

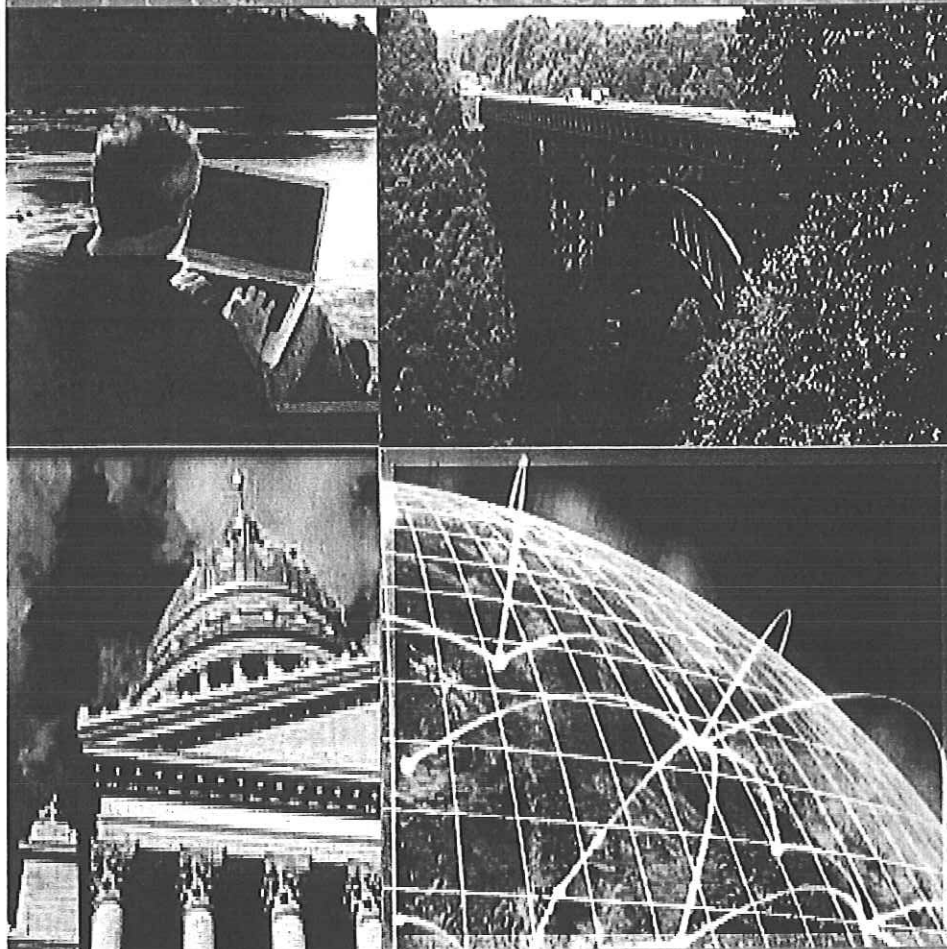
**West Virginia
RFP #DEV1224
TECHNICAL PROPOSAL**

November 22, 2011

Submitted to:
Department of Administration
Purchasing Division
Building 15
2019 Washington Street, East
Charleston, WV 25305-0130

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Submitted by
ICF International
9300 Lee Highway
Fairfax, VA 22031



November 22, 2011

Mr. Frank Whittaker
Department of Administration
Purchasing Division, Building 15
2019 Washington Street, East
Charleston, WV 25305-0130

SUBJECT: ICF Proposal 20111343 in Response to State of West Virginia; Department of Administration; Purchasing Division Request for Proposal; RFQ Number DEV1224; "Broadband Consulting Services"

Dear Mr. Whittaker:

ICF Incorporated, L.L.C. (an ICF International company hereafter referred to as "ICF") is pleased to provide this proposal in response to the subject request. This proposal is valid for a period of 60 days from the date of its submittal, at which time ICF reserves the right to revise the contents or extend the validity date, if needed.

ICF understands the complex issues and competing perspectives of broadband technologies, sustainable business models for rural service areas, and federal program compliance requirements. As an internationally recognized professional services firm with more than 4,000 employees, ICF offers more than 40 years of experience providing consulting services to address complex management, technology, and policy challenges like those in bringing affordable broadband access to rural America.

ICF looks forward to partnering with West Virginia to create a State-wide broadband assessment and plan designed to increase adoption and deployment of broadband technologies. ICF's passion for our work, deep industry expertise and knowledge of best practices will help the West Virginia Development Office improve the State's economy through small business development and entrepreneurship.

Timothy M. Lowry, Director, Contracts, is available to discuss contractual issues and may be contacted at 781-676-4016, or via email at (tlowry@icfi.com). Issues of a technical nature should be directed to Dan Bertuna, Vice President, at 703-225-2924, or via email at (dbertuna@icfi.com). Correspondence should be faxed to 703-218-2547.

Sincerely,

A handwritten signature in cursive script that reads "F. Michael Gray".

F. Michael Gray
Vice President, Contracts
703-934-3527
mgray@icfi.com

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1. QUALIFICATIONS AND EXPERIENCE

A. Introduction

West Virginia has embarked on a significant and strategic initiative to extend affordable and reliable high speed broadband to rural and underserved communities across the State. In 2010, West Virginia received millions of dollars worth of American Reinvestment and Recovery Act (ARRA) projects. These projects provide West Virginia an unprecedented opportunity to improve broadband deployment and adoption for the State.

West Virginia can strengthen its economy and create jobs through small business growth and development by deploying broadband infrastructure across the State—helping to improve public safety, increase educational opportunities, advance health care delivery, and enhance transparency in government. This creates a significant opportunity for the State and local communities to leverage broadband connectivity and improve West Virginians' quality of life.

ICF understands the complex issues and competing perspectives of broadband technologies, sustainable business models for rural service areas, and federal program compliance requirements. ICF's staff have been intimately involved with rural broadband issues for the last nine years and the broadband advisor for the USDA Broadband Initiatives Program (BIP) since its inception in 2009. ICF International has the expertise, skills, knowledge, and independence to help objectively assess current programs and advise West Virginia on best practice approaches to better measure, leverage, and target adoption programs within the State. The ICF team leverages decades of operational and consulting experience designing, evaluating, implementing, and operating broadband, telecommunications, and cable networks in rural and urban areas. Through our support of the BIP and our knowledge of the FCC's National Broadband Plan and regulations, ICF has:

- Developed a customized analytical tool for Broadband Technology Opportunities Program (BTOP) awardees to meet the specific ARRA and BTOP program compliance and reporting requirements for middle mile and last mile projects.
- Developed a customized State assessment framework to provide Universal Service Fund (USF) SWOT analysis, provide targeted technical assistance to meet program eligibility, compliance, and reporting requirements for existing USF and pending Connect America Fund (CAF) programs.
- Developed innovative broadband wireless and USF mapping capabilities that utilize ICF's in-house GIS lab and expertise to provide customized analysis and reporting to meet complex compliance and program monitoring needs.

Mr. Keith Montgomery, ICF's Senior Program Director Broadband, is a native West Virginian who has completed extensive broadband fiber-to-the-home and wireless network feasibility studies for private

Key Advantages of ICF

- **Trusted advisor who reviewed and scored 2,200+ USDA's Broadband Initiative Program (BIP) applications.**
- **Currently providing Post Award monitoring and technical support services for BIP loan and grant compliance, middle mile and last mile environmental reviews, Davis Bacon compliance, and ARRA compliance.**
- **Global experience with local West Virginia knowledge: understand broadband policies and trends at the national level while bringing an understanding of West Virginia's specific needs.**
- **Team of qualified staff ready to start immediately.**
- **Licensed to do business in West Virginia; ICF office located in Charleston, WV.**

investment companies in sixteen West Virginia services areas. Along with Mr. Montgomery, ICF offers a dedicated team with national and international broadband expertise and the qualifications needed to ensure that the State's broadband objectives are successfully met.

The ICF Broadband team will help West Virginia create a State-wide broadband assessment and plan designed to increase adoption and the innovative use of broadband technology. ICF combines passion for our work with industry expertise and best practices to produce compelling results throughout the entire program lifecycle, from research and analysis through implementation, proactive monitoring, and process improvements for our clients.

Our response has been organized to address the specific requirements of the RFP in the following order:

- 1) Demonstrate ICF's industry and professional expertise and capabilities and our understanding of the broadband situation in West Virginia.
- 2) Explain our management approach and introduce our staff.
- 3) Define our technical solution and proposed actions to meet the stated project goals and objectives.
- 4) Provide specific references of relevant project and staff.

This response will demonstrate ICF's "best practice" approach for providing trusted advisory services and agile program management.

B. Understanding West Virginia

The State of West Virginia (the State) is poised to take advantage of recent substantial investments in broadband technology that will benefit businesses, schools and hospitals, government services, and underserved citizens. However, the changing landscape of the telecommunications industry poses challenges to West Virginia that it must successfully navigate to fully benefit from these investments. West Virginia requires unbiased, independent expertise that provides strategies for adoption and change management, agile program management, and actionable program and performance measurement analysis.

Rapid adoption of broadband technology is driving the capacity expansion and integration of various wireline and wireless technologies that break the previously held single technology per provider model. Over the course of the last decade, user demand has transitioned from simple voice networks and data networks delivering basic email and static web pages to sophisticated data and video interactions, powerful search and data analysis capabilities, the growth of e-commerce, and more dynamic social networking tools. States that do not effectively manage this change will risk limiting economic development, inhibiting education and health services, and restricting the ability of citizens, businesses, and the government in communicating and doing business.

As telecommunications infrastructure evolves, telecommunications funding is likewise evolving, creating both opportunities and challenges for West Virginia. In 2010, West Virginia received an American Reinvestment and Recovery Act's (ARRA) Broadband Technology Opportunity Program (BTOP) middle mile and sustainability award (\$135 million), BIP last mile infrastructure award (\$43 million) and State Broadband Data and Development (SBDD) mapping funds (\$4.7 million). Given the tight deadlines associated with ARRA funding, West Virginia's attention must be focused on these awards and the ability of these key infrastructure projects to deliver on the pledge of true economic promise.

Moreover, current and future reforms to the Universal Service Funds (USF) and Intercarrier Compensation (ICC) may impact the amount of funding West Virginia receives, and will certainly change the way these funds are used. Preparing for these changes is critical for West Virginia. Without proactive planning, the State risks not being able to maximize the amount of funding it receives under the reformed system. Additionally, failing to anticipate these reforms may prevent the State from fully leveraging funds to modernize the broadband infrastructure so vital to West Virginia's economic future.

While broadband telecommunications infrastructure and funding sources are rapidly changing, access to and adoption of broadband technology remains a substantial challenge in West Virginia. According to a survey of 30 West Virginia communities conducted by FutureGenerations, 40% of households in these communities do not have the Internet and 52% do not have access to broadband technology.¹ While broadband access rates are higher in other regions of the State, expanding access throughout the entire State is essential in a modern economy and one of West Virginia's major challenges given its geography and rural characteristics. Some other challenges that West Virginia has begun to address include:

- Small business development is severely hindered without broadband access. In two small focus group surveys of West Virginian small business owners, 97% indicated that broadband access was important to their company's growth and competitiveness.²
- Connecting schools, including community colleges and libraries, to broadband technology is a critical need already recognized by the State. Students cannot receive the education necessary for careers in the 21st century economy without the ability to utilize the on-line resources and research capabilities offered by broadband technology.
- Critical government services, including emergency preparedness, public safety, and utilities such as smart grid infrastructure require wireless broadband services in order to provide the level and quality of services citizens can expect from their government.
- Providing effective telehealth services is becoming increasingly dependent on broadband infrastructure. Both the health care industry and citizens requiring health services can use broadband to access health-based knowledge, resources, and services available outside of the community. Effective telehealth services can be particularly beneficial for veterans and their families that may need access to medical services and specialists not available in all communities.

ICF has the depth and breadth of experience to help West Virginia "connect-the-dots" by understanding the linkages between existing and new resources, technology infrastructures, and state, community, and business stakeholders through the most effective and efficient means to address these challenges. ICF provides the fact-based analyses with actionable recommendations that West Virginia needs to make the rapidly transforming telecommunications world work to the benefit of its citizens, business, and communities.

¹ "Communities Expanding the Benefits of Broadband: West Virginia 2011 Fact Sheet." FutureGenerations WV. April 2011. www.futurewv.org.

² "Focus Group Report: Broadband and Technology Use Among Small Business in West Virginia," RMS Strategies for the West Virginia Small Business Technology Education & Competitiveness Initiative. May 2005.

C. Corporate Overview

ICF International (ICF) is a diversified professional services firm that partners with clients to deliver consulting services and technology solutions. ICF combines passion for work with industry expertise and innovative analytics to produce compelling results throughout the entire program lifecycle, from research and analysis through implementation and improvement. In addition, ICF's Broadband team helps communities, governments, and businesses leverage broadband infrastructure to meet community economic development goals and improve the quality of life. At ICF, we understand that the end goal of broadband is not the network itself—rather it is the possibilities that come from providing citizens and businesses with access to the services that ride over the network. Citizens, businesses and civic organizations use broadband technology to communicate, find information, buy goods and services, enjoy personal entertainment, build social networks, deliver healthcare and other social services, and ensure first responder connectivity.

D. Broadband Capabilities [RFP reference 2.3]

ICF's Broadband team has direct experience in planning, evaluating and building broadband infrastructure in domestic and international projects. We understand that construction and implementation of the West Virginia's BTOP middle mile networks will serve as the primary driver in opening up geographically diverse areas which will deliver broadband at higher speeds, with better reliability and lower costs. The ICF Broadband team has vast broadband industry experience and knowledge that has been deepened by supporting the USDA Broadband Initiative Program (BIP). Some of our capabilities include:

- Broadband feasibility and sustainability. ICF performs market analysis, service definition, strategic reviews, pricing, demographics and business case development for states, regions, communities, and businesses. We offer development of broadband policies, guides, and tools; desktop monitoring for compliance with program requirements; design and implementation of post award project monitoring; and project and program management and dashboard reporting.
- Technology planning and evaluation. ICF evaluates and recommends alternative broadband access architectures and solutions based on a client's unique needs and goals, including network and capacity-building analyses, broadband speeds, access coverage, and geographic information systems (GIS) and geospatial applications. This includes engineering design, evaluation, RFP development and evaluation, vendor and equipment selection and analysis, construction management and monitoring.
- Economic and capacity development. ICF delivers planning, technical assistance and training to enhance the utility of broadband technology in building capacity for state, community, and anchor institution programs. We provide assessments of anchor institution's broadband needs and existing capabilities, change management support for adoption of technology and services, local broadband network design, purchasing support, and project management for implementation or grant submission for funding.
- Project management. ICF administers complex projects and programs under tight deadlines with high quality results. Our approach leverages individual professional and technical expertise with professional project management practices to cost effectively customize high value solutions for clients. Change management methods are incorporated into recommendations and strategic communication programs to overcome normal obstacles to adoption by increasing awareness, purpose, benefits, and success stories.

- Wireless mapping, spectrum analysis and advisory services. ICF performs empirically derived wireless capacity and utilization efficiency measurements and measurements-based mapping for coverage that reveals true availability and capacity for communities, large services areas or an entire state. ICF's unique aerial surveying capability is fast and reliable for both large and small geographic areas, predicting coverage effectiveness and spectrum efficiencies across terrain and other ground clutter.
- Federal regulatory and Universal Service Fund (USF) analysis and advisory services. ICF performs state or service/equipment provider Strengths Weaknesses Opportunities and Threats (SWOT) assessments and analyses for regulatory rules and rate changes. ICF retains former Universal Service Administrative Company (USAC) subject matter experts to provide training and education, increase eligibility and participation, and/or provide logical steps to maximize or minimize the impacts that result from recent USF/ICC reforms.
- BTOP and BIP monitoring, analysis, compliance and advisory services. ICF designs, evaluates, and implements federal broadband and telecommunications grant management, infrastructure deployment, and user adoption programs. ICF supports awardees and recipients for ARRA and BTOP program compliance and reporting requirements for middle mile and last mile projects.

The Broadband team is further supported by ICF's experts in policy development, strategic assessment of complex social issues, environmental issues, telehealth capabilities, GIS mapping, large scale or targeted survey capabilities as well as technical advisory services for federal, state and local communities.

ICF understands the importance of establishing 21st century broadband infrastructure across the United States and leveraging technology to improve the quality of life for communities. We understand that the objectives of the National Broadband Plan are to make reasonable, defensible, and effective regulations for managing the transition to high-speed broadband infrastructure and services. We bring in-depth knowledge of the opportunities, realities and challenges facing rural and urban America and are ready to meet West Virginia's broadband consulting needs.

E. Industry & Policy Analysis [RFP reference 2.3.1]

Using our expertise in areas such as broadband, community and economic development, regulatory analysis and public policy development, ICF supports decision makers at all levels with rigorous analyses, solid research, and cutting-edge thinking. We assist clients with policy and program development, assessments, and other business, financial and technical reviews that are necessary to implement broadband plans, projects, and policies.

1. UNDERSTANDING AND VIEW OF THE BROADBAND INDUSTRY AT BOTH FEDERAL AND STATE LEVELS TO PROVIDE POLICY ANALYSIS, PROGRAM DEVELOPMENT, OR PLANNING ASSISTANCE TO CLIENTS (RFP REFERENCE 2.3.1.1)

In the next six to 24 months the Federal Government will implement significant changes that will impact current State strategic broadband plans, telecommunication policies and broadband services. These include proposed changes to wireless spectrum allocation, deployment of wireless broadband networks, deployment of BTOP fiber networks and connections, reform of the USF and ICC rate structures, implementation of a new Connect America Fund (CAF) for targeted broadband access and leveraging state broadband mapping initiatives.

This changing landscape is illustrated by the recent developments surrounding the USF. The USF has historically provided close to \$8 billion in annual support to the 56 States and territories for the provision of telecommunications. In the National Broadband Plan, the FCC called for major reform of both the USF and the ICC programs. A Notice of Proposed Rulemaking (NPRM) was issued in February 2011 to begin the process of reforming the USF and ICC. On October 27th, 2011, FCC Commissioners voted unanimously to reform USF and ICC, and requested a Further Notice of Proposed Rulemaking (FNPRM) from the Wireline Competition Bureau (WCB) to provide additional details and clarification of these changes. Reforms will begin to be implemented in 2012 and continue to evolve over the next few years. Many of the suggested reforms will look to state broadband mapping efforts to identify where broadband is currently available in order to target resources to deliver services to unserved or underserved areas.

It is important for West Virginia to monitor and prepare now. By assessing existing needs, infrastructure, and mapping capabilities, the State can ensure it is in a position to minimize risks resulting from the reforms and other regulatory changes. ICF's Broadband team offers the experience and skills necessary to assess these changes from an impartial and unbiased standpoint in order to provide the best advice to West Virginia.

The following are examples of programs that ICF supports which demonstrate our understanding and view of the broadband industry at both federal and State levels and our experience providing policy analysis, program development, and planning assistance to clients.

Example 1-1: USDA's Farm Bill Rural Development Broadband Loan and Loan Guarantee Program. For USDA's Farm Bill Broadband Loan and Loan Guarantee program, ICF assisted USDA's Rural Utility Service in developing programmatic policies, reviewed and summarized comments on proposed rule making options, provided recommendations for the development of revised program regulations, and assisted in drafting revised Farm Bill regulations. ICF assisted in the review and revision of application procedures and facilitated meetings for policy decisions and technical considerations surrounding proposed regulatory changes. As the ARRA-funded BIP program winds down, this legacy broadband program is expected to re-emerge as a primary broadband program for USDA.

Example 1-2: USDA's ARRA-funded Broadband Initiatives Program Support. Since its inception in July 2009, ICF has supported the ARRA funded, Broadband Initiatives Program (BIP) for the USDA Rural Utility Service. Beyond the program implementation support, ICF provided policy support throughout the project through review and analysis of regulatory and programmatic requirements, and the development of post-award monitoring policies and procedures. ICF continues to perform BIP Post Award support by reviewing compliance against policies and procedures and offering legal support, environmental reviews, Davis-Bacon training and compliance, network engineering support, financial reporting, operational feasibility reviews, and ARRA compliance. ICF's staff performs support on site with RUS staff, through remote desktop monitoring programs and in the field performing site visits with awardees.

Example 1-3: West Virginia First Broadband Initiative. Prior to joining ICF, Mr. Montgomery, the team's Senior Program Director Broadband, served as the Senior Operating Executive at iTown Communications. The West Virginia First Advanced Broadband program was developed in coordination with State government and local representatives to aggregate smaller communities into a larger, sustainable broadband community using a public private partnership business model. Mr. Montgomery completed comprehensive regulatory, demographic, economic and market analyses of potential

customers, competitors and pricing for available services for each defined service area. The study defined a broadband market roll-out strategy to provide services to all schools, public buildings, business locations and homes within the service area.

2. DOMESTIC AND INTERNATIONAL EXPERIENCE IN ASSESSMENT, ENGINEERING, DESIGN, OPERATION AND CAPACITY BUILDING FOR BROADBAND INFRASTRUCTURE AND DIFFERENT BUSINESS MODELS APPLICABLE TO BOTH MIDDLE MILE AND LAST MILE NETWORKS AS EVIDENCED BY VERIFIABLE, DELIVERED WORK PRODUCT PERTAINING TO THE SAME (RFP REFERENCE 2.3.1.2)

As a variety of broadband technologies are being deployed and adopted throughout the State, it is critical that this infrastructure is built as planned and performs as promised. West Virginia's mountainous terrain helps concentrate communities in the river and mountain valleys, but poses particular challenges during both construction and deployment of broadband infrastructure. The State requires an experienced, skilled advisor that can help assess, analyze, plan, and monitor the deployment and adoption of broadband infrastructure.

ICF's experts have completed broadband feasibility studies and broadband network designs for middle mile projects, fiber-to-the-premise (FTTP) last mile networks, cable, wireless, WiMAX, satellite, and combined technology solutions around the globe as well as for communities in West Virginia and at least 16 other states. Furthermore, ICF's Chief Technology Officer for this project, Mr. Donald Bishop, has been the chief architect and a construction and engineering lead on wireless and wireline broadband projects in major cities and rural communities throughout the nation, Europe, South America, and Asia. The Senior Program Director of Broadband, Mr. Keith Montgomery, has directed city, regional, and national broadband network design and construction projects, and managed several city and country network deployments.

The following are examples of programs that ICF team members have supported and demonstrate our domestic and international experience in assessment, engineering, design, operation and capacity building for broadband infrastructure.

Example 2-1: USDA / RUS Broadband Initiatives Program Support. For the BIP program, ICF evaluated the technical and financial feasibility of over 2,200 applications for rural broadband projects covering middle mile, last mile, satellite and capacity building. ICF designed a technical network review process to produce competent and objective assessments of proposed network designs based on both quantitative and qualitative methods. ICF evaluated each application to determine whether:

- The proposed network covered the indicated service area.
- The proposed network was technically viable as a broadband network.
- The proposed network could deliver the minimum broadband service required by USDA.
- The network design could deliver the speeds proposed to customers.
- The project could be deployed in a reasonable timeframe if funded.
- The construction and component costs were reasonable.
- The business plan was financially feasible and sustainable.

Based on ICF's review process, USDA selected and awarded 233 projects for funding which ICF continues to monitor as part of our Post Award support to USDA.

Examples 2-2: West Virginia First Broadband Initiative Study. While serving as the Senior Operating Executive at iTown Communications, Mr. Montgomery led the design of four fiber-to-the-home

broadband networks and developed public-private-partnerships with three communities. Mr. Montgomery prepared an initial network design for local jurisdictions along with a financial assessment to determine the viability of the business model. He worked with state government and local representatives to create sustainable broadband communities. The broadband communities supported a fiber-to-the-home 100 Mbps active network for triple play and a complementary WiMAX wireless network at prices below the incumbent provider. He also assessed fiber middle mile, fiber last mile and 4G WiMax deployments for rural markets in North Carolina, South Carolina, Tennessee, Virginia, Arizona and western Pennsylvania.

Example 2-3: Thailand Chareon Pokphand Nationwide Broadband Initiative. While serving as the Chief Technology Officer to Mitsui & Co., Mr Bishop architected an advanced fiber optic and hybrid-fiber coaxial network throughout the nation of Thailand. This project involved a redesign of a portion of the optical fiber network owned by the Thai government to connect five major cities: Bangkok, Chiang Mai, Chiang Rai, Hat Yai and Nakhon Ratchisima. Mr. Bishop supported the engineering and deployment of the last mile networks in these cities, plus several others throughout the country. The total value of the Thai project was just under USD \$768 million. Mr. Bishop has also engineered optical fiber projects throughout the USA for companies such as AT&T, Time Warner, and TCI (now part of Comcast).

3. ADVISORY, ASSESSMENT AND PROGRAM SUPPORT FOR STATE AND FEDERAL REGULATORY, FEDERAL FUNDING PROGRAMS, AND UNIVERSAL SERVICE FUND REFORMS INCLUDING AN ASSESSMENT OF WHERE EXISTING FEDERAL AND STATE FUNDING IS UNDERUTILIZED AS EVIDENCED BY VERIFIABLE DELIVERED WORK PRODUCT PERTAINING TO THE SAME (RFP REFERENCE 2.3.1.3)

As noted previously, the Federal Government is in the process of implementing significant changes that will impact current State strategic broadband plans, telecommunication policies and broadband services. The ICF Broadband team has analyzed the National Broadband Plan, USDA, and NTIA programs, and related USF reforms. ICF experts continuously monitor changes within the broadband industry and regularly attend FCC workshops, industry conferences and policy briefings. The ICF team has written white papers, articles, and conducted webinars on a range of broadband policy issues and related USF reforms and brings this insight about federal programs and regulatory and funding reforms to the State. ICF has briefed state representatives and stakeholders from eight states on USF-related topics. ICF has worked to educate service and equipment providers, as well as, state representatives on the impacts of these policy changes and help them connect the dots on pending legislation, regulations, and financial impact to service providers.

Furthermore, ICF understands how to advise, assess, and support state and local governments. ICF provides services to state and local authorities on a range of topics such as housing and community development, economic development, education, information technology, and finance, to name a few. ICF staff strives to ensure that services and products result in practical, actionable, effective information that clients can readily use to measure, assess, and improve their programs.

The following are examples of programs that ICF team members have supported and serve to demonstrate our advisory, assessment, and program support efforts which help state and federal customers maximize program funding.

Example 3-1: Broadband Expansion Project for the University of Arkansas. The project included a 900-mile network expansion to connect to 23 colleges in the state of Arkansas. In order to comply with the BTOP grant requirements, an environmental assessment (EA) was needed in an extremely short amount of time. ICF coordinated with the various federal and state agencies, the client and various sub

consultants to complete the EA. ICF also worked closely with the engineering firm to design the new construction elements so as to avoid impact to any sensitive archaeological or environmental resources. The expeditious manner in which ICF prepared the EA allowed NTIA to issue their Finding of No Significant Impact in a timely manner, allowing the project funding to stay on track.

Example 3-2: USDA / Broadband Initiatives Program Support-Satellite Program Support. RUS was interested in creating a satellite program to serve rural customers that are beyond the economically viable reach of terrestrial broadband providers. Mr. Bishop was tasked to evaluate the in-orbit capacity of each of these companies, installation costs, installation capacities, already announced and underway space segment upgrade plans, and existing marketing programs and service offerings. This evaluation formed the basis of a specific Satellite Service effort that was issued under the second round of funding. The program encompassed a competitive bid process for selected regions and did not require the launching of any new satellites. The total cost burden to the BIP program was reduced from \$1.5B requested to launch new satellites over the U.S. to \$100M while providing for more remote subscribers to be reached than were originally proposed in the Round 1 applications, and at lower subscription costs. This resulted in over a 93% costs savings to the BIP Program upon its successful implementation.

Example 3-3: Support for Technical Assistance to Communities. ICF is a leading advisor for community development projects for HUD and HHS and has wide-ranging knowledge and experience advising and assessing communities and states. Following are two examples of these types of efforts.

- For HHS, ICF³ supports key aspects of the Assets for Independence (AFI) program and the AFI Resource Center. The program effectively assisted regional offices through outreach to potential AFI applicants, enhancing technical assistance and training for current grantees, and enabling the AFI Program to monitor the asset-building community in each region.
- ICF provides technical assistance and capacity building to nonprofit and for profit developers at the local level through the HUD's Neighborhood Stabilization Program and Community Development Technical Assistance contracts. This capacity building has helped to stabilize neighborhoods, communities and regions and provide economic opportunity through improved community infrastructure and services.

Example 3-4: USDA Universal Service Fund Support. With the pending USF reform action being discussed, RUS was interested in understanding the potential financial impact to the BIP and Farm Bill borrowers from a reduction of USF subsidies. A special USF impact analysis was performed on BIP applicant's financial statement to review estimated cash flow and profitability impacts with elimination and prorated reductions for USF and ICC funding. A report was prepared for BIP awardees to support USDA filing comments on USF reform and usage by the program.

4. ASSESSMENT AND DEVELOPMENT OF COMPREHENSIVE STRATEGIC AND TACTICAL PLANS FOR INFRASTRUCTURE DEPLOYMENT AND CAPACITY BUILDING FOR COMMERCIAL ENTITIES, COMMUNITIES OR STATES (RFP REFERENCE 2.3.1.4)

West Virginia is currently supporting the active deployment of over \$136 million for infrastructure and mapping services. Managing this deployment, and planning for future deployments, requires the use of accurate, detailed GIS mapping. It also requires capacity building of commercial entities as well as local and state governments so this new infrastructure can be fully utilized.

³ ICF partnered with Corporation for Enterprise Development (CFED) on the AFI project.

ICF's Broadband team leverages years of operations and consulting experience in strategic and tactical planning and capacity building through training and technical assistance to local communities and state governments in rural and urban areas. Our GIS mapping capabilities complement and support our strategic planning experience by providing our clients with customized analysis and reporting.

The following are examples of programs that ICF team members have supported which demonstrate our strategic and tactical planning experience and capacity building experience.

Example 4-1: Strategic Planning at CLEAR Communications. While employed at CLEAR Communications, Mr. Montgomery lead a 12-month strategic planning exercise for the shareholders to determine economic impact, capacity planning and predicting new market services for emerging wireless and broadband technologies. This resulted in significant network and market expansion of services creating explosive economic growth for small business and rural sections of the country. CLEAR grew to the 50th largest company in New Zealand, capturing 20% market share and employing over 900 staff.

Example 4-2: USDA / Broadband Initiatives Program - BIP and GIS Mapping. ICF relied on support from GIS analysts to evaluate the technical and financial feasibility of over 2,200 rural broadband projects. ICF's geospatial analysts integrated applicant drawn maps with multiple data sources to determine if applications met service area eligibility requirements (e.g., requirements pertaining to unserved areas, rural areas). ICF also provided detailed maps of incumbent comments to support the efforts of RUS field staff to verify the status of existing broadband service. These series of processes automated consistent application review criteria including determining rurality (how far an application's proposed service area is from an urban area), overlap of geographic areas currently being served by existing service providers, and population and households served. ICF provided both regular and ad hoc reports and analyses to support and clarify policy decisions or evaluations of targeted service areas, which provided USDA with the ability to deploy infrastructure and build capacity across the United States.

Example 4-3: National League of Cities - Community and Economic Development Consulting. While employed at the National League of Cities (NLC), ICF's Program Manager, Ms. Katherine Bates, managed the policy development process on information technology and communications including public safety interoperability and broadband deployment from a municipal perspective. She assisted in developing comments on the National Broadband Plan and explored possible collaborations for NTIA's Broadband Technology Opportunities Program (BTOP) funding application. She tracked legislative and FCC actions related advanced broadband technology as well as staffed NLC's Information Technology and Communications (ITC) Policy Committee. Ms. Bates guided the work of seven committees involving more than 1,200 local elected officials from throughout the country, building consensus on long-term federal policy priorities and goals for the nation's cities and towns.

Example 4-4: Mid-Atlantic Regional Collaborative (MARC) Green Consortium. ICF conducted a multi-mode Green Jobs Survey of 35,000 private- and public-sector employers in Maryland, DC, and Virginia. The survey built on research already conducted by the States and the District to 1) profile the region, each state, and each Local Workforce Investment Agency's emerging green economy; 2) identify the number and type of jobs and skills required; and 3) establish a baseline that can be used to track future industry and job changes. The survey also sought to identify barriers to growth and gain an understanding of successful policy initiatives for the region and in each state. ICF also conducted an analysis of the necessary skills and training opportunities to support the educational and economic development partners of the region and in each state that will be used to ensure that they have a

workforce ready for the opportunities provided by a greening economy and to build curricula and certification programs that align to green job skill needs.

5. IMPLEMENTATION AND MANAGEMENT OF BROADBAND ADOPTION PROGRAMS ON A REGIONAL OR NATIONAL LEVEL (RFP REFERENCE 2.3.1.5)

Successfully building and deploying broadband infrastructure by itself does not ensure that West Virginia will reap the comprehensive benefits of broadband. Adoption of broadband services, promoted through outreach and education efforts as well as programs to train citizens and business in computer and Internet skills is also critical. Managing adoption programs require strong communication and outreach skills, an understanding of the target population, information and tracking systems, and clear policies and procedures that are consistently applied.

The ICF Broadband team has the full range of experience, skills, and systems to support the State's adoption programs. As a full-service professional services firm, ICF offers the education and outreach skills, the program implementation and management skills, and the tools and systems that are necessary to guide West Virginia's broadband strategy.

The following are examples of programs that ICF team members have supported that demonstrate our implementation and management experience of broadband adoption programs and activities.

Example 5-1: USDA / RUS Broadband Initiatives Program-Technical Assistance Grant Program Support.

In supporting the BIP program, ICF worked with USDA to develop criteria by which to assess applications for technical assistance funding. These applications proposed a variety of activities including the implementation and management of broadband adoption programs, the development of broadband network designs, and the execution of financial feasibility studies. After developing the evaluation criteria, ICF reviewed more than 50 applications for compliance with program rules, applicant capacity, and project feasibility. Based on ICF's review, RUS awarded a total of \$3.4 million to 19 technical assistance projects located throughout the United States. This experience provides ICF with insights into a range of different adoption programs and what elements are most likely to result in successful programs.

Example 5-2: CLEAR Communications LTD, New Zealand & Concert Communications Inc. Mr.

Montgomery was one of the founding executives for CLEAR Communications which deployed a national telecommunications network in New Zealand. CLEAR Communications created award winning service targeting rural consumers, small business and school adoption programs for broadband services, taking over 22% market share in four years. At Concert Communications he developed a partner support program which facilitated the support of global sales between partners for data, voice, and managed services.

Example 5-3: Vermont Consumer and Business Telecommunications Survey.

The Vermont Department of Public Service contracted with ICF to conduct the Vermont Telecom Residential Survey with Vermont residents and non-residential organizations including public, private, non-profit, and educational organizations. The survey measured Vermonters' telecommunication needs, as well as related behaviors, knowledge, awareness, and perceptions. This information was used to identify areas of deficiency in Vermont's telecommunications systems. The survey also identified the telecommunications providers that the State should work with to develop programs and policies to address these deficiencies, such as expanded broadband Internet access and cell phone coverage. The survey data was

also used to evaluate Vermonters' needs and behaviors in order to support short- and long-term planning efforts for bringing broadband to Vermont.

Example 5-4: West Virginia and Ireland Broadband Summit. As CEO of iTown Communications, Mr. Montgomery facilitated a series of meetings with Governor Manchin and the Irish Prime Minister's office to discuss broadband and economic development strategies.

F. Specialized Broadband Mapping [RFP reference 2.3.2]

An overarching objective of broadband mapping is to provide a comprehensive picture of where wireline and wireless broadband services are available. A majority of states rely on data reported from service providers as a primary source for broadband availability. Most states supplement these self-reported data with crowd-sourced data in an effort to establish independent corroboration of coverage and connection speed. While this is a reasonable methodology to build a base understanding of where broadband is and is not available, it is not sufficient to drive critical infrastructure planning initiatives that are essential to vibrant growth and a healthy economy.

Effectively, monitoring, assessing, and influencing broadband infrastructure deployment requires the underlying data to be independently sourced. Expanding service capabilities and capacities to rural areas is often hindered by the availability of middle mile services and Internet peering diversity and capacity, which is rarely reported, and even less verifiable. In more rural areas and in areas isolated because of terrain, topography, or geography, those same middle mile and peering point challenges are exacerbated and compounded by low population densities. ICF understands the important interactions between middle mile availability, peering points and their influences, as well as the commercial concerns that discourage deploying broadband in rural areas, and how to improve reporting so that better decisions can be made. Further, ICF experts are able to meet the standards outlined by NTIA for broadband-related mapping.

Another key factor in mapping involves improving data reporting granularity. Data is often reported in blocks of varying geographic sizes which can create unintended bias when viewed and analyzed geospatially. Census blocks, census tracts, postal code boundaries, and county boundaries, all influence reporting. When a provider can offer service to one residence in a defined reporting block, the entire block may well be reported as served. In rural areas this can and does create the illusion that availability is greater than it is. Wireless coverage is especially vulnerable to this issue. ICF's Broadband team and GIS experts help identify reporting granularity issues and minimize related analytical distortions.

Wireless broadband service is arguably the most important area for development in the next 20 years. Consumer use of mobile broadband is growing in the number of users, but perhaps more importantly, in the traffic loading on a per user basis. This has significant implications from a planning perspective. ICF developed an innovative aerial spectrum surveying solution to provide independent reporting of three critical metrics: spectrum utilization, provider capacity, and wireless coverage. Using some of the most advanced instrumentation and analytical resources, ICF documents these elements. With reports and specialized map layers based on empirical data, spectrum assignments can be more effectively managed, ensuring that sufficient capacity exists in both the last mile network and in the supporting middle mile network.

ICF mapping experts integrate data sets into a contextual universe to enhance understanding that helps customers make informed decisions. ICF's geospatial analysis and information technology experts go

beyond analysis to deliver data in ways that are flexible, understandable and action oriented utilizing cartography, custom reports, dashboards, web mapping, and web sites to ensure that the knowledge gained in the analysis can be used to confidently inform actions and enhance communication with all user and stakeholder groups.

Examples of ICF's expertise in developing specialized mapping and analysis is demonstrated below:

Example 6-1: USDA / RUS Broadband Initiatives Program-Broadband Mapping: ICF provided enhanced analysis and reporting using internal databases, GIS reporting and mapping techniques to leverage expert broadband industry knowledge. ICF's Broadband and Geospatial Solutions professionals created an innovative solution that blends wireless, wireline, and satellite broadband acumen with powerful demographic and mapping capabilities to determine actual versus theoretical network coverage for targeted service areas for each BIP application. GIS technology was used to determine eligibility, overlap, demographic statistics, and technical ability of broadband technologies proposed by applicants for their target markets. ICF also provided detailed maps of incumbent comments to support the efforts of RUS field staff through the task of verifying the status of existing broadband service. These series of processes automated consistent application review criteria including determining rurality (how far an application is from an urban area), overlap of geographic areas currently being served by existing service providers, and population and households served. As such, ICF provided both regular and ad hoc reports and analyses to support and clarify policy decisions or evaluations of targeted service areas. The team utilized ESRI's ArcGIS Desktop and ModelBuilder tools, and Python scripting language to create models and scripts to process application data. Additionally, maps of each application, full technical documentation, and metadata were created for spatial layers and processes used to serve the program.

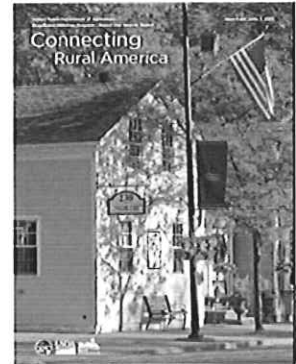
Example 6-2: Department of Veterans Affairs (VA) Burial Program and Policy Evaluation: The VA policy is to establish a new national cemetery when the un-served population is at least 170,000 within a 75-mile radius. ICF's Geospatial Solutions team examined the reasonableness of the current policy for the future, analyzing the effects of changing the radius or population thresholds. ICF developed a model that used network analysis (drive-time) to compute the time and distance of the nearest VA-funded cemetery to each census tract. The distance to a cemetery impacts the satisfaction of next-of-kin and the number of times next-of-kin are able to visit after the internment. ICF created maps to display the location and 75-mile buffer of open cemeteries in a given year. The maps showed locations where new cemeteries were needed using five-year incremental projections through the year 2030. This "drive-time" metric assessed the effects of changing the population threshold to evaluate current cemetery locations and the need for new locations to better serve the changing demographics for different states.

G. Strategic Communications [RFP reference 2.3.3]

PR Week recently named the ICF 200-person Strategic Communications and Marketing Division the sixth top public relations agency in the country. ICF's strategic communications and marketing work drives audiences to take desired actions and ultimately to change behavior. ICF's campaigns emphasize outcomes and compare tactics against special performance metrics, including reach, frequency, re-tweets, Facebook likes, and blog links. Customers select ICF to develop public awareness campaigns because the focus of ICF's strategic communications capabilities is on social progress, such as ways to increase Broadband adoption rates among West Virginia's business and its citizens.

A sampling of ICF's expertise in developing and implementing public awareness campaigns are reflected in the projects below:

Example 7-1: Broadband strategic communications: In supporting the USDA/BIP program, ICF’s strategic communications charge was to create program awareness and disseminate information to applicants, and to communicate progress to key stakeholders, such as Congress, state, and local elected officials, and the general public. ICF developed and implemented a robust national outreach plan, helping RUS with public awareness and information dissemination tasks. ICF developed communication tools to help RUS assist first-time and small businesses applicants navigate the process—tools such as online applicant guides, correspondence, fact sheets, Web content, and supporting regional workshops. ICF’s Creative Services department developed brand identity design options by bringing USDA’s logo family together under a coherent aesthetic, communicating the core message of the initiative. ICF produced two reports for BIP—the “Connecting Rural America” report received an “exceeds” rating from USDA during the quality assurance monitoring process for this contract. The reports were distributed to the White House, Congressional members, and posted on www.broadbandusa.gov.

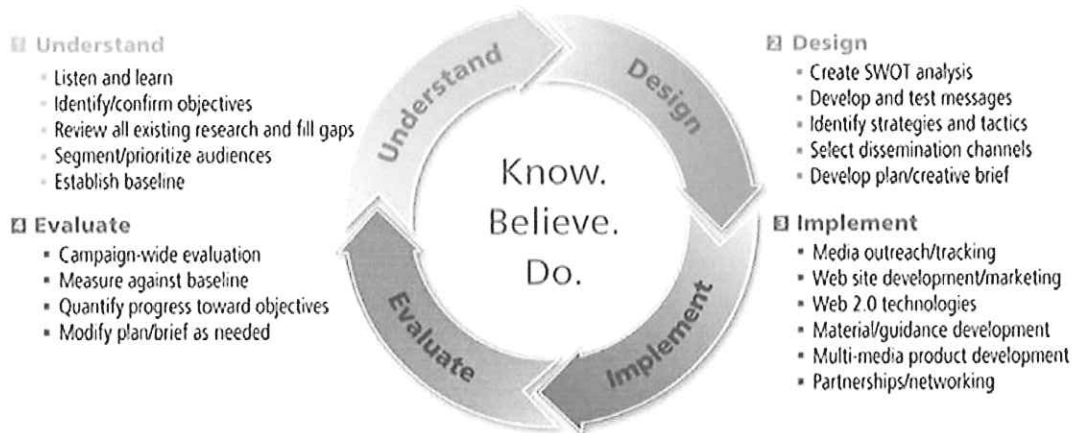


Example 7-2: EPA ENERGY STAR® Brand Awareness Campaign: ICF managed a multi-media awareness campaign for the ENERGY STAR program. The campaign raised awareness about the link between energy use and air pollution, and educated the public about how the use of energy-efficient products labeled with the ENERGY STAR label can help reduce air pollution. ICF developed a strategy that included the development and placement of print, broadcast, and transit public service advertisements; media tours in 33 cities; targeted national media outreach; and a variety of other tactics including leveraging third-party communications and seeking opportunities in special broadcast programming. ICF managed all aspects of the campaign, including strategic planning; development of press kits, video news releases, and compilation tapes; media training; message development; media tracking, reporting, and analysis; development of fulfillment materials for consumer inquiries; consumer hotline training; and logistical coordination between all participating parties.



Example 7-3: Consumers Energy: Consumers Energy is Michigan’s second-largest electric and natural gas utility, providing service to more than 6 million residents in all 68 counties. ICF is developing and managing the Residential Energy Efficiency portfolio, which consists of the following programs: ENERGY STAR® Lighting and Appliances, HVAC and Water Heating, Multifamily, Home Performance with ENERGY STAR, and Home Energy Assessment pilot program. ICF has developed a broad, integrated marketing and communications strategy, which includes positioning across all programs, targeting the general public and contractors, and integrating creative messaging with Consumers Energy’s current branding and messaging. ICF is using its proven social marketing approach, integrating branded multimedia marketing initiatives, with community-based intervention strategies. Marketing activities in each market are coordinated tightly with the roll-out of specific programs. Our approach helps overcome the informational and attitudinal barriers that exist today, and set the stage for market transformation in Michigan.

If the State desires, ICF will utilize a standard four-step process, outlined below, to develop public awareness campaigns to promote standards, best practices, and the adoption of broadband technology throughout West Virginia.



This process maximizes use of the State’s marketing dollars by doing the following:

- Work with the State to prioritize efforts and refine the Scope of Work and key tasks.
- Deliver a solid understanding of the various target audiences across the State.
- Generate on-target messages that resonate with key audiences.
- Develop strategic, localized, and coordinated public awareness strategies.
- Derive the maximum benefit from available resources.
- Guide on-time/on-budget campaign execution.

H. Project Staffing and Organization Plan

Under the strategic leadership of Mr. Keith Montgomery, Senior Program Director Broadband, ICF offers a dedicated team with expertise in national and international broadband network planning and deployment, broadband mapping, federal and state regulatory policy analysis, USF program support, strategic communications and public awareness campaigns, technical assistance for capacity building and economic development, and workforce development, retraining and labor market analysis. With these skills and experience, ICF will provide the State with the right experts at the right time to assist the State and ensure it successfully meets its established broadband objectives.

Our key personnel include our Senior Program Director Broadband, our Program Manager and the Project Leads for Objectives 1-8. These individuals will guide all aspects of the work and ensure continuity throughout the period of performance. ICF will provide the State with a proven team as all staff members have successfully worked together on similar programs. This team is able to immediately provide support upon award of a contract.

The following table summarizes the capabilities of our proposed team (see Appendix B, beginning on page 58, for full resumes).

Exhibit H-1. Experience, Background and Accomplishments of ICF Team Key Personnel

Personnel & Role	Years of Experience, Education	Relevant Experience and Professional Accomplishments
Keith Montgomery Senior Program Director Broadband	32 years of tele-communications, business development, operations, IT, finance, planning, and program management CPA/BA	<ul style="list-style-type: none"> • Designed and implemented the feasibility review for 2,200+ applications for the Broadband Initiatives Program. • CEO, COO, CFO & CIO experience with international and domestic telecom and technology company. • Developed the West Virginia First Advanced Broadband program. • Completed broadband feasibility studies and broadband network designs for fiber-to-the-home, WiMAX, wireless & combined solutions for WV, AZ, WA, VA, NC, SC, ND, SD, WI, MI, & TN.
Katherine Bates Program Manager & Project Lead – Objectives 3, 6, 6, 8; Technical Assistance	20 years managing and leading state and local government programs MPA / BS	<ul style="list-style-type: none"> • Managed IT and broadband policy development with the National League of Cities. • Extensive experience evaluating and developing integrated community and/or economic development and infrastructure programs and policies. • Compiled “best practice” documents in the areas of community and economic development, infrastructure, information technology and public safety. • Coordinated policy positions for over 18,000 cities and towns and 49 state leagues on federal programs relating to public finance, community and economic development, information technology, human development, public safety and transportation. • Conducted due diligence for the National League of Cities in obtaining Round One BTOP Funding.
Don Bishop Project Lead - Objectives 1, 5; Chief Technology Officer	30 years in the telecommunication industry, with a focus on broadband networks and technologies BA and specialized technology training	<ul style="list-style-type: none"> • Project manager overseeing all Network Engineers responsible for review 2,200+ applications during the Broadband Initiatives Program. • Support the BIP post-award monitoring efforts by conducting Management Assessment Profiles and reviews of current project awardees. • Chief architect and construction and engineering lead on wireless and wireline broadband projects in major cities and rural communities throughout the nation, Europe, South America, and Asia.
Michael Spead Project Lead- Objectives 2, 4; USF Analysis	10 years telecommunications experience MBA / JD / BBA	<ul style="list-style-type: none"> • Analyzed USF reforms and impacts for state regulators. • Former Senior Manager for the High Cost program under the USF. • Certified Project Management Professional. • Six Sigma Green Belt.
Dan Bertuna Business Manager	15 years federal contracting and finance experience MBA / BBA	<ul style="list-style-type: none"> • Experience managing and administering federal government programs. • Extensive financial analysis, project management and reporting experience. • Former federal contracting officer for the Department of Defense. • Managed WMD Defeat Technology ID/IQ contract with a \$1.2B ceiling.
Christina Techico Workforce Development	15 years workforce development experience MA / BA	<ul style="list-style-type: none"> • Managed federal initiatives in partnership with the U.S. Department of Labor, Education, Health and Human Services, and Justice at the federal and state level. • Developed Online Workforce Readiness Assessment tool deployed throughout the state of South Carolina.
Dominic Modicamore Economic Analysis	14 years of experience in economic analysis, economic impact modeling and analysis, and economic and community development MUP / BA	<ul style="list-style-type: none"> • Provided grants management support on the due diligence task for the Broadband Technology Opportunities Program. • Analyzed economic and fiscal impact of taxing the telecommunications infrastructure in Massachusetts. • Analyzed labor market trends for green industries and occupations in Washington State, the oil and gas industries in Alaska, and employment trends by occupation in Massachusetts.
John Ross Education Assessment	25 years experience in education with focus on education technologies Ph.D./ M.A./ B.M.E.	<ul style="list-style-type: none"> • Extensive experience in research and evaluation to inform long-range planning, grant writing, and product development. • Develops and implements technology plans that support long-term school improvement.

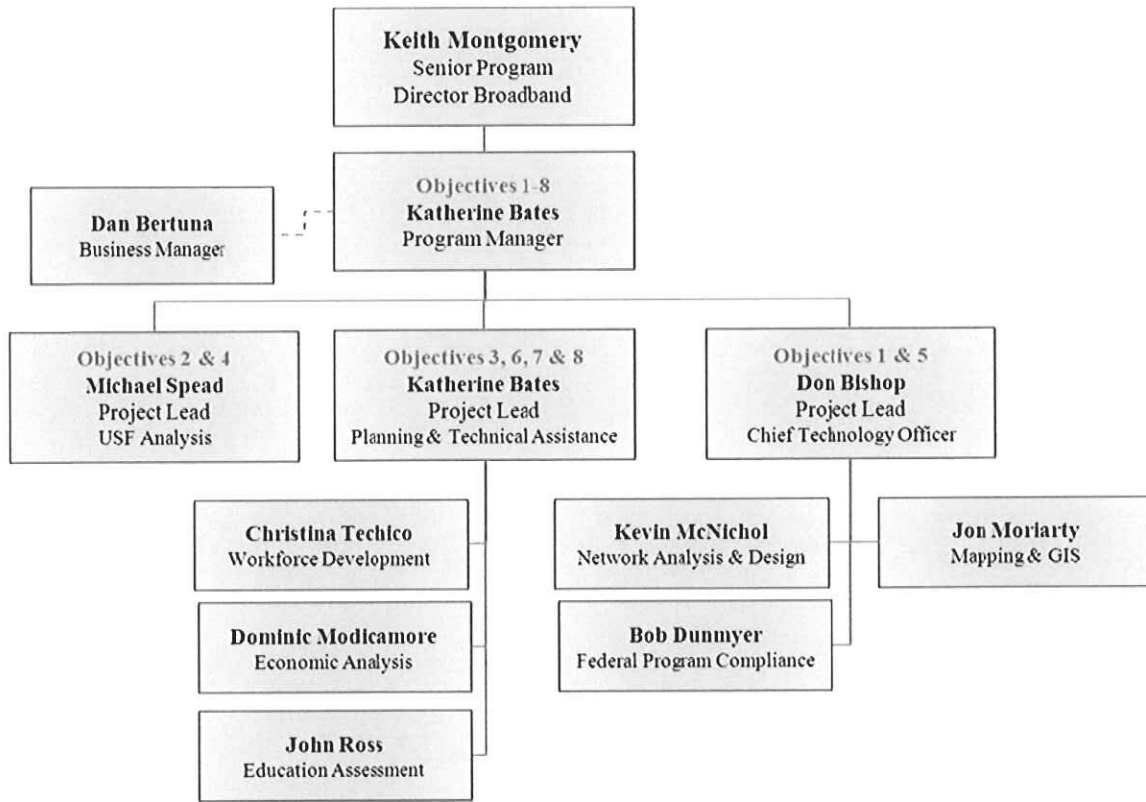
Exhibit H-1. Experience, Background and Accomplishments of ICF Team Key Personnel

Personnel & Role	Years of Experience, Education	Relevant Experience and Professional Accomplishments
Kevin McNichol Network Analysis & Design	30 years telecommunications experience	<ul style="list-style-type: none"> Completed feasibility reviews on the USDA RUS Broadband Initiatives Program (BIP). Performed Management Assessment Profiles for USDA BIP project awardees.
Bob Dunmyer Federal Compliance	13 years financial planning and analysis Masters in Finance / Master in Management	<ul style="list-style-type: none"> Broadband Initiatives Program (BIP) finance lead for middle mile, last mile and satellite applications. Lead compliance expert for BIP Management Assessment Profile visits. Fortune 100 Telecommunications experience.
Jon Moriarty Mapping & GIS	13 years project management experience BA	<ul style="list-style-type: none"> Senior Manager with database and spatial analytics teams. Experienced in design of logical workflow automation tools to support complex large scale project such as the management of the Broadband Initiatives Program applications and geospatial evaluation.

Leveraging the staff’s collective experience and utilizing lessons learned from previous projects provides the State with the assurance that projects will be completed on time and with the highest quality. In addition to the staff identified above, ICF can access a wide range of expertise and skill sets throughout the company to support additional requirements such as USF reform implications, GIS mapping, workforce management, strategic communications, and environmental impact assessments, if needed later in the project. Resumes of key staff can be found in Appendix B, beginning on page 58.

The ICF team has been organized to meet all of the State’s project requirements. Our organizational structure (Exhibit H-2) reduces overhead and ensures that the State will have the best expertise available to meet project goals and objectives.

Exhibit H-2



ICF will assign an experienced Project Lead to each of the objectives/goals that the State requires. The work will be overseen by Mr. Keith Montgomery, Senior Program Director Broadband. He will provide strategic guidance and advisory services to the State and will provide executive oversight to the team. He will also review and monitor project efforts to ensure results are consistent with cost, schedule, and performance requirements.

Reporting to Mr. Montgomery will be Ms. Katherine Bates, Program Manager. Ms. Bates will be the State's primary point of contact and will be responsible for coordinating day-to-day activities across the team. She will complete financial and operational reviews, write required reports, and assign other subject matter experts if requested by the State for additional project objectives. In addition, Ms. Bates will act as the project lead for the development and implementation of the plan to increase access and adoption of broadband technology around the State's small business community (Objective 3) as well as the review of West Virginia's current K-12 school-based broadband resources (Objective 6). She will also coordinate the delivery of technical assistance to enable the State to leverage additional funding (Objective 7) and provide consulting services around existing and future state broadband projects (Objective 8).

Ms. Bates will be supported by two additional Project Leads, Mr. Michael Spead and Mr. Don Bishop. Mr. Spead will oversee the analysis of the USF and the recent FCC reforms (Objective 2) as well as the analysis on other federal programs that affect the deployment of broadband throughout West Virginia (Objective 4). Mr. Bishop will coordinate the efforts to assess the current state broadband map (Objective 5), as well as lead the SWOT analysis of current broadband efforts throughout the State (Objective 1).

The team will be also be supported by a Business Manager, Mr. Dan Bertuna. He will support project planning, scheduling and tracking, any subcontractor or vendor arrangements and procurement, contract compliance, and budget tracking and reporting. Mr. Bertuna is also available to provide program and contract guidance support to the State to ensure that federal programs that currently support the State's broadband efforts are fully utilized.

2. TECHNICAL APPROACH

ICF identifies and solves complex problems for our clients. One way we accomplish this is by performing targeted assessments, gap analyses and SWOT analyses to understand and document the current status quo and match these findings to desired outcomes. By understanding how the results of these different assessments and analyses relate and connect to each other, targeted programs can be designed and implemented that will address and overcome the barriers to change or adoption.

Our technical approach hinges upon understanding—and the key to understanding is the clear communication of objectives. ICF recommends that within ten days of contract award, the Senior Program Director Broadband, the Program Manager, and the Project Leads, meet with the State to review and discuss project objectives/goals, requirements, and timelines. Clear, articulated objectives are critical to conducting effective, efficient assessments and open communication will remain a focal point of our execution throughout this effort.

ICF will manage the eight objectives based on the direction of the State regarding the timing, priority and interaction between the objectives. However, ICF will recommend to the State an approach that seeks to order the schedule of activities so that the results from the initial tasks inform and support the subsequent assessments and reports. While each deliverable will stand on its own to provide the State with the necessary information and recommendations, logically ordering the timing of these objectives and ensuring that lessons and findings from each deliverable are built into future deliverables across each objective will result in a comprehensive assessment. This building and sharing of lessons and findings will also occur across activities being conducted simultaneously as the results from all the objectives work together to support a next generation broadband solution to all West Virginians. The following high-level project schedule indicates the objectives that can be conducted concurrently and the outputs that will become inputs for other objectives.

The following pages provide a detailed explanation of how ICF plans to accomplish each of the objectives as delineated in the RFP. Objectives 1 through 7 include a list of specific deliverables for each objective. These deliverables reflect the recommended list of products to successfully fulfill the requirements of each objective. Upon completion of the initial assessment, analysis or plan for each Objective, ICF recommends follow-on monitoring and oversight. This will provide the State with timely and updated situation analysis. The State may request additional activities related to ongoing monitoring assessments, training, technical assistance, outreach or other support. For our technical approach, ICF has captured these activities under advisory services in Objective 8; however, ICF will work with the State to determine the most appropriate Objective under which to carry out these follow-on activities.

A. Objective 1 – SWOT Assessment [RFP reference 2.4.1]

An assessment of current broadband efforts across the State's governmental entities with regard to strengths, weaknesses, opportunities and threats.

Objective/Scope

Large-scale broadband infrastructure projects take time to plan and implement, and must remain economically viable over their designed service life, which is difficult as broadband technologies and broadband applications are continually evolving. Because technology evolution easily outpaces the implementation of the supporting physical infrastructure, regular evaluations of the benefits provided by the infrastructure need to be undertaken to address the changing marketplace, mitigate unforeseen risks, and make certain the network infrastructure remains economically viable and socially relevant. ICF created the Broadband Project Assessment Review protocol (BPAR), a specialized evaluative framework, to assess how closely broadband infrastructure projects meet specific program compliance and reporting requirements. ICF will use this BPAR protocol to conduct a SWOT assessment for each of the relevant federally-funded and state broadband projects.

Measurable Activities/Planned Effort

Using the BPAR protocol, ICF will conduct a thorough review of current broadband efforts across the State's governmental entities, as well as those being funded by other federal or state governmental entities. ICF will interview key stakeholders and complete desktop reviews of public documents, project plans, and reports. The BPAR protocol is organized to achieve these five objectives:

- Evaluate the current broadband network infrastructure plans against the original project specification, including any approved changes introduced since the project's start.
- Assess financial records, contracts, project plans against the original project specification, including any approved changes introduced since the project's start.
- Implement a system for desktop monitoring of project policies, procedures, financial records, project documentation, change management systems, and risk management systems.
- Apply 'lessons learned' and best practices to provide additional guidance and insights when evaluating the various aspects of the project's performance.
- Be flexible to accommodate special needs of the specific assessment scope.

The first two of these BPAR objectives form the two-step approach that ICF will use to evaluate each project.

Step 1: Broadband Network Infrastructure Assessment—The network infrastructure assessment is a multifaceted review of the tactical objectives of the broadband project. These facets include a review and evaluation of the overall project design, infrastructure performance, the project’s engineering practices, the change and risk management processes, and the as-built documentation records and processes. The reviews are compared to the initial program’s specification and objectives, plus all the approved changes made to that initial plan. This evaluation will involve the project’s sponsors, the key stakeholders, and other responsible members from the various supporting organizations (contractors, engineering firms, environmental companies, and others, as necessary). ICF will:

- 1) Gather and review project documentation:
 - Review full network design from a construction performance perspective and address changes to the project’s scope or definition.
 - Review project’s plans and records for equipment purchase and support.
 - Review construction practices, especially if materially changed from proposed plan, including changes to routes, any switches between aerial and underground construction strategies, conduit strategies, or changes made to accommodate environmental concerns.
- 2) Evaluate the physical infrastructure and the processes involving both change and risk management.
- 3) Assess impact to schedule baselines, cost baselines, or other financial or scheduling impacts.

Step 2: Finance and Management Assessment—The objective of the Finance and Management Assessment is to assess how well the project is adhering to its outlined goals, costs, and timelines. This includes identifying gaps in management processes, management policies, reporting guidelines, and timely completion requirements. A specific focus is placed on project policies and procedures for fund distribution. ICF will:

- 1) Gather and review relevant project reports and application information:
 - Review purchasing, payables, payroll policies and reports.
 - Review and assess for compliance to Davis-Bacon and ARRA/NTIA post-award reporting requirements.
- 2) Evaluate and compare financial and implementation goals against cost baselines, project objectives, and schedule baselines; highlight any policies or procedures that are not clear.
- 3) Compare initial cost and schedule baselines to the current revisions to ensure that any changes are well documented and well supported.
- 4) Evaluate change management and risk management policies to assure that change control and risk registers are kept current and relevant to the project as it moves from the planning phase through the implementation phase and onto the operations and maintenance phase.

Deliverables

ICF will deliver a SWOT analysis that will objectively identify strengths and weaknesses, find, evaluate and prioritize opportunities and realistically identify threats on the following:

- 1) Projects awarded through the ARRA NTIA BTOP program.
- 2) Projects awarded through the ARRA USDA BIP program.
- 3) Projects funded through other federal programs (e.g., FCC Rural Health Care Pilot Program).
- 4) West Virginia State broadband mapping initiative funded through NTIA SBDD program.
- 5) Projects that are funded through the West Virginia Broadband Deployment Council.

- 6) Other significant regional and local broadband projects.

B. Objective 2 – Federal Program Assessment [RFP reference 2.4.2]

As assessment of federal programs and policies, including those at the NTIA, the FCC, and USDA that will impact the State and its broadband plans.

Objective/Scope

ICF will provide an assessment to enable the State to understand existing federal programs and policies. There are currently many programs that have, or could have, an impact on the State's ability to effectively deploy broadband infrastructure and applications that utilize that infrastructure. ICF is experienced in working with the requirements of these programs and will provide an assessment that will include a review of the National Broadband Plan and Map; USF reform, including eRate and rural health care; ICC reform; and the various proposals regarding spectrum allocation. By understanding how current projects funded by BIP and BTOP will serve to advance the State's goals, the State can focus its future efforts on filling the gaps in service by leveraging additional federal telecommunications programs. ICF experts will also provide an assessment of spectrum issues as they relate to West Virginia.

ICF will review the FCC and Veteran's Administration telehealth programs (West Virginia recently received an almost \$10 million rural health care grant from the FCC); the USDA Community Connect program; and the Department of Homeland Security program for public safety interoperability. In addition, ICF will analyze private sector opportunities like the Connect to Compete Initiative, a program designed to help residents improve outcomes in education, health, and employment through broadband opportunities and technology solutions. West Virginia will benefit from ICF's knowledge of federal programs and ability to determine how these programs interrelate and impact the State.

Measurable Activities/Planned Effort

The general approach ICF will take in completing this assessment will include a complete federal program assessment and performing a gap analysis. As part of this analysis, ICF will:

- Assess the National Broadband Plan implementation and its impacts to West Virginia.
- Incorporate results of the BTOP project and compliance review assessment from Objective 1.
- Examine current USF, NTIA and USDA broadband programs that impact West Virginia carriers.
- Assess where existing federal/State funding is underutilized.
- Determine gaps left by federal programs to develop targeted State programs that will meet State goals and also support deployment/adoption of broadband technologies to targeted groups, populations, and/or geographic areas within West Virginia.
- Evaluate and assess the data and information gathered on eligibility and participation in the federal programs for their strengths and weaknesses.
- Incorporate information captured as part of the Objective 1 SWOT analysis.

Deliverables

ICF will provide a comprehensive assessment report of the major federal programs and policies related to broadband in order to ensure that State programs can be designed or structured to effectively target

gaps, capitalize on opportunities/strengths and minimize threats/weaknesses. ICF will periodically update this assessment.

C. Objective 3 – Small Business Development [RFP reference 2.4.3]

Assisting in the development and implementation of a plan/strategy focused on increasing access and adoption of broadband around the State's small business and entrepreneurial communities to include benchmarking, analysis, a detailed work plan and measurable results.

Objective / Scope

ICF proposes developing a targeted West Virginia Small Business Broadband Development Program, needed for small businesses to successfully access and utilize broadband infrastructure. The objective of this program is to increase the number of new small businesses and strengthen existing small businesses in West Virginia by leveraging the broadband infrastructure currently being deployed throughout the State. Approximately 90% of all West Virginia companies have 20 or fewer employees. Strengthening these small businesses can be very successful in creating much needed jobs and in developing stronger industry sectors in West Virginia. The preliminary, not seasonally adjusted, unemployment rate for West Virginia was 7.9% in September.⁴ During the same month, a total of 62,000 people were unemployed in West Virginia.⁵ Leveraging the deployment of broadband to strengthen and grow small businesses throughout West Virginia offers a great opportunity to employ much of this ready workforce that is vital to the growth of the State economy.

In order to identify the barriers to broadband adoption and use, as well as identify areas of potential growth for small businesses, ICF will work with the West Virginia Small Business Development Center (WVSBDC) to construct an economic and labor market assessment and plan. The Small Business Broadband Development Program will then use the plan to assist in establishing technology related pilot programs customized for specific State regional economies. These programs could be deployed by the State under a sustainable and replicable program framework.

Measurable Activities / Planned Effort

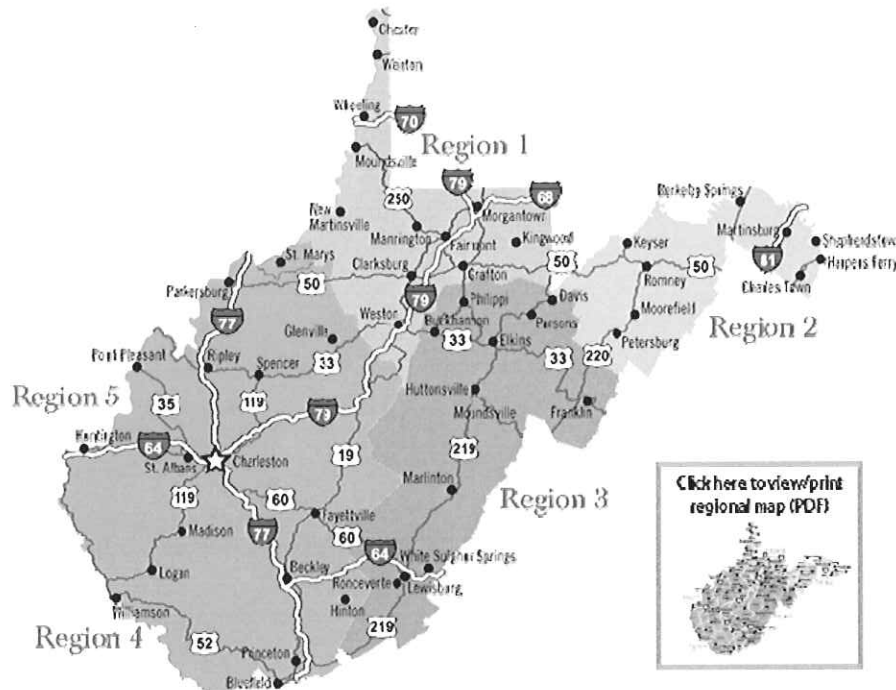
The general approach ICF will take in completing this assessment will include a five-step approach. This five-step approach is illustrated in Figure C-2.

Step 1: Economic and Labor Market Assessment. ICF will complete an economic and labor market assessment to determine baseline economic and labor market metrics for each of the five economic development regions in West Virginia. These regions will be consistent with the five economic development regions identified and used by the West Virginia Department of Commerce, as shown in Figure C-1 below. The assessment will consist of an industry sector analysis, an occupational sector analysis, a small business assessment, and the identification of employers and workforce stakeholders. ICF will also work with stakeholders in each of the West Virginia regions to collect input on the economic trends in the region, major developments that may be proposed, and other relevant information. This information will be incorporated into the labor market assessment.

⁴ Bureau of Labor Statistics (BLS), Regional and State Employment and Unemployment (Monthly) news release, 10/21/2011.

⁵ *ibid*

Figure C-1



Step 2: Identify Markets. Utilizing the economic assessment and labor market analysis, ICF will determine markets that present opportunities for small businesses and related regional economic opportunities and workforce development needs. This step will include the development of a gap analysis, supply chain analysis, and cluster analysis. The gap analysis will determine where “gaps” in labor supply and skill sets are located for existing and expanding business markets. A supply chain analysis will identify the supply of goods and services that major industries in West Virginia utilize and the extent to which these goods and services are supplied by West Virginia firms. This will identify opportunities for small businesses to engage in the supply of goods and services to these major State industries. The cluster analysis will identify clusters of industries in West Virginia where agglomeration economies have developed based on labor market, natural resource, or other locational advantages. These clusters often present opportunities for growth and further development, particularly for small businesses.

Step 3: Create Regional Economic Impact Assessments. Utilizing the work completed in the previous step, ICF will demonstrate how broadband deployment can impact regions of the State. This step will monitor, assess, and influence broadband infrastructure deployment, adoption, affordability, and sustainability for West Virginia through the use of the State’s broadband mapping efforts. This will allow WWSBDC to monitor and measure broadband availability and speeds in order to ensure that small businesses have the access and speeds they need. WWSBDC will coordinate with the State broadband mapping program to ensure an accurate broadband map and determine if a targeted gap analysis is needed. This step will also assess and evaluate existing small business and economic development resource websites to perform gap analysis and determine best practices. The analysis could determine steps needed to create a small business web portal for information, education, community development, and business support capabilities. The assessment would build on previous work and

lessons learned from current small business development efforts, including the West Virginia Small Business Technology Education and Competitiveness Initiative and WVHTC Affiliate Program.

Step 4: Develop Measurable Outcomes. ICF will develop outcomes that can be used by West Virginia and other stakeholders to determine and develop policies that will maximize small business development and job creation. Assessments and programs will incorporate information from the SWOT report from Objective 1 and the identification of regional opportunities and needs, in order to design and deliver end-to-end measurable and replicable programs and address the current barriers of broadband adoption. The regional economic impact assessments will be measured by utilizing a state-of-the-art regional economic model. Economic impact studies will be completed for each assessment identified in Step 3 and the results, or measurable outcomes, for each economy will be analyzed. The outcomes will include all the major economic, demographic, and fiscal metrics, including number of jobs created by industry sector and occupation, output (or sales) generated, gross regional product, income generation, cost of production, productivity, demographic and labor market changes, state and local tax revenue generation, and others.

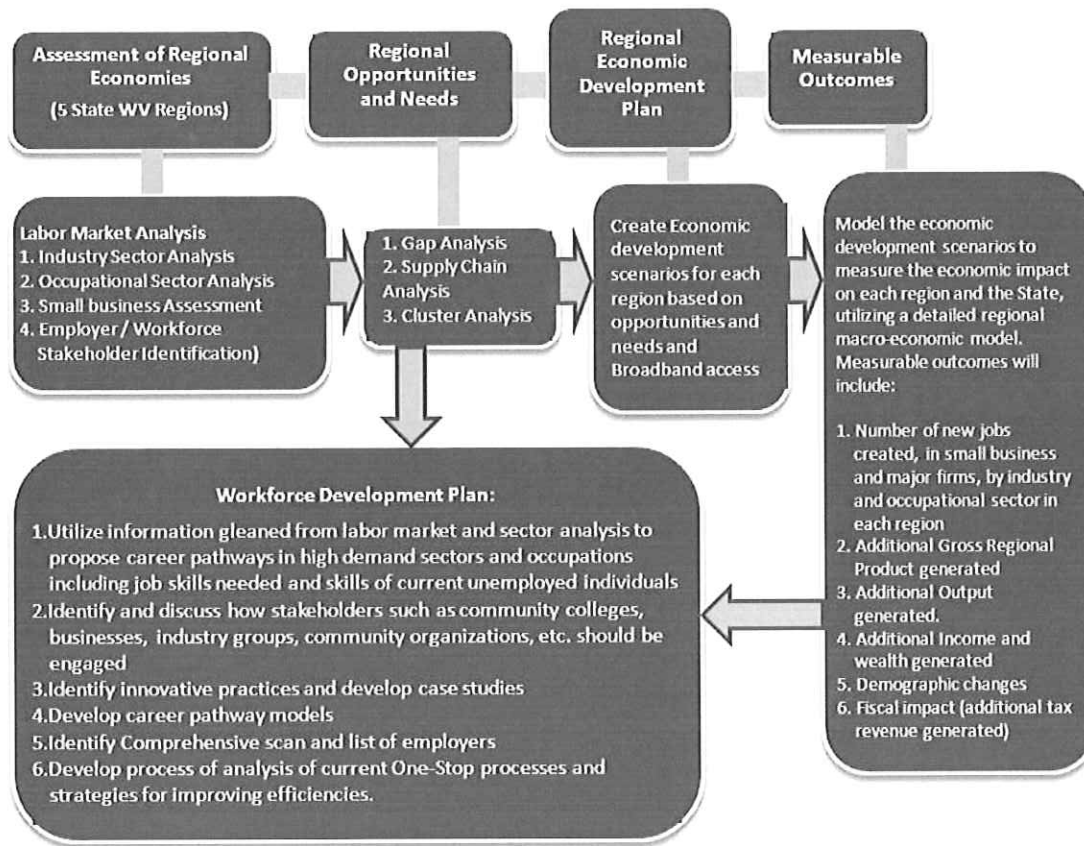
ICF proposes to use the REMI Policy Insight+ model (REMI PI+) to complete this step in the study. ICF economists have many years of experience in the use of the REMI PI+ model, completing numerous economic studies. The REMI PI+ model is one of the most advanced and widely accepted regional economic models in use and includes hundreds of detailed industry and occupational sectors, incorporating the complete inter-industry relationships. The REMI models are also dynamic; they demonstrate economic changes over time, allowing firms and individuals to change their behavior in response to changing economic conditions and singular events, such as the deployment of broadband. Finally, the REMI PI+ model includes a spatial dimension of the economy. This incorporates the productivity and competitiveness benefits due to the concentration, or agglomeration, of economic activity in cities, metropolitan area, and regions, i.e. the clustering of industries. For example, the concentration of the chemical industry in West Virginia, or the location of universities and colleges in particular regions of the State, increases productivity and competitiveness in those regions for particular industries, based on inter-industry relationships. This locational advantage helps to attract and grow other firms and industries that are dependent on the labor force, production, supplier goods and services, and technology that are clustered in those regions. The REMI models are fully customizable and built by regions, consisting of counties, groups of counties, states and regions. The outputs of the REMI PI+ model include thousands of economic, demographic, and fiscal metrics, as identified in Step 4.

Step 5: Develop a Workforce Development Plan. The primary outcomes expected from the West Virginia Small Business Broadband Development Program include significant jobs creation, promotion of economic recovery, and expansion of business opportunities, and assistance to those most impacted by the current recession. In the changing global economy technology will in fact play a crucial role towards helping the program administrators attain these goals, and will be integral to re-training dislocated workers. The activities of this step in the study include the following:

- Utilize information gleaned from labor market and sector analysis to propose career pathways in high demand sectors and occupations including job skills needed and skills of current unemployed individuals.
- Conduct employer outreach to facilitate individuals' job search, job placement, and job retention.
- Solicit feedback from employers and subject matter experts to ensure that educational programs and curriculum are addressing competencies required and other workforce needs.

- Support employment and training connections among educators, students, and employers.
- Improve Job Placement Strategies at County One-Stop Shops.
- Conduct assessment of current One Stop program intake, assessment, goal setting and case management documentation processes.
- Compare current practices with best practice models on One-Stop and Case Management efficiency.

Figure C-2: Workflow for West Virginia Small Business Broadband Development Program



Upon completion of this Plan, the State may request additional activities related to further research, training, technical assistance, outreach or other support. ICF will work with the State to address these needs as part of the advisory services discussed under Objective 8.

Deliverables

The following are the proposed deliverables associated with the targeted West Virginia Small Business Broadband Development Program:

- Economic and labor market assessment. This will include baseline data and projections by industry sector, occupations, and a small business assessment.

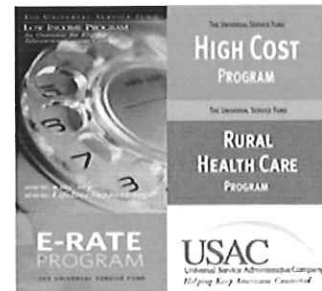
- Gap analysis of the regional labor forces.
- An analysis of supply chains within the State and industry clusters.
- Assessment and evaluation of existing small businesses and economic development resource websites to perform gap analysis and determine best practices.
- Identification of steps needed to create a small business web portal for information, education, community development, and business support capabilities.
- Economic impact assessment and subsequent measurable results, such as number of jobs created, income generation, output, gross regional product, demographic impacts, State and local tax revenue generation, and others.
- Identify innovative workforce development practices and develop case studies.
- Comprehensive scan and list of employers.
- Workforce Development Plan.

D. Objective 4 – USF & CAF Analysis [RFP reference 2.4.4]

An analysis of the Universal Service Fund as it relates to West Virginia’s current community of service providers and in anticipation of forthcoming changes at the federal level/initiation of the Connect America Fund to include potential impact on West Virginia’s citizens of the forthcoming changes and solutions to lessen any anticipated impact.

Objective/Scope

Since West Virginia is a large recipient of USF funding through its existing rural wireline and wireless telecommunications providers, USF reforms will have a major financial impact on (1) the former Verizon telecommunications network and operations recently purchased by Frontier, (2) Frontier’s previously existing service areas in the Eastern Panhandle and Mercer County, and (3) rural service providers. West Virginia regulators and representatives will need to understand new opportunities and minimize negative impacts by taking proactive steps, considering the impact on the rural provider, as well as the consumers and economies they support. ICF’s USF reform assessments include both a State/Market Risk Analysis and a Service Provider Risk Assessment to evaluate the potential impact on West Virginia’s citizens and identify solutions to lessen any anticipated impact.



Measurable Activities/Planned Effort

The approach ICF will take in completing this assessment will include:

- 1) Complete federal and State USF SWOT assessment and gap analysis:
 - Prepare desktop assessment of USF reform implementation impacts for West Virginia.
 - Identify current USF program usage by program and highlight impacted West Virginia carriers.
 - Assess where existing federal/State funding is underutilized.
 - Design and complete a survey or interview State carriers (with State permission) to determine a risk profile for USF reform impacts.
 - Prepare a State and carrier risk profile assessment.
 - Prepare gap analysis for State USF and broadband funding programs.
 - Assess current State monitoring, mapping and reporting capabilities for USF and reform impacts.
- 2) Validate data and monitor findings:

- Design and implement a dashboard monitoring and reporting process to monitor ongoing activity and connectivity.
- Provide recommendations for improvements to State broadband map and monitoring.
- Map eligibility and participation data for federal/State programs.
- Review gap analysis and best practice adoption programs in working session with State designees and discuss potential next steps.
- Determine gaps left by federal programs and recommend targeted State programs that will meet State deployment/adoption goals for targeted groups, populations, and/or geographic areas within West Virginia.

Deliverables

ICF’s specialized assessment of USF and CAF issues will include the following deliverables:

- Design of survey or interview of State carriers.
- State/Market Risk Analysis and a Service Provider Risk Assessment.
- Gap analysis of West Virginia best practices for State USF and broadband funding programs.
- Assessment of current State monitoring, mapping, and reporting capabilities for USF and reform impacts.
- Dashboard monitoring tool to evaluate activity and connectivity.
- Map of eligibility and participation data for federal/State programs.

E. Objective 5 – State Broadband Map Analysis [RFP reference 2.4.5]

A review and analysis and report on the current State broadband map with regard to national standards, best practices, levels of granularity and inclusion of all current broadband technologies being offered in West Virginia (wire line, wireless, fiber, satellite) in order to monitor, assess and influence broadband infrastructure deployment, affordability and sustainability.

Objective/Scope

The West Virginia State broadband map is a powerful tool that can be utilized by broadband stakeholders, consumers, and State policy makers. The map is very visible—in many ways the primary advertisement for the State’s technological infrastructure—and feeds into many other broadband objectives in this RFP. From USF distribution to linking community anchor institutions to the network, broadband adoption and access is primarily a spatial challenge, and the West Virginia broadband map offers a spatial understanding of the situation. Since the launch of the West Virginia State broadband map in early 2011, stakeholders have been able to visualize and understand broadband access on a statewide and individual address level. Statewide data on Internet provider competition, type of service, technology, and connection speed is now available to anyone with an Internet connection.

With this mapping tool, West Virginia has taken an important first step toward providing stakeholders with actionable and readily understandable data about the State’s telecommunications infrastructure. Now that the National Broadband Map and other state broadband mapping efforts have been published on the web, West Virginia’s current functionality should be compared, analyzed, and augmented to reflect changing consumer, industry, and policy needs.

The West Virginia Office of GIS Coordination, Division of Homeland Security and Emergency Management, and the Statewide Addressing and Mapping Board produced the West Virginia Broadband Map—a resource for broadband stakeholders in the State. The map currently displays data on:

- Total number of providers.
- Broadband service availability by technology type (cable, fixed wireless, mobile wireless, etc.).
- Areas without broadband service.
- Maximum download and upload speed.

These layers provide a context for markers that indicate the presence of community anchor institutions.

Measurable Activities/Planned Effort

ICF will work with map makers and users to:

- Review and analyze national standard and best practices for collecting underlying data.
- Determine gaps in the current broadband map's analytical display features.
- Introduce new sources of data that improve the accuracy of service availability and capacity displays on the broadband map.
- Improve reporting reliability by establishing primary reporting dependence on independently measured empirical data.

ICF will compare West Virginia's current mapping capabilities with other state efforts and best practices which utilize mapping efforts which are relevant to the State of West Virginia. The report will also analyze how the data and capabilities of the national broadband map compare to the West Virginia State map.

ICF will include an analysis of how financial data could be incorporated into the mapping tool. Data on USF recipients, eligible areas, and potential changes once the Connect America Fund is implemented is one example of the kind of data enhancement ICF can provide. The report will include a detailed summary of the type and structure of such supplemental datasets.

The report will be designed to assess the map's ability to influence broadband infrastructure, deployment, affordability, and sustainability. ICF will seek to analyze all concerns raised in this RFP through the lens of geospatial analysis. Layering broadband availability data, demographic data, and financial data may allow the State to make well informed and easily measurable policy decisions.

Armed with a thorough report and solid underlying data sets, West Virginia can make the best policy and planning decisions possible. ICF's broadband experts understand the issues and possible deficiencies associated with each class of reporting data and their impacts on the future state of broadband. Improving the information available on the State's broadband mapping website can be made much more useful by enhancing data already available, how it is viewed, and by removing to a large extent the effects of reporting and sample biases in the underlying data sets. This will enable West Virginia to create effective and well managed action plans to assure all its citizens have fair access to affordable and sustainable broadband service.

Deliverables

ICF will produce a report that will focus on the value of leveraging data and best practices learned from other mapping efforts, developing mapping tools to facilitate decision making, and structuring available data to be more articulate and flexible, supporting the State's changing communications needs.

The report will focus on four main deliverables:

- Complete initial state broadband map assessment and gap analysis.
- Test compliance of NTIA standards and assess potential ways to improve upon those standards for the State's benefit.
- Review the current display and usability of the West Virginia map compared to best practices.
- Assess the underlying map data and collection methodology for purpose, effectiveness and completeness.
- Assess the potential addition of pricing, competition, and other data to the map to leverage utility to the individual consumer and users of the State broadband map.

Layering broadband availability data, demographic data, and financial data will allow the State to make well informed and easily measurable policy decisions. ICF will tailor this report to highlight the West Virginia broadband map's areas of strength and areas of improvement.

F. Objective 6 – K-12 Broadband Access and Adoption [RFP reference 2.4.6]

An analysis of West Virginia's current school-based (K-12) broadband access and adoption rates to include potential solutions to any identified shortcomings.

Objective/Scope

The State's K-12 school system possesses a strong history in leveraging the benefits of educational technology. As a result, the K-12 education system holds the greatest potential to utilize better broadband access and applications. Students and educators in West Virginia are familiar with learning and teaching with digital technologies and resources found online; they will be quick to scale up when provided adequate broadband access. However, currently many of the State's online teaching, learning, assessment, and professional development resources are of limited usefulness to educators and students simply because of limited or inadequate broadband.

The ultimate goal for the use of broadband is to create positive outcomes for education in West Virginia. High-speed Internet availability provides access to high-quality digital resources, interactive learning tools, advanced small group collaboration, and regional connectivity—allowing students and teachers to spend more quality time in relevant learning environments. Reliable broadband access and appropriate educational adoption programs have shown in best practice studies to positively impact the learning environment, student achievement, and teacher effectiveness by creating schooling structures that are better adapted to the global digital society and economy we live in today. Emerging social network capabilities address social isolation by connecting rural teachers and students with information from other educators and experts from around the world. This improved communication will provide an extended net of interaction between the school and home—all focused on promoting student learning.

Measurable Activities/Planned Effort

The general approach ICF will take in completing this assessment will include:

- 1) Complete initial school assessment and gap analysis.
- 2) Validate data and monitor findings.
- 3) Address broadband adoption program gaps.

ICF’s planned efforts will build upon the educational regulation and infrastructure that already exists in West Virginia. For example, although the RFP only mentions K-12 educational facilities, ICF could provide related postsecondary systems, community colleges, West Virginia University, and Marshall University, in the report as a supplemental option. There may be areas in which the capabilities of higher educational facilities can be leveraged with K-12 facilities to produce a stronger result.

ICF will use the four implementation levels defined by West Virginia Department of Education’s (WVDE) to determine access and adoption described in the RFP. This framework will be used to more easily collaborate with the personnel at the State, WVDE, Regional Education Service Agencies (RESAs), and counties to determine fairly accurate measures of broadband access for at least three of these levels: state, north/south POPs, and school districts. The number of access points and capacity of the network at the building level within districts is also a measure that should be possible. Identifying the number of devices at the classroom level is more difficult and relies on self-reported data. Determining *how* those devices actually use bandwidth (e.g., for using e-mail vs. interactive video or streaming media-based content resources) is beyond the scope of this RFP, but a general level of broadband capacity required for reported students, faculty and programs will be estimated.

Table F-1 depicts ICF’s preliminary evaluation of how the implementation levels correlate to difficulty of survey and measurement:

Table F-1

Implementation levels	Access		Adoption	
	Anchor Institutions	Others ¹	Anchor Institutions	Others
Level 4: state POPs		●		●
Level 3: to N/S POPs		●		●
Level 2: Connection to WAN ²	●	● ³	●	●
Level 1: Internal LAN	●	●	●	●

- - Probably known now; should be verified
- - Potential for relatively accurate measure through technical data; verify through technical means if possible
- - Potential for loose measure through self-reported data
- - Extremely difficult to measure; beyond the scope of the RFP

¹ Others refers to additional K-12 institutions that are not identified as anchor institutions. According to the map of West Virginia Schools from the Division of Homeland Security and Emergency Management, not all schools in the state are anchor institutions because not all counties have anchor institutions. Every county has schools, however.

² Connections to the LAN should be reported in terms of actual bandwidth capacity (e.g., T1, DS3, Broadband 10MB to 100 MB) at the building level, not simply whether a connection exists or not.

³ According to the map of West Virginia Schools from the Division of Homeland Security and Emergency Management, there are 5 counties that do not have K-12 Anchor Institutions.

To streamline costs and provide the State with actionable advice and recommendations, ICF’s analysis will focus on levels 2, 3, and 4.

Access at Implementation Level 4, from the State POPs to the intended destination is likely known and should be available from the WVDE or the State. It is also likely that the State can determine the amount of traffic or percentage of the available bandwidth that is used during given time periods. Examples may be annual, during the school year, monthly, weekly, and possible peak periods. This gross measure of level of use may substitute for adoption in this case as determining categories of adoption at this level are likely impossible. It is unlikely that adoption level data for different resources is—or is even feasible—to collect at this level.

Access at Implementation Level 3, from the school/county aggregation point to the North/South POPs is also likely known and should be available from the WVDE. Adoption is likely to be harder to determine at this level, even at the gross level of use described for Level 4, since as the level of control over access and adoption and the data required to measure it is distributed from the state level—where infrastructure and skilled personnel are available—to counties and ultimately schools, the measure relies on accessing data from systems and/or personnel who may not have as much control or training as those at the state level. The most knowledgeable staff at this level may be at the 8 RESAs, as some counties may not have access to trained network personnel—trained to at least at the level of completing some certificated program rather than on-the-job experience. It is likely, however, that this data will ultimately have to be provided by county network personnel or validated in a separate survey or site visit.

Access at Implementation Level 2 requires determining the actual bandwidth capacity at the building level. While this information should be able to be determined through reports of access to bandwidth at Level 3 and the actual number of sites, the chance for error is greater at this level. Many network administrators should be able to provide this information, but steps should be taken to verify the accuracy of these reports to ensure that all sites that draw on the bandwidth are accounted for. Some concerns at this level are:

Adoption at Implementation Level 2 can be aggregated through different reporting mechanisms, but for efficiency, is likely to be gathered from a combination of network usage statistics and self-reported data. Data should also be collected from curriculum and instruction, assessment, virtual school, and professional development staff (when available—in small counties, these will often be the same person)

to determine the number and type of subscriptions and services used in these departments. While this data is less accurate for determining actual adoption, it does give a measure of the potential for adoption if fully implemented.

Deliverables

- Complete an initial assessment and gap analysis of West Virginia schools broadband data and school connections.
- Desktop review of BTOP connection assessment reports and plans.
- Review of available State school level data for broadband capabilities, compare to federal school database information and State broadband map.
- Design and complete a survey to validate information, common definitions and facilitate update of relevant state and federal school databases.
- Design and implement a dashboard monitoring and reporting process to monitor ongoing activity and connectivity.
- Recommendations for improvements to State broadband map and monitoring for State officials.
- Review gap analysis and best practice adoption programs in working session with State designees and discuss potential next steps.
- Target specific school system review for additional broadband coverage and funding support as requested.
- Assess strategic communications program for West Virginia broadband adoption program highlight key accomplishments and success stories.

G. Objective 7 – Additional Funding [RFP reference 2.4.7]

Analysis of opportunities to leverage additional funding with State-based resources around the development, deployment and adoption of broadband technologies to include specific market opportunities and technical assistance around addressing any identified opportunities.

Objective/Scope

As current broadband projects are completed, there will be opportunities to leverage State funding to gain additional resources for the continued deployment and adoption of broadband in the State. ICF will work with the West Virginia Development Office to:

- Explore opportunities for additional funding for specific programs including, but not limited to, economic development initiatives, small business programs and information portals.
- Explore leveraging State funds to secure USF, CAF or other federal program dollars for targeted service area or targeted user groups in the State.
- Review previous and existing efforts and build on those that are viable.
- Conduct an exhaustive review of potential funding sources available including federal grants, loans, other state funding and foundation grants.

Measurable Activities/Planned Effort

Based on the SWOT analysis described in Objective 1 and the economic study described in Objective 3, ICF, working with the State, will determine what programs could be developed to further West Virginia's broadband goals. After identifying potential programs, ICF will use its network of contacts at the federal level, including those at the Veterans Administration, the FCC, USDA, Commerce, Health and Human

Services, and Housing and Urban Development to determine if any of the proposed programs are eligible for federal funding. ICF has experience writing federal grant applications and can assist West Virginia in these efforts. ICF will also explore opportunities where the Department of Commerce can partner with the Departments of Education, Health and Human Resources or other departments as appropriate.

Additionally ICF will use contacts at private companies/foundations including those associated with Verizon, Comcast, and Time Warner as well as national and regional foundations including the Benedum, Ford, and Gates foundations, to explore the possibility of private funding for these programs. ICF staff have led successful application processes and secured funding for programs that have furthered state and local goals.

Possible Market Opportunities

Based on the report produced, specific programs can be modeled. For example, the development of a Small Business Information Portal, a full service website for small businesses. This would build upon previous work and lessons learned from current small business development efforts, including the West Virginia Small Business Technology Education and Competitiveness Initiative and WVHTC Affiliate Program. With State approval, ICF would:

- Develop a Small Business Information Portal strategy and implementation plan.
- Develop education, information dissemination and marketing programs.
- Develop a social media network strategy to help create a community among small businesses within the regions and throughout the State.
- Develop an e-commerce tool-kit/electronic mall framework tool-kit for small business and community use.
- Highlight exceptional small businesses in West Virginia and how the use of technology was instrumental in their success.

Another potential program could involve the Boy Scout Jamboree occurring at the Summit Bechtel Family National Scout Reserve in 2013. Building on the regional economic data gathered in Task 3, ICF would have the needed information to develop a targeted small business broadband deployment program. The program could include:

- Analysis of broadband availability in the region.
- Analysis of the impact of the economic event, in this case the Boy Scout Jamboree.
- Coordination with the regional economic development authority (Region 4) determine uses of broadband to reap maximum rewards prior to and during the event.

Each example could be further developed and pursued for outside funding from foundations who share the common goal of small business and economic development in West Virginia.

Deliverables

ICF will compile a report of potential programs, funding sources and next steps for the State to review. Once the State decides which programs to pursue, ICF can work with them on the implementation of these programs.

H. Objective 8 – Advisory Consultancy Services [RFP reference 2.4.8]

Provide advisory consultancy services for the development, implementation or refinement of State broadband projects and programs focused on development, deployment or adoption of broadband technologies to include an independent and objective analysis of existing plans and operational strategies around same.

ICF will be West Virginia’s trusted advisor on broadband. ICF’s multi-faceted experience with broadband deployment and adoption—coupled with a deep understanding of the State—allows ICF to provide an independent and objective analysis of the State’s broadband projects. ICF’s experience will help connect the dots on broadband issues including telehealth, rural education, workforce development and retraining programs. West Virginia will be able to rely on ICF to ensure that the funding for broadband deployment and adoption in the State is expended in a coordinated and efficient manner. This includes funding from the FCC Rural Healthcare program; the USF High Cost program, CAF, e-Rate, and Low Income programs; BTOP deployment and adoption funding; BIP funding; and any other federal, state or local funding applied to broadband infrastructure or adoption efforts. ICF does not have any financial stake in the State’s broadband effort, but does have extensive knowledge of broadband and specific State’s needs.

Specifically, ICF could provide further advisory services on each Objective identified in this proposal, including, but not limited to the following:

- **Objective 1 – SWOT Assessment:** provide bi-annual updates to the SWOT Analysis, BPAR and other reports to ensure that the projects remain on track and in compliance.
- **Objective 2 – Federal Program Assessment:** provide biannual updates to the report by:
 - Performing on-going regulatory assessment, policy development, and program management to optimize, modernize, and/or refocus existing State programs.
 - Providing ongoing FCC, NTIA and RUS monitoring, regulation updates, mapping support and technical assistance.
 - Providing technical assistance for training, outreach, and education to maximize eligibility and participation in federal and state programs.
 - Providing engineering, finance, and grant writing support for targeted grant applications for federal funding.
- **Objective 3 – Small Business Development:** support the on-going activities of the West Virginia Small Business Broadband Development program by:
 - Developing a training curriculum for the occupations that are forecasted to be in demand.
 - Engaging community colleges, employers, and other stakeholders to create training programs for high demand occupations.
 - Working with State agencies to develop training programs and placement services for unemployed workers to transition them into the workforce and into jobs.
 - Performing further economic and fiscal analysis to determine the impact on the state of occupational training and placement of the unemployed workforce into high-demand jobs.
- **Objective 4 – USF and CAF Analysis:** continue to address State program development, modernization, and management by:
 - Interviewing designated West Virginia representatives to outline key State broadband priorities and objectives.
 - Providing regulatory assessment, policy development, and program management skills to optimize, modernize, and/or refocus existing State programs to ensure their ability to serve current State interests.

- Providing adequate technical assistance for training, outreach, and education to maximize eligibility and participation in federal and state programs.
- Providing ongoing USF monitoring, regulation updates, mapping support and technical assistance.
- **Objective 5 – State Broadband Map Analysis:** refine and enhance State broadband map by:
 - Providing additional layers and supplemental data as requested by the State.
 - Designing and implementing mapping capabilities based on other tasks in this RFP (e.g., USF and other federal funding layers).
 - Performing target service area analysis for broadband access and adoption programs for anchor institutions, under served and un-served areas.
 - Designing specialized mapping and analytics for wireless broadband services.
 - Providing technical assistance to target user groups and State analysts.
- **Objective 6 – K-12 Broadband Access and Adoption:** address the broadband gaps identified in the report including:
 - Targeting specific school systems for additional broadband coverage and funding support.
 - Designing and providing targeted Technical Assistance for rural education adoption programs.
 - Assessing strategic communications program for West Virginia broadband adoption program highlight key accomplishments and success stories.
 - Coordinating with the community colleges, based on the assessments, to support small business adoption and work force management programs discussed in other sections of this proposal.
- **Objective 7 – Additional Funding:** support the implementation efforts of the State to obtain additional funding for broadband deployment and adoption efforts.

These are examples of what consultancy work ICF can do for the State of West Virginia to ensure the State continues to take advantage of the investments being made in broadband deployment and adoption. ICF International has the expertise, skills, knowledge and independence to help West Virginia maximize the effectiveness of the broadband investments and grow West Virginia's economy and improve the quality of life for its citizens.

3. PAST PERFORMANCE CITATIONS - REFERENCES

The references below showcase the ICF Broadband team’s multi-dimensional skills in the areas of broadband deployment, capacity building, and economic development. Most of these projects are referenced in the proposal above.

The table below provides a reference for finding the Past Performance Citations relevant to the sections highlighted below.

Section	ICF Project Description / Past Performance Citation	Page Reference
2.3.1. Industry and Policy Analysis: State and Federal Funding Analysis and Strategic Support	#1 - USDA / Rural Utility Service (RUS) Broadband Initiatives Program (BIP) Implementation	p. 39
	#2 - West Virginia First Broadband Initiative	p. 41
	#3 - Vermont Consumer and Business Telecommunications Survey	p. 43
	#4 - California Advanced Lighting Controls Training Program (CALCTP)	p. 44
	#5 - Mid-Atlantic Regional Collaborative (MARC) Green Consortium	p. 45
	#6 - USDA Rural Development Broadband Loan and Loan Guarantee Program	p. 46
	#7 - Broadband Expansion Project for the University of Arkansas	p. 47
	#8 - Support for the Assets for Independence (AFI) Program	p. 48
	#9 - Dane County, Wisconsin Infrastructure and Capacity Building Technical Assistance	p. 50
	#10-Neighborhood Stabilization Program Technical Assistance (NSPTA)	p. 51
2.3.2 Specialized Broadband Mapping	#1 - USDA / Rural Utility Service (RUS) Broadband Initiatives Program (BIP)	p. 39
	#11-Department of Veterans Affairs (VA) Burial Program and Policy Evaluation	p. 52
2.3.3 Strategic Communications	#1 - USDA / Rural Utility Service (RUS) Broadband Initiatives Program (BIP)	p. 39
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1. USDA/Rural Utility Service (RUS) Broadband Initiatives Program (BIP) Implementation

Overview:
ICF is assisting with the implementation of the Rural Utilities Service's ARRA-mandated Broadband Implementation Program, including application processing, policy development, satellite program support, GIS and mapping, technical assistance, and strategic communications.
Client:
U.S. Department of Agriculture, Rural Utilities Service
Value:
Contract Value: \$44 million
Key Staff:
Keith Montgomery, Don Bishop, Bob Dunmyer, Kevin McNichol, Jon Moriarty
Reference Point of Contact:
<ul style="list-style-type: none"> ▪ Deputy RUS Administrator: David Villano, 202-720-9554, E-mail: david.villano@wdc.usda.gov
Period of Performance:
<ul style="list-style-type: none"> ▪ 2009 – 2013
Description of Services/Relevance to the State of West Virginia:
<p>Under the scope of the BIP Program, ICF performed the following:</p> <ul style="list-style-type: none"> • Application Processing - ICF evaluated the technical and financial feasibility of over 2,200 applications for rural broadband projects covering middle mile, last mile, satellite, and capacity building. ICF designed a technical network review process to produce competent and objective assessments of proposed network designs based on both quantitative and qualitative methods. ICF evaluated each application to determine if: <ul style="list-style-type: none"> ○ The proposed network covered the indicated service area. ○ The proposed network was technically viable as a broadband network. ○ The proposed network could deliver the minimum broadband service. ○ The network design could deliver the speeds proposed to customers. ○ The project could be deployed in a reasonable timeframe if funded. ○ The construction and component costs were reasonable. <p>Based on ICF's review process, USDA selected and awarded 233 projects for funding. ICF continues monitoring support services as part of our Post Award support to USDA.</p> • Program Policy & Post Award Support/MAP Visits - ICF also provides policy support for the BIP Program through review and analysis of regulatory and programmatic requirements and the development of post-award monitoring policies and procedures. ICF continues to perform BIP Post Award support including reviewing compliance against policies and procedures, legal support, environmental reviews, Davis-Bacon training and compliance, network engineering support, financial reporting, and other ARRA compliance services. ICF's staff performs support (1) on-site with RUS staff, (2) through remote desktop monitoring programs and (3) in the field performing site visits with awardees. ICF has completed 50 BIP Management Assessment Profiles (MAP) and other site visits since 2009. • Satellite Program Support - During first of two BIP funding rounds, satellite broadband companies proposed launching new space segments and supporting ground station support facilities as a means to serve very rural customers that are beyond the economically viable reach of terrestrial broadband providers. The total for these proposals was \$1.5B, nearly half the program's total appropriation. ICF evaluated the in-orbit capacity of each of these companies, installation costs, installation capacities, previously underway space segment

upgrade plans, and existing marketing programs and service offerings. Apart from the enormous upfront costs, satellite-based broadband is also commonly referred to as "the broadband of last resort" by industry experts because of the technology's performance and application limitations. Through ICF's work, the total cost burden to the BIP program was reduced from \$1.5B to \$100M, a 93% reduction, while providing for more remote subscribers to be reached than were originally proposed, at lower subscription costs. The program did not require the launching of new satellites and was designed to provide broadband to subscribers whose monthly charges were on par with terrestrial broadband.

- **GIS & Broadband Mapping** –To support BIP, ICF provided enhanced analysis and reporting using internal databases, GIS reporting and mapping techniques. GIS technology was used to determine eligibility, overlap, demographic statistics and technical ability of broadband technologies proposed by applicants for their target markets. ICF also provided detailed maps of incumbents to support the efforts of RUS field staff to verify the status of existing broadband service. These series of processes automated consistent application review criteria including determining level of rurality (how far an application is from an urban area), overlap of geographic areas currently being served by existing service providers, and population and households served. ICF has provided both regular and ad hoc reports and analyses to support and clarify policy decisions or evaluations of targeted service areas. The team utilized ESRI's ArcGIS Desktop and ModelBuilder tools, and Python scripting language to create models and scripts to process application data. Additionally, maps of each application, full technical documentation, and metadata were created for the spatial layers and processes used to serve the program.
- **Technical Assistance Grant Program Support** - ICF worked with RUS to develop criteria for assessing applications for technical assistance funding. These applications proposed a variety of activities including the implementation and management of broadband adoption programs, the development of broadband network designs, and the execution of financial feasibility studies. After developing the evaluation criteria, ICF reviewed more than 50 applications for compliance with program rules, applicant capacity, and project feasibility. Based on ICF's review, RUS awarded a total of \$3.4 million to 19 technical assistance projects located throughout the United States.
- **Strategic Communications** - ICF's strategic communications charge for BIP was to create program awareness and disseminate information to applicants while also communicating progress to key stakeholders, such as Congress, state and local elected officials, and the general public. ICF developed and implemented a robust national outreach plan, assisting RUS with public awareness and information dissemination activities. We developed communication tools to help RUS assist first-time and small businesses applicants navigate the process, including online applicant guides, fact sheets, Web content, and supporting regional workshops. ICF's Creative Services department worked with USDA to develop brand identity design options incorporating USDA's logo to communicate the core message of the initiative. ICF produced two reports for BIP, including the "Connecting Rural America" report which received an "exceeds" rating from USDA during the quality assurance monitoring process for this contract. The reports were distributed to the White House, Congressional members, and posted on www.broadbandusa.gov.

ICF's budget increased commensurate with increases in the scope of work. Our flexibility in administering the program, including the ability to rapidly ramp-up operations was praised by the Undersecretary for Rural Development in a [letter](#) sent to the Government Accountability Office.

2. West Virginia First Broadband Initiative

Overview:

The West Virginia First Broadband Initiative was responsible for the design of four fiber-to-the-home broadband networks and public-private-partnerships with three communities.

Client:

Universal Telecommunications, Inc. (UTI)

Value:

Project budget phased over three years:
 Wood County Local Community Public-Use Network (LCPN) - \$250,000
 Beckley LCPN - \$350,000
 Bluefield LCPN - \$150,000
 West Virginia Middle Mile Assessment - \$75,000

Key Staff:

Keith Montgomery

Reference Point of Contact:

- Chairman, UTI: H. Brian Thompson, Phone: 703-917-0606, Address: 1950 Old Gallows Road, Vienna, VA 22182 E-mail: HBT@uti.com

Period of Performance:

- 1/2005 –3/2008

Description of Services/Relevance to the State of West Virginia:

The West Virginia First Advanced Broadband program was developed in partnership with State and local government representatives. The goal of the program was to aggregate smaller communities into a larger, sustainable broadband community using a public-private partnership business model. A complete economic, marketing, and engineering feasibility and sustainability analysis were performed to support RUS loan applications for the broader communities. Private equity funding was also obtained for a network designed deployment and operation of a 100 Mbps fiber-to-the-premise (FTTP) broadband network with WiMAX wireless capability.

Each proposed broadband project included a comprehensive network design for a FTTP broadband network covering the entire targeted service area, network design for wireless WiMAX overbuild and middle mile networks to connect service areas with cable, and telephone and Internet interconnections to create a fully operational broadband local community public-use network (LCPN). Each community completed a comprehensive demographic, economic and market analysis of potential customers, competitors and pricing for available services for each service area. Total operating costs and revenue projections were created from an independent study by the Yankee Group to comply with RUS and other debt funding requirements. The feasibility and sustainability study defined a broadband market roll-out strategy to provide services to all school, public buildings, business locations, and homes in the service area. The steps of the project included:

1. Preliminary Assessment: prepared an initial network design for local jurisdictions included in the LCPN, using a proprietary LCPN financial model to determine feasibility that the project is viable and worth pursuing.
2. Public Sponsor Coordination: provided coordination of multiple local jurisdictions and in some instances state agencies, including providing the briefings and materials public officials needed to decide on their participation.
3. Procurement of Independent Feasibility Study Consultants: managed the selection of qualified

independent engineering, marketing and financial consultants to prepare pro forma financial statements and business plans. The consultants conducted an independent third party review of the proprietary network design, elements of which are patent pending, and prepared a report for use in qualifying for project financing.

4. **Qualification for Financing:** served as coordinator for the project to work with financial institutions to qualify for and obtain financing required to construct the network and cover the startup costs of the operation.
5. **Implementation Management:** served as project manager for procuring the resources to complete the detailed construction engineering design and construct the network. Also acted as the overall network implementation manager up to and including network testing for service initiation.

The project also reached the following milestones:

- Completed 16 network preliminary designs, three were sponsored by local communities.
- Awarded \$38M loan from RUS in 2007 for Beckley LCPN project.
- Complete economic and capacity planning study for the middle mile network to connect all 16 LCPN service areas which would serve 95% of the State's population.

3. Vermont Consumer and Business Telecommunications Survey

Overview:
ICF conducted conduct a telephone survey measuring public opinion about local telephone, cell phone, Internet, television, and telecommuting. The survey measured resident’s needs, related behaviors, knowledge, awareness, and perceptions of telecommuting. Results were used to identify deficiencies in the current system, address those deficiencies, and expand current Internet access and cell phone coverage.
Client:
State of Vermont Department of Public Service
Value:
\$47,000
Key Staff:
Randal ZuWallack, Robynne Locke
Reference Point of Contact:
<ul style="list-style-type: none"> ▪ Project Director: Jim Porter, Phone: 802-828-4003, Address: Vermont Department of Public Service, 112 State Street, Drawer 20, Montpelier, VT, E-mail: james.porter@state.vt.us
Period of Performance:
<ul style="list-style-type: none"> ▪ 11/1/2009 – 5/31/2010
Description of Services/Relevance to the State of West Virginia:
<p>The Vermont Department of Public Service contracted with ICF to conduct a telephone survey (the Vermont Telecom Residential Survey) with 500 Vermont residents and 385 non-residential organizations including public, private, non-profit, and educational organizations. The survey measured Vermonters’ telecommunication needs, as well as related behaviors, knowledge, awareness, and perceptions. The Vermont Department of Public Service will use the information to identify areas of deficiency in Vermont’s telecommunications systems, and work with telecommunications providers to develop programs and policies to address these deficiencies, such as expanding broadband Internet access and cell phone coverage. The survey data will also be used to evaluate Vermonters’ needs and behaviors in order to support short and long-term planning efforts for bringing relevant technologies to Vermont.</p> <p>The sample for the Vermont Telecom Residential Survey was a dual-frame random digit dial (RDD) sample. The survey is referred to as “dual-frame” since some Vermont residents were selected from a cell phone sampling frame, and some were selected from a landline telephone frame. In total, 500 Vermont residents were interviewed—400 on landline phones and 100 on cell phones. The landline sample was stratified into four regions of Vermont: Champlain Valley, Northeast Kingdom, Central Vermont, and Southern Vermont.</p>

4. California Advanced Lighting Controls Training Program (CALCTP)

Overview:
The Employment Training Panel is a supplement to the California Advanced Lighting Controls Training Program (CALCTP) and is supporting the training of 325 employed journey-level electricians in advanced lighting controls (ALC) to improve energy efficiency in commercial facilities across the state.
Client:
State of California
Value:
\$450,000
Key Staff:
Mark Ouellette, Rebecca Eaton, Akua Gyabaah, Alyson Freedman
Reference Point of Contact:
<ul style="list-style-type: none"> ▪ Program Analyst: Diane Woodside, Phone: 650-655-6935, Address: Employment Training Panel, State of California ETP, 1065 East Hillsdale Blvd., Ste. 415, Foster City, CA 94404, E-mail: dwoodside@etp.ca.gov
Period of Performance:
<ul style="list-style-type: none"> ▪ 2/2010 – 12/2011
Description of Services/Relevance to the State of West Virginia:
<p>ICF is providing comprehensive support for the grant. Specific areas of support include:</p> <ul style="list-style-type: none"> • Curriculum Development: ICF developed and updated the curriculum that is being used along with computer lab boards. ICF is also leading train-the-trainer sessions in which master electricians will be trained on the concepts and shown how to teach it to their journey-level electricians. • Curriculum Review: To ensure fidelity to the model, ICF is periodically monitoring training facilities and trainers to ensure they are following the model, teaching the concepts correctly, and adhering to the curriculum.

5. Mid-Atlantic Regional Collaborative (MARC) Green Consortium

Overview:
ICF led the DOL-funded multi-state labor market information (LMI) Mid-Atlantic Regional Collaborative Green Consortium (MARC) for the District of Columbia, Maryland, and Virginia. ICF conducted a multi-mode Green Jobs Survey of 35,000 private- and public-sector employers in Maryland, DC, and Virginia. ICF also conducted an analysis of the necessary skills and training opportunities needed to have a workforce ready for a “greening” economy.
Client:
Maryland Department of Labor, Licensing & Regulation
Value:
\$4,000,000
Key Staff:
Rebecca Eaton, Akua Gyabaah
Reference Point of Contact:
<ul style="list-style-type: none"> ▪ MARC Project Director: Michael Stevenson, Phone: 301-974-9005, Address: 7480 Baltimore Annapolis Boulevard, Glen Burnie, MD 21060.
Period of Performance
1/1/2010 – 5/31/2011
Description of Services/Relevance to the State of West Virginia
<p>ICF conducted a multi-mode Green Jobs Survey of 35,000 private- and public-sector employers in Maryland, DC, and Virginia. The survey builds on research previously conducted by the States and the District to:</p> <ol style="list-style-type: none"> 1) profile the region, each state, and each Local Workforce Investment Agency’s emerging green economy. 2) identify the number and type of jobs and skills required. 3) establish a baseline that can be used to track future industry and job change. <p>The survey also seeks to identify barriers to growth and gain an understanding of successful policy initiatives for the region and in each state.</p> <p>ICF also conducted an analysis of the necessary skills and training opportunities to support the educational and economic development partners of the region/state that will be used to ensure that each region and state have a workforce ready for the opportunities provided by a greening economy and to build curricula and certification programs that align to green job skill needs. ICF used the Quarterly Census of Employment and Wages (QCEW) database as the sample frame and further categorized and narrowed this list of employers based on relevant NAICS codes, establishment size, and Workforce Investment Board area. The analysis is used by the partners to direct their training and certification programs for the future.</p>

6. USDA Rural Development Broadband Loan and Loan Guarantee Program

Overview:
ICF assisted in developing policies related to the USDA Broadband Loan and Loan Guarantee Program, including assistance with the development of revised program regulations & facilitation of meetings to support policy development.
Client:
USDA's Rural Utility Service
Value:
\$1.2M
Key Staff:
Andy Zehe, Scott Ledford, Janet Pershing
Reference Point of Contact:
<ul style="list-style-type: none"> ▪ Deputy Assistant Administrator: Jon Claffey, Phone: 202-692-0212, Address: Mail Stop 1590, 1400 Independence Ave., SW, Washington, D.C. 20250
Period of Performance:
<ul style="list-style-type: none"> ▪ 2008—Present
Description of Services/Relevance to the State of West Virginia:
<p>ICF supports the USDA in processing applications related to the Broadband Loan and Loan Guarantee Program, USDA's legacy broadband program. ICF has assisted USDA's Rural Utility Service in developing programmatic policies and provided recommendations for the development of revised program regulations. ICF assisted in the review and revision of application procedures and facilitated meetings concerning policy decisions and technical considerations surrounding proposed regulatory changes. As the ARRA-funded BIP program winds down, this legacy broadband program is expected to re-emerge as a primary broadband program for USDA.</p> <p>To date, ICF's tasks have included:</p> <ul style="list-style-type: none"> • Facilitating discussions with USDA staff to clarify policy decisions. • Drafting regulatory text for agency consideration. • Technical assistance. • Financial feasibility studies. • Network mapping.

7. Broadband Expansion Project for the University of Arkansas

Overview:

ICF prepared an Environmental Assessment (EA) for the University of Arkansas to expand two existing state-owned and -managed networks: the Arkansas Telehealth Oversight and Management (ATOM) network and the Arkansas Research and Education Optical Network (ARE-ON). The project was funded through the Department of Commerce's Broadband Technology Opportunities Program (BTOP).

Client:

University of Arkansas Medical Sciences

Value:

\$149,880

Key Staff:

Chris Brungardt, Elizabeth Diller, David Johnson, David Ernst, Gabriel Roark, Lawrence Goral, and Elyse Procopio

Reference Point of Contact:

- Grants Director: Rachel E. Ott, Phone: 501-231-7905, Address: 4301 West Markham Street / #518 Little Rock, Arkansas 72205, E-mail: REOtt@uams.edu
- Project Manager: Scot Ramoly, Phone: 479-575-6447, ARE-ON Project Manager, Address: 155 S. Razorback Road, Fayetteville, AR 72701, E-mail: sgramoly@areon.net

Period of Performance:

- 09/30/10 – 12/31/11

Description of Services/Relevance to the State of West Virginia:

The ATOM and ARE-ON projects include a 900-mile network expansion to connect to 23 colleges in the state of Arkansas. The project was funded through the NTIA's BTOP program as part of the American Recovery and Reinvestment Act of 2009. The grant stipulated strict schedule milestones relative to the completion of the environmental process and construction. One such stipulation was that a draft EA be submitted no later than January 1, 2010. ICF was not under contract until mid-November 2010, leaving less than 3 months to deliver the document. Adding to the challenge, the engineering design also started in mid-November.

ICF developed a strategy to allow the environmental documentation process to proceed without having complete design information by developing an integrated process that allowed the environmental studies to inform the engineering process about any impacts to sensitive resources. This ensured that the engineering would not impact the EA. ICF coordinated field surveys by biologists and archaeologists that identified avoidance areas for the engineers. In addition, we were able to complete habitat-based assessments of the sensitive areas where new construction was planned.

ICF worked closely with the NTIA and other regulatory agencies to ensure their understanding and approval of the general approach. We worked with the US Fish and Wildlife Service on endangered species issues and the Arkansas Historic Preservation Office on cultural resource avoidance. ICF successfully completed the draft EA within the required timeline in order to maintain grant compliance. We went on to complete the final EA on which the NTIA was able to base their Finding of No Significant Impact.

8. Support for the Assets for Independence (AFI) Program

Overview:
ICF provides support to the Assets for Independence (AFI) program within the U.S. Department of Health and Human Services, Administration for Children and Families. This program supports asset building efforts nationwide through grant funds.
Client:
Department of Health and Human Services Administration for Children and Families Office of Community Services
Value:
\$2,769,318 (07-09) \$4,970,076 (09-12)
Key Staff:
Carole Norris, Ben Miller, Sierra Solomon, Vi Huynh, Denise DeVaan
Reference Point of Contact:
<ul style="list-style-type: none"> Contracting Officer: Tanya Crawford, Phone: 301-442-0058, Address: HHS/PSC/SAS/DAM, Parklawn Building, 5600 Fishers Lane, Room 5-101, Rockville, MD 20857, E-mail: Tanya.Crawford@psc.hhs.gov
Period of Performance:
<ul style="list-style-type: none"> 01/07 – 10/09 (first contract) 10/09 – 03/12 (second contract)
Description of Services/Relevance to the State of West Virginia:
<p>Under a previous contract, ICF provided comprehensive support to the AFI Resource Center, the center of operations for the AFI Program, allowing ICF to raise the program’s profile among key constituencies and increasing the number of fundable AFI grant applications. Under the current contract, ICF is continuing to assist the Office of Community Services (OCS) in administering key aspects of the AFI program and the AFI Resource Center. For FY2011, ACF named ICF International Outstanding Contractor for this work.</p> <p>The scope of work for this contract includes:</p> <ul style="list-style-type: none"> Grantee Support and Intensive TA. Through the AFI Resource Center, nonprofit community development organizations and state and local governments receive intensive technical assistance on all aspects of managing an AFI Project. ICF team members worked with OCS staff to form four TA Teams that provide critical support to AFI grantees nationwide to help them to succeed. Outreach to Potential Applicants. ICF assists OCS with developing and implementing a number of strategies for cultivating high quality grant applications. Strategies include hosting monthly webinars on the AFI Program and the application process, organizing two-day outreach workshops nationwide, providing one-on-one assistance and information to potential applicants and much more. Grants Management Systems and Processes. Using both remote and on-site staff, ICF helps OCS to fulfill grants management functions, including maintaining grantee records, assisting with grant application processing, and providing routine administrative support. ICF has worked with OCS to refine existing frameworks for grantee monitoring and annual and quarterly assessments, which will be used to identify and respond to each grantee’s unique training and technical assistance needs. ICF also administers the AFI Help Desk, providing competent and reliable management of inquiries received by the AFI Resource Center’s main telephone number and email address.

- **Management Information Systems.** ICF provides support to AFI's MonAFI grants management system, which helps a geographically diverse staff work seamlessly to support grantees. In 2009, ICF completed the integration of a digital document management.
- **Grantee Training and Events.** ICF develops and delivers training curricula for AFI grantees, including the recently debuted Action Planning for AFI Grantees and AFI Leadership training. Additionally, ICF worked with OCS to design interactive Web trainings using the Captivate system that provides on-demand assistance to grantees seeking to complete key AFI forms and reports.
- **Conference Development.** ICF assisted OCS with the development and delivery of the AFI 2010 Conference and Learning Academies, a four-day series of events for grantees.
- **Communications and Information Sharing.** ICF has developed and implemented a coordinated communications and information sharing strategy that continues to present a unified and polished AFI brand.

Recently, ICF improved the AFI Resource Center Web site at idaresources.org by integrating its management into AFI's Salesforce-based MonAFI system so that it can be easily updated and managed by AFI staff. In order to facilitate cross-grantee communication, ICF also developed an online grantee directory that provides grantee-level and grant-level data in a one-page format. In addition, ICF maintains and has conducted multiple site reviews and enhancements on the AFI Program Web site.

9. Dane County, Wisconsin Infrastructure and Capacity Building Technical Assistance

Overview:
Staff assisted Dane County, WI with expending CDBG and HOME dollars in a timely fashion according to regulations, and provided technical assistance and capacity building to nonprofits/CHDOs. Staff also guided the deployment of infrastructure improvements in the Town of Madison.
Client:
Dane County Wisconsin CDBG Program
Value:
\$1.4M
Key Staff:
Katherine Bates
Reference Point of Contact:
<ul style="list-style-type: none"> ▪ Senior Program Analyst/Manager: Lorie Bastean, Phone: 608-242-6420, Address: Dane County Department of Human Services, 1202 Northport Drive, Madison WI 53704
Period of Performance:
<ul style="list-style-type: none"> ▪ 1999-2001, 2008-2009
Description of Services/Relevance to the State of West Virginia:
<p>Staff provided technical assistance and capacity building to 43 municipalities and nonprofits in Dane County, Wisconsin regarding federal Community Development Block Grant (CDBG) and HOME funding. This included ensuring that the municipalities and nonprofits were in compliance with federal regulations as well as providing technical assistance and capacity building to nonprofits on housing and community development issues.</p> <p>Staff assisted the Town of Madison in obtaining a Section 108 loan to deploy infrastructure in the designated low income area of the town. This included ensuring that the infrastructure (access road and bridge) was included in the federal planning process as well as coordinating town hall meetings and working with elected officials to ensure the infrastructure would not impede any future plans. Staff completed the Section 108 loan paperwork for the Town.</p> <p>Staff also ensured that the County was in compliance with HUD regulations, directing them to the portions of the program that were potentially noncompliant. Leveraging relationships with HUD staff, ICF worked to bring the program into agreement with all HUD requirements. As a result, the County did not receive any findings in its annual HUD review.</p>

10. Neighborhood Stabilization Program Technical Assistance (NSPTA)

Overview:
ICF is leading the NSPTA effort for HUD. The helps local communities purchase, rehabilitate, and re-sell foreclosed properties in distressed neighborhoods by building the capacity of NSP grantee staff and their partners to aid in delivering successful and compliant NSP projects.
Client:
U.S. Department of Housing and Urban Development (HUD), Community Development Division
Value:
\$11,916,716 (national), \$1,500,000 (local)
Key Staff:
Andy Zehe, Brandy Bones, Kim Wollos, Kelly Price, Bonnie Lester, Rosemary Craft, Amy Mortimer
Reference Point of Contact:
<ul style="list-style-type: none"> ▪ Contracting Officer: Guadalupe Herrera, Phone: 202-708-3176, E-mail: Guadalupe.m.herrera@hud.gov
Period of Performance:
<ul style="list-style-type: none"> ▪ 9/25/09-9/24/12
Description of Services/Relevance to the State of West Virginia:
<p>ICF performs the following tasks in support of NSPTA:</p> <ul style="list-style-type: none"> • Lead TA Provider: responsible for managing the TA request process; developing procedures and templates to be used by all TA providers; collecting information and tools from TA providers for the Resource Exchange Website; collecting and distributing information from TA providers and HUD staff on previous experience with specific grantees or grantee partners; collecting information on TA accomplishments from all TA providers and providing the information to HUD; training all practitioners on policy changes made by HUD; distributing policies and information from HUD to all TA providers; and arranging periodic meetings with all TA providers. • Needs Assessments, TA, and Capacity Building: completed numerous needs assessments including 18 over a 4 month period. ICF is also conducting intensive follow up technical assistance. Intensive TA assignments involve on site delivery of expert, in-depth advice regarding NSP program designs and grant implementation. ICF also developed a process to deliver virtual environmental review (ER) TA to nonprofit NSP2. • Tools and Products: provided leadership to team of senior TA providers to create two toolkits for grantees organized by program type (such as homeownership, multifamily rental, or lease-purchase) based on the lessons learned. • Disaster Recovery and Grant Reporting (DRGR) Manual and Training: coordinated with HUD to author a DRGR manual and training. ICF also conducted a train the trainer session for other TA providers on the DRGR system. • Self-Directed and Group Learning: ICF created format for Problem Solving Clinics consisting of one-on-one sessions with TA experts and workshop sessions organizing logistics for six Clinics throughout the country. ICF has also facilitated dozens of NSP webinars. • Information Management: The NSP TA Website, which went live within 6 weeks following work plan approval, acts as a portal for grantees, HUD staff, TA providers, developers, partner organizations and local governments and manages NSP information. As part of NSP TA Website, ICF also created a virtual help desk.

11. Department of Veterans Affairs (VA) Burial Program and Policy Evaluation

Overview:

The VA contracted with ICF to study the on-going feasibility of establishing a new national VA cemetery when the un-served veteran population is at least 170,000 within a 75-mile radius. ICF's Geospatial Solutions team examined the reasonableness of the current policy for the future, analyzing the effects of changing the radius or population thresholds.

Client:

Department of Veterans Affairs, Office of Policy and Planning

Value:

\$1,256,253

Key Staff:

Kevin Wright, Steve Heinrich

Reference Point of Contact:

- Contracting Officer Technical Representative: George Fitzelle, Phone: 202-461-5770

Period of Performance:

- 12/22/06 – 08/29/08

Description of Services/Relevance to the State of West Virginia:

ICF Geospatial Solutions team used the ArcGIS suite of geo-processing and cartographic tools. These tools allowed ICF to develop a series of models to establish and test proof of concepts regarding geo-processing logic and flow required to answer such inquires.

- A **network analysis ("drive-time") model** was used to compute the time and distance of the nearest VA-funded cemetery to each census tract. The distance to a cemetery impacts the satisfaction of next-of-kin and the number of times they are able to visit after the internment. ICF conducted a survey of burial preferences of recently deceased veterans. Using the results of the survey, ICF geocoded the veterans' last address then calculated the distance to the nearest national or state VA cemetery and the distance to the cemetery where the veteran was buried. The maps showed locations where new cemeteries were needed using five-year incremental projections through the year 2030. This "drive-time" metric assessed the effects of changing the population threshold to evaluate current cemetery locations and the need for new locations to better serve the changing demographics for different states.
- A **"buffer distance" model** used to calculate the population served within a 75-mile radius of each open cemetery in a given year. Due to the close proximity of some cemeteries, the model created Thiessen polygons to ensure mutual exclusivity. A proportional overlay was applied to compute the population served by each cemetery. The radius was made a variable to allow the model to run against different distances as determined by analyzing population and cemetery locations. The output was a list of census tracts, the cemetery serving the tract and the appropriate demographic information. The "buffer distance" model also calculated the potential un-served veteran population. Based on this information, ICF designed and developed a model that identified areas of 170,000 veterans within a 75-mile radius. The output was a complete list of areas in need of VA cemetery facilities. ICF developed five-year incremental projections through the year 2030.

ICF automated the process by using a combination of ArcGIS, ModelBuilder, and Python scripting language. The ability to automate allowed a rapid turn-around without having to re-work the script tools/models whenever there was a change in the key variables.

12. EPA ENERGY STAR® Brand Awareness Campaign

Overview:
ICF managed a multi-media awareness campaign for the ENERGY STAR program. The campaign raised awareness about the link between energy use and air pollution and educated the public about how the use of energy-efficient products labeled with the ENERGY STAR label can help reduce air pollution.
Client:
U.S. Environmental Protection Agency, Climate Protection Partnerships Division
Value:
\$24 million
Key Staff:
Robin Clark, Nora Buehler, Tony Silva
Reference Point of Contact:
Director: Ann Bailey, Phone: 202-343-9023, Address: ENERGY STAR Product Labeling Ariel Rios Building, 1200 Pennsylvania Avenue, N.W., Washington, DC 20460, E-mail: bailey.ann@epa.gov
Period of Performance:
October 2001 – September 2006 and October 2006 to October 2011
Description of Services/Relevance to the State of West Virginia:
<p>ICF worked closely with the EPA to raise awareness of the ENERGY STAR Program. In 2001, brand awareness of the program was not high. ICF developed a strategy that included the development and placement of print, broadcast, and transit public service advertisements; media tours in 33 cities; targeted national media outreach; and a variety of other tactics, including leveraging third-party communications and seeking opportunities in special broadcast programming.</p> <p>ICF managed all aspects of the campaign, including strategic planning; development of press kits, video news releases, and compilation tapes; media training; message development; media tracking, reporting, and analysis; development of fulfillment materials for consumer inquiries; consumer hotline training; and logistical coordination between all participating parties. Due to ICF's support, the ENERGY STAR brand is now well-known throughout the US.</p>

13. Consumers Energy

Overview:
Consumers Energy is Michigan’s second-largest electric and natural gas utility, providing service to more than 6 million residents in all 68 counties. ICF is developing and managing the Residential Energy Efficiency portfolio, which consists of the following programs: ENERGY STAR® Lighting and Appliances, HVAC and Water Heating, Multifamily, Home Performance with ENERGY STAR, and Home Energy Assessment pilot program.
Client:
Consumers Energy
Value:
\$38 million
Key Staff:
Selena Ramkeesoon, Maria Salinas, Jennifer Porter
Reference Point of Contact:
Energy Efficiency Programs Manager : Mike Kanser, Phone: 517-788-2220, Address: One Energy Plaza, Jackson, MI 49201, E-mail: makanser@cmsenergy.com
Period of Performance:
June 2009 – December 2011, currently executing 12 month contract extension.
Description of Services/Relevance to the State of West Virginia:
ICF has developed a broad, integrated marketing and communications strategy, which includes positioning across all programs, targeting the general public and contractors, and integrating creative messaging with Consumers Energy's current branding and messaging. ICF is using its proven social marketing approach, integrating branded multimedia marketing initiatives, with community-based intervention strategies. Marketing activities in each market are coordinated tightly with the roll-out of specific programs. Our approach helps overcome the informational and attitudinal barriers that exist today—and sets the stage for market transformation in Michigan.

APPENDIX A: SCORING REFERENCE SHEET

Evaluation Criteria	Subsection	ICF Proposal Reference	Page Reference
Qualifications & Experience	Firm Qualifications	<ul style="list-style-type: none"> Section 1A: Introduction Section 1B: Understanding West Virginia Section 1C: Corporate Overview Section 1D. Broadband Capabilities Section 1E3: Advisory Assessment and Program Support... 	p. 1 p. 2 p. 4 p. 4 p. 8
Qualifications & Experience	Staff Qualifications	<ul style="list-style-type: none"> Section 1A: Introduction Section 1E1 Example 1-3 & Section 1E2 Example 2-2: West Virginia First Broadband Initiative Section 1E2, Example 2-3: Thailand Chareon Pokphand Nationwide Broadband Initiative Section 1E4, Example 4-1: Strategic Planning at CLEAR Communications Section 1H: Project Staffing and Organization Plan Section 3-9: Dane County, Wisconsin Infrastructure and Capacity Building Technical Assistance Appendix B: Resumes 	p. 1 p. 6 & p. 8 P. 8 p. 10 p. 15 p.50 p. 58
Qualifications & Experience	Experience with Similar Projects	<ul style="list-style-type: none"> Section 1E: Industry & Policy Analysis Section 3: Past Performance Citations - References 	p. 5 p. 38
Qualifications & Experience	References	<ul style="list-style-type: none"> Section 3: Past Performance Citations - References 	p. 38
Qualifications & Experience	Past Projects	<ul style="list-style-type: none"> Section 1E: Industry & Policy Analysis Section 3: Past Performance Citations - References 	p. 5 p. 38
Qualifications & Experience	2.3.1.1 Federal and State Policy Analysis and Program Development or Planning Assistance	<ul style="list-style-type: none"> Section 1E1, Example 1-1: USDA Rural Development Broadband Loan Guarantee Program Section 1E1, Example 1-2: USDA / RUS Broadband Initiatives Program Support Section 1E1, Example 1-3: West Virginia First Broadband Initiative 	p. 6 p. 6 p. 6

Evaluation Criteria	Subsection	ICF Proposal Reference	Page Reference
Qualifications & Experience	2.3.1.2 Domestic and International Assessment, Engineering, Design, Operation, and Capacity Building Experience	<ul style="list-style-type: none"> Section 1E2, Example 2-1: USDA / RUS Broadband Initiative Program Support Section 1E2, Example 2-2: West Virginia First Broadband Initiative Study Section 1E2, Example 2-3: Thailand Chareon Pokphand Nationwide Broadband Initiative 	<p>p. 7</p> <p>p. 7</p> <p>p. 8</p>
Qualifications & Experience	2.3.1.3 State and Federal Funding Advisory, Assessment and Program Support	<ul style="list-style-type: none"> Section 1E3, Example 3-1: Broadband Expansion Project for the University of Arkansas Section 1E3, Example 3-2: USDA / RUS Broadband Initiatives Support – Satellite Program Support Section 1E3, Example 3-3: Support for Assets for Independence-Technical Assistance to Communities Section 1E3, Example 3-4: USDA Universal Service Fund Support 	<p>p. 8</p> <p>p. 9</p> <p>p. 9</p> <p>p. 9</p>
Qualifications & Experience	2.3.1.4 Assessment and Development for Infrastructure Deployment and Capacity Building	<ul style="list-style-type: none"> Section 1E4, Example 4-1: Strategic Planning at CLEAR Communications Section 1E4, Example 4-2: USDA / RUS Broadband Initiatives Program - BIP and GIS Mapping Section 1E4, Example 4-3: Dane County, Wisconsin - Community and Economic Development Consulting Section 1E4, Example 4-4: Mid-Atlantic Collaborative (MARC) Green Consortium 	<p>p. 10</p> <p>p. 10</p> <p>p. 10</p> <p>p. 10</p>
Qualifications & Experience	2.3.1.5 Implementation and Management of Broadband Adoption Plans	<ul style="list-style-type: none"> Section 1E5, Example 5-1: USDA / RUS Broadband Initiatives Program - Technical Assistance Grant Program Support Section 1E5, Example 5-2: CLEAR Communications, LTD, New Zealand & Concert Communications Section 1E5, Example 5-3: Vermont Consumer and Business Telecommunications Survey Section 1E5, Example 5-4: West Virginia and Ireland Broadband Summit 	<p>p. 11</p> <p>p. 11</p> <p>p. 11</p> <p>p. 12</p>
Qualifications & Experience	Specialized Broadband Mapping	<ul style="list-style-type: none"> Section 1F: Specialized Broadband Mapping 	p. 12
Qualifications & Experience	Strategic Communications	<ul style="list-style-type: none"> Section 1G: Strategic Communications 	p. 13
Approach & Methodology	2.4.1 Goal / Objective 1	<ul style="list-style-type: none"> Section 2A: Objective 1 – SWOT Assessment [RFP reference 2.4.1.] 	p. 21

Evaluation Criteria	Subsection	ICF Proposal Reference	Page Reference
Approach & Methodology	2.4.2 Goal / Objective 2	<ul style="list-style-type: none"> Section 2B: Objective 2 – Federal Program Assessment [RFP reference 2.4.2] 	p. 23
Approach & Methodology	2.4.3 Goal / Objective 3	<ul style="list-style-type: none"> Section 2C: Objective 3 – Small Business Development [RFP reference 2.4.3] 	p. 24
Approach & Methodology	2.4.4 Goal / Objective 4	<ul style="list-style-type: none"> Section 2D: Objective 4 – USF & CAF Analysis [RFP reference 2.4.4] 	p. 28
Approach & Methodology	2.4.5 Goal / Objective 5	<ul style="list-style-type: none"> Section 2E: Objective 5 – State Broadband Map Analysis [RFP reference 2.4.5] 	p. 29
Approach & Methodology	2.4.6 Goal / Objective 6	<ul style="list-style-type: none"> Section 2F: Objective 6 – K-12 Broadband Access and Adoption [RFP reference 2.4.6] 	p. 31
Approach & Methodology	2.4.7 Goal / Objective 7	<ul style="list-style-type: none"> Section 2G: Objective 7 – Additional Funding [RFP reference 2.4.7.] 	p. 34
Approach & Methodology	2.4.8 Goal / Objective 8	<ul style="list-style-type: none"> Section 2H: Objective 8 – Advisory Consultancy Services [RFP reference 2.4.8] 	p. 36
Oral Interview	N/A	<ul style="list-style-type: none"> TBD 	N/A
Cost	Cost Volume	<ul style="list-style-type: none"> Attachment C: Cost Sheet 	Separate Volume

APPENDIX B: RESUMES

Keith J. Montgomery**ICF International****Senior Program Director Broadband****EDUCATION**

B.A., Accounting and Finance, West Virginia University, Morgantown, West Virginia, 1978

CERTIFICATIONS AND TRAINING

C.P.A. Maryland, 1982

EXPERIENCE OVERVIEW

Mr. Montgomery has 32 years of experience in the telecommunications and technology industry, including more than 15 years of experience in senior executive positions. Prior to joining ICF, he served as Executive Officer for iTown, CLEAR, and Concert, and held senior management positions for MCI's network construction and revenue finance teams. Mr. Montgomery offers a deep understanding of the economic challenges faced by rural America as well as the trade-offs between technology options available for deployment.

PROJECT EXPERIENCE

Broadband Initiatives Program, USDA Rural Utilities Service (RUS), 2009-Present. Mr. Montgomery serves as ICF International's Senior Program Director of Broadband. He was one of the principals in designing, implementing, and managing the RUS feasibility review programs for the Broadband Infrastructure Program for the RUS. He identified critical performance measurements for applications to rank financial, network, product offering, market, and organizational strengths and risks for each application. ICF reviewed over 2,200 wireless, terrestrial and satellite last mile and middle mile applications across the nation, resulting in over \$2.8B in awards. Mr. Montgomery has firsthand experience with the BIP program review of the different industry and vendor claims on the broadband service coverage which mask the practical deployment of issues in rural, urban, and metro service areas.

iTown Communications, 2003-2009. While employed at iTown Communications, Mr. Montgomery served as the Senior Operating Executive with full strategic planning and P/L management responsibilities. iTown was established in July 2003 to provide feasibility studies, network design, finance, construction, and operations of broadband community access networks to rural and secondary markets supporting the delivery of video, voice, data and Internet services to residential and business customers. The company designed four fiber-to-the-home broadband networks, developed public-private-partnerships with three communities, and was selected as a finalist for the Seattle broadband network project.

During this time he completed economic, technology, and market assessments for broadband networks and services, and created financial and business models for access and retail service companies. He developed the West Virginia First Advanced Broadband program with state government and local representatives which created broadband communities by aggregating smaller communities in a public private partnership business model. The broadband communities supported a fiber-to-the-home, 100 Mbps active network for the triple play and a complementary WiMAX wireless network at prices below the incumbent provider. He also assessed fiber

Senior Management, Broadband and Telecommunications Expertise

- **CEO, COO, CFO & CIO experience with international and domestic telecom and technology companies.**
- **Network & broadband feasibility, planning, deployment and operations.**
- **Designed and implemented ICF's RUS broadband feasibility review program for wireless, wireline and satellite applications.**
- **Completed broadband feasibility studies and broadband network designs for fiber-to-the-home, WiMAX, wireless & combined solutions for WV, AZ, WA, VA, NC, SC, ND, SD, WI, MI & TN.**
- **Founding executive that deployed telecommunication, Internet, and TV network for New Zealand.**

middle mile, fiber last mile and 4G WiMAX deployments for rural markets in North Carolina, South Carolina, Tennessee, Virginia, Arizona, and western Pennsylvania.

LabBook, Inc., 2000-2003. While employed at LabBook, Inc. as the Senior Operating and Financial Executive, Mr. Montgomery was responsible for systems development, ecommerce, business strategic partnerships, and financial operations. During his tenure, the company developed award winning biotechnology software providing desk top and server applications that supported research workflow and knowledge management tools.

MCI Communications, 1982-1999. While employed at MCI Communications Mr. Montgomery served as Vice President of Ventures and Alliances and was seconded to international joint ventures in key executive roles to help establish and grow the companies. He served over 18 years at MCI Communications and retired after the Worldcom merger.

Concert Communications Services Inc., 1995-1998. While employed at Concert Communications, Mr. Montgomery served as the Senior Financial Executive responsible for Planning; Business Analysis; Pricing; Finance, Accounting, Chief Information Officer (development and operations); Treasury; Tax and Commercial Contracts. Concert built voice, data, and Internet global networks connecting 98% of the world's telecommunication markets and secured \$2B in customer contracts. Concert was recognized as a world leader with focus on quality services and innovative use of technology to solve real business issues.

CLEAR Communications Inc., 1990-1994. While employed at CLEAR Mr. Montgomery served as the Founding Senior Financial Official for Financial Operations. He was promoted to Chief Operating Officer. The Company was launched in six months and secured 1% market share per month for 12 months. CLEAR grew to the 50th largest company in New Zealand, capturing 20% market share and employing over 900 staff. Mr. Montgomery lead a 12 month strategic planning exercise for the shareholders to determine economic impact, capacity planning and predicting new market services for the emerging wireless and broadband technologies. This resulted in significant network and market expansion of services creating explosive economic growth for small business and rural sections of the country.

AWARDS

- MCI Excellence in Service Award winner, 1982
- Concert Excellence in Service Award winner, 1997
- CIO Top 100 Award for Innovative Use of Technology, 2001
- CLEAR won the "Most Respected Communications Company, 1993

EMPLOYMENT HISTORY

ICF International	Senior Program Director Broadband	2009–Present
iTown Communications	President, CEO, and CFO	2003–2009
LabBook, Inc.	President and COO	2000–2003
MCI Communications	Analyst to VP Ventures and Alliances	1982–1999
Concert Communications Services, Inc.	CFO	1995–1998
CLEAR Communications, Inc.	COO & CFO	1990–1994
Perdue, Inc.	Cost Accountant to Controller	1979–1982

Katherine Wallace Bates

ICF International

**Program Manager &
Project Lead: Planning and Technical Assistance**

EDUCATION

MPA, Concentration in Organizational Management, University of Tennessee, Knoxville, 1991

B.S., Business with Honors, Concentration in Economics and Public Administration, University of Tennessee, Knoxville, 1989

EXPERIENCE OVERVIEW

Ms. Bates has 20 years of experience in managing and leading state and local government programs dealing with a wide array of subjects including: public finance, infrastructure, community and economic development, information technology, broadband policy development, affordable housing development, and disaster preparedness and management. She has worked extensively at the state and local level, engaging stakeholders in important community and economic development issues. She has experience staffing committees and task forces of national, state and local leaders as well as developing plans based on the input of the committees and interested parties. She has compiled "best practice" documents for local elected leaders.

Planning and Technical Assistance Expertise

- **20 years managing and leading federal, state, and local government programs.**
- **Managed IT and Broadband policy development with National League of Cities.**
- **Extensive consulting experience in evaluating and developing integrated community/economic development and infrastructure programs and policies.**

PROJECT EXPERIENCE

Management

Information Technology and Broadband Policy Development, 2001-2010. While the Policy Manager and Independent Consultant at NLC, Ms. Bates managed the policy development process on information technology including public safety interoperability and broadband deployment. She assisted in developing comments on the National Broadband Plan and explored collaborations for NTIA's Broadband Technology Opportunities Program (BTOP) funding application. She tracked legislative and FCC actions related advanced broadband technology.

Sloan Foundation Grant, Urban Institute/NLC, 2006-2008. While working as a consultant with the Urban Institute and NLC, Ms. Bates managed the Sloan Foundation Grant: "Legislating for Results: Using Performance Measurements to Communicate with Residents." She provided training sessions for local elected officials and staff on performance measurements and assisted with publishing a set of 10 briefing papers, including a "Best Practices" section available for state and local government use.

Municipal Policy Manager, National League of Cities, 2001-2006. While employed at NLC, Ms. Bates had the responsibility of coordinating the policy positions of over 18,000 cities and towns and 49 state leagues on federal programs related to public finance, community and economic development, information technology, human development, public safety and transportation.

CDBG Specialist, Dance County, Wisconsin, 1999-2001. While working for Dane County, WI, Ms. Bates managed the new Urban County Consortium that allowed the County to directly access \$1.2 million in CDBG funds from the federal government. She developed the county's Housing and Commercial Revitalization Development Funds for housing and economic development.

Engaging Stakeholders

Sloan Foundation Grant, Urban Institute/NLC, 2006–2008. While an Independent Consultant, Ms. Bates interviewed stakeholders and developed education sessions in performance measurement in budgeting based on the input received.

Immigration Task Force, National League of Cities, 2007–2008. As an Independent Consultant, Ms. Bates staffed a committee of 25 local elected officials and staff to develop a plan for tackling immigration at the local level. The committee also developed NLC’s national immigration lobbying platform.

Municipal Policy Manager, National League of Cities, 2001–2006. While employed at NLC, Ms. Bates staffed seven policy committees comprised of level elected officials from across the country. She developed 28 educational sessions annually for the committees, including preparing briefing books, selecting speakers and obtaining feedback on the issues.

CDBG Specialist, Dane County, Wisconsin, 1999–2001. While at Dane County, WI, Ms. Bates staffed committees of local elected officials and residents to develop the County’s community development plans.

Technical Assistance

Disaster Housing Assistance Program, Quadel Consulting, 2010. Ms. Bates provided policy guidance to the County of Galveston, Texas related to using CDBG funding for disaster recovery and slum and blight.

BTOP/NTIA Round 1 Application, National League of Cities, 2009. While an independent consultant, Ms. Bates engaged NLC and various other interested parties in exploring a partnership to apply for Round One BTOP Funding. Ms. Bates conducted the due diligence necessary to submit an application.

CDBG Technical Assistance, Dane County, Wisconsin 2008. Ms. Bates provided technical assistance to the County to update federally required plans and ensure that county was in compliance with CDBG, HOME and ADDI regulations.

Dane County Housing and Commercial Revitalization Funds, Dane County, WI, 1999–2001. Ms. Bates provided technical assistance to applicants looking to access low interest loans from the Funds.

Federal, State and Municipal Policy Analysis and Plan Development

Municipal Policy Manager, National League of Cities, 2001–2006. While employed at NLC, Ms. Bates guided the work of seven standing committees, building consensus on long-term federal policy priorities and goals for the nation's cities and towns. She monitored and analyzed legislation pertaining to municipal interests before Congress and federal agencies.

CDBG Specialist, Dane County, Wisconsin, 1999–2001. While at Dane County, WI, Ms. Bates established and implemented housing and community development plans for 43 participating communities. She created neighborhood revitalization strategies and plans for the county.

EMPLOYMENT HISTORY

ICF International	Expert Consultant	2010-present
Self-Employed	Consultant	2006-2010
National League of Cities	Policy Manager	2001-2006
Dane County, Wisconsin	CDBG Specialist	1999-2001
WI Housing and Econ Dev Authority	Portfolio Development Officer	1997-1999
Knox County, Tennessee	CDBG Project Manager	1990-1993

Donald Bishop

ICF International

Project Lead: Chief Technology Officer

EDUCATION

Liberal Arts, Daytona Beach Community College, Daytona Beach, Florida, 1981

CLEP, Mathematics & Science, Princeton, New Jersey, 1980

Electrical Engineering Studies, Electronics Instrumentation Systems; Liberal Arts, Computer Programming and Networking, Satellite Communications, U.S. Air Force, Lowry AFB, Aurora CO, 1979–1980

EXPERIENCE OVERVIEW

Mr. Bishop has 30 years of experience in the radio and telecommunications industry, with a focus on broadband networks and technologies. He has extensive expertise in both wireless and wired broadband networking. Mr. Bishop has authored and presented papers for Institution of Radio and Electronics Engineers (Australia), Society of Cable Telecommunications Engineers, National Cable Television Association, Philippine Cable Television Association, and other prestigious organizations at National and International conferences on new technology developments trends and applications. Mr. Bishop has extensive Internet protocol experience, analog and digital satellite and television technologies experience, baseband video and audio, and complex digital modulation formats.

Network and Technical Expertise

- **30 years of telecomm experience.**
- **Inventor and multiple US Patent awardee for a broad range of pioneering wireless, digital communications, and coordinated location systems.**
- **Developed propagation models for all wireless technologies for the Broadband Initiatives Program.**
- **Project manager overseeing all Network Engineers for the Broadband Initiatives Program.**

PROJECT EXPERIENCE

Broadband Initiatives Program, USDA Rural Utilities Service, 2009–Present. Mr. Bishop led the network feasibility team and managed all aspects of the technology reviews. He developed the network workflow management tracking system. He has helped develop the Satellite RFP for BIP Round 2, and developed all the analytical tools for that program. Mr. Bishop worked with the BIP Policy team developing applicant data collection forms, and helped write the technology related topics in the BIP Application Guide and various policy and process guides used throughout the program. Mr. Bishop has direct management responsibility for the network engineering staff, peaking at twenty-five wireless, wireline, and network engineers.

Weintraub Telecomm, 2009. Mr. Bishop was subcontracted to ICF for the RUS BIP through Weintraub Telecomm before joining ICF.

Public Wireless, Inc. 2008–2009. While employed at Public Wireless, Mr. Bishop led the team that developed next-generation hardware and embedded software platform merging CATV technology with carrier grade cellular/wireless radio technology. He was responsible for coverage solutions for wireless carrier networks, 2G/2.5G/3G protocols, digital and analog DAS, picocell, microcell, femtocell technologies, VoIP, IEEE802.16 related protocols with custom integrations for backhaul via copper, fiber, and wireless. This involved integrating controller design, radio design and apparatus case and advanced antenna systems. He re-tooled the engineering department to meet a changing business model.

Wildblue Communications, Inc., 2006–2008. While employed at Wildblue Communications, Mr. Bishop held a leadership role in developing and maintaining all hardware and embedded software systems for a satellite modem system. He had a key role in developing next-generation technology, especially high performance 200Mbps transmitter/receiver and modem system (BPSK/QPSK/8, 16PSK, 32~1024 QAM).

Mediacell, Inc., 2002–2006. While employed at Mediacell, Inc., Mr. Bishop developed and managed software, hardware, and field engineering groups. He had a key role in developing core technology and field deployments. He was responsible for advanced wireless subscriber access and bridging technologies for cable (HFC) networks: wireless plant extension, hybrid wireless, and mobile wireless centered on DOCSIS protocol, various VOIP protocols, 2G/2.5G/3G cell technologies, and all IEEE802.11 & .16 related protocols—wired, wireless and optical.

Broadband Services, Inc., 2000–2002. While employed at Broadband Services, Mr. Bishop led a 12 person team that successfully developed and implemented next-generation GIS/SQL-based software design and integrated network management platform. He developed Next-gen intelligent mapping & network management software solutions, and commercial network design services for wireless and cable industries.

Tektronix, Inc., 1998–2000. While employed at Tektronix, Inc., Mr. Bishop was responsible for team leadership and development strategies for three important new products, plus several legacy products: RF Vector Signal Analyzer (RFA300), and two IP-networked psycho-visual picture quality analyzers. He launched an entirely new class of instrumentation for in-service television quality of service monitoring for compressed high definition and standard definition television. He was responsible for the development of all technical training material for a worldwide field engineering team.

PROFESSIONAL AFFILIATIONS

Society of Cable telecommunications Engineers, 1982

Institute of Electrical and Electronics Engineers, 1991

EMPLOYMENT HISTORY

ICF International	Vice President	2010–Present
Weintraub Telecomm	Vice President, Broadband Technology	2009–2010
Public Wireless, Inc.	Chief Technology Officer	2008–2009
Wildblue Communications, Inc.	Principal Engineer, Systems Architecture	2006–2008
Mediacell, Inc.	Founder, Chief Technical Officer	2002–2006
Broadband Services, Inc.	Chief Engineer, Professional Services	2000–2002
Tektronix, Inc.	Technical Product Development Manager	1998–2000
Mitsui & Co., LTD.	Chief Engineer	1995–1998
General Instrument Hong Kong	Sr. Applications Engineer, Advanced Technologies	1991–1995
Antec	Sr. Engineer, R&D, Linear Optics Transmissions	1986–1991
ATC (now Time Warner)	Engineering Manager	1981–1986

Michael Spead**ICF International****Project Lead: USF Analysis****EDUCATION**

M.B.A., Project Management, George Mason University, Fairfax, VA, 2010
J.D., Law, Catholic University of America's Columbus School of Law,
Washington, DC, 2004

B.B.A., Finance and International Business, George Washington University,
Washington, DC 1998

CERTIFICATIONS AND TRAINING

PMP, Project Management Professional, 2007

Six Sigma Green Belt, 2009

EXPERIENCE OVERVIEW

Michael Spead is the former Senior Manager of the High Cost program under the Universal Service Fund. He specializes in evaluating state and federal financing and award programs. He was instrumental in developing best practices in program/project management, business process engineering, and enterprise architecture to provide high quality end-to-end solutions for these funds. Mr. Spead has more than a decade of telecommunications experience, where he has been responsible for operations and program management, regulatory and policy analysis, as well as managing information technology, financial, and strategic projects.

PROJECT EXPERIENCE

ICF International, 2011-Present. As the Senior Technical Specialist to the Broadband team, Mr. Spead leverages his extensive experience to provide insight to the various reforms affecting the industry. He monitors changes in the broadband and telecommunications regulatory environment to support state, local, and commercial entities with technical and advisory services.

High Cost Business Process Redesign, Universal Service Administrative Company, 2009-2010. While at the Universal Service Administrative Company, Mr. Spead developed, initiated, and led a business process analysis and redesign project for the High Cost program. This included redesigning business process models to balance operational efficiency and adequate controls, integrating business processes under the overall division and corporate policy, capturing relevant metrics and reporting to assess risks, making recommendations for program improvements to senior management.

High Cost In-House Initiative, Universal Service Administrative Company, 2006-2010. While at the Universal Service Administrative Company, Mr. Spead helped to lead the transition to move all operational work related to the High Cost program from an external vendor to internal staff. This ensured proper handling and balancing of the High Cost Program Knowledge Management Transition, the High Cost Program Systems Development Initiative, and the High Cost Program Documentum Implementation.

High Cost Program System Development Initiative, Universal Service Administrative Company, 2006-2010. While at the Universal Service Administrative Company, Mr. Spead served as programmatic project lead on a multi-million dollar systems development initiative to build an integrated operations system that could capture/validate data, assign eligibility for support, and calculate, analyze, and report on the approximately \$5 billion dollars in annual support provided to rural telecommunications carriers under the High Cost program of

Universal Service Fund Expertise

- **Former Senior Manager for USAC's High Cost and Low Income support mechanisms.**
- **Over 10 years of telecommunications experience.**
- **Extensive experience utilizing best practices in business process engineering, systems integration, and program/project development, and execution to provide exceptional management consulting and program/project management.**

the USF. This included project management activities, developing requirements, training developers on user needs, graphical user interface design, developing use and test cases, performing data migration and user acceptance testing, and business process redesign.

Local Switching Support System, Universal Service Administrative Company, 2006. While at the Universal Service Administrative Company, Mr. Spead served as project manager and programmatic lead of a systems development project to capture/validate data, as well as calculate, analyze, and report on the approximately \$1 billion dollars in annual support provided to rural telecommunications carriers under the Local Switching Support component of the USF. This included project management activities, developing and negotiating requirements, training developers on user needs, graphical user interface design, developing use and test cases, performing data migration, performing user acceptance testing, and business process redesign.

Part 36 Data System, Universal Service Administrative Company, 2005. While at the Universal Service Administrative Company, Mr. Spead served as project manager, initiator, and programmatic lead of a systems development project to capture/validate data, as well as calculate, analyze, and report on the approximately \$1 billion dollars in annual support provided to telecommunications carriers under the High Cost Support component of the USF. This included project management activities, developing requirements, training developers on user needs, graphical user interface design, developing use and test cases, performing data migration, performing user acceptance testing, and business process redesign.

Regulatory Compliance System, Universal Service Administrative Company, 2003. While at the Universal Service Administrative Company, Mr. Spead served as project manager, initiator, and programmatic lead of a business analysis and systems development project to modernize the analysis, processing, review, and reporting for Federal and State orders, appeals, and other regulatory documents. This included project management activities, developing and negotiating requirements, training developers on user needs, graphical user interface design, developing use and test cases, performing data migration, performing user acceptance testing, and business process redesign.

EMPLOYMENT HISTORY

ICF International	Senior Technical Specialist	2011–Present
Colorado Technical University	Project Management Instructor	2011–Present
Universal Service Administrative Company	Senior Program Manager	2003–2010
National Association of Home Builders	Legal Intern	2001–2002
Winstar Communications	Senior Financial Analyst	2000–2001
Freddie Mac	Securities Analyst	1999–2000

Dan Bertuna**ICF International****Business Manager****EDUCATION**

M.B.A., Finance, George Mason University, Fairfax, Virginia, 2004

B.B.A., International Business, Magna cum Laude, George Washington University, Washington, DC, 1994

EXPERIENCE OVERVIEW

Mr. Bertuna has over 15 years of experience in the management and administration of federal government programs and contracts. He served in the federal government as a Contracting Officer for the Defense Threat Reduction Agency focused on research and development programs and later as a business and finance manager for several private sector companies providing technology and engineering services to the federal government. Mr. Bertuna has strong leadership and management skills, exceptional business acumen, and well-developed interpersonal and communication skills.

Business and Finance Expertise

- **15+ years experience managing and administering federal government programs and contracts.**
- **Provides strategic vision and tactical business plan for the Broadband team.**
- **Financial analysis, project management and business development professional.**

PROJECT EXPERIENCE

Vice President, ICF International 2010–present. Mr. Bertuna is supporting both the business development and operations of the new Broadband team. He directs the strategic vision and tactical business plan. He facilitates, reviews and reports on non-profit and grant opportunities for broadband. Mr. Bertuna creates target area libraries for competitive information and contracts. He provides internal marketing coordination focused on target areas including smart grid, homeland security, E-healthcare, Indian Nation, and aviation. He develops business metrics and tools to enable performance tracking and maximize achievement of broadband business goals. Mr. Bertuna oversees and coordinates monthly project reporting, subcontracts, invoicing, occupancy and controllables. He develops and updates an opportunities pipeline focused on broadband opportunities spanning federal, state & local and commercial markets. He reviews financial systems and internal controls including budget setting and contract management, tracking, expenditures, subcontracting and reporting, and the preparation of accurate and timely monthly financial statements. Mr. Bertuna established metrics which allowed for more effective utilization of resources.

Deputy General Manager, Cubic Applications, Inc., 2005–2010. While with Cubic Applications, Mr. Bertuna managed day-to-day operations of the Threat Technologies Division. His responsibilities included financial and project administration, facilities management and security, staffing and personnel management, business development and customer relationship management. He reviewed financial systems and internal controls including budget setting and contract management, tracking, expenditures, subcontracting and reporting, and the preparation of accurate and timely monthly financial statements. He also developed a process to provide increased transparency on programs and projects which resulted in identifying over \$1M in expiring funds which could be turned into revenue. Mr. Bertuna instituted policies and procedures to formalize capture and business development efforts. This resulted in an increase in pipeline opportunities by 50% with no addition to BD resources. Mr. Bertuna led business development efforts with the Defense Threat Reduction Agency (DTRA) for software integration, development and analysis efforts. He developed marketing plans, white papers and presentations to both internal and external customers. He was the project manager for WMD Defeat Technology ID/IQ contract with a \$1.2B ceiling with DTRA. Mr. Bertuna managed multiple task orders covering wide range of products and services. He assisted with proposal preparation and provided final review of outgoing proposals. He evaluated risks and financial impacts to ensure compliance with company policies. Mr. Bertuna provided

technical and financial expertise to evaluate several potential acquisition targets. Mr. Bertuna analyzed business operations, backlog, contracts and pipeline for senior corporate development manager.

Business Manager, Software AG, 2004–2005. While employed with Software AG, Mr. Bertuna provided financial, contractual, proposal and advisory support to consulting group. He assisted with proposal preparation and provided final review of outgoing proposals for business terms. He evaluated risks and financial impacts to ensure compliance with company guidelines and provide recommendations to mitigate potential risks. Mr. Bertuna developed annual operating budget for consulting group and provide monthly forecast of revenue and profitability along with trend and variance analysis. Mr. Bertuna also reviewed teaming agreements and contract terms & conditions for prime and subcontract agreements with government and private clients to ensure compliance with federal regulations and internal policies. He analyzed current business processes to identify areas of inefficiency and propose improvements to processes which result in time and cost savings.

Finance & Administration Manager, ICF Consulting, 2000–2004. He participated in strategic planning related to the acquisition of key companies and/or discrete business assets. He worked with senior management to develop short-term and long-term strategic plans based on sound financial assumptions. Mr. Bertuna prepared annual operating budgets for various lines of business and provided senior management with periodic budgeting and forecasting of revenue, labor and expenses. Mr. Bertuna produced financial and contractual analyses, monthly revenue recognition in accordance with generally accepted accounting practices, cash flow and accounts receivable analysis. He participated in business proposal review and response, contract negotiation and execution and post-award administration. Mr. Bertuna prepared and negotiated teaming agreements and terms & conditions for prime and subcontract agreements with government clients. He reviewed terms for compliance with Federal Acquisition Regulations (FAR) regulations and internal ICF policies. He performed contractual and financial due diligence, contract novation and transfer, migration into Costpoint accounting system, and project reconciliation for acquired businesses.

AWARDS

Blanche Witte Memorial Award, 1995

PROFESSIONAL AFFILIATIONS

- National Defense Industrial Association (NDIA)
- Association for Financial Professionals (AFP)
- Financial Management Association (FMA)

EMPLOYMENT HISTORY

ICF International	Vice President	2010–Present
Cubic Applications, Inc.	Deputy General Manager	2005–2010
Software AG	Finance Manager	2004–2005
ICF Consulting	Finance & Contracts Manager	2000–2004
Defense Threat Reduction Agency	Contracting Officer	1994–2000

Christina H. Techico, M.A.

Workforce Development

EDUCATION

M.A., Counseling Education, San Jose State University, San Jose, California, 1998

B.A., Psychology, Wellesley College, Wellesley, Massachusetts, 1995

EXPERIENCE OVERVIEW

Ms. Techico has over fifteen years of experience working on workforce development, social service programs, youth development, and education reform efforts, primarily for the U.S. Departments of Labor, Education, and Health and Human Services at the Federal, State, and local levels. Her strengths lie in end-to-end strategic planning, program design, project development, implementation, technical assistance and training, and management. Currently, she manages several projects on welfare reform, workforce development, and projects that target special populations, such as at-risk youth. She serves as the Project Director for the Temporary Assistance for Needy Families (TANF) Information Technology (IT) Initiative which includes the development of the flagship tool, the Online Work Readiness Assessment, a comprehensive web-based tool that assesses individuals' readiness for work, their strengths, barriers to work, and helps develop pathways to self-sufficiency.

PROJECT EXPERIENCE

Welfare Reform

Online Work Readiness Assessment, Temporary Assistance for Needy Families (TANF) Information Technology (IT) Initiative, U.S. Department of Health and Human Services, Administration for Children and Families, Office of Family Assistance (OFA), 2007–Present. As Project Director for the TANF IT Initiative, Ms. Techico is in charge of the development of OWRA as well as the dissemination, outreach, training, and technical assistance to pilot States, tribes, and counties. With OWRA, TANF professionals can identify barriers to employment adequately and accurately and outline for TANF participants appropriate education, training, work core and non-core activities, as specified in the Deficit Reduction Act of 2005. OWRA will also help case managers connect TANF participants to labor market information as well as local workforce demands and needs. The OWRA tool has been field tested in 21 localities in 5 States, 2 Tribes, and the District of Columbia between 2009 and 2010.

Workforce and Economic Development and Education Reform

Technical Assistance for the DOL YouthBuild Program, U.S. Department of Labor (DOL) Employment and Training Administration Office of Workforce Investment, 2007–Present. The DOL YouthBuild program is designed to provide leadership development, construction skills training, academic certificate/degree attainment, and other supports with the objective of moving at-risk and out-of-school youth to full time, sustainable employment. Ms. Techico manages the project for ICF and oversees on-site staff. In addition, she provides subject matter expertise and support on this project as it relates to youth development and workforce development.

YouthBuild Community of Practice, 2007–2009. As a technical assistance strategy, ICF developed and hosted the first DOL Community of Practice—the YouthBuild Community of Practice (CoP) for current DOL and Housing and Urban Development (HUD) YouthBuild grantees. The CoP is a password protected environment that allows grantees to share resources, lessons learned, and strategies. Ms. Techico managed the project and also provided

ICF International

Workforce Development and Social Service Programs Expertise

- **15+ years of workforce development, social service programs and education reform experience.**
- **Manages several projects on welfare reform, workforce development, and targeting special populations, such as at-risk youth and ex-offenders.**
- **Managed federal initiatives in partnership with the U.S. Departments of Labor, Education, Health and Human Services, and Justice at the Federal and State level.**

technical assistance and training to Federal staff, technical assistance partners, and YouthBuild grantees. US DOL Employment and Training Administration (ETA) has viewed the YouthBuild CoP as a model CoP for other CoPs that has since been developed by ETA.

Strategic Partnerships for a Competitive Workforce (SPCW), U.S. Department of Labor, Employment and Training Administration, Office of Workforce Investment, 2005–2006. In partnership with the U.S. Department of Education, Office of Vocational and Adult Education, the U.S. Department of Labor created the Strategic Partnerships for a Competitive Workforce (SPCW) to inform and support communities that are building comprehensive workforce and educational solutions to meet the needs of high growth industries in their local communities. SPCW brought together local teams with representation from the workforce, community college, adult education, secondary education, employers, industry, and community based organizations to look at system changes and building career pathways in high-growth industries, such as healthcare, construction, and advanced manufacturing. Ms. Techico provided management and oversight over the delivery and design of the webinars.

Shared Youth Vision, U.S. Department of Labor (USDOL), Employment and Training Administration, Division of Youth Services, 2004–2005. Ms. Techico served as the project manager assisting USDOL in the design and implementation of the Shared Youth Vision. Specifically, Ms. Techico was responsible for implementing and managing three interagency Youth Regional Forums in the winter of 2004. The Forums were a collaboration between the U.S. Departments of Labor, Justice, Health and Human Services (Administration for Children and Families), and Education. Teams representing system leadership in education, workforce, juvenile justice, and foster care from each state attended one of the Youth Forums. The teams examined perspective changes in legislation, policy guidance, and operational processes, and formed new strategic responses to serving youth throughout the system.

Onsite Assignment, U.S. Department of Labor (USDOL) Employment and Training Administration (ETA) Division of Youth Services, 1998–2004. As part of the onsite assignment at USDOL, Ms. Techico provided direct technical assistance and training on youth employment projects. She developed policies and guidance to grantees and stakeholders; conducted strategic planning; facilitated partnership and collaboration; and designed technical assistance, training, and products addressing the nation’s most vulnerable youth, including foster care youth, incarcerated youth, at-risk youth, and high school dropouts. In addition, she provided subject matter expertise on programmatic issues related to disabilities and youth development and conducted training for local youth employment programs’ staff.

EMPLOYMENT HISTORY

ICF International	Senior Manager	2010–Present
	Manager	2008–2010
	Senior Associate	2007–2008
DTI Associates-A Haverstick Company	Senior Policy Analyst	1998–2007
New Life Clinics	Crisis Response for Children, Youth, and Family Counselor	1998
	Adolescent and Family Counseling Intern	1997
Chinese Family for Christ	Summer Camp Director	
	3rd and 4th Grades Assistant Teacher	1995–1996

Dominic Modicamore, M.U.P.

ICF International

Economic Analysis

EDUCATION

M.U.P., Master of Urban Planning (specialization in Economic Development Planning), State University of New York, Buffalo, NY, 1997

B.A., Economic Geography (specialization in Urban and Regional Economic Analysis), State University of New York, Buffalo, NY, 1994

CERTIFICATIONS AND TRAINING

Certified in Federal Grants Management, 2011

Certified in REMI Policy Insight and REMI TranSight economic impact modeling, 2000

Certified in advanced IMPLAN economic impact modeling, 2009

Completed Training in the use of the Oxford Economic Model, an international macro-economic model

Cost Estimating training, 5-day course, 2009

EXPERIENCE OVERVIEW

Mr. Modicamore is an economist with 14 years of experience in economic analysis, labor market economics, economic impact modeling and analysis, and economic and community development. He is a firm subject matter expert in labor economics and economic impact modeling. Mr. Modicamore has conducted numerous studies across a broad range of economic areas, included labor market studies at the national, regional, and local levels and economic impact studies for various local economic and fiscal policies, changes in energy costs and regulations, labor market trends, economic development projects and initiatives, and transportation, utility, and infrastructure projects.

PROJECT EXPERIENCE

Labor Market Studies

Analyzing Labor Market Trends for Training and Placement of YouthBuild Participants in WA State, 2011. Mr. Modicamore completed a labor market information (LMI) analysis for the YouthBuild program, which focused on occupational trends and green-related industries and occupations in the State of Washington. The study included an analysis of the educational attainment and training required for successful placement of YouthBuild participants. YouthBuild is a community development program that addresses core issues facing low-income communities: housing, education, and employment.

Economic Impact of the Oil and Gas Industry in the Gulf Coast and Alaska, National Commission on BP Deepwater Horizon Oil Spill, 2010. While employed at Booz Allen Hamilton, Mr. Modicamore completed a labor market analysis and authored a report on the oil and gas industry in the Gulf Coast States and in Alaska. Direct and indirect employment and its impact on the state and local economies were analyzed.

HHS Labor Supply and Demand Model, Department of Health and Human Services, 2009. While employed at Booz Allen Hamilton, Mr. Modicamore developed a labor supply and demand model for HHS that is used to measure the supply and demand of labor, by industry sector and occupation, required to convert all medical

Economic Impact and Telecommunications Expertise

- **Provided Grants Management support on the Due Diligence task for the Broadband Technology Opportunities Program.**
- **Analyzed Economic and Fiscal Impact of Taxing Telecommunications Infrastructure in Massachusetts.**
- **Analyzed Labor Market trends for green industries and occupations in WA, oil and gas industry in AK, employment trends by occupation in MA.**
- **Performed economic impact studies for the Army Office of Economic Adjustments, the Department of Defense, the Boston Mayor’s Office, and CT Light and Power.**

facilities in the US to electronic health records. A labor force “gap analysis” was also completed to measure the gap between the future supply and demand for particular labor categories.

Labor Market / Employment Projections 1999 – 2009. While employed at the Boston Redevelopment Authority and the Metropolitan Area Planning Council, Mr. Modicamore conducted short and long range labor market and employment projections by detailed industry sector for the city of Boston, numerous other cities and towns in Massachusetts, and Massachusetts as a whole. Included were projections for the labor force, employed, unemployed, and number of jobs by industry sector.

Economic Impact Studies

The Economic Impact of Utility Infrastructure Improvements and Rate Changes for Connecticut Light and Power, Regional Economic Models, Inc. 2009. As a subcontractor to Regional Economic Models, Inc. (REMI), Mr. Modicamore completed a study that forecasted the economic impact of utility infrastructure improvements and electricity rate changes. This included analyzing the economic impact of the construction phase of the utility infrastructure improvements and the long-term economic impact of changes in the electricity rate structure.

The Economic Impact of ARRA Stimulus funding to “Green” City and State owned Buildings in Boston, 2009. Using the REMI model for Boston and Massachusetts, Mr. Modicamore completed a study that measured the economic and fiscal impact of over \$500 million in construction spending on a number of projects in the City of Boston proposed to be funded by the ARRA. The projects included the “greening” of various city and state owned buildings, road and bridge infrastructure improvements, and large real estate development projects.

The Economic Impact of National Institutes of Health (NIH) funding in Boston, Mayor’s Office, City of Boston, 2007. While employed at the Boston Redevelopment Authority, Mr. Modicamore completed a study that projected the economic impact of over \$1 billion in NIH funding in Boston. The funding was received by a number of hospitals, universities, and medical research institutions in the Boston area, including Harvard University, the Massachusetts Institute of Technology, Massachusetts General Hospital, Brigham and Woman’s Hospital, and Dana Farber Cancer Institute.

The Economic and Fiscal Impact of Taxing Telecommunications Infrastructure in Massachusetts, 2005. This study projected the economic and fiscal impact of proposed legislation that would create a property tax on telecommunications infrastructure in Massachusetts. The study analyzed the impact of the tax on consumer telecommunication pricing, consumption, and capital investments.

Grants Management

Department of Commerce National Telecommunication and Information Administration (NTIA) Due Diligence for the Broadband Technology Opportunities Program (BTOP), 2010. While employed at Booz Allen Hamilton, Mr. Modicamore provided Grants Management support on the Due Diligence task for the Broadband Technology Opportunities Program (BTOP) of the American Recovery and Reinvestment Act (ARRA). Mr. Modicamore completed Budget and Sustainability financial risk assessments of applications for Sustainable Broadband Adoption (SBA) projects.

EMPLOYMENT HISTORY

ICF International	Senior Technical Specialist	2011
Booz Allen Hamilton	Senior Associate	2009–2011
Boston Redevelopment Authority	Senior Research Associate / Economist	2000–2009
Metropolitan Area Planning Council	Economic Development Planner	1999-2000
Town of Barnstable, Planning Department	Planner	1997-1999

John Douglas Ross, Ph.D.

ICF International

Education Assessment

EDUCATION

Ph.D., Curriculum and Instruction, Instructional Technology, Virginia Tech, Blacksburg, VA, 1999

M.A., Music in Music Education, University of Texas at Austin, Austin, Texas, 1986

B.M.E., Magna Cum Laude, University of South Carolina, Columbia, South Carolina, 1985

EXPERIENCE OVERVIEW

Mr. Ross is an experienced education professional with more than 20 years in the industry. Within the past 11 years he has focused on educational technologies and how they can impact the achievements of students and schools. He has extensive experience in research and evaluation to inform long-range planning, grants writing and product development. He specializes in developing and implementing technology plans that support long-term school improvement.

PROJECT EXPERIENCE

ICF International, 2011. Mr. Ross has served an expert consultant to ICF for the past year.

TechLearnTech.com, 2010-present. Mr. Ross is an instructional designer with expertise in education technology. He combines his unique set of skills to help schools, districts, states, and education organizations solve complex instructional problems. As an Education Technology Consultant, Mr. Ross helps educators use educational technologies to improve school and student achievements. He has extensive experience in expert facilitation in support of data-based decision making, developing and delivering professional development online and in person, and instructional design of print, web-based, and multimedia products and services.

Bethel University, 2010-present. As Adjunct Graduate Faculty, Mr. Ross teaches an online graduate course in educational technologies based on the textbook that he co-authored. The course is delivered entirely online to Masters of Education candidates and includes a series of podcast lectures that he wrote and narrated.

Edvantia (formerly AEL), 1999-2010. While at Edvantia, Mr. Ross serves as a researcher, writer, presenter, and multimedia designer specializing in educational technology and K-12 school improvement for a federal funded not-for-profit educational laboratory. He is an excellent project manager, consistently meeting deadlines and managing annual budgets exceeding \$1M. He is a frequent presenter at regional and national conferences and co-author of the first university-level textbook for teacher candidates that addresses the revised ISTE National Educational Technology Standards for Teachers. Mr. Ross has numerous standalone and web-based multimedia credits with role as instructional designer, content expert, media developer, and project manager. His projects include developing and/or hosting web conferences, webcasts, online discussions, and podcasts. As a professional development expert, he launched and managed a corporate-wide distance-learning environment called ePD@Edvantia serving more than 8,000 educators in multiple states.

Virginia Tech, 1996-1999. Mr. Ross served as an Instructor and Teaching Assistant for "History and Analysis of Musical Styles," a sophomore-level required course designed to provide music majors with critical analysis skills based on the tradition of Western Art Music. He was the instructional designer for technology-supported instructional program for Department of English as well as teaching assistant for Faculty Development Institute.

Education Expertise

- **25 years in the education industry.**
- **11+ years focusing on educational technologies.**
- **Research and evaluation to inform long-range planning, grant writing, and product development.**
- **Develops and implements technology plans that support long-term school improvement.**

Longwood College, 1997. As the Developer and Instructor of the web-based course “MSC 349: Marching Band Methods” Mr. Ross developed curriculum and designed all associated web pages, graphics, and animations for a distance-based course developed to provide necessary skills for undergraduate music education majors for all aspects of designing and implementing the modern high school marching band program.

SELECTED PUBLICATIONS AND PRESENTATIONS

Ross, J. (2011). *Online Professional Development: Design, Deliver, Succeed!* Thousand Oaks, CA: Corwin Press. Selected as “Book of the Month” for July 2011 by Learning Forward (formerly the National Staff Development Council).

Cennamo, K., Ross, J. D., Ertmer, P. A. (2010). *Technology integration for meaningful classroom use: A standards-based approach.* Belmont, CA: Wadsworth.

Ross, J., & Wood, C. (2006). *Using data for informed decision making: Developing comprehensive data systems for Virginia educators.* Charleston, WV: Edvantia.

Ross, J. D., & Hambrick, K. (2002). *Technology's potential to support assessments that empower student learning: A research synthesis.* Charleston, WV: AEL.

Ross, J. D., McGraw, T. M., & Burdette, K. (2001). *Toward an effective use of technology in education: A summary of research.* Charleston, WV: AEL.

EMPLOYMENT HISTORY

ICF International	Expert Consultant	2011
TeachLearnTech.com	Educational Technology Consultant and Author	2010–Present
Bethel University	Adjunct Graduate Faculty	2010 –Present
Edvantia (formerly AEL)	Senior R&D Specialist, Instructional Technology / Director of Technology, Appalachia Regional Comprehensive Center	1999-2010
Virginia Tech	Instructor and Teaching Assistant	1996-1999
Longwood College	Developer and Instructor	Fall 1997
York High School	Director of Bands	1989-1996
Newport News Summer Institute for the Arts	Instructor	1994-1995
Clute Intermediate School	Director of Bands	1986-1989

Kevin McNichol

ICF International

Network Analysis & Design

EDUCATION

Diploma, General, Roseville High School, Roseville, Michigan, 1977

CERTIFICATIONS AND TRAINING

Facilitative Leadership, 2008

Windows 2000 Advanced Server MCSE Prep, 2000

Intro and Advanced Cisco Router Course, 1998

NetworkLAN Fundamentals, Writing Style for Professionals, C Programming, GNET Architecture and Operation, Leadership Training, 1988-1996

Broadband CATV Systems, 1981

Mechanical Engineering, 1977-1980

United States Naval Summer Science Academy, 1975

Engineering and Telecom Expertise

- **30 year telecommunications engineering professional.**
- **Performed engineering and construction projects in Maryland.**
- **Completed feasibility reviews on broadband applications.**
- **Fiber, wireline and wireless technical expertise.**
- **Conducts management assessment profiles for rural project awardees.**

EXPERIENCE OVERVIEW

Mr. McNichol is a 30 year veteran of the telecommunications industry. He has been responsible for the design and deployment of systems and evaluation of multiple technology platforms. Mr. McNichol has a record of successful technical operations and engineering consulting experience. He was a vital team member during the USDA Broadband Initiatives Program and was responsible for completing network and engineering feasibility reviews for fiber, wireline and wireless applications. He has a proven history of developing sustainable solutions at an affordable cost and has a demonstrated ability to meet tight deadlines.

PROJECT EXPERIENCE

ICF International - USDA RUS Broadband Initiatives Program (BIP), 2009-present. Mr. McNichol performed reviews of engineering proposals, subscriber acquisition projections, Environmental Impact Statements and other documents submitted by Applicants. Feasibility analysis was completed and recommendations were then provided for each Applicant. Mr. McNichol now has key responsibilities for performing post-award site visits to project awardees to provide management analysis and progress status reporting to the USDA Engineering branch.

Comcast, 2003-2009. Mr. McNichol was responsible for engineering, including overseeing LMC operations for Indiana and Missouri regions. He oversaw all headend operations and transport to and maintenance of all hubs and OTN facilities. He implemented Tandberg/Broadbus VOD system in Western Michigan using Motorola settops. He deployed and activated remote monitoring for analog and QAM signal quality in Hubs and implemented digital video monitoring across footprint. He upgraded ALOHA network for full interactive capability for 50% less capital cost than the other regions. He migrated VOD system for 1/3M customers from Concurrent to Tandberg/Broadbus with minimal disruption and completed installation and activation of 13 zones of Digital Ad-Insertion equipment.

As the Director of Engineering and Construction for Montgomery County, Maryland, Mr. McNichol reduced underground cables replacement time by 50% and met 95% serviceability prior to occupancy. He led the region

in commercial build goals and was first in the region to complete the CHSI upgrade to 3 Mbps. He piloted the DVR launch for the company using Motorola settops and conducted extensive troubleshooting of the units. He launched the OnDemand, DVRs, CDV, ADS, Enhance Cable and Family Tier within 24 months. Mr. McNichol developed concept production for "MDU encoder" product which is used company-wide in digital simulcast markets. He implemented changes to improve Motorola DAC performance by 31% prior to DAC upgrade.

AT&T Broadband, 2001-2002. While the Director of Operations Mr. McNichol ensured high availability of services for all affiliated during the transitions for RoadRunner to AT&T Broadband and from mediaone.net to attbi.com. He oversaw the migration of NOC support for all "former RoadRunner" markets to AT&T BB NNOC.

ServiceCo, LLC (a.k.a. RoadRunner), 1998-2001. As the Director of Operations for the Central Region Mr. McNichol built, managed and staffed three Regional Data Centers supporting over 15 markets. He activated 12 markets for DOCSIS service and implemented DOCSIS overlays in the remaining 3. He conceptualized and drove the implementation of a modified POP3 server to reduce customer impact during planned and unplanned server maintenance windows. He migrated inbound modem service for MN telco-return system from an outside vendor to an in-house phone switch which eliminated expense and improved performance.

Continental Cablevision/MediaOne, 1996-1998. As the Director of Engineering for the Michigan/Ohio region, Mr. McNichol implemented cablemodem service using LanCity product and telco return modem service in the Ann Arbor, MI and St. Paul, MN markets. He coordinated and assisted the Construction and Field Operations Departments on the testing and certification of return plant and the resolution of reverse plant issues. He was the technical consultant to the Corporate Learning Center of Excellent team for the development of standard training courses for all technical employees nationwide.

EMPLOYMENT HISTORY

ICF International	Expert Consultant	2011–Present
Self Employed	Private Consultant	2009-2011
Comcast	Regional VP of Engineering and Technology – Michigan Region	2006-2009
Comcast	Director of Engineering and Construction – Montgomery County, MD	2003-2006
AT&T Broadband	Director of Operation, Detroit Regional Center	2001-2002
Serviceco, LLC (RoadRunner)	Director of Operations, Central Region	1998-2001
Continental Cablevision/MediaOne	Director of Engineering-HSD	1996-1998
Electronic Data Systems	Tech Leader	1988-1996
Continental Cablevision of St. Louis	District Engineer St. Louis / Southern Illinois	1985-1988
Continental Cablevision of Michigan	RF/Data Engineer	1980-1985

Robert Dunmyer

ICF International

Federal Program Compliance

EDUCATION

Masters in Finance, University of Colorado, Denver, CO, 2002

Masters in Management, University of Colorado, Denver, CO, 2002

CERTIFICATIONS AND TRAINING

Certificate of Entrepreneurship, University of Denver, Denver, CO 2002

EXPERIENCE OVERVIEW

Mr. Dunmyer has 12 years of financial planning and analysis experience. He has exceptional analytical, strategic planning and organizational skills. He has a track record of excellent leadership and the ability to nurture relationships and communication between functional groups during all phases of a company's growth and delivers business solutions acceptable to all departments and levels of management. He is an accomplished team leader, coordinator and facilitator with a history of quantifiable results.

PROJECT EXPERIENCE

Broadband Initiatives Program (BIP), USDA Rural Utilities Service Management Assessment Profile (MAP visits), 2009-present. Now that the BIP awards have been issued Mr. Dunmyer is the project lead for the MAP visit phase of the project. These MAP visits are used to assess the management team of BIP awardees, the organization's ability to execute on the BIP project as submitted in the application and to confirm that all projects are compliant with BIP guidelines. Mr. Dunmyer works closely with RUS HQ in Washington DC as in depth reports are reviewed to determine if recommendations need to be issued to the awardee. Projects with serious concerns are followed up on to focus efforts appropriately. In many cases, the MAP team has discovered and corrected problems that could have impacted a project's success.

Broadband Initiatives Program (BIP), USDA Rural Utilities Service Application Review task, 2009-present. As a Senior Manager on the Broadband team, Mr. Dunmyer lead a team of feasibility analysts that were responsible for completing financial, demographic and business plan assessments of various broadband services and network projects for fiber and wireless applications and completing project reports for each of the applications. Mr. Dunmyer participated in feasibility reviews with upper management and coordinates with senior staff as needed for assigned projects. Mr. Dunmyer created multiple financial models to assist in the analysis of the broadband applications including one that determines whether an application can handle a larger loan as part of the capital funding request, a model that analyzes the weighted average useful life of the applicants capital assets and was a lead on the team that created the workbook that was used to analyze all the applications that were submitted to the USDA RUS in Round 2 of the Broadband Initiatives Program.

Med1Online, LLC, 2005-2009 While employed at Med1Online, LLC as the Corporate Controller, Mr. Dunmyer managed overall accounting systems and processes for this medical equipment distributor. His responsibilities included: management of all financial reporting, budgeting, planning and forecasting, interfacing with external auditors and investor group for due diligence on financial transactions, interfacing with tax accountants on income tax matters, managing staff of fifteen professionals responsible for general accounting, treasury management, benefits and payroll. He led the corporate initiative to automate business processes around a new CRM and ERP system. He conducted work flow process analysis of every corporate task with department heads

Compliance & Financial Expertise

- **Fortune 100 Telecommunications experience.**
- **13 years of financial planning and analysis.**
- **Lead compliance expert for BIP MAP visits.**
- **BIP Financial Feasibility Team Lead for middle mile, last mile and satellite applications.**

companywide. By removing personnel transaction touches he eliminated redundancy and increased productivity. Mr. Dunmyer was instrumental in instituting the paper-less initiative which resulted in the ROI of the ERP purchase being accomplished one year earlier than forecasted.

The FeedRoom, 2003-2005. While serving as Director of Finance to the FeedRoom, a broadband video solutions business that provides video-centric web applications to Fortune 100 Companies, such as Wal-Mart, GE, GM, Reuters and HP, Mr. Dunmyer managed FP&A, budgeting and developed internal audit procedures with the accounting department. He developed a financial model used to pursue a mezzanine round of financing and compared monthly numbers to plan and presented to the Board of Directors. He project managed a scalable system for software developers to communicate with multiple clients to keep more simultaneous projects on track to completion on release dates using an Agile development methodology. By gathering business requirements from new and existing clients, he was able to translate this information into functional system requirements for the developers and worked with staff to articulate technical limitations for clients.

Qwest Communications, 1999-2002. Mr. Dunmyer was a Senior Manager in Finance and worked closely with several business units to develop a financial model for a startup division within Qwest and received funding to launch 27 metro fiber networks. He was integral in completing the goal of launching 25 metro fiber networks in 24 months. Mr. Dunmyer built a team of 7 business and financial analysts that presented detailed city level business cases to executives. Decisions were driven by analysis of telecomm demand, ease of construction and time to market using NPV, IRR, and ROI. Mr. Dunmyer controlled a budget of \$700 million and reported performance monthly including variance analysis for projected cost savings (\$100 million) and target revenue (\$500 million) and capital spending.

Knowledge Alliance, 1997-1999. Mr. Dunmyer led the integration of 7 corporate acquisitions in two years at this start up and coordinated the move of all accounting operations to Denver, CO. He centralized and integrated all accounting operations on a Great Plains platform. He was responsible for due diligence and valuation of more than 30 target acquisitions.

EMPLOYMENT HISTORY

ICF International	Senior Manager	2011-Present
	Expert Consultant	2009-2011
Med1Online, LLC	Corporate Controller	2005-2009
The Feed Room	Director – Finance & Operations	2003-2005
Qwest Communications	Finance Operations – Senior Manager of Capital Management	1999-2002
Knowledge Alliance	Financial Planning & Analysis – FP&A	1997-1999

Jon Moriarty

ICF International

Mapping & GIS**EDUCATION**

B.A., Economics, University of Pennsylvania, Philadelphia, PA 1998

EXPERIENCE OVERVIEW

Mr. Moriarty has over 13 years of experience in project management roles for both large and small scale Federal IT implementations. He has been an analyst, lead consultant, and account manager on projects ranging from single FTE consulting engagements to staffs of 20 dedicated to full life cycle development. On these projects, Mr. Moriarty was responsible for all aspects of the projects including staff, cost, and schedule. As a solutions engineer and consultant, he designs, develops, and delivers large-scale, multi-vendor implementations. He has a broad base of professional experience in information technology consulting, enterprise architecture, project management, web development, and vendor relationship management.

PROJECT EXPERIENCE

Broadband Initiatives Program (BIP), USDA Rural Utilities Service, 2009-present. Mr. Moriarty is currently leading the technology and spatial analytics teams in designing, developing, and implementing workflow automation tools, spatial analytics conclusions, and both ad hoc and designated reports for the review of ARRA broadband stimulus grant and loan applications. The project has led to development and refinement of reusable geospatial and data analytical models for use in national broadband analysis and has provided both spatial and traditional reporting materials to audiences ranging from RD staff to senior White House officials.

Application Processing, Development, and Reporting, USDA Rural Housing Service. 2009-Present Mr. Moriarty is currently overseeing the IT portions of projects to support and stabilize USDA agency-funded multi-family housing. The project goals are to help optimize processes, develop and deliver automated reporting and training, support underwriting and loan review, and support loan committees. Specifically, Mr. Moriarty and his team assist with dynamic reporting using data from MFIS & AMAS in Hyperion and Informix to provide reports and dashboards to senior officials.

National Training and Technical Assistance Center, US Department of Justice. 2010-Present Mr. Moriarty currently oversees the technical development and maintenance of IT systems that support the delivery and reporting of training and technical assistance for both DOJ's Office of Victims of Crimes (OVC) and its Office of Juvenile Justice & Delinquency Prevention (OJJDP). Responsibilities include high level management, product release management, architecture coordination, and development team throughput for each project.

Pay.gov Implementation, U.S. Department of Treasury. 2004-2009. Mr. Moriarty was part of a team responsible for product management, implementation, and enterprise architecture for the Department of the Treasury's online payment service, Pay.gov. Implementation responsibilities included technical coordination between agencies for nearly one quarter of the Federal government. Additional responsibilities include the multi-year implementation of a customized performance tracking system, management of a repeatable implementation

Mapping & GIS Expertise

- Senior Manager with database and spatial analytics teams.
- Experienced in design of logical workflow automation tools to support complex large scale projects such as the management of BIP applications and geospatial evaluation.
- Project lead in reviewing competitor broadband service areas claims and determining overlaps, under served areas and rurality applications.
- Project lead in converting network requirements from wireless technology coverage claims by vendors versus actual terrain and field tests.

process, supervision and administration of IT customer relationship management framework, and implementation of service-oriented enterprise architecture solutions.

Collections Management System, Kern County, CA Treasurer and Tax Collector, 2005-2009. Mr. Moriarty lead a team in developing a comprehensive tax collection and payment system for county tax payments. Technologies developed and implemented ranged from counter based check scanning, card swiping, and cash drawer operations to online bill payment with ACH and credit card options to back office reporting and mainframe integration. Primary responsibilities included client management and subcontractor management as well as database design, user interface development, and report creation.

v+Cart Product Management, Various Clients, 2005-2009. Mr. Moriarty was responsible for the full life-cycle management of a product line of shopping cart websites for Federal, State, local government and commercial clients. Responsibilities included concept, sales, design, development, and implementation. Product implementations included requirements analysis through customization, go-live, and maintenance. Select implementations include:

- FDIC - <https://vcart.velocitypayment.com/fdic/>
- U.S. Coast Guard - <https://vcart.velocitypayment.com/uscg/>
- U.S. Fish and Wildlife Service - <https://vcart.velocitypayment.com/fws/>
- State of Delaware - <http://shop.delaware.gov/>
- U.S. Navy Europe Morale Welfare & Recreation (site unavailable)

Enterprise Architecture Support, U.S. EPA Office of Research and Development, 2002-2003. Mr. Moriarty led a team of contractors charged with developing enterprise architecture artifacts for EPA’s Office of Research and Development. Results from the project fed design decisions and documentation required for submission to OMB.

National Beaches Program Reporting Support, U.S. EPA Office of Water, 2000-2001. Mr. Moriarty lead a team to develop a distributed performance tracking system for collecting and reporting water quality information from the nation’s beaches and provide a technical submission method through EPA’s Central Data Exchange (CDX). The results of the project were a precursor to the eventual development of eBeaches for EPA.

General Enforcement Management System, U.S. EPA Office of Enforcement and Compliance Assurance, 1999-2001. Mr. Moriarty worked on a team to provide requirements analysis and design for a consolidated IT system to track permitting, compliance, and enforcement within EPA OECA. Responsibilities included facilitation of multi-day Joint Application Design (JAD) sessions across the country, requirements definition, and general database design for the system.

EMPLOYMENT HISTORY

ICF International	Senior Manager	2009-Present
Govolution, LLC	Agency Adoption Manager and Vice President	2004-2009
	Solutions Engineering	
CGI-AMS	Analyst through Consultant	1998-2004

Attachment B: Mandatory Specification Checklist

List mandatory specifications contained in Section 2.5:

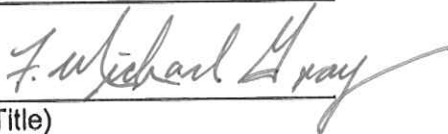
Not applicable.

I certify that the proposal submitted meets or exceeds all the mandatory specifications of this Request for Proposal. Additionally, I agree to provide any additional documentation deemed necessary by the State of West Virginia to demonstrate compliance with said mandatory specifications.

ICF Incorporated, L.L.C.

(Company)

F. Michael Gray



(Representative Name, Title)

703.934.3527

(Contact Phone/Fax Number)

November 17, 2011

(Date)

RFQ No. DEV1224

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (*West Virginia Code* §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: ICF Incorporated, L.L.C.

Authorized Signature: *Frederick Gray* Date: November 17, 2011
State of Virginia

County of Fairfax, to-wit:

Taken, subscribed, and sworn to before me this 17 day of November, 2011.

My Commission expires May 31, 2015, 20 .

AFFIX SEAL HERE

NOTARY PUBLIC *Runa McCann*



Rev. 09/08

State of West Virginia
VENDOR PREFERENCE CERTIFICATE

Certification and application* is hereby made for Preference in accordance with *West Virginia Code*, §5A-3-37. (Does not apply to construction contracts). *West Virginia Code*, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the *West Virginia Code*. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

1. **Application is made for 2.5% resident vendor preference for the reason checked:**
 Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; or,
 Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or,
 Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; or,
2. **Application is made for 2.5% resident vendor preference for the reason checked:**
 Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
3. **Application is made for 2.5% resident vendor preference for the reason checked:**
 Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
4. **Application is made for 5% resident vendor preference for the reason checked:**
 Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; or,
5. **Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**
 Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; or,
6. **Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**
 Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (*West Virginia Code*, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: ICF Incorporated, L.L.C.

Signed: *F. Michael Gray*

Date: November 17, 2011

Title: VP, Director of Contracts

*Check any combination of preference consideration(s) indicated above, which you are entitled to receive.