

Application for Federal Assistance SF-424

Version 02

* 1. Type of Submission:		* 2. Type of Application:		* If Revision, select appropriate letter(s):	
<input type="checkbox"/> Preapplication		<input checked="" type="checkbox"/> New		<input type="text"/>	
<input checked="" type="checkbox"/> Application		<input type="checkbox"/> Continuation		* Other (Specify)	
<input type="checkbox"/> Changed/Corrected Application		<input type="checkbox"/> Revision		<input type="text"/>	
* 3. Date Received:		4. Applicant Identifier:			
<input type="text" value="08/14/2009"/>		<input type="text"/>			
5a. Federal Entity Identifier:			* 5b. Federal Award Identifier:		
<input type="text"/>			<input type="text"/>		
State Use Only:					
6. Date Received by State:		7. State Application Identifier:			
<input type="text"/>		<input type="text"/>			
8. APPLICANT INFORMATION:					
* a. Legal Name: <input type="text" value="Commonwealth of Kentucky"/>					
* b. Employer/Taxpayer Identification Number (EIN/TIN):			* c. Organizational DUNS:		
<input type="text" value="610600439"/>			<input type="text" value="007002959"/>		
d. Address:					
* Street1:	<input type="text" value="700 Capitol Avenue"/>				
Street2:	<input type="text"/>				
* City:	<input type="text" value="Frankfort"/>				
County:	<input type="text" value="Franklin"/>				
* State:	<input type="text" value="KY: Kentucky"/>				
Province:	<input type="text"/>				
* Country:	<input type="text" value="USA: UNITED STATES"/>				
* Zip / Postal Code:	<input type="text" value="40601-3410"/>				
e. Organizational Unit:					
Department Name:			Division Name:		
<input type="text" value="Finance & Administration Cab"/>			<input type="text" value="Commonwealth Office Technology"/>		
f. Name and contact information of person to be contacted on matters involving this application:					
Prefix:	<input type="text" value="Mr."/>	* First Name:	<input type="text" value="Phil"/>		
Middle Name:	<input type="text"/>				
* Last Name:	<input type="text" value="Baughn"/>				
Suffix:	<input type="text"/>				
Title:	<input type="text" value="Chief Information Officer"/>				
Organizational Affiliation:					
<input type="text"/>					
* Telephone Number:	<input type="text" value="502-564-6840"/>	Fax Number:	<input type="text"/>		
* Email:	<input type="text" value="phil.baughn@ky.gov"/>				

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9. Type of Applicant 1: Select Applicant Type:

A: State Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

Department of Commerce

11. Catalog of Federal Domestic Assistance Number:

CFDA Title:

*** 12. Funding Opportunity Number:**

0660-ZA29

* Title:

Recovery Act - State Broadband Data and Development Grant Program

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

*** 15. Descriptive Title of Applicant's Project:**

Kentucky Broadband Mapping Project

Attach supporting documents as specified in agency instructions.

Add Attachments

Delete Attachments

View Attachments

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16. Congressional Districts Of:

* a. Applicant * b. Program/Project

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment

Delete Attachment

View Attachment

17. Proposed Project:

* a. Start Date: * b. End Date:

18. Estimated Funding (\$):

* a. Federal	<input type="text" value="3,500,000.00"/>
* b. Applicant	<input type="text" value="700,000.00"/>
* c. State	<input type="text" value="0.00"/>
* d. Local	<input type="text" value="0.00"/>
* e. Other	<input type="text" value="0.00"/>
* f. Program Income	<input type="text" value="0.00"/>
* g. TOTAL	<input type="text" value="4,200,000.00"/>

* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?

- a. This application was made available to the State under the Executive Order 12372 Process for review on
- b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- c. Program is not covered by E.O. 12372.

* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.)

Yes No

21. *By signing this application, I certify (1) to the statements contained in the list of certifications** and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)

 ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: * First Name: Middle Name: * Last Name: Suffix: * Title: * Telephone Number: Fax Number: * Email: * Signature of Authorized Representative: * Date Signed:

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*** Applicant Federal Debt Delinquency Explanation**

The following field should contain an explanation if the Applicant organization is delinquent on any Federal Debt. Maximum number of characters that can be entered is 4,000. Try and avoid extra spaces and carriage returns to maximize the availability of space.

PROJECT ABSTRACT

The Commonwealth of Kentucky (Commonwealth), through the Commonwealth Office of Technology (COT), welcomes the opportunity to expand broadband telecommunications services, with support from the American Recovery and Reinvestment Act of 2009 and the Broadband Data and Development Program. Increasing the access to and adoption of broadband services will build economic capital, strengthen public safety resources, improve living standards, expand educational and healthcare opportunities, and raise the levels of civic engagement and governmental transparency for Kentucky citizens and businesses.

In 2004, the Commonwealth began a mission to accelerate the growth of technology. The intent was to enhance support of community and economic development, improve healthcare, enhance education, and provide more effective government. At the time, Kentucky was one of the first states to have such a far reaching initiative.

It is critical that the level of broadband access throughout the Commonwealth is confirmed through adequate mapping and independent verification, so that the Commonwealth may intelligently and efficiently begin to identify the barriers that prevent so many Kentucky citizens from adopting broadband and reaping its benefits..

The Commonwealth proposes in this grant request to create a transparent, sustainable process by which to ensure that the information from carriers and other service providers regarding the type, quality and location of services is comprehensive and verifiable. The Commonwealth is issuing a Request for Proposals and will enter into competitive negotiations for a third-party vendor to collect the necessary provider information and produce a comprehensive, understandable map which details clearly the underserved/unserved areas of the state. The Commonwealth will contract with additional, separate and apart from the data collection vendor, third-party entity(s) to perform a verification audit of any and all data to determine the data validity. The collection vendor must share and collaborate with the audit entity all information required to determine data validity. The collection vendor and all affiliates awarded a contract for data collection will not be eligible to compete in the Broadband Mapping Audit RFP. The collection vendor will correct any and all errors identified by the third-party audit entity(s) at no additional cost to the Commonwealth.

Additionally, the Commonwealth is proposing various planning and research activities at the state and local levels. Among the research activities the Commonwealth will conduct is to identify unserved/underserved areas of the state and the community anchor institution. Other activities will include identifying barriers to the adoption of broadband and other information technology services, identifying available speeds for broadband connection in various regions, identifying and tracing areas with low levels of use, and facilitating information exchange.

EXECUTIVE SUMMARY

The Commonwealth of Kentucky (Commonwealth), through the Commonwealth Office of Technology (COT), welcomes the opportunity to expand broadband telecommunications services, with support from the American Recovery and Reinvestment Act of 2009 and the Broadband Data and Development Program. Increasing the access to and adoption of broadband services will build economic capital, strengthen public safety resources, improve living standards, expand educational and healthcare opportunities, and raise the levels of civic engagement and governmental transparency for Kentucky citizens and businesses.

In 2004, the Commonwealth began a mission to accelerate the growth of technology. The intent was to enhance support of community and economic development, improve healthcare, enhance education, and provide more effective government. In order to meet this mission, the Commonwealth entered into an agreement with an outside provider to create and maintain a statewide broadband map. At the time, Kentucky was one of the first states to have such a far reaching initiative. While that particular mapping initiative fulfilled the requirements at the time, the resulting maps need to be updated due to the ever-changing technology, growth of households, and expansion of broadband providers. Given the competitiveness of today's economic environment, the Commonwealth acknowledges the need for the most comprehensive data elements available.

It is critical that the level of broadband access throughout the Commonwealth is confirmed through adequate mapping and independent verification, so that the Commonwealth may intelligently and efficiently begin to identify the barriers that prevent so many Kentucky citizens from adopting broadband and reaping its benefits..

The Commonwealth proposes the following activities for the Broadband Data and Development Program:

1. Creation of a broadband map for Kentucky in accordance with the NTIA program standards and a state map with aggregate information compatible with the existing Commonwealth map
2. Audit and verification of the broadband mapping information by an independent third party
3. Identification of barriers to the adoption of broadband service and information technology services
4. Creation and facilitation of local planning teams including state and local leaders to develop regional ideas for broadband deployment and adoption by citizens and businesses
5. Prioritization and funding of project ideas to encourage use of broadband capabilities statewide

The Commonwealth proposes for the broadband mapping project to collect comprehensive and verifiable broadband data that meets the program standards. The data will be accessible and clearly presented to NTIA, the public, and state and local governments without unduly compromising data or the protection of confidential information. A workable and sustainable framework for repeated updating of data will be implemented. A plan for collaboration with state-level agencies, local authorities, and other constituencies, as well as a proposal for planning projects designed to identify and address broadband challenges in the state will be put into place. A reasonable and cost-efficient budget will be presented as will a representation of the capacity,

knowledge and experience of the Commonwealth and contractors. The Commonwealth will propose a timeline for expedient delivery of data with initial delivery of a substantially complete set of availability data by November 1, 2009.

The Commonwealth proposes in this grant request to create a transparent, sustainable process by which to ensure that the information from carriers and other service providers regarding the type, quality and location of services is comprehensive and verifiable. The Commonwealth is issuing a Request for Proposals and will enter into competitive negotiations for a third-party vendor (collection vendor) to collect the necessary provider information and produce a comprehensive, understandable map which details clearly the underserved/unserved areas of the state. The unserved and underserved areas of the Commonwealth (as defined by the Notice of Funds Availability) coincide with the rural areas of the state, generally but not limited to, the southern, eastern and western regions. The Commonwealth anticipates prioritizing the allocation of grant funds based on need and existence of community anchor institutions. The collection vendor will be asked to collaborate with the Commonwealth to evaluate ongoing needs and develop a comprehensive broadband plan to increase the sustained adoption of broadband services to Kentucky citizens. The Commonwealth will contract with additional, separate and apart from the collection vendor, third-party entity(s) (audit entity) to perform a verification audit of any and all data to determine the data validity and accuracy. The collection vendor must share and collaborate with the audit entity all information required to determine data validity at any location. The collection vendor and all affiliates awarded a contract for data collection will not be eligible to compete in the Broadband Mapping Audit RFP. The collection vendor will correct any and all errors identified by the third-party audit entity(s) at no additional cost to the Commonwealth.

Additionally, the Commonwealth is proposing various planning and research activities at the state and local levels. Among the research activities the Commonwealth will conduct is to identify unserved/underserved areas of the state and the community anchor institution. Other activities will include identifying barriers to the adoption of broadband and other information technology services, identifying available speeds for broadband connection in various regions, identifying and tracing areas with low levels of use, and facilitating information exchange.

PROPOSAL

1. Data

(a) Data Gathering

The Commonwealth is issuing a Request for Proposals and will enter into competitive negotiations for a third-party vendor to collect the required data and produce a comprehensive, understandable, interactive and searchable map of existing broadband service capability and availability. The collection vendor will also be required to develop geographical information system maps displaying levels of broadband service by connection speed and type of technology used. The maps must, at a minimum, conform to all requirements found in the Notice of Funding Availability and be consistent with the Federal Communications Commission's requirements for integration into the national broadband map. The mapping data will be developed to ensure integration with demographic information for statewide and national broadband services reporting. In addition the maps will clearly identify gaps in broadband service through a method of geographic information system mapping of service availability based on the geographic boundaries of where service is available or unavailable among residential or business customers. The map will also provide a baseline assessment of statewide

broadband deployment in terms of households with high speed availability and identify various layers of user businesses and organizations such as those involved in telecommunications, K-12 education, health care, public safety, libraries, higher education, community-based services, local government, tourism, parks and recreation, and agriculture.

The collection vendor will identify the speeds of broadband connections made available to individuals, businesses, rural areas, agricultural areas, and suppliers of critical infrastructure in Kentucky including educational institutions, health care providers, education providers, law enforcement, and local governmental institutions. At a minimum, the collection vendor may rely on the data rate benchmarks for broadband service utilized by the Federal Communications Commission (Commission) to reflect different speed tiers and to promote consistency of data with data gathered from other states.

The collection vendor will provide the NTIA with the broadband data collected from the various broadband providers and shall meet deadlines as stated in the NTIA Technical Appendix. The broadband data provided to NTIA will be in type and format required and will be submitted within the time constraints required by the NTIA deadlines.

The following information will be displayed on the broadband map(s):

- Geographic areas in which broadband service is available;
- Technologies used to provide broadband service in geographic areas;
- Spectrum used for the provision of wireless broadband service in geographic areas;
- Speeds at which broadband service is available in such areas; and,
- Broadband service availability at public schools, libraries, hospitals, colleges, and universities and all public buildings owned or leased by agencies or instrumentalities of the states or municipalities or other subdivisions of the states and their agencies or instrumentalities

The map will be searchable by address and to the extent possible, the type and speed of service will be provided for each address. If the broadband service provider agrees, their identity will be available; otherwise, the data displayed will indicate that a provider provides service to that location using a specific type of technology. Data concerning the average revenue per user and data regarding type, technical specification or location of infrastructure owned, leased or used by a broadband service provider will be collected but not displayed.

The specific information regarding data collection methodology will not be determined until a contract is signed with the collection vendor.

(b) Accuracy and Verification

The Commonwealth will contract with a third-party entity(s) to perform a verification audit of any and all data at any location. The verification audit will include analysis of the collection vendor's methodology, consistency with ESRI standards and the accuracy of the field testing information gathered by the collection vendor. The collection vendor must share and collaborate with the audit entity all information required to determine data validity and accuracy. The collection vendor and all affiliates awarded a contract for data collection will not be eligible to compete in the Broadband Mapping Audit RFP. The collection vendor will correct any and all errors identified by the audit entity at no additional cost to the Commonwealth.

The specific methodology to verify data accuracy will not be determined until a contract is signed with the audit entity.

(c) Accessibility

The Commonwealth will develop a statewide broadband map that will include the general broadband data collected from various broadband providers. The data will reflect all information provided to the NTIA in detail and content, with exception to data that is legally restricted. Supplemental data provided to the Commonwealth in a format that meets the following requirements:

- All map areas must be closed, non-overlapping polygons with a single, unique identifier. All polygons must have valid topology.
- Data must be in State Plane Single Zone Projection (FIPS1600)
- Data must be FGDC compliant metadata <http://www.fgdc.gov/metadata> in XML format.
- An ESRI File based geodatabase for the entire state or territory should be submitted as a single, zipped file containing all of the component files. The file should be named “area_availability_KY.zip”

The broadband map will be a comprehensive, understandable, interactive and searchable map of existing broadband service capability and availability. The map will be accessible to the public via a state website maintained by COT’s Division of Geographic Information (DGI). DGI currently maintains the Kentucky Geography Network (<http://kygeonet.ky.gov/>), which generates 5.5 to 7.5 million web hits monthly from approximately 36,000 unique visitors accessing interactive maps, retrieving data or doing data research.

(d) Security and Confidentiality

The Commonwealth agrees to treat any matter that is a trade secret, commercial or financial information, or privileged or confidential, as a record not subject to public disclosure except as otherwise mutually agreed to by the broadband service provider and the Commonwealth.

The collection vendor will be in compliance with privacy policies established by governmental agencies or by state or federal law. It is anticipated that the collection vendor will enter into non-disclosure agreements with the broadband service providers. The collection vendor and the audit entity will also enter into a non-disclosure agreement. The collection vendor will provide all detail to all federal governmental entities as required by the NTIA. The collection vendor will provide the general information in aggregate form to the Commonwealth.

Consistent with the Recovery Act’s emphasis on transparency and accountability, information regarding the Commonwealth’s efforts for the Broadband Data and Development Program will be posted on the Commonwealth’s recovery website: <http://kentuckyatwork.ky.gov/Pages/Broadband.aspx>. This information will include, but will not be limited to publicly searchable maps showing broadband availability, information regarding contracts for work to be done under this application and progress towards achieving the timelines outlined in the NOFA. The Commonwealth will be compliant with the section 1512 reporting requirements as well as any other ARRA required reporting and transparency information.

2. Project Feasibility

(a) Applicant Capabilities

The collection vendor will provide a budget in their cost proposal in response to the RFP. The budget must be reasonable and cost efficient. Their proposed budget will include, at a minimum:

- All relevant taxes and administrative fees
- Labor, travel and travel time
- Consultation services
- Supplies needed for the provisioning of the services and
- Total cost estimate for the project.

The collection vendor will also provide an annual cost for the years after the initial data collection for updating the data. This cost shall include all costs related to the semi annual maintenance and updates required by the NTIA and to be sent to the NTIA and the Commonwealth. The collection vendor will create and maintain a project budget, throughout the life of the contract.

The audit entity will also provide a budget in their response to the auditing RFP. The cost will include analysis of the collection vendor's methodology, consistency with ESRI standards and the accuracy of the field testing information gathered by the collection vendor. The costs must be reasonable and cost efficient. The proposed budgets will include the same categories as the cost proposals for the data collection RFP.

Specific costs will not be determined until vendor proposals are received. It is anticipated that the auditing costs will be approximately ten percent of the mapping costs.

The Commonwealth will use the funds for eligible costs as governed by the cost principles in OMB Circular A-87 and the Program's authorizing legislation. The Commonwealth acknowledges and agrees that the funds will not be expended for any casino or other gambling establishment, aquarium, zoo, golf course, or swimming pool.

The Commonwealth will meet the required 20 percent non-federal matching contribution with a combination of fair market value of data previously collected and related to the BDIA-eligible uses under this Program and non-cash expenditures of property, goods and services that will benefit the project. The amount of \$400,000 was expended by the Commonwealth prior to FY 2007 for data collected for a broadband mapping project. The data needs to be updated but should be a starting point for the collection vendor to use when planning the data collection for this project. The Commonwealth proposes to contribute approximately \$100,000 in the first year of the grant period for various support expenditures including but not limited to project monitoring (salary and overhead), contract management (salary and overhead), reconciliation activities, necessary creation and maintenance of mapping services and map products from DGI, website and storage costs, communications and printing costs. In the remaining years of the contract it is estimated that the costs will drop to approximately \$50,000 per year for the oversight and support of updating the maps and other support activities.

(b) Applicant Capacity, Knowledge and Experience

The Commonwealth Office of Technology (COT) oversees the shared IT infrastructure resources and services of the Executive Branch and establishes partnerships and alliances for effective implementation of IT projects. COT is responsible for developing and implementing statewide IT applications, and for establishing IT policy and standards, as well as strategic and tactical IT planning.

COT adheres to the Commonwealth IT Enterprise Architecture and Standards which reflect a set of principles for information, technology, applications, and organization. These standards provide guidelines, policies, directional statements and sets of standards for information technology. It defines, for the Commonwealth, functional and information needs so that technology choices can be made based on business objectives and service delivery.

Web link: http://technology.ky.gov/policies/architecture_and_stds.htm

The entire management team at COT is ITIL certified (Information Technology Infrastructure Library.) ITIL is a framework of best practice approaches intended to facilitate the delivery of high quality information technology services. COT is in the process of implementing ITIL practices in day-to-day operations.

The Chief Information Officer for Kentucky and the Commonwealth Office of Technology Commissioner is Philip Baughn. He has led large-scale corporate turnarounds, been the CIO of two international technology companies, and overseen the introduction of two formal Project Management Offices. His background includes all aspects of technical leadership and oversight as well as a keen understanding of executive business and change management.

As it relates to the broadband stimulus program itself, COT has particular skills in management of the following complex and large-scale technology projects:

- **KIH2**

The Kentucky Information Highway is a statewide telecommunications and information network developed by Kentucky state government in partnership with the state's local telephone companies. In 1995, the Commonwealth of Kentucky entered into a ten-year contract with a consortium of communication companies to develop the Kentucky Information Highway (KIH). BellSouth served as the prime contractor, coordinating a consortium of Kentucky's nineteen other local telephone companies (local exchange carriers) and Qwest Communications, a long-distance carrier, as a co-prime contractor. In 2005, the Commonwealth of Kentucky bid and let an RFP for KIH-2 in order to upgrade its telecommunications network and reduce costs. AT&T was awarded this contract, and has sub-contracted with all of the other local telephone companies to provide a state wide MPLS (WAN) network. The MPLS backbone that supports KIH-2 provides increased resiliency/fault tolerance within the providers' network, as well as increased security by virtually segmenting the WAN based on agency needs.

Today, over 1,200 sites are inter-connected across the state including Executive Branch Agencies, libraries, local government and health departments. KIH-2 is managed by the Commonwealth Office of Technology Network Operations Branch, which is responsible for the design, implementation, and support of the KIH infrastructure. The core of the KIH-2 network is located at the Commonwealth Data Center, and is comprised of multiple enterprise and carrier class switches that are connected by gigabit Ethernet. This network is extended to the Frankfort Metropolitan Area Network (MAN) over a fiber optic network. Furthermore, KIH-2 connects all 120 counties through a Wide Area Network (WAN) utilizing high-speed data circuits via an MPLS network. KIH-2 connectivity from COT offers many additional services to the entire Commonwealth including:

- The Internet
- Email and Global Address Listing

- Agency/Department LAN based systems and servers
- The Mainframe
- eMARS for Accounting and Procurement
- Other servers on the network

These services are provisioned, configured, installed, and supported solely through COT, as a turnkey solution. KIH-2 is more than just a means of connecting sites. In fact, KIH-2 is actually a series of value-added services (configuration, support/troubleshooting, monitoring, and security) that allow agencies to concentrate on the deployment of key business solutions that relate directly to their business model.

- **GIS**

The Division of Geographic Information (DGI), a division of the Commonwealth Office of Technology, is responsible for encouraging, coordinating, and implementing GIS programs throughout the Commonwealth of Kentucky. DGI works with state, regional, and local governmental entities, and serves as liaison to federal agencies. Activities include strategic planning, implementation services, technical and administrative support, dissemination of geospatial data, grant administration, research, and policy development. Many agencies throughout the Commonwealth use DGI's resources on a daily basis and stakeholders have grown to expect that they will find the most current information available. Many stakeholders leverage the extensive GIS Base Data resources as a basic part of doing GIS or providing internet mapping applications to state workers or citizens.

For years, Kentucky has been accurately acknowledged as one of the best mapped states in the United States. In the past two decades, major efforts have been made to compile this "mapping," using state-of-the-art Geographic Information System (GIS) technologies. These efforts have ranked Kentucky State Government near the top in the United States in terms of successful enterprise GIS Implementations. As a result, agencies leveraging these resources have improved their effectiveness and efficiency while being able to view the immediate and long-term effects of their actions or proposed actions. Their application of GIS provides decision support on issues regarding land and property use analysis, policy and regulation implementation, boundary designations, protection of natural resources, infrastructure planning and maintenance, and provisions for public safety and event response.

ESRI magazine recognized DGI for their leadership in GIS in 2005.

<http://www.esri.com/news/arcnews/summer05/articles/commonwealth-of-kentucky.html>

- **KEWS**

COT manages and maintains the statewide public safety communications network named the Kentucky Emergency Warning System (KEWS). KEWS is a robust all-weather communications network that is a highly survivable emergency communications network initiated in 1979. KEWS provides service to Commonwealth agencies such as the Kentucky State Police, Department of Military Affairs, Kentucky Educational Television, Department of Fish and

Wildlife Resources, Kentucky Transportation Cabinet, Department of Natural Resources, Kentucky Emergency Management, and the University of Kentucky, as well as Federal and Local agencies such as the Federal Bureau of Investigations, National Weather Service, and numerous Local/County Emergency Medical Services. COT is managing a multi-year project to upgrade the KEWS network to complete digital service.

- **Wireless Networking**

COT has successfully completed the installation of wireless Internet systems throughout the state. The installations include 17 of Kentucky's State Resort Parks and the Kentucky Horse Park's new outdoor and indoor arenas along with much of the park grounds. Additionally, COT is growing our wireless footprint and expertise at an exponential rate to stay ahead of the demands of our customer agencies.

The COT executive and technical staff has a wealth of knowledge and experience in large-scale information technology initiatives that include infrastructure, application development and project management.

The collection vendor and audit entity will be evaluated on project staffing including knowledge and experience with similar projects. The specific information will not be determined until a contract is signed with the vendors.

3. Expedient Data Delivery

Although the specific timeline for data delivery will not be determined until the contracts are awarded for this project, the Commonwealth has the knowledge and experience as described below to manage the project to ensure that the required timelines are met.

The Commonwealth's use of GIS

- Kentucky currently maintains a nationally recognized, publicly-available Enterprise GIS accessible as interactive maps, downloadable data and baseline information.
- Kentucky enters 2009 with over 29 years experience in GIS, beginning with Governor Julian Carroll's "Lands Unsuitable for Mining Project".
- The Kentucky Geography Network (<http://kygeonet.ky.gov/>) monthly generates from 5.5 to 7.5 million web hits from upwards of 36,000 unique visitors accessing interactive maps, retrieving data or doing data research.
- Consultants, investors, economic development specialists, environmental protection entities, local governments, and a host of other people utilize Kentucky's services as they look to invest, locate, or visit the Commonwealth.
- Kentucky's statewide Water & Wastewater Infrastructure, Mining, Transportation, Recreation, and Geology GIS data stores are unmatched in the nation.
- The Kentucky Event Mapping and Analysis Portal (KEMAP) provides a secure mapping portal for use by agencies who have access to potentially sensitive information e.g. Homeland Security (EOC), National Guard (JOC), Environmental Response Team, etc.

For many years, Kentucky has been acknowledged as one of the best mapped states in the nation. In the past two decades, major efforts have been made to compile this “mapping,” using state-of-the-art Geographic Information System (GIS) technologies. These efforts have ranked Kentucky State Government near the top in the nation in terms of successful enterprise GIS Implementations. As a result, agencies leveraging these resources have improved their effectiveness and efficiency while being able to view the immediate and long-term effects of their actions or proposed actions. Their application of GIS provides decision support on issues regarding land and property use analysis, policy and regulation implementation, boundary designations, protection of natural resources, infrastructure planning and maintenance, and provisions for public safety and event response.

Responsibilities of DGI

The Division of Geographic Information (DGI) is now structured within the Commonwealth Office of Technology and is responsible for encouraging, coordinating, and implementing GIS programs throughout the Commonwealth of Kentucky. DGI works with state, regional, and local governmental entities, and serves as liaison to federal agencies. Activities include strategic planning, implementation services, technical and administrative support, dissemination of geospatial data, grant administration, research, and policy development.

It is important to note that a multitude of agencies use DGI’s resources on a daily basis. External leveraging is due to the large number of stakeholders that participated in their initial development and implementation. Stakeholders have grown to expect to find the most current information available and are dependent on this information to drive their in-house decision-making and business processes. Additionally, many stakeholders leverage the extensive GIS Base Data resources as a basic part of doing GIS or providing internet mapping applications to state workers or citizens. It is this “utility” and open sharing of data and information that will continue to drive GIS in Kentucky.

Geospatial Computing and Resource Asset

Below is an outline of the “Geospatial Assets” managed by DGI. Each asset is critical in that they interact with each other, but also they interact/communicate with components in other agencies at the regional, state, and even federal level. It is important that these assets maintain a high level of availability so as not to disrupt the flow of spatial information within state government and to entities in all sectors.

DBMS (Database) & Spatial Database Engine (SDE)

DGI stores all critical raster and vector data in a robust RDBMS (MS SQL Server) using ESRI’s Spatial Database Engine, or SDE. This allows for backend connections to other RDBMS in terms of attribute data and is a state-of-the-art method for storing extremely large raster (imagery) datasets.

KyRaster

KyRaster is one of the most valuable GIS components in Kentucky. It has been mirrored to COT (Cold Harbor), EPPC Information Services, McVey Hall (UK Computing Center), and Kentucky State University. It can be replicated by other state agencies as their in-house needs for this dataset are increased. This 2TB geodatabase contains all the aerial images, topographic maps, digital elevation models, hillshade, SPOT satellite imagery, TruColor Imagery, LandCover Imagery, Slope, and other critical raster GIS base layers. Nearly every State Agency (that does

GIS) leverages this resource in one way or another. It drives all but two of the Internet Mapping Applications served by State Government, is an invaluable in-house tool for the DGI, and is leveraged on the GIS Desktop by users in State Agencies. KyRaster is THE base GIS data for Kentucky.

Two instances of this resource exist. One instance is dedicated to Internet Mapping Application while the other serves image data across the WAN to GIS Desktops. Other instances will be replicated at various physical locations as the demand for this resource grows.

KyVector

Like KyRaster, KyVector is the master repository of vector-based (lines, polygons, and points) GIS data in the Commonwealth. It is based on all vector data that is available on the Kentucky Geography Network. This SDE instance is leveraged by ArcGIS users within the WAN and many internet mapping applications. The KyVector database mirrors the categories on the “browse” tab of the KYGEONET. A “KYGEONET” link has been added to each vector dataset so users have easy access to the metadata for the data they are working with. KyVector now houses 250+ thematic layers.

Web Mapping Services

The early and original method of sharing the results of GIS data analysis was by plotting hard-copy maps. Although still an effective manner of communication, hard-copy map production is NOT cost-effective and should be used only in certain situations. Alternatively, the use of internet mapping is new, however its utilization in State Government is key to the efficient dissemination of spatial (mapped) information in a “Streamlined” Government. Kentucky is leading the nation in the application of internet mapping and DGI’s GIS resources are now the basis of this success. The use of this technology puts DGI at the front of Kentucky’s GIS Community and allows for cost effective provision/communication using location based information. DGI currently hosts sites for state and local government entities at little or no cost.

Kentucky Geography Network

A prime example of a truly successful and collaborative effort is that of the Kentucky Geography Network (<http://kygeonet.ky.gov/>). This web service is the geospatial data clearinghouse for the Commonwealth. The site and its associated services normally has over 7,500,000 hits per month and has been held by the World GIS Community as the “model” for implementing GIS data sharing for a given area . . . in this case Kentucky. Several agencies pooled their expertise and resources to launch this site . . . with a \$0.00 budget! The service is very small in terms of physical size. The whole thing would probably fit on a CD. What it does is “point” or “direct” users to the GIS data resources that are available for Kentucky. Once a “publisher” to the service has been setup, there is very little administration that is performed by DGI Staff. Publishers manage their publications remotely and are diligent in keeping their information current and available. A unique pool of expertise is required to maintain this on behalf of all users and publishers and that expertise now resides at DGI.

Another important thing to note regarding the Kygeonet is its full integration with the Federal Geospatial One-Stop at Geodata.gov. The Kygeonet and the Geospatial One Stop (GOS) are truly synchronized web services. Items published to the Kygeonet are “harvested” by the GOS on a consistent basis thus ensuring that the data is current at both the state and federal levels. Both the GOS and Kygeonet are built on ESRI’s ArcIMS Metadata services and both have been highly successful implementations.

In addition to the listed projects, the personnel in the DGI have over 75 years of GIS specific professional experience; the contract and project managers have the ability to ensure that the data is received within the proposed timelines and technically sound.

The collection vendor and the Commonwealth will meet the following deadlines as stated in the NTIA Technical Appendix.

- Substantially complete set of availability data by November 1, 2009, accurate as of June 30, 2009
- Substantially complete set of broadband mapping data on or before February 1, 2010
- Complete data collection by March 1, 2010

The Commonwealth understands that a data set is considered substantially complete when it contains data on broadband services provided by a) 70 percent of broadband service providers in a state; b) to 80 percent of households in a state; c) to 90 percent of households in rural areas of the state and d) to 95 percent of public Community Anchor Institutions.

A more detailed timeline will not be available until vendors are determined for the project.

4. Process for Repeated Data Updating

The collection vendor will maintain the broadband mapping with semi-annual updates due each March 1st and September 1st throughout the life of the contract starting with September 1st after the initial data collection. Data will be accurate according to the following schedule.

- Updates for March 1st shall be accurate as of December 31st of the previous calendar year.
- Updates for September 1st shall be accurate as of June 30th of the same calendar year.

A more detailed process for data updating will not be available until vendors are determined for the project.

5. Planning and Collaboration

The Commonwealth is requesting \$500,000 in planning funds for various planning and research activities at the state and local levels. Among the research activities the Commonwealth will conduct is to identify unserved/underserved areas of the state and the community anchor institutions. Other activities will include identifying barriers to the adoption of broadband and other information technology services, identifying available speeds for broadband connection in various regions, identifying and tracking areas with low levels of use and facilitating information exchange. The funds will be used for personnel costs, including fringe benefits, travel and supply costs.

The Commonwealth intends to collaborate with state-level agencies, local authorities, businesses and non-profit organizations when possible throughout the process from the planning stage through the semi-annual updating of the maps. The Finance & Administration Cabinet will continue a collaborative effort involving state agencies, libraries, area development districts, county and municipal officials, and other representatives of public and private associations. The public and private stakeholder associations are actively solicited for input to the development and execution of broadband policy in the Commonwealth. Additional workgroups may be formed on a regional and/or local basis to address planning efforts as the broadband efforts become more granular.

