Infrastructure and the Company's business plan allow more than one provider to serve end users in the proposed funded service area?
Yes

G. Project Milestones and Completion Factors

Timeline & Milestones

34. Infrastructure Build-out Timeline:
Please refer to upload section at the end of the document.

35. Licenses, Regulatory Approvals and Agreements:
Licenses and regulatory factors related to the project include:

*In order to ensure projects move forward without delay, the State of Michigan is developing a multi-agency coordinating committee comprised of management level staff from each of the agencies involved in the permitting or approval process. The committee will be responsible for

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

expediting and/or resolving any issues that develop with regard to broadband project permitting. In addition, in order to minimize the time associated with the review and approval process for projects related to this program, the group has developed a streamlined process for application identification, submittal and processing. Applicants awarded funds for broadband infrastructure projects will be notified by letter of the expedited process and contact information for the committee.

*Pole access permits for access to right of way on utility poles. Merit has agreements in place for access to AT&T, DTE, Consumers Energy, Great Lakes Energy and Verizon utility poles. Poles are selected and permitted after an engineering walk through on the selected route. Due to pole condition and utilization at the time of the survey the actual selection of poles may change. Permitting can be expensive, has an expiration, and therefore cannot be obtained in advance.

*MDOT permits to build across or parallel to state and federal roadways are applied for 6-8 weeks before construction on the targeted roadway. Permitting can be expensive, has an expiration, and therefore cannot be obtained in advance

*Railroad crossings are engineered on an Individual Case Basis (ICB). Where poles are available an aerial path will be used. Underground crossing will be used where required. This process is well documented and known by the selected contractors. Similar to utility poles, railroad permitting takes place 8-10 weeks before construction.

*Michigan Metro Act permits, or a letter of waiver, are required by municipalities and city governments. These permits require actual mileage and cannot be submitted until final engineering is complete.

Merit has permits in place that can be amended with additional mileage for the following municipalities:

*Bay County, City of Clare, Gaines Township, City of Grand Rapids, City of Hillsdale, Isabella County, Village of Jonesville, City of Kentwood, Village of Mackinaw City, City of Midland, City of Mount Pleasant, City of Petoskey

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization**: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	**Applicant Name**: Dr. Donald J Welch

Merit will be applying for Michigan Metro Act permits, or filing a letter of waiver, in the following municipalities:

*City of Benton Harbor, City of Lake Michigan beach, City of South haven, City of Zeeland, City of Grand Haven, City of Ferrysberg, City of Muskegon, City of Whitehall, City of Montague, City of Shelby, City of Pentwater, City of Ludington, City of Scottville, City of Manistee, City of Beulah, City of Traverse City, City of Kalkaska, City of Mancelona, City of East Jordan, City of Boyne City, City of Pellston, City of Berrien Springs, City of Dowagiac, City of Cassopolis, City of Three Rivers, City of Centreville, City of Sturgis, City of Coldwater, City of Hudson, City of Adrian, City of Blissfield, City of Dundee, City of Monroe, City of Gaylord, City of Grayling, City of Roscommon, City of Gladwin, City of Oscoda, City of East Tawas, City of Twining, City of Standish, City of Pinconning, City of Bay City

*River bridge crossings are covered by the Metro Act in the case of a city or municipality and by MDOT otherwise. Underground river crossings are reviewed by the Army Corp Engineers or the State of Michigan Department of Environmental Quality, depending on the river. These are processed on an ICB.

36. Construction and Vendor Contracts

Merit's network engineering and operations team will install and manage the optical transport equipment and the network equipment including routers and switches. Merit's team currently manages optical and network devices over a 1600 mile fiber infrastructure in Michigan, Ohio, Indiana, and Illinois. Merit has expertise in managing fiber networks using test equipment such as OTDRs, power meters, and fiber scopes. Merit has worked closely with optical and network equipment providers and will continue to work with these vendors.

Merit will work with fiber installation contractors to install the fiber along the proposed routes. ███████████████████████ and Merit Network have a ███████ ████████████████████████████ to provide construction management for the project when funded. ████████████████████████████████████ ███████████████████

Merit has ███████████████████████████ with ██████████████ to provide project management and installation of the project's inside plant needs at anchor institution locations. █████████████ has a vast experience with inside plant requirements for schools, libraries, and

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

governmental agencies.

Please see Supplemental Information 3 for documentation of the ███████████████

Qualification of Management Team and Organizational Readiness

37. **Management Team Resumes:**
    Please refer to upload section at the end of the document.

38. **Organizational Readiness:**
    Merit Network is prepared to perform the engineering, operational, managerial and business functions necessary to complete and maintain the network described in this proposal. Today Merit operates a broadband IP network that serves over 250 organizations with connection speeds of up to several gigabits per second. Merit's network comprises a hybrid of circuit types, including owned fiber, leased fiber and leased circuits, with connections to diverse organizations with varying needs. All business operations needed to provide customer service are in place today and ready to accommodate the additional customers envisioned by this proposal.

Merit is a 501(c) (3) member owned consortium of Michigan's public universities, which receives no state funding and is governed by a Board of Directors representing those institutions. All staffing and operations are located within Michigan, including Merit's network operations center and customer support. Merit has a twelve-member management team as part of its total full-time staff of 65, with a strong diversity of talent and expertise in the field of wide area networking.

Merit's network engineering staff will have primary responsibility for mapping the desired routes, contracting with fiber builders, arranging for permits, monitoring construction, and selecting the hardware. For completed network links, this group will ensure the quality of network performance and implementation of new technologies. Merit will add a statistical engineer and a project manager to support this project.

Merit's network operations staff has responsibility for assisting with the design of new and

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

updated services, overseeing fiber and circuit installations, configuring and installing hardware, and troubleshooting complex network issues. Operations staff has advanced skills in routing, switch and router configuration, and fiber optic equipment networks. The operations team will collaborate on the design of the network, perform site inspections, oversee the work of fiber contractors, certify completed circuits, and install optronics and electronics. Merit will add a new network engineer as part of this project.

Merit operates a 24x7 network operations center (NOC) to continuously monitor the network, diagnose and resolve issues, field trouble reports from members, and perform maintenance tasks. The network operations center staff uses software tools to perform routine monitoring and troubleshooting, and maintains an ongoing ticketing system to track problems through resolution. For this project Merit will add one staff member to the NOC group.

Merit's member relations team handles customer service and sales, provide service quotes, initiate orders for new services and respond to member requests. Merit's finance and administration staff performs all accounting, human resources, facilities, finance and grant administration. These sections will add 4 people to augment their capability.

Merit Network, Inc. has pioneered, built and run networks for over 43 years as Michigan's non-profit research and education network. Merit's heritage includes its leadership role with the National Science Foundation Network (NSFNET)-the precursor to today's Internet. Merit has continued to lead as demonstrated by the success of the Michigan Lamda Rail and Blue Line fiber projects. These projects represents major parts of Merit's 1600-mile fiber network.Merit is more than capable of building and running this network for the benefit of Michigan. Merit will leverage its experience in managing collaborative partnerships as REACH 3MC moves forward

Other

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

39. Organizational Chart:

Please refer to upload section at the end of document.

40. Legal Opinion:

Please refer to upload section at the end of document

41. Government and other Key Partnerships:

The key partners in the REACH-3MC project are Merit Network and four subrecipients: LYNX, Iserv, Tc3Net and ACD.net. Memoranda of Understanding between Merit and these four partners are provided in the supporting documentation.

REACH-3MC will provide a long-term, collaborative middle mile infrastructure that will help all types of organizations in the service areas achieve their diverse aims. Our strategy for making the fullest use of the infrastructure involves leveraging the respective strengths of Merit and the four subrecipients. Merit will actively communicate with its current members, as well as potential members in education, libraries, community support organizations, health care, public safety and government, to ensure that they are aware of the opportunity to use the REACH-3MC infrastructure. The four subrecipients will likewise actively seek new business, particularly among service providers and commercial organizations.

The project has identified anchor institutions in each county of the service area that would constitute ideal initial connectors. These anchor institutions are either current members of Merit Network or are optimally located based on planned last mile analysis. The project envisions that these organizations will be engaged on an individual case basis to discuss connecting to the network. The supporting documentation includes letters of support from many of these potential anchor institutions, indicating their support of the REACH-3MC as a means for improving access within their local communities.

42. Recovery Act and Other Governmental Collaboration.

Merit has extensive experience with initiating and participating in collaborations to improve efficiencies, strengthen results, and empower organizations. For example, Merit currently actively works with many local communities (including Hillsdale, Alpena and Escanaba) to plan and implement regional fiber collaborations. These projects have continuously demonstrated the value of combining the resources of disparate organizations to meet common goals.

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

The following are two examples of Recovery Act projects that will leverage Merit's network infrastructure:

* Michigan State University is developing a statewide BTOP Public Computer proposal in conjunction with the State of Michigan and other partner organizations. The project, with a proposed value of $4.6 million, will help to overcome the demographic and economic barriers to broadband adoption through programs focused on education, commerce and health care. The project will have a state-wide reach, and the REACH-3MC infrastructure will be leveraged to improve network capacity for local libraries and other key public access institutions that will participate in the MSU project.

* Internet2 is applying for a grant under the National Science Foundation's Major Research Instrumentation Program (program value of $200M) for its project "MRI-R2 Consortium: Development of Dynamic Network Service (DYNES)". The project has a dollar value of over $2.8M including cost-sharing. Merit will collaborate by hosting computing equipment for this project.

Merit and the subrecipients of this project are also collaborating on a number of other fiber network builds that will apply for BIP/BTOP funding. These projects will connect to and directly leverage the infrastructure built through the REACH-3MC project:

* Merit will be the backhaul provider for a last mile application being submitted in the second round of BIP/BTOP by Boardman River Communications of South Boardman, MI, to serve rural areas south of Kalkaska, MI.

* ACD.net is planning to submit two last mile applications in the second round of BIP/BTOP funding, with projects to serve Berrien and Cass Counties and Hillsdale and Branch Counties. Merit will be a backhaul provider for these projects.

* In the Upper Peninsula, Peninsula Fiber Network plans to submit middle mile and last mile BIP proposals for significant rural areas. Merit will interconnect and obtain fibers on that project.

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Merit Network Inc.
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Donald J Welch

* AllBand Communications Cooperative will submit a BIP application to serve the northeast portion of Michigan's Lower Peninsula. Merit's existing infrastructure and REACH-3MC infrastructure will connect with this project at three locations.

* Air Advantage, LLC, is leading a partnership to provide coverage for Michigan's Thumb region. Merit will interconnect with this project.

Community Involvement (BTOP Applicants Only)

43. Partnering with Disadvantaged Businesses

Merit has a Memorandum of Understanding (MOU) with ███████████ a disadvantaged small business based out of ████████████ The MOU is an agreement that ███████████ will provide professional services for inside plant requirements at anchor institutions throughout the REACH-3MC Project. ██████████ will provide engineering, design, and implementation services to prepare the facilities for the fiber optic network being delivered to the anchor institutions.

██████████ is 100% owned by a female and has less than 20 employees. ███████████
██

██████████ experience and abilities will be a great asset for the success of the project.
A letter of support that describes the partnership is included in the attachment for Question 41.

H. Project Budget

44. General Overall Budget

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Merit Network Inc.
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Donald J Welch

Budget	Loan Request	Grant Request	Equity	Debt	Bond	Other
Network & Access Equipment (switching, routing, transport, access)	2,494,622	2,494,622	496,712			
Outside Plant (cables, conduits, ducts, poles, towers, repeaters, etc.)	14,743,024	14,743,024	4,323,903			
Buildings and Land – (new construction, improvements, renovations, lease)						
Customer Premise Equipment (modems, set-top boxes, inside wiring, etc.)						
Billing and Operational Support Systems (IT systems, software, etc.)	3,000	3,000	1,500			
Operating Equipment	8,520	8,520				

Submitted Date: 8/18/2009 1:53:59 PM		Easygrants ID: 153			
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program		**Applicant Organization**: Merit Network Inc.			
Task: Submit Application - Infrastructure Programs		**Applicant Name**: Dr. Donald J Welch			

(vehicles, office equipment, other)					
Engineering/ Professional Services (engineering design, project management, consulting, etc.)	1,085,304	1,085,304	64,072		
Testing (network elements, IT system elements, user devices, test generators, lab furnishings, servers/computers, etc.)	25,000	25,000			
Site Preparation	3,200	3,200			
Other					
TOTAL BROADBAND SYSTEM	18,362,670	18,362,670	4,886,187		

Broadband Infrastructure Application
Submission to RUS (BIP) and NTIA (BTOP)

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

Total Budget: $ 41,611,527

45. Detailed Budget:

Please refer to upload section at the end of the document.

46. Reasonableness

Under the REACH-3MC project, Merit Network will construct 955 miles of new fiber-optic infrastructure, with middle mile services to be provided by Merit and four subrecipients. The network is engineered to provide maximum flexibility in service provisioning, making the infrastructure available for the widest possible set of applications. Merit has significant experience in network provisioning and fiber construction to serve organizations ▮▮▮▮▮▮ ▮▮▮▮▮▮ The network for this project is engineered to reflect Merit's findings in terms of building reliable networks in a financially sustainable manner.

The equipment requirements for the proposed system are twofold. Merit will be operating a middle mile system with the primary purpose of connecting anchor institutions to a statewide network at gigabit speeds. The DWDM optical network will have eight Optical Add/Drop Mux (OADM) sites for access to the system. The cost for the complete system with amps at appropriate locations is $2,282,945, which is in line with our experience and the experience of our peer networks.

Between the OADM locations, routers and switches will be installed to connect local organizations at 100 Mbps, 1 Gbps, and 10 Gbps data rates. The multi port switches will be positioned in communities along the network to connect anchor and critical organizations in a sustainable cost effective method. The 15 switches will have enough interfaces to connect up to 12 organizations at up to 1 Gbps speeds in each community they are located in. The cost per port is $604 at these locations.

The 10 Gbps routers will provide high capacity local routing for more efficient network usage. The 10 Gbps routers will be located in communities where the requirements are needed with the cost per port being $563 per port. This configuration will provide the maximum amount of capacity while limiting management and operational cost. The ability to leverage the long-haul

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

OADM optics with multiple 10 G waves will maximize the investment. Merit has used this technology for several years and has found that supportability and functionality of this system maximizes the investment for years to come.

The second optical system will be operated by LYNX Network Group, one of Merit's subrecipients. LYNX is also a middle mile provider that provides services to CLECs and ISPs. This system will have 15 OADM sites located at each of the central offices that the fiber infrastructure will be connecting. This system will be able to interface with the local ILEC to provide DS1 to OC3 middle mile services to local businesses, ISPs and CLECs.

The fiber infrastructure cost is based on number of strands in the fiber bundle and the number of miles (e.g. the typical cost for 72 strands is $34,500 per mile). The cost includes engineering, permitting and installation of the cable. Past experience with local fiber builds in these areas shows that the costs are reasonable. The other included items, fiber tags and pole replacements, are in line with our current experience with fiber builds. Access to central offices and anchor organizations are also in line with past experience in installing fiber to these types of facilities.

The total budget is reasonable for a 955 mile project that includes installing fiber into facilities. The systems being installed will be supportable into the future and expected revenues will be enough to maintain services into the foreseeable future.

A particular strength of the REACH-3MC model is that it supports a range of technologies, offering economical near and long term solutions allowing Michigan to embrace and optimize the impact of optical fiber technology. The REACH-3MC model is inclusive, scalable and sustainable – extending reasonable and affordable services through a significant portion of the state.

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Merit Network Inc.
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Donald J Welch

47. Historical Financial Statements:
   Please refer to upload section at the end of the document.

48. Broadband Subscriber Estimates:
   Please refer to upload section at the end of the document.

49. Other Services:
   Please refer to upload section at the end of the document.

50. Pro Forma 5-Year Financial Forecast and Assumptions:
   Please refer to upload section at the end of the document.

51. Commitment of Capital Funding Support
   Commitment of Capital Funding Support   BIP
*LYNX Network Group, LLC. will provide ███████████ of the total project cost, for infrastructure. Equity funding will provide direct payment to support project costs.

*The Iserv Company, Inc. will provide ███████████ of the total project cost, for infrastructure. Equity funding will provide direct payment to support project costs.

*KEPS Technologies, Inc. (ACD.net) will provide ███████████ of the total project cost, for infrastructure. Equity funding will provide direct payment to support project costs.

*The Computer Care Company, Inc. (TC3Net) will provide ███████████ of the total project cost, for infrastructure. Equity funding will provide direct payment to support project costs.

Commitment of Capital Funding   BTOP
*Merit Network, Inc. will provide $3,436,118.00, 8.26% of the total project cost, for infrastructure. A combination of debt (90%) and equity funding (10%) will be used. The debt portion will be a 5 year fixed loan at an estimated 7.25%. See funding letter of commitment from ███████████ (letter included in Q41 response).

*LYNX Network Group, LLC. will provide ███████████ of the total project cost, for infrastructure. Equity funding will provide direct payment to support project costs.

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

*The Iserv Company, Inc. will provide ██████████████ of the total project cost, for infrastructure. Equity funding will provide direct payment to support project costs.

*KEPS Technologies, Inc. (ACD.net) will provide ██████████████ of the total project cost, for infrastructure. Equity funding will provide direct payment to support project costs.

*The Computer Care Company, Inc. (TC3Net) will provide ██████████████ of the total project cost, for infrastructure. Equity funding will provide direct payment to support project costs.

BTOP Requirements

52. Matching Funds:

    a. Cash: $ 8,322,305.00
    b. In-Kind: $ .00
    c. Percent of Total Project Cost: 20

53. Demonstration of Financial Need:

The service area of the REACH-3MC project covers over 28,135.54 square miles with a population of only 1,917,060. The extensive area to be covered and the associated low population rates have not demonstrated opportunities for reasonable returns on investing in fiber builds across the area. An estimated $41.6 million is necessary for a complete middle mile fiber build across this territory. Merit's net cash income is generally modest. Its reserves, at approximately $5M, are designated for future equipment replacement on its current network and support for a fluctuating general operating capital requirement of approximately $2M per month. Funding for the build-out would have to come from loans or grants.

The Merit Board of Directors' approved cash operating budget for Merit's FY 2010 (June through July) projects revenue at $17,521,093 and expense at $17,520,418. The net cash increase of $675 demonstrates the lack of available net proceeds to fund a project of this magnitude. Furthermore, the five-year revenue average of $1.7M, based upon the projected incremental revenue from the proposed broadband build, validates the economic impracticality

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

of financing a $41.6M build. Even a bond issue (if attainable) with an interest rate of 4%, over twenty years, would require annual payments well over the annual net increase after the incremental operating expenses were applied to those revenues.

Though the scope of the proposed build-out has not been monetarily feasible, Merit has a strong history of seeking funding and fostering partnerships for service areas where alliances have good business cases for capital investment recovery and sustainability. In April, 2005, Merit received a $4.2M loan through the Michigan Strategic Fund to support a 500-mile fiber build across mid-Michigan. Merit, in 2005, partnered with the University of Michigan, Michigan State University and Wayne State University to build a high-capacity optical system to carry network and research traffic between Detroit, Ann Arbor, Lansing and Chicago. In 2005, the Alpena community through collaboration with Merit connected federal, county and state facilities. Merit partnered with Peninsula Fiber Network, in Michigan's Upper Peninsula, to build 374 miles of fiber that went live in January, 2007. In the last year, Merit and several organizations have partnered to build and provide community access: Allband Communications Cooperative, Alpena Public Schools, and Merit interconnected fiber assets from Alpena to Hillman; Great Lakes Comnet, Inc. and Merit sponsored a co-build from Mt. Pleasant to Big Rapids; and Merit and the Jackson and Hillsdale communities collaborated on a co-build within the two areas to connect ISDs, public utilities, and community and private colleges. Each of these builds was supported by solid business plans that demonstrated moderate rates of recovery based on reduction of circuit expense and revenue increase due to improvement of client proximity to fiber.

In those areas where the return on investment did not support standard loan options Merit has assessed possible low-cost loans or grant opportunities. Merit has not qualified for RUS grants and began in 2008 to seek other options. In December, 2008, Merit submitted a $2.2M proposal to the Hebert H. and Grace A. Dow Foundation for a 100-mile fiber build from Alpena to Mackinaw City. Though well received by the foundation, the grant was not funded due to the foundation's determination that funding for the area had already been allocated for other projects and that the scope of the request was beyond their immediate funding limits.

In the REACH-3MC service, Merit cannot present a business plan that would provide a rate of return acceptable to lending institutions for a $41.6M fiber build. Therefore Merit seeks support under BTOP to provide much-needed access to the proposed service area.

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

54. Unjust Enrichment

Merit Network, Inc. is not currently receiving or has requested any federal support for non-recurring costs (one-time capital expenses) in the service area(s) for which Merit is seeking an award.

55. Disclosure of Federal and/or State Funding Sources

In April of 2005, Merit Network, Inc. received a $4.2M loan through the Michigan Strategic Fund to support a 500 mile fiber build connecting, among others, the following end points: Muskegon ISD, Big Rapids (FSU), Mt. Pleasant (CMU), and the Midland RESA. Merit completed the build on time, within budget, and is current in its obligation to the State. Though the four mentioned end points are within Merit's BTOP applications service area there is no duplication of builds. Furthermore, the fiber build of the BTOP service area will compliment and complete the fiber already in place.

Merit Network, Inc. is an approved e-rate vendor and as such assists its members in obtaining funding through the Universal Service Fund. The members received approximately $1.26M in both fiscal year 2008 and fiscal year 2009 (June through July). (Note: The amount for fiscal year 2009 may be adjusted since not all of the funding has been disbursed to date.) To aid its members, Merit invoices its members at the approved e-rate discount percentage and requests reimbursement (as required under the USAC discount program regulations) for the discounted amount directly from USAC. Merit receives no USAC funding to support operational or capital cost of any kind; only the members receive any monetary benefit from the USAC funding. Merit also supports its members in the same manner under the USF Rural Health Care Program. Disbursements totaled $9,671 in fiscal year 2008. Disbursements for fiscal year 2009 are expected to be the same. Once again, Merit receives no USF Rural Health Care Program funding to support operational or capital cost of any kind; only the members receive any monetary benefit from the funding.

Merit Network, Inc. has not received or requested any other federal or state funding for projects to which the application relates.

I. Self Scoring – BIP Only Self Scoring

56. Self Scoring Sheet

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

Criteria	Method	Points	Self Scores
PROJECT PURPOSE			
Proportion of Rural Residents Served in Unserved Areas	1 point for every 10,000 unserved households	Up to 5	0
Rural Area Targeting	1 point for every 5% increase in the rural service area up the minimum 75% rural area requirement	Up to 5	4
Remote Area targeting	1 point for every 50 miles a service area is located from a non-rural area	Up to 5	0
Title II Borrower	If you are or were a Title II borrower	5	0
Recovery Act and other governmental collaboration	1 point will be awarded for each governmental or Recovery program the applicant is partnering with	Up to 5	5
PROJECT BENEFITS			
Performance of the offered services	If a last mile wireline project delivers 20M to household – if a last mile wireless projects delivers 2M to end-user – if a middle mile projects delivers 100M to end points	**10**	10
Affordable of services offered	Points awarded based on the proposed rate structure and the logistics of the proposed service area	Up to 5	5

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Merit Network Inc.
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Donald J Welch

Choice of service provider	If the proposed infrastructure is available to be used by multiple service providers	**5**	5
Critical Community Facilities	If discounted rate packages at least 25% lower than advertise rates are available to critical facilities	**5**	0
PROJECT VIABILITY			
Applicant's organizational capability	Points will be awarded on the strengths and accomplishments of key management	Up to 12	11
Community Support	If a letter of support has been received from a designated representative of the community for every community in the proposed service territory	2	2
Ability to promptly start project	If the applicant can demonstrate that all licenses and regulatory approvals have been received, contractors and vendors are ready to enter into contracts, and equity has been deposited into applicant accounts	10	0
Socially and economically disadvantaged small businesses (SDB), as defined by section 8(a) of the Small Business Act, 15 U.S.C. §637.	If the applicant is a Section 8(a) entity	1	0
PROJECT BUDGET AND SUSTAINABLITY			
Reasonableness of the budget	Points will be awarded based the	Up to 5	3

Submitted Date: 8/18/2009 1:53:59 PM		Easygrants ID: 153	
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program		**Applicant Organization:** Merit Network Inc.	
Task: Submit Application - Infrastructure Programs		**Applicant Name:** Dr. Donald J Welch	

	adequacy of the proposed budget		
Leverage of outside resources (outside funding/financing requested)	(i) 10 points if this ratio is greater than 100% (ii) 7 points if this ratio is between 100% and 75% (iii) 5 points if this ratio is between 75% and 50% (iv) 3 points if this ratio is between 50% and 25% (v) 1 points if this ratio is lower than 25%	10	1
Extent of grant funding (Grant funds/loan funds)	(i) 0 points if this ratio equals 100% (ii) 1 points if this ratio is between 100% and 75% (iii) 3 points if this ratio is between 75% and 50% (iv) 5 points if this ratio is lower than 50% (v) 10 points if no grant funds are requested	10	0
Total Points		100	46

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

J. BTOP Certification Requirements

Certification (Requested for BTOP)

Please refer to upload section at the end of the document regarding following uploads.
1. U.S. Department of Commerce, Broadband Technology Opportunities Program
2. SF-424D Assurances—Construction Programs (Schedule N)
3. CD-511, Certification Regarding Lobbying (Attachment O)
4. SF-LLL, Disclosure of Lobbying Activities (Attachment P)
5. CD-512, Certification Regarding Lobbying—Lower-Tier Covered Transactions (Attachment Q) This certification will not be required until the time of the grant award, because it applies to subcontractors, etc.

K. BIP Certification Requirements

Certification (Requested for BIP)

Please refer to upload section at the end of the document regarding following uploads.

1. Equal Opportunity and Nondiscrimination Certification
2. Certification Regarding Architectural Barriers
3. Uniform Relocation Assistance and Real Property Acquisition - Policies Act of 1970 Certification
4. Certification Regarding Debarment, Suspension, and Other Responsibility Matters – Primary Covered Transactions
5. Certification Regarding Lobbying for Contracts, Grants, Loans, and Cooperative Agreements

Submitted Date: 8/18/2009 1:53:59 PM	Easygrants ID: 153
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	Applicant Organization: Merit Network Inc.
Task: Submit Application - Infrastructure Programs	Applicant Name: Dr. Donald J Welch

6. Network Design and Implementation Plan Certification (to be complete for projects requesting more than $1 million in federal assistance)

L. Schedules

Schedule: A-1 Congressional Districts

1. State the Congressional District of the Applicant's headquarters
Michigan - 15

2. State the Congressional District for each area covered by the Project.
Michigan - 1

Michigan - 2

Michigan - 4

Michigan - 5

Michigan - 6

Michigan - 7

Michigan - 15

M. Proposed Funded Service Area Details (BIP & BTOP)

13. Proposed Funded Service Area (BIP - Last Mile Projects):

> **Proposed Funded Service Area Name:**
> **Census Blocks in Proposed Funded Service Area:**
> **Community Name:**