Close Form | Next | Print Page | About

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424

Version 02

* 1. Type of Submission:
- [ ] Preapplication
- [x] Application
- [ ] Changed/Corrected Application

* 2. Type of Application:
- [x] New
- [ ] Continuation
- [ ] Revision

* If Revision, select appropriate letter(s):

* Other (Specify)

* 3. Date Received: 08/14/2009

4. Applicant Identifier:

5a. Federal Entity Identifier:

* 5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name: District of Columbia OCTO

* b. Employer/Taxpayer Identification Number (EIN/TIN): 536001131

* c. Organizational DUNS: 022555952

d. Address:

* Street1: 441 4th Street NW
Street2:
* City: Washington
County:
* State: DC: District of Columbia
Province:
* Country: USA: UNITED STATES
* Zip / Postal Code: 20001

e. Organizational Unit:

Department Name:

Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:
* First Name: Barney
Middle Name:
* Last Name: Krucoff
Suffix:

Title:

Organizational Affiliation:

* Telephone Number: 202-727-9307
Fax Number:

* Email: barney.krucoff@dc.gov

Close Form | Previous | Next | Print Page | About

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424 Version 02

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.):

District of Columbia

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

District of Columbia Broadband Mapping and Planning

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

Close Form | Previous | Next | Print Page | About

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424 — Version 02

16. Congressional Districts Of:

* a. Applicant: DC-001 * b. Program/Project: DC-001

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

Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 10/01/2009 * b. End Date: 09/30/2014

18. Estimated Funding ($):

* a. Federal	2,400,000.00
* b. Applicant	0.00
* c. State	948,481.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	3,348,481.00

*** 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 Explanation

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: Barney

Middle Name:

* Last Name: Krucoff

Suffix:

* Title: GIS Manager

* Telephone Number: 202-727-9307 Fax Number:

* Email: barney.krucoff@dc.gov

* Signature of Authorized Representative: Barney Krucoff * Date Signed: 08/14/2009

Authorized for Local Reproduction

Standard Form 424 (Revised 10/2005)
Prescribed by OMB Circular A-102

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424 Version 02

*** 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 District of Columbia is a densely developed urban area enjoying a thriving market for broadband services. District residents and businesses can choose among multiple fixed line and wireless broadband providers. Yet even in a city that is relatively well educated and extremely fortunate to be the Capital of the United States, many Americans are missing opportunities to learn, interact, and transact because they are not online or are using outmoded technology. Therefore, on July 30, 2009, Mayor Adrian M. Fenty, issued Mayor's Order 2009-132 designating the Office Chief Technology Officer (OCTO) as the District of Columbia's "eligible entity," and directed OCTO to cooperate fully with the NTIA. The District's policy goal is to enable all residents and businesses to access and adopt broadband services through the education of its many benefits.

Specifically, the District's goal for BDIA related funds is to establish and sustain a common source of data, allowing all stakeholders (federal, District, private, and non-profit) to effectively improve the accessibility and encourage the adoption of broadband. This will be accomplished by:

- **Meeting all deliverables and schedules established by NTIA, thereby fully contributing to the national broadband map.**
- **Forming lasting partnerships with private sector providers and non-governmental organizations so that data is collected efficiently and distributed in an equitable manner.**
- **Going beyond NTIA deliverable requirements and developing detailed geographic and demographic data on the adoption of broadband.**
- **Disseminating the data to NTIA and as appropriate to the public with online mapping and data feeds.**
- **Establishing processes for and funding repeated data updating over five years.**

District of Columbia
Proposal to National Telecommunication and Information Administration
For the State Broadband Data and Development Grant Program (BDIA)
Opportunity Number **0660—ZA29**

Applicant Organization:	**Office of the Chief Technology Officer (OCTO)** **Key Contact:** Ken Boley, Director, **Title:** Intergovernmental Initiatives **Phone**: (202) 478-5879 **Email:** Kenneth.Boley@dc.gov **Secondary Contact:** Barney Krucoff **Title**: GIS Manager **Phone**: (202) 727-9307 **Email:** Barney.Krucoff@dc.gov
Cooperating District Government Organizations	Public Service Commission Office of Planning Office of Cable Television Department of Transportation

Broadband Providers Who Contributed Data to the District of Columbia Public Service Commission for preliminary mapping

A_C_N Communications Services
Alantech Online Inc.
AT&T
Global Crossing Telemanagement
Broadview Network Holdings Inc.
Broadview Communications LLC
Cavalier
Comcast Cable Communications Inc.
Cypress Communications
DSLNet Communications LLC
Global Crossing
Global Telecom Brokers (GTB)
Infotelecom LLC
Intrado Communications Inc.
Keenan Local
Level 3 Communications
T-Mobile
TW Telecom Holdings
Verizon
Matrix Telecom
McGraw Communications
MCI Metro (Verizon Access)
Metropolitan Communications of DC Inc.
Metropolitan DSCI Corporation
NationsLine District of Columbia Inc.
Network Communications International Corporation
One Communications
One Voice Communications Inc.
OpenBand
Qwest Communications Company LLC
Reliance Globalcom Service Inc.
Sprint Nextel Corporation
Starpower (RCN)
SuneSys
WilTel
XO Communications

Executive Summary

The District of Columbia is a densely developed urban area enjoying a thriving market for broadband services. District residents and businesses can choose among multiple fixed line and wireless broadband providers. Yet even in a city that is relatively well educated and extremely fortunate to be the Capital of the United States, many Americans are missing opportunities to learn, interact, and transact because they are not online or are using outmoded technology. Therefore, on July 30, 2009, Mayor Adrian M. Fenty, issued Mayor's Order 2009-132 designating the Office Chief Technology Officer (OCTO) as the District of Columbia's "eligible entity," and directed OCTO to cooperate fully with the NTIA. The District's policy goal is to enable all residents and businesses to access and adopt broadband services through the education of its many benefits.

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The District of Columbia Public Service Commission (PSC) worked diligently in contacting and collecting broadband information for Washington, DC. The Federal Communication Commission (FCC) lists 40 broadband data service providers for the District of Columbia in 2008. Each provider was asked to voluntarily submit FCC Form 477, providing a breakdown of subscriptions in terms of residential vs. commercial, speed of connectivity, and by Census Tract. For these purposes, a fixed line broadband connection is defined as having a download speed of 768kbps or greater and an upload speed of 200kbps or greater. Data from Form 477 comes from December 2008 and excludes wireless providers due to the difficulty of distinguishing between business and personal use.

Pursuant to the letters sent by PSC Chairman Kane, the District received voluntary submissions from 30 of the FCC listed 40 broadband service providers. However, 4 of these businesses do not actually provide broadband data services inside the District. The PSC received an encouraging 75% response rate. All major fixed line facilities and all but one major wireless provider voluntarily contributed. Collectively, the data accounts for over 99% of residential

subscribers. The District's preliminary analysis below, meets NTIA's definition of "substantially complete," with Census Tract as the smallest geography.

After reviewing fixed line facility data, it was discovered that almost all, 99% of the residential broadband connections in the District come from the three largest providers. As such, minor providers were not included as they would not affect the 40% threshold for "underserved". Form 477 data from large providers was aggregated by census tract to determine the total number of broadband connections by Tract.

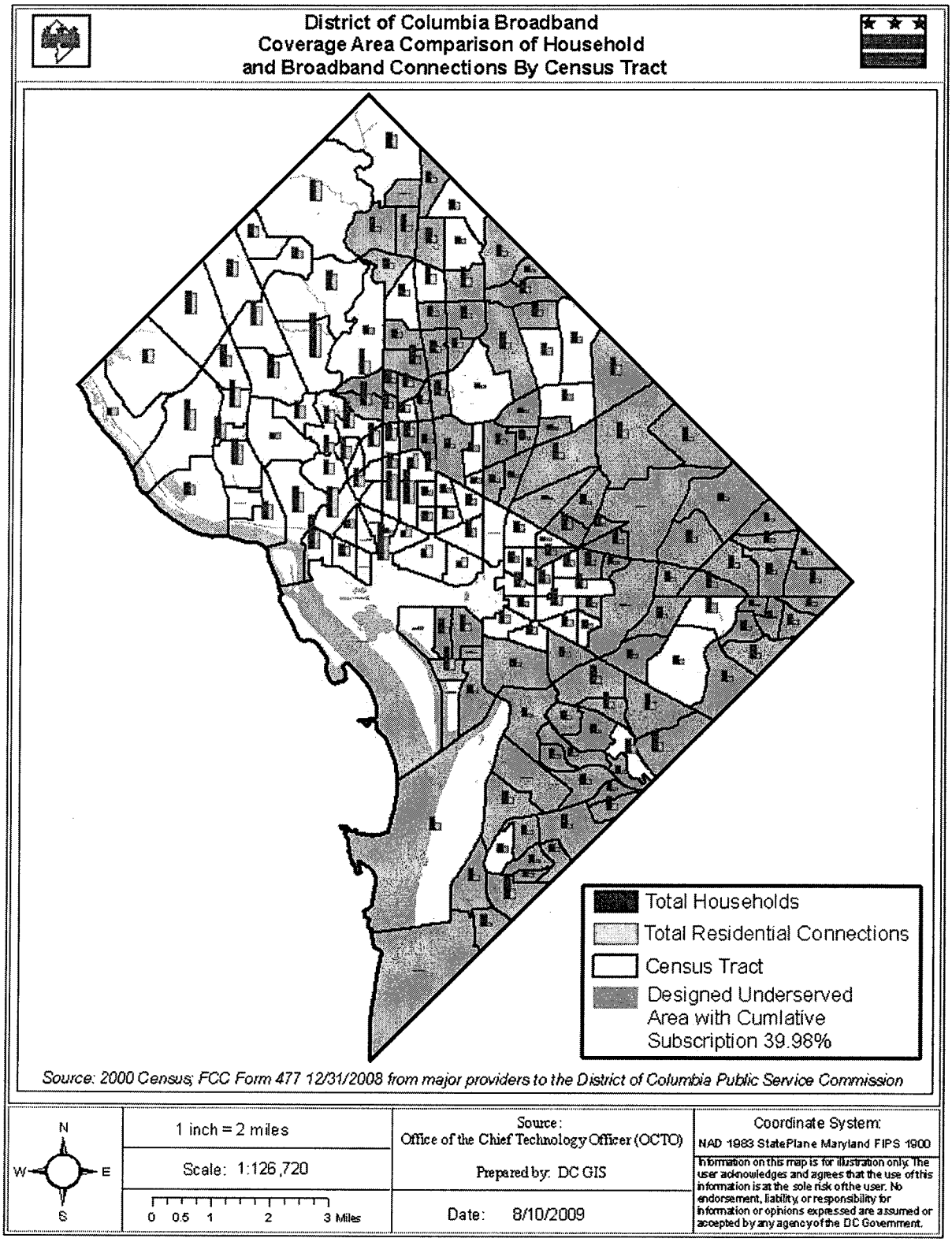
Comparing the subscriber data with census data reveals that households which do not have broadband are concentrated on the eastern side of city. The graphs in the "District of Columbia Broadband Coverage Area Comparison of Household and Broadband Connections by Census Tract" map compare household count with fixed line facility broadband subscribers by Census Tract (pg 4). The shaded red area on Map 1 meets the NTIA definition of "underserved" with a cumulative adoption rate of 39.98%.

The results show a stark digital divide. As a whole the District has a citywide broadband adoption rate of 57.87%. This statistic masks the near-100% adoption rates in the more affluent neighborhoods, as well as adoption rates below 40% in large lower income areas. For Internet access, these lower-income residents rely heavily on the strained resources of publicly funded libraries, recreation centers or other community-based facilities.

Digital literacy and broadband adoption can improve educational attainment and provide a helping hand out of poverty. In the District, entrenched poverty and educational attainment are substantial problems, though they are not always apparent in a region with above average educational attainment and income. For example, the District of Columbia suffers from one of the lowest adult literacy rates in the country. According to The State of Adult Literacy report published by the D.C. State Education Agency in March 2007, 37 % of the District's total adult population reads at the lowest levels of functional literacy. Although adults at this level are represented in all city wards, functionally illiterate adults are most likely to live in Wards 5, 7, and 8, with percentages close to 50% east of the Anacostia River. In 2002, the State Education Agency estimated that more than 130,000 adult residents (22% of the population) lacked a high school diploma or a General Equivalency Diploma (Washington Literacy Council Annual Report, 2007).

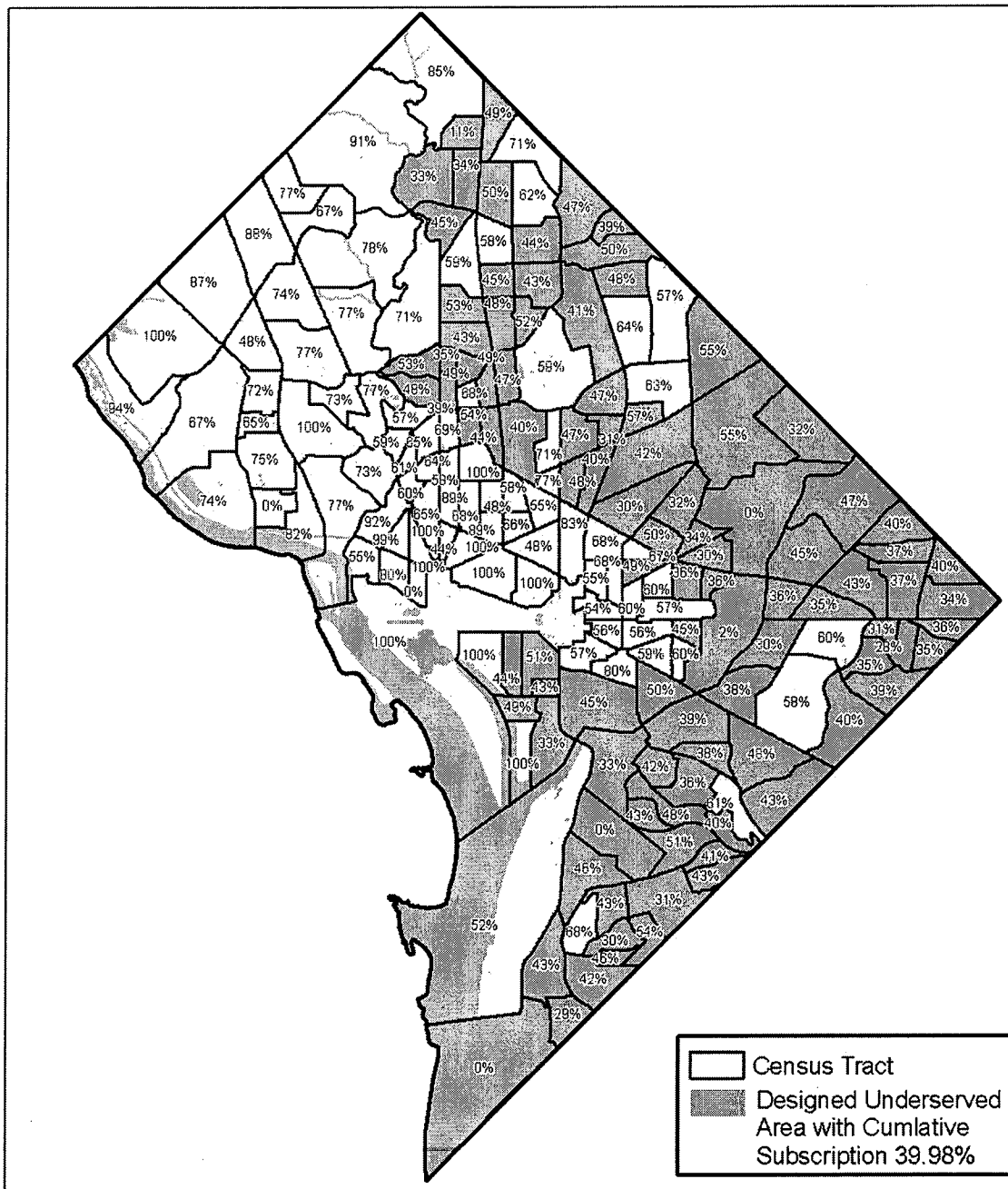
The District's unemployment rate, driven in part by residents' poverty and poor educational attainment, is abnormally high in certain communities. In May 2009, citywide unemployment was 10.7%, but as with other indicators there are wide disparities in unemployment across communities. In May 2008, before the recent economic downturn, the citywide unemployment figure was 6.6%, but in Wards 7 and 8 it was 11.2 and 17.2, respectively, as compared with 1.7% in Ward 3, the city's most affluent ward.

The District will use the data developed under BDIA to refine and target programs that promote digital literacy and broadband adoption to address educational attainment and improve job skills to combat poverty. In conclusion, the District has a credible understanding of broadband availability and adoption, has established a working relationship with broadband providers, and has a strong policy motivation to carry on.



Map-1 District of Colombia Broadband Availability and Adoption

Map - 2: District of Columbia Broadband Coverage Area Comparison of Household and Broadband Connections By Census Tract



Source: 2000 Census; FCC Form 477 12/31/2008 from major providers to the District of Columbia Public Service Commission

N W E S	1 inch = 2 miles	Source: Office of the Chief Technology Officer (OCTO)	Coordinate System: NAD 1983 StatePlane Maryland FIPS 1900
	Scale: 1:126,720	Prepared by: DC GIS	Information on this map is for illustration only. The user acknowledges and agrees that the use of this information is at the sole risk of the user. No endorsement, liability, or responsibility for information or opinions expressed are assumed or accepted by any agency of the DC Government.
	0 0.5 1 2 3 Miles	Date: 8/10/2009	

1. Data

(a) Data Gathering

The District's approach to data gathering will employ a variety of data sources and collection techniques. Data sources are identified as "primary" and "secondary" for data deliverables. The overlap among data sources and collection techniques is intentional. The primary source is the most authoritative and desirable source. For example, it is preferred that data on broadband availability be submitted by providers. The District will use the secondary source for verification. In the rare case that the primary source is not available, the secondary will become the primary. Table 1, on the following page, cross-references all required data deliverables with the associated primary and secondary sources.

Table 1: NTIA Required Deliverables

Data Collection & Verification Techniques (P = Primary Source, S = Secondary Source / Validation)

Data Deliverables	Provider Submission	Check Provider Web site	Field Data Collection	Broadband Test Web App (Public Input)	DC GIS Processing	Existing DC or Federal Records	Statistical Survey
1. Broadband Service Availability in Providers' Service Area							
(a) Availability Associated With Specific Census Block							
Provider Name	P					S	
Doing Business as	P	S				S	
Provider FCC Registration Number	P					S	
Sequential ID Number					P		
Census Tract and Block	P	S		S			
Technology of Transmission	P	S					
Max Advertised Speed Downstream	P	S					
Max Advertised Speed Upstream	P	S					
Typical Down Speed			S	P			
Typical Upstream Speed			S	P			
(b) Availability by Shapefile - Wireless Services Not Provided to a Specific Address							
Provider Name	P					S	
Doing Business as	P	S				S	
FRN Provider FCC Registration number	P					S	
Sequential ID Number					P		
Technology of Transmission	P	S					
Spectrum Used (Multiple Fields)	P		S			S	
Max Advertised Speed Downstream	P	S					
Max Advertised Speed Upstream	P	S					
Typical Down Speed			P	S			
Typical Upstream Speed			P	S			
2. Subscriber Weighted Average Speed	P			S		S	
3.b Broadband Service Infrastructure Middle Mile and Backbone Interconnection Points							
Provider Name	P						
Doing Business as	P						
FRN Provider FCC Registration Number	P					S	
Ownership of Facility (eased or wned)	P		S			S	
Serving Facility Capacity	P		S				
ownership of Facility (eased or wned)	P		S				
Latitude & Longitude & Elevation	P		S		P		
4.0 Community Anchor Institutions							
Name						P	
Address						P	
Latitude & Longitude				S	P	P	
Category				S		P	
Broadband Service	S			P			
Technology of Transmission	S			P			
Advertised Downstream Service Speed		P		S			
Advertised Upstream Service Speed		P		S			

The District of Columbia will develop and provide additional deliverables beyond those required by NTIA, in order to track and improve adoption rates. Table 2 cross-references the District's proposed additional data deliverables with their primary and secondary data sources and collection techniques.

Table-2: District of Columbia Deliverables Not Required by NTIA

Data Collection & Verification Techniques (P ='s Primary Source, S ='s Secondary Source / Validation)

Data Deliverables	Provider Submission	Check Provider Website	Field Data Collection	Broadband Test Web App	DC GIS Processing	Existing DC or Federal Records	Statistical Survey
5.0 Underserved Areas and Related Information							
Total households By Census Tract and Block (most recent Census)						P	
Number of fixed facility broadband Subscribers by Census Block	P						S
Percentage of fixed facility broadband adoption by Census Track					P		
Subscribers who use wireless as primary broadband source at home				S			P
Percentage of fixed facility and wireless broadband adoption by Census Track					P		
6.0 Broadband Market Characteristics (survey)							
Who isn't using broadband? (Age, Sex, Race, Location, Multi/Single dwelling, Income)							P
If not, why not? (Availability, Cost, Lack of Hardware, Level of Technical Skills, Don't understand benefits)							P
Who is using broadband (Age, Sex, Race, Location, Income)				S			P
What technology? (Use NTIA Technology of transmission and speed tier definitions including wireless)				S			P
What price is paid monthly? (If bundled what other services?)				S			P
If broadband access outside the home (where, how, how often, free or paid)				S			P
7.0 Large scale GIS data files including Point Address File and Street Centerlines with address ranges						P	
8.0 FGDC Compliant Metadata for all deliverables						P	

Data Source: Broadband Providers (Providers)

A successful delivery of all data required by the NTIA will result from the cooperation between the District Government and broadband providers. The voluntary submission of provider data ensures the entire project's accuracy, speed, and cost savings. The District of Columbia Public Service Commission will be the lead agency for provider outreach as described in Section 5 of this narrative.

As previously noted, the District has received excellent response from providers, but it does not have long-term non-disclosure agreements in place. The District's intention is to closely adhere to the implied agreement between NTIA and providers, as outlined by the providers' letter of August 6, 2009, and the NOFA clarification of August 7, 2009. In other words, the District's proposal is conservative in the level of cooperation it assumes, specifically:

- The District will enter into confidentiality agreements where requested by providers.
- Based on the providers' commitments to NTIA and the cooperation already received, the District anticipates providers will be forthcoming with availability data at the Census Tract level.
- The District will not request last-mile facility data, but it expects to receive middle-mile and backhaul facility data and to be allowed to verify that data.
- The District also hopes to receive transmission-type and speed-tier data from providers (maximum, minimum, and weighted average) for the city as a whole.
- The District will go further and seek subscriber-count data from providers to at least the Census Tract level, Block level preferred. Based on the original NOFA, the District expects to be able to derive adoption rates by aggregating the individual subscriber addresses to Census geographies. Under the clarification, there is no confidence this data will be forthcoming, but it will be requested.

Data/Validation Source: Provider Web Sites

Provider Web sites are useful secondary sources of information. The District has comprehensive point addresses for the city and access to reverse look-up data where it can get the phone number for a specific address. This data will be combined with Census Block and generate a statistically significant sample of addresses to check. Staff (employees or in-house contractors) will test the sample addresses (and in the case of DSL, phone numbers) against the Web sites of major residential providers (at least three). The Web sites of major wireless providers will also be checked. Using this technique, the District will collect or verify provider information, including:

- Transmission type
- Maximum and minimum advertised speeds
- Speed tiers
- Pricing for various speed tiers (existence of pricing bundles that include non-broadband service will be noted, but may or may not be recorded)
- Coverage maps

Data/Validation Source: Engineering Field Data Collection

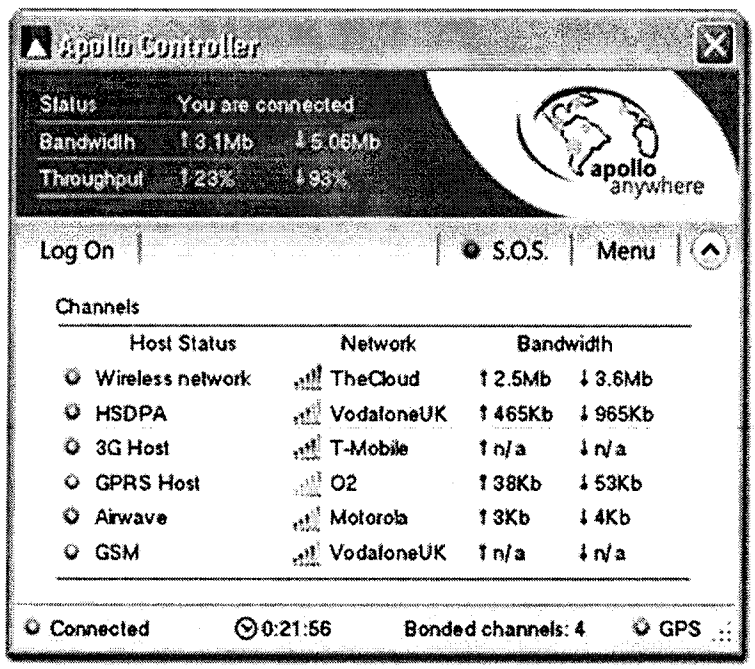
The District intends to issue an RFP for a firm qualified in civil and telecommunications/network engineering. The firm's duties will include verifying provider data in the field. The verification effort will focus on NTIA deliverables 1.b Availability by Shapefile – Wireless Services, and 3.b Middle Mile and Backhaul Interconnection points. Maintaining confidentiality of interconnection point data will be a contractual obligation. The firm will also be allowed to enter in direct NDA with providers in order to access their records and facilities.

The fixed-facilities survey assumes the cooperation of providers and will operate as follows:

Broadband engineers that are familiar with both fixed-line and wireless networks, including their network design parameters, will inspect middle-mile and backhaul interconnection points. These interconnection points can include, for example, carrier hotels or carrier-owned switching facilities.

At the interconnection points, the engineer will review service providers' documentation (available at the location) for its transport facility data rates and determine if that information correctly correlates with that observed for the transport facility. Providers' reported capacity will be validated. Further, by visually inspecting interconnection points, the engineer will validate the serving capacity for the transport facility with any associated and installed equipment to confirm (to the degree possible) the accuracy of the capacity information furnished by providers. The documented capacity for the facility will be reviewed by the engineer and may also be sampled using providers' test equipment at the interconnection site or using the engineer's test equipment.

The engineer will also determine if facilities are owned or leased by providers, and, if necessary, (e.g., for leased facilities) service providers may be expected to make appointments with their broadband provider sites. These inspections will require coordination with providers, since interconnection points may be verified in the field and are associated with the connection of separate pieces of equipment or transmission facilities within, between, or among networks. For example, interconnection may include co-location arrangements, entrance facilities, and mid-span fiber meet arrangements. At the site, the Broadband Engineer will



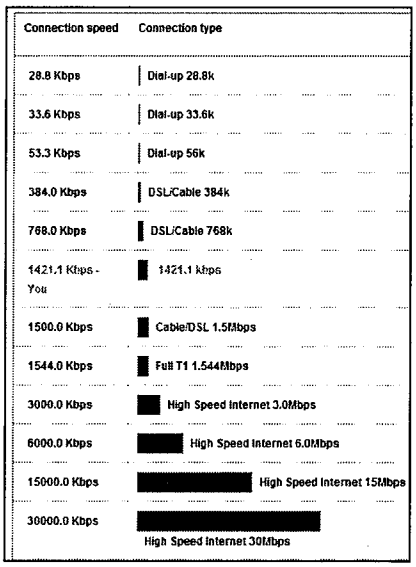
verify the presence of facilities, and will establish the latitude, longitude, and elevation of the service location.

Engineers will also verify provider-submitted wireless coverage areas and the spectrum used, and test the typical speed. The District, in conjunction with other National Capital Region local governments, operates a wireless broadband network for public safety and already owns the equipment and software needed for wireless testing (see screenshot Figure 1). The equipment can measure the strength of a given signal at a given place and time. It can detect data services at that location and what frequencies they are using. Lastly, it can speed test those services and store all results on a central server. The equipment will be leveraged for this project, but it is not counted as an in-kind contribution because it was purchased through a Federal grant from the Department of Homeland Security.

As a back-office function, the engineering firm will review results and process data to NTIA/District specifications as detailed in the NOFA technical appendix.

Data/Validation Source: Broadband Test Web Application (DC Employee and Public)

The District will purchase and customize a COTS "Broadband Test Web Application." The application will be hosted on the District's Web portal, DC.gov. The application will meet the following high-level requirements:



- Initial questions will separate wireless users from fixed-facility users, including fixed-facility users using WiFi.
- Users will be asked about current location.
  - Residence (single family, multifamily)
  - Office
  - Community anchor institution
  - Outdoors (intersection or hundred block)
- User addresses (place names, intersections, and blocks) will be verified against the District of Columbia Master Address Repository. Users with verified District of Columbia locations will be allowed to proceed. Others will be politely directed to another Web page with more information on the Federal and District broadband mapping project and appropriate links.
- Users with verified locations will then be asked a short series of questions, for example:
  - Who is your ISP?
  - What is your transition technology?
  - How much do you pay per month? (not required)
    - Are other services bundled for that price?
- A speed test will be administered.

- The user will be thanked for participating and provided with a report.
- All data will be captured on a District or contractor server for later compilation.

The Broadband Test Web Application will be used in the following ways:

- The District employs nearly 30,000 people. Approximately one-third live in the city. The Chief Technology Officer of the District will send out an email and other marketing material encouraging employees to test their home Internet service. If DC GIS determines that typical data is missing in a specific geographic area, Human Resources will specifically contact employees who live in that immediate vicinity. The result will be typical speed data for all major providers, NTIA deliverable 2.0.
- A special interface will be provided for staff of community anchor institutions. Every community anchor institution will be contacted by DC GIS and asked to use the application. Each institution will receive a mailing/email/phone call and be given a unique code and asked to complete additional questions. The District will contact the institution until someone has made an entry using that code, or participation is declined, or the institution reports that it does not have Internet access. The data collected will be used to compile NTIA required deliverable 4.0.
- Finally the Web site will be featured on DC.gov and in public-service announcements. District residents and businesses that wish to voluntarily contribute data to the National Broadband Map and/or report availability problems will be able to do so.

Data/Validation Source: DC GIS Data Processing

NTIA deliverables require some back office and/or geospatial processing. These techniques will be used to derive additional data attributes. The techniques include, but are not limited to:

- Assigning sequential identification numbers.
- Geocoding, the process of assigning map coordinates to addresses.
- Aggregating data to Census geography.
- Creating metadata and documenting processes.

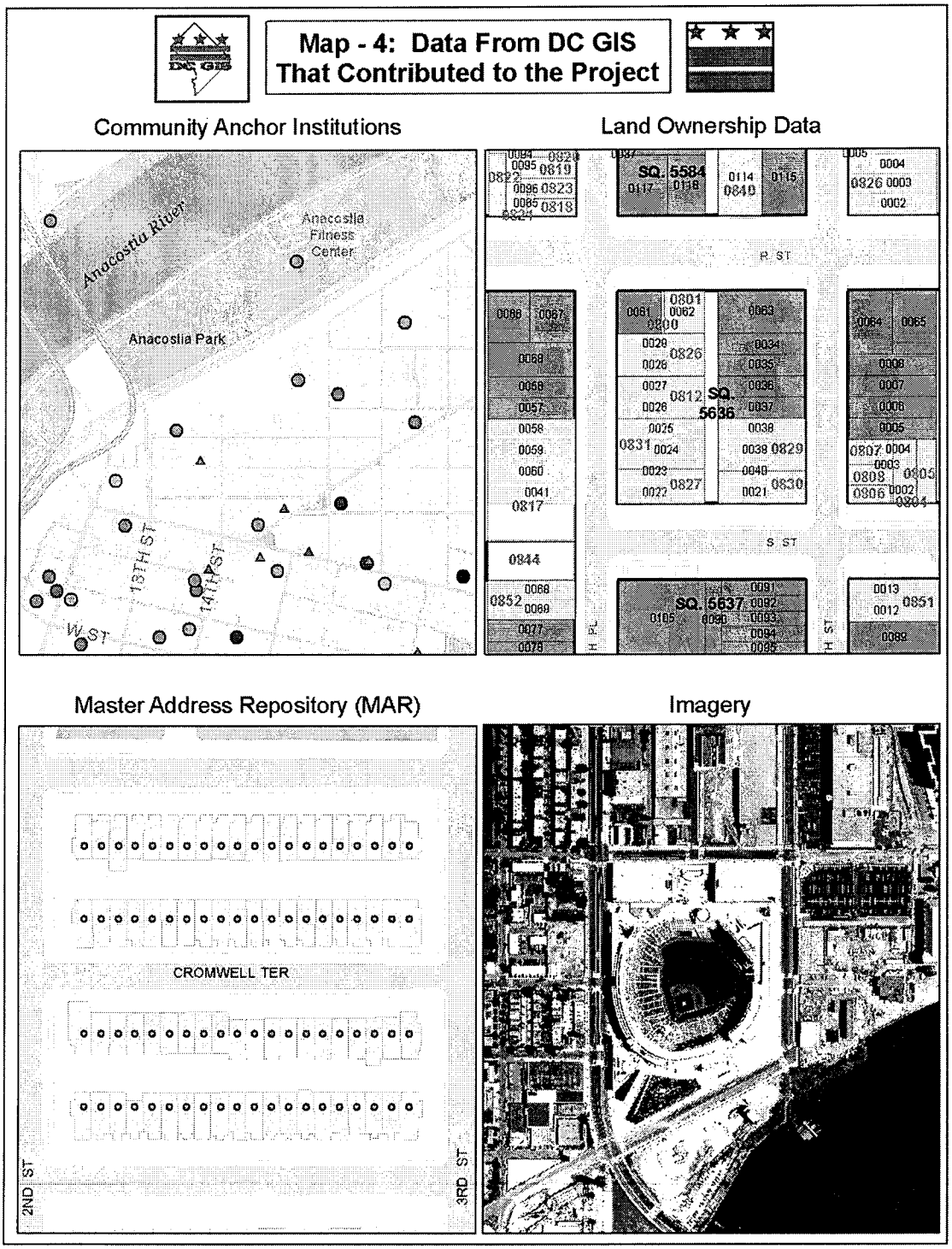
Data/Validation Source: Federal and District Public Records

In many cases the government already has information that will be employed. Records the District intends to employ include:

- FCC filings from 477 filers – These will help the District understand who the providers are. They will identify small providers that could otherwise be easily overlooked.
- FCC Form 477 the complete form – As previously discussed, providers sharing their Form 477 data with PSC has greatly enhanced the District's understanding of its underserved areas. The District will continue to seek this data from providers and encourage NTIA and FCC to make it available to awardees to the extent possible.

- DC PSC filings – Provide valuable information on the local provider community.
- DC Master Address Repository (MAR) – This locates addresses and verifies each address as related to a particular building structure. The MAR also contains information on residential units with rental, condominium, and multi-family structures. This will be very helpful in determining "underserved" areas.
- DC land ownership data - Parcel data will determine who owns and has access to various middle-mile and backhaul facilities.
- DC institutions data – DC GIS already maintains a very complete database of community anchor institutions.
- DC GIS imagery – Six-inch resolution imagery helpful for assessing the quality of other geospatial datasets.

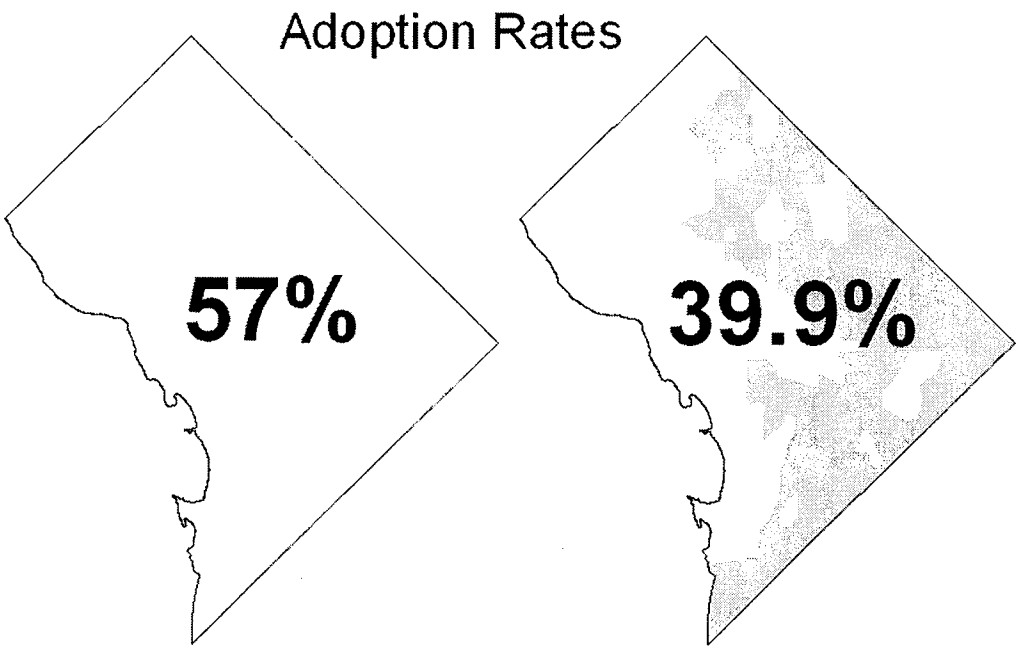
Map 3 provides a sample of the geospatial data the District is contributing in-kind.


Map - 4: Data From DC GIS That Contributed to the Project
Community Anchor Institutions
Land Ownership Data
Anacostia River
Anacostia Fitness Center
Anacostia Park
13TH ST
14TH ST
W ST
R ST
S ST
H PL
H ST
SQ. 5584
SQ. 5636
SQ. 5637
Master Address Repository (MAR)
Imagery
CROMWELL TER
2ND ST
3RD ST

Data/Validation Source: Statistical Survey

The availability of broadband is not the issue in the District; adoption is the issue. Therefore the District will issue an RFP for a public opinion/statistical survey firm, academic institution, or qualified nonprofit group. The firm will be responsible for developing and conducting a scientific survey of DC residents.

Due to the very specific geographic requirements of BTOP, the District needs to be able to map "underserved areas" to at least the Census Tract level, Block level preferred. The District has a citywide adoption rate of approximately 57%, but the area in red below has an adoption rate of 39.9%, meeting the definition of underserved. Thus, the graphic illustrates how the resolution of the underlying geography can expose or mask the problem.



If FCC Form 477 data or equivalent data is available either voluntarily from providers or directly from the Federal government, the required sample size needed to indentify underserved areas to the Census Tract level will be reasonable. If not, the survey will have a sample size large enough to report results with reasonable certainty for Census Tract aggregates. Up to 11,000 respondents will be required. Such a survey will be expensive and difficult to repeat on an ongoing basis.

In either case, the survey will attempt to answer at least the following high-level questions. The actual detailed questions asked by the survey will be developed by the selected contractor.

Broadband Market Characteristics (statistical survey):

- Who is not using broadband? (age, sex, race, education, location, multi/single family dwelling, income)
- If not, why not? (availability, cost, lack of hardware, level of technical skills, don't understand benefits)
- Who is using broadband? (age, sex, race, education, location, dwelling type, income)
- What technology? (Use NTIA technology of transmission and speed-tier definitions including wireless)
- What is the monthly price? (If bundled, what other services?)
- Is broadband accessed outside the home? (where, how, how often, free, or paid)

Lastly, the District expects to use the survey to help calibrate other data collection and analysis techniques, for example:

- There is a risk that other subscriber counting techniques will be in error due to the number of households in multifamily dwellings. This would occur if an ISP has a single "commercial" account with a landlord who then redistributes broadband to tenants.
- Similarly, the District does not currently understand the degree of overlap between households subscribing to fixed-facility and wireless broadband. To what degree are the same households subscribing to both types of services, or is wireless a true substitution of fixed-facility connections and how is this changing over time?

The District's designation of underserved areas will gain accuracy and credibility by adjusting for these types of difficulties to measure conditions, but first needs to understand the data. The survey is the best instrument.

(b) Accuracy and Verification

The District has a Ph.D. economist/statistician from the Office of Planning State Data Center assigned to the project team. She will determine the appropriate sample size needed to validate various deliverables to a 95% and 99% level of confidence for each NTIA deliverable.

A validation report will be sent with each deliverable and included in the metadata. The report will briefly describe the population of data, the validation sample size, the error rate found, and the level of confidence in the sample. The statistician will review each validation report.

The District's manageable geographic area also makes validation easier than it will be for larger jurisdictions.

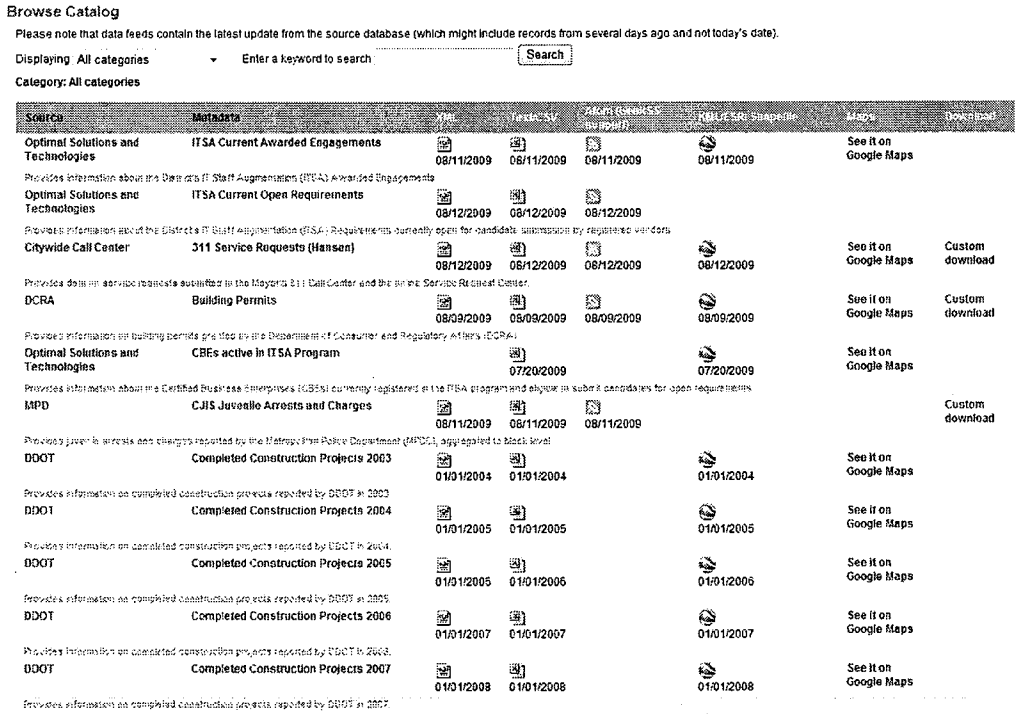
- The District anticipates, with the combination of D.C. employee checks and the provider Web site checks, that it will be able to validate availability data of broadband for 95% or more of developed Census Blocks.

- The District also anticipates that the field engineering team will be able to visit 90% or more of middle-mile and backhaul interconnection points. At a minimum, it will confirm the locations and access most facilities.

(c) Accessibility

The District prides itself on data transparency and leveraging existing systems to make non-confidential data public. The District will make all data available to NTIA and provide non-confidential data to the public through four means:

- Provide the data to NTIA in the formats required by the technical appendix. The data will then become part of the National Broadband Map and other Federal data products and publications.
- Add the data to its public data catalog, considered to be one of the primary inspirations for the new Federal catalog data.gov. The broadband data will join over 300 datasets and feeds available to the public. When possible, it will be made available as XML, CSV, GeoRSS, KML, and Shapefile with live links to Google Maps.



Browse Catalog

Please note that data feeds contain the latest update from the source database (which might include records from several days ago and not today's date).

Displaying: All categories | Enter a keyword to search | Search

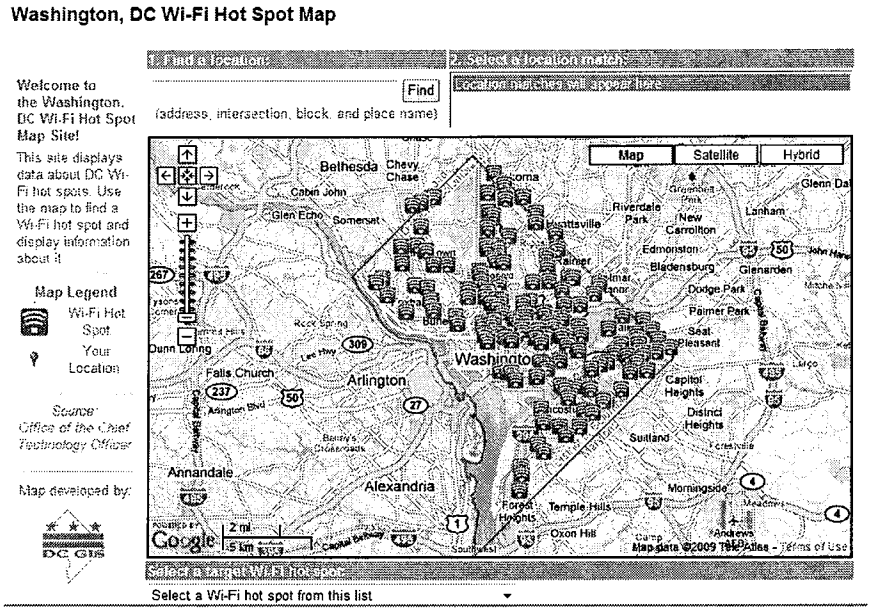
Category: All categories

Source	Metadata	XML	Text/CSV	GeoRSS (Simple)	KML/KMZ (Shapefile)	Maps	Download
Optimal Solutions and Technologies	ITSA Current Awarded Engagements	08/11/2009	08/11/2009	08/11/2009	08/11/2009	See it on Google Maps	
Provides information about the District's IT Staff Augmentation (ITSA) Awarded Engagements							
Optimal Solutions and Technologies	ITSA Current Open Requirements	08/12/2009	08/12/2009	08/12/2009			
Provides information about the District's IT Staff Augmentation (ITSA) Requirements currently open for candidate submission by registered vendors							
Citywide Call Center	311 Service Requests (Hansen)	08/12/2009	08/12/2009	08/12/2009	08/12/2009	See it on Google Maps	Custom download
Provides data on service requests submitted to the Mayor's 311 Call Center and the online Service Request Center.							
DCRA	Building Permits	08/09/2009	08/09/2009	08/09/2009	08/09/2009	See it on Google Maps	Custom download
Provides information on building permits as filed by the Department of Consumer and Regulatory Affairs (DCRA)							
Optimal Solutions and Technologies	CBEs active in ITSA Program		07/20/2009		07/20/2009	See it on Google Maps	
Provides information about the Certified Business Enterprises (CBEs) currently registered in the ITSA program and eligible to submit candidates for open requirements							
MPD	CJIS Juvenile Arrests and Charges	08/11/2009	08/11/2009	08/11/2009			Custom download
Provides juvenile arrests and charges reported by the Metropolitan Police Department (MPDC), aggregated to block level							
DDOT	Completed Construction Projects 2003	01/01/2004	01/01/2004		01/01/2004	See it on Google Maps	
Provides information on completed construction projects reported by DDOT in 2003							
DDOT	Completed Construction Projects 2004	01/01/2005	01/01/2005		01/01/2005	See it on Google Maps	
Provides information on completed construction projects reported by DDOT in 2004.							
DDOT	Completed Construction Projects 2005	01/01/2006	01/01/2006		01/01/2006	See it on Google Maps	
Provides information on completed construction projects reported by DDOT in 2005.							
DDOT	Completed Construction Projects 2006	01/01/2007	01/01/2007		01/01/2007	See it on Google Maps	
Provides information on completed construction projects reported by DDOT in 2006.							
DDOT	Completed Construction Projects 2007	01/01/2008	01/01/2008		01/01/2008	See it on Google Maps	
Provides information on completed construction projects reported by DDOT in 2007.							

District of Columbia Data Catalog (http://data.octo.dc.gov/)

- Make the data available as a mapping Web service with options including the Open GIS Consortium's Web Map Service (WMS). A variety of services are possible, and NTIA can specify its preference should it wish the National Broadband to consume data in this way.

- Build a District of Columbia Broadband Map. This will be a Web mapping application for public users who do not want the raw data, but do want quick answers. The application will be built to the following high-level requirements:



Public WiFi hot spots map developed by DC GIS
(http://dcatlas.dcgis.dc.gov/agencyapps/wifi.aspx)

  - The ability to enter an address, place name, 100 block, or intersection, and return a map with broadband availability (fixed facility and wireless) at that location.
    - Users will be able to follow links to the Web sites of providers who voluntarily contributed data.

  - The option to view a variety of data layers, including:
    - Polygon layers showing provider service territories (fixed facility and wireless to the nearest Census Block)
    - A polygon of areas of the District meeting the NTIA's definition of underserved
    - Free Wi-Fi hot spots provided by the DC Government
    - Public computer centers
    - BTOP projects and a quarterly status update.

  - The ability to follow links providing project partners, including:
    - NTIA
    - National Broadband Map
    - Federal Communications Commission
    - District of Columbia Public Service Commission
    - Office of the Chief Technology Officer
    - DC GIS

- The application will be developed in-house by DC GIS combining the utility of ArcGIS Server for handling large data sets and polygon datasets and the familiar interface and speed of Google Maps that many users have come to expect. For a portfolio of other mapping applications developed by DC GIS, visit: http://links.dc.gov/Discovery

(d) Security and Confidentiality

The District expects to handle less confidential data than previously planned, based on the clarification made to the NOFA. Nevertheless, the District is planning to accept confidential data. The confidential data the District anticipates to handle includes:

- Middle-mile and Internet backhaul connection point data:
  - OCTO will request provider and PSC permission to share this data with Washington Metropolitan Fusion Center and the District of Columbia Department of Homeland Security and Emergency Management. How this sharing will be accomplished will be subject to negotiation with the providers and receiving agencies.
- Other data covered by confidentiality agreements with providers:
  - The District is particularly concerned with measuring adoption and will seek subscriber counts for Census Tracts or Blocks. The District will agree to keep this data confidential provided the provider agrees that counts for each area may be published with all providers aggregated.
  - The District has a number of providers that service a relative handful of large business and government clients. The District will agree to keep the footprints of such providers confidential if publication would make the identity of their customers apparent.

The Public Service Commission will set up two dedicated computers off the network in a locked room to handle confidential data. DC GIS staff will install ArcGIS Desktop on these computers and work with data under the Commission's supervision. Sensitive data will only leave to be submitted to NTIA.

2. Project Feasibility

(a) Capabilities / Budget

The District is requesting $1.9 million dollars in mapping funds and proposing an in-kind match of $948,481 or 46 percent. The in-kind match includes $398,481 of DC employ labor and a DC GIS data contribution valued at $550,000. The valuation of the data is based on replacement cost to the District. In fact, most of this data is already been placed in the public domain and has many other uses in addition to broadband mapping. Even if the DC GIS data is assigned zero value, it clearly has utility for the project. Without the DC GIS data the District's in-kind contribution would be 23 percent and still exceed the minimum requirement.

The following tables contain all the calculations for both in-kind contributions and requested funding. Cost assumptions are clearly shown. DC employee rates include benefits equal to 22% of base salary. Note: The PSC is prevented from making in-kind contributions by the nature of their funding which comes from fees assessed on regulated utilities and can only be used for dedicated purposes.

Planning funds are requested in a separated table. Planning funds will be used to support the District of Columbia Broadband Mapping Advisory Committee and for public outreach and education activities directly related to broadband adoption. The Committee will hold a public vote(s) on the expenditure of planning funds. The fact that the Committee will have the responsibility of allocating the planning is intended to bring all parties to the table and have the side effect of making the Committee more effective in its coordination role.

	Cost Assumptions			District of Columbia In-kind Contribution			
Project Activities	**Hourly Rate (w/ FTE benefits of 22%)**	**Year 1 Hours (includes Pre-Award)**	**Years 2-5 Total hours over 4 years**	**Pre-Award**	**Year 1 2010**	**Years 2-5 2011-2014**	**Subtotal**
Pre-Award Cost							-
Proposal development	70.38	260		18,300			18,300
Initial From 477 data entry and underserved area analysis	60.00	346		20,760			20,760
SOW development, procurement, & selection for two RFPs	58.65	519		15,221	15,221		30,441
Project & Task Management							-
Statistician demographer (Joy Philips or equivalent)	58.65	693	1,387		40,664	81,328	121,992
Project Manager (Ken Boley or Equivalent)	70.38	346	1,038		24,351	73,054	97,406
Mapping Manager (Barney Krucoff or equivalent)	70.38	519	1,038		36,527	73,054	109,582
DC GIS Data Contributions							-
DC GIS orthoimagery update every other year	6" resolution, replace value 100K			100,000	100,000		200,000
Address point data updated monthly includes units inside multi-family dwellings which help with adoption rate calculations. Also street centerlines with address ranges.	DC has spent approximate 500K on address data since 2000. Our cost to replace it be at least 300K.			300,000	50,000		350,000
				$454,281	**$ 266,763**	**$227,437**	**$ 948,481**

District of Columbia in-kind contributions

	Cost Assumptions			Requested BDIA Funding		
Project Activities	**Hourly Rate (w/ FTE benefits of 22%)**	**Year 1 Hours (includes Pre-Award)**	**Years 2-5 Total hours over 4 years**	**2010**	**2011-2014**	**Funding Subtotal**
Project & Task Management						-
Provider outreach and communication PSC (Cary Hinton or equivalent)	70.38	519	1,038	36,527	73,054	109,582
PSC Staff manage provider relations and communications	38.13	867	2,080	33,042	79,300	112,342
Contract RF/network engineering manager (Robert Pavlak of equivalent)	120.00	693	692	83,200	83,040	166,240
Data Gathering, Validation						-
Engineering contractor field verification (fixed and wireless)	Annual mobilization $7,500, engineer day rate $650 per day, Year1, 2 engineers for 3 months, + 30K for PM and data processing. Years2-5, 1 engineer for 3 months + 20K for PM and			115,500	126,500	242,000
Statistical survey contractor	Year1 design plus survey sample size of 11,000 to map data to Census Tract level, years2-5 sample size of 1,200 tracks citywide.			200,000	160,000	360,000
DC employee check from home speed test validation	Promotional material and outreach			15,000	20,000	35,000
GIS Staff and Contract Costs (GIS mapping & analysis, checking provider Web sites, processing data from public & employee speed tests, canvassing community anchor institutions, QC, metadata, managing data feeds, & transmittals to NTIA)	50.00	3,000	6,000	150,000	300,000	450,000
DC Broadband Mapping Application						-
Software	ArcGIS Server Advanced			65,286	52,229	117,515
Hardware	Dell Blade Server Power Edge			10,452		10,452
Database & Systems Administrators	110.00	519	692	57,090	76,120	133,210
FTE application development and Maintenance (Tianpu Liang or Equivalent)	58.65	600	519	35,192	30,441	65,634
DC Broadband Test Web Application						-
Software	Evaluating open source speed			10,000		10,000
Hardware	Dell Blade Server Power Edge M6010			10,452		10,452
Contract application development and maintenance contract software developer	90.00	519	346	46,710	31,140	77,850
				$868,451	**$1,031,825**	**$1,900,276**

Planning Funds

	Requested Planning Funds	
Project Activities	**Years1-5, 2010-2014**	
Operations of the District of Columbia Broadband Mapping Advisory Committee	$	50,000
Broadband outreach and education campaigns approved by public vote of the DC Mapping Advisory Committee	$	450,000
	$	**500,000**

(b) Applicant Capacity, Knowledge, and Experience

The District has formed a committee of executive leaders, broadband providers, and non-governmental organizations. The committee will ensure that agencies coordinate and that commitments are met.

On a daily basis the project will be led by District employees and resources as shown on the organizational chart below. Experienced staff members have been assembled from across the government. The team has significant capabilities in:

- Broadband/telecommunications law and regulation
- Demographics and statistics
- Geographic Information Systems
- Project management
    - Data production and analysis
    - Database administration
    - Software development
- Public affairs and broadband provider relations
- Radio frequency and fixed-facility broadband

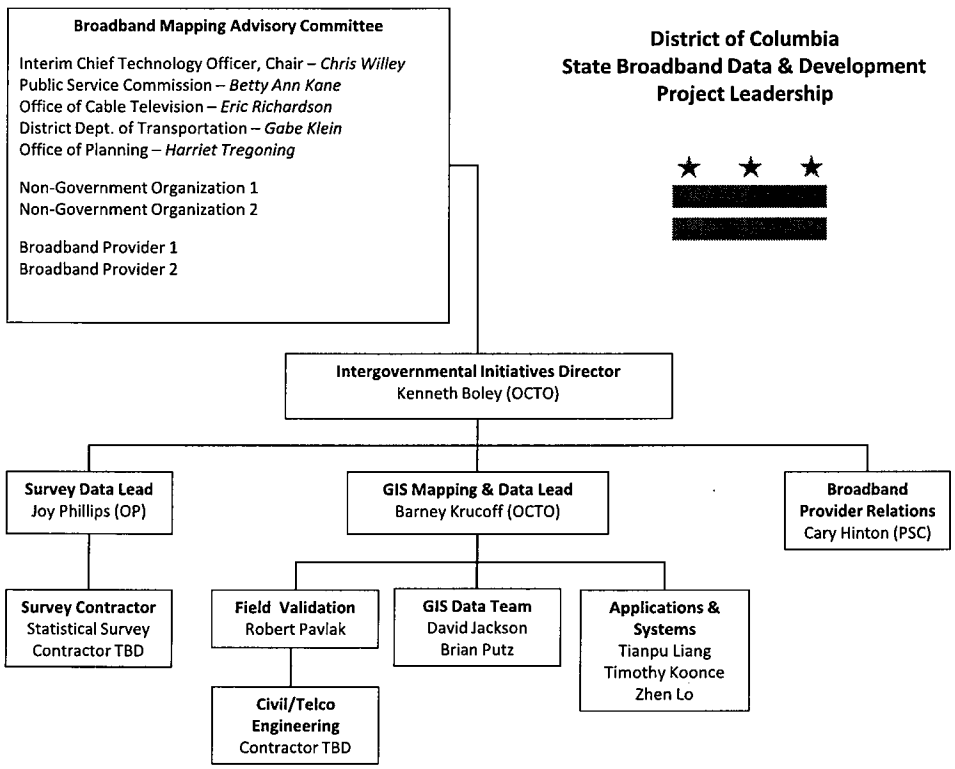
The volume, schedule, and nature of the work will require additional resources beyond the District's experienced team. The District intends to issue two competitive RFPs open to for-profit firms, nonprofit organizations, and academic institutions.

- **Engineering Validation Firm** - The District will hire a qualified consultant with expertise in civil and telecommunications/network engineering. The contractor's primary duties will be to validate provider data in the field. The verification effort will focus on NTIA deliverables 1.b Availability by Shapefile – Wireless Services, and 3.b Middle Mile and Backhaul Interconnection Points. Selection criteria will include:
    - telecommunications engineering experience
    - a successful track record of working with various providers, but independence from providers as a business entity
    - survey and mapping experience

- the resources to mobilize and meet NTIA deadlines and complete initial validation by January 15, 2010
- price

- **Market Research/Survey Firm** - The District will hire a qualified consultant with expertise in planning and executing public surveys. The contractor will be capable of designing and conducting a survey of District residents with minimal supervision. Selection criteria will include:
  - expertise in statistics
  - experience conducting market research, with previous experience with broadband market research a plus
  - the resources to mobilize and meet NTIA deadlines and complete the initial survey by January 15, 2010
  - price

The organizational chart below shows project roles and responsibilities of all parties. The organizational chart is followed by brief biographical sketches of team members.



Chris Willey
Interim Chief Technology Officer
Office of the Chief Technology Officer
District of Columbia Government

Project Role: Chair of the Broadband Mapping Advisory Committee

Chris Willey serves as the interim Chief Technology Officer (CTO) for the District of Columbia, bringing with him more than 17 years of IT experience in senior management and Web development. Mr. Willey most recently served as the Deputy CTO of Infrastructure Services for the Government of the District of Columbia. Among his duties were managing the District's information technology (IT) infrastructure (desktop computers, servers, mainframes, networks, and data centers) and leading the District's public Wi-Fi initiative, which offers free Wi-Fi hot spots in government locations throughout the city. As Deputy CTO, Mr. Willey led a diverse staff of over 200 serving the District's 500,000+ residents and 80 government agencies and departments.

Before joining the District, Mr. Willey served as the CTO for the Metropolitan Washington Council of Governments (COG) for more than three years. In this capacity, he developed the organization's first IT strategic plan and aided Chief Information Officers around the National Capital Region to envision and implement regional technology solutions, such as deploying wireless broadband and fiber-based networks for emergency communications.
Mr. Willey holds an M.B.A. from the University of Maryland's Robert H. Smith School of Business. He earned a B.A. in English and comparative literature from the University of Massachusetts at Amherst.

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Betty Ann Kane
Chairman
Public Service Commission
District of Columbia Government

Project Role: Member of the Broadband Mapping Advisory Committee and Senior Liaison to Broadband Providers

Betty Ann Kane was nominated by Mayor Adrian Fenty and confirmed by the City Council as Chairman of the Public Service Commission effective March 3, 2009, for a term ending June 30, 2010. She has served as a Commissioner since March 6, 2007. Ms. Kane is an experienced public official with more than 30 years of service to the District of Columbia Government in elected and appointed positions and extensive private sector experience in regulatory, administrative, and public policy matters. Chairman Kane was elected as an at-large member of the District of Columbia Board of Education in 1974 and re-elected in 1975. She was elected to three terms as an at-large member of the City Council from 1978 to 1990. Her service on the Council included chairing the Public Services and Cable Television Committee, with legislative, budgetary, and oversight responsibility for the D.C. Public Service Commission, Office of People's Counsel, cable television, and utility regulatory policy.

As government relations advisor for a Washington law firm, Chairman Kane wrote the guidebook on telecommunications and cable television regulation for the National League of Cities and assisted local governments in influencing Congressional and Federal Communications Commission decisions on telecommunications matters. She later operated her own government relations company, serving a variety of business, nonprofit, and labor organizations, as well as serving as a government relations specialist for the D.C. Court System.

Chairman Kane also served as a Trustee and as Executive Director of the District of Columbia Retirement Board, and she led the transformation of the Board from an investment agency managing $3.2 billion in pension funds to a full-service retirement and investment agency.
Betty Ann Kane serves as Chairman of the Telecommunications Committee of the Mid-Atlantic Conference of Regulatory Commissioners, is a member of the Telecommunications Committee of the National Association of Regulatory Utility Commissioners, and has been appointed by the Federal Communications Commission to the Joint Conference on Advanced Telecommunication Service and the North American Numbering Council.

Chairman Kane is a graduate of Middlebury College and has an M.A. in English from Yale University, as well as doing specialized academic study in telecommunications regulation at the Annenberg School, and investing and finance at the Wharton School, at the University of Pennsylvania.

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Kenneth Boley
Intergovernmental Initiatives Director
Office of the Chief Technology Officer
District of Columbia Government

Project Role: Project Lead and Grant Manager under the BTOP and BDIA

Kenneth Boley serves as the Director for Intergovernmental Initiatives in the Office of the Chief Technology Officer. His duties include the leading and implementation of District priorities such as public safety wireless broadband and citywide credentialing consolidation for District first responders using the D.C. Smartcard. Further responsibilities include the management of the National Capital Region Interoperability Program, where he monitors federal grant funding and advises the Council of Governments' committee of 21 D.C. metropolitan-area CIOs.

Before joining the District, Mr. Boley served as Counsel for the law offices of Lawler, Metzger, Milkman & Keeney (Washington, D.C.). His primary role included advising holders of radio spectrum licenses in multifaceted campaigns to change federal rules governing public safety and the commercial spectrum. Boley also served as Senior Counsel for the law offices of Lampert & O'Connor (Washington, D.C.), litigating before the Federal Communications Commission on behalf of national Internet service providers for discovery, briefing, and the successful negotiation of settlements.

Mr. Boley has a J.D. from Georgetown University Law Center, where he graduated cum laude, and a B.A. from Amherst College, where he also graduated cum laude. Boley is also a member of the bar in the District of Columbia and the state of Maryland.

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Joy E. Phillips
State Data Center Associate Director
Office of Planning
District of Columbia Government

Project Role: Overseer for Broadband Demographics and Survey Data Collection

Joy E. Phillips joined the Office of Planning in February 2005 as the Associate Director of the State Data Center. Dr. Phillips' areas of responsibility include the collection, analyses, and reporting of demographic data for the District of Columbia. She conducts research and analyses on area demographic trends and their implications using a broad range of data sources, including the U.S. Census Bureau, the Bureau of Labor Statistics, Info USA, the Centers for Disease Control and Protection, and other locally available data. She develops micro-geographies of population, households, and employment estimates and projections by race, ethnicity, age, gender, census blocks, block groups, tract, traffic analyses zones, and wards. Dr. Phillips writes monthly and quarterly reports on the latest demographic trends nationally and in the District of Columbia. She is responsible for the accurate and timely realignment of the District geographies, namely, census blocks, block groups, tracts, wards, voting precincts, and traffic analyses zones.

Before joining the Office of Planning, Dr. Phillips worked at the Department of Health as a statistician and coordinator of the department's Geographic Information System. Dr. Phillips designed, implemented, and managed the Department of Health's Statistical Surveillance System, which produced monthly reports on key health indicators and program performance measures. She also designed, implemented, and analyzed customer survey instruments for the Vital Records Division.

Dr. Phillips has a master's degree and a Ph.D. in economics from Howard University in Washington, D.C. She also has a B.S. in economics from the University of the West Indies, in Trinidad.

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Cary B. Hinton
Policy Advisor to PSC Chair
Public Service Commission
District of Columbia Government

Project Role: Broadband Provider Liaison

Cary Hinton serves as the Policy Advisor to Chairman Betty Ann Kane of the Public Service Commission of the District of Columbia, bringing with him a diverse professional background of more than 20 years' experience working on telecommunications policy issues.

Before joining the District, Mr. Hinton worked for the Sprint Corporation for 15 years as a Regional Director for state and local government affairs. In this position, he advocated Sprint's policy and legislative recommendations before state and local legislators and government officials in the eastern states and the District of Columbia. Prior to joining Sprint, Mr. Hinton was the Director of state and local government affairs for the United States Telephone Association, the national association of local telephone companies. He advocated the USTA's federal regulatory and legislative policies to state and local regulatory, legislative, and government officials. Mr. Hinton worked several years for the Bell Atlantic Corporation as a Manager for state government relations, where he coordinated the development and advocacy of bi-jurisdictional federal-state regulatory policies.

Mr. Hinton received a B.A. in urban affairs from the University of Southern California and an M.S. in resource policy and management from the University of Michigan. He did postgraduate work at the University of Southern California's School of Public Administration.

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Barney Krucoff
Geographic Information System Program Manager
Office of the Chief Technology Officer
District of Columbia Government

Project Role: Geographic Information System and Mapping Manager

Barney Krucoff serves as the Geographic Information Systems Program Manager in the Office of the Chief Technology Officer, a position he has held since 2004. As the manager, Mr. Krucoff leads and coordinates GIS implementation for the District Government. Mr. Krucoff's major project accomplishments include the publication of 300+ publicly available GIS layers, the adoption of the DC GIS Strategic Plan in cooperation with the United States Geological Survey and the Federal Geographic Data Committee, the establishment of the Federated Data Model, which governs geospatial data sharing among District agencies, and the integration of live operation data into the DC GIS Central database (service requests, permitting, and crime data feeds). Mr. Krucoff is also responsible for the development of service-oriented architecture supporting multiple District Web applications using GIS. Additionally, Krucoff serves as Chairmen of the GIS Committee of the Washington Council of Governments, where he coordinates the National Capital Region's GIS activities.

Before joining the District, Mr. Krucoff served as the GIS manager at Michael Baker Jr. Inc. in Alexandria, Va., from 1998 to 2004. In his time there, he worked with Federal, State, and Local GIS practitioners to successfully deliver GIS services. Mr. Krucoff managed Baker's National Pipeline Mapping System project for the United States Department of Transportation, building a national data set from private sector data submissions.

Mr. Krucoff has a master's degree in city planning from the Georgia Institute of Technology and a B.A. from Vanderbilt University.

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Robert Pavlak
Citywide Broadband Wireless Network Manager
Office of the Chief Technology Officer
District of Columbia Government

Project Role: Broadband Provider Facility & Field Validation

Robert Pavlak serves as the Public Safety Citywide Broadband Wireless Network Manager in the Office of the Chief Technology Officer, maintaining the only public safety broadband network of its kind (700 MHz) in the United States. During his time in this position, he is credited with the successful delivery of an unprecedented wireless video streaming network solution for the 2009 Presidential Inauguration, supporting local, federal, and military agencies. He is a passionate builder of high performance teams and leading-edge network products, with a track record of delivering results and improving the performance, scalability, and reliability of complex software and hardware network systems.

Mr. Pavlak is an engineering executive with 30 years' experience in product development, delivering pioneering wireless and broadband network products to international markets. Before joining the District, Mr. Pavlak worked more than 20 years at Bell Laboratories and 10 years at start-up companies. Mr. Pavlak has managed the development of many network "firsts,"

including AT&T's first digital high-capacity cellular system and the first GSM base station. Mr. Pavlak started Lucent's cellular systems development team in Britain and led the engineering of Level 3's European IP network. Additionally, he led the engineering at three other start-up companies: the engineering plans for a U.S. nationwide broadband wireless network for public safety at Frontline Wireless, the development of WiMAX wireless network products, and the successful development and delivery of mobile Internet gateway products to Asian markets.

Mr. Pavlak has an M.S. in electrical engineering and computer science from the University of California at Berkley and a B.S. in electrical engineering from the Rensselaer Polytechnic Institute.

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Mario Field
Geospatial Data Manager
Office of the Chief Technology Officer
District of Columbia Government

Project Role: GIS Data, Field Acquisition, and Metadata Development Lead

Mario Field serves as the Geospatial Data Manager for the GIS Program in the Office of the Chief Technology Officer. His duties include the training and management of the GIS data team, whose responsibility is to design, develop, and maintain the District's enterprise geospatial database in support of GIS services to government, its citizens and visitors, and the larger geospatial community. Mr. Field's major projects include the successful implementation and delivery of the 2005 and 2008 Planimetric Updates for the District's base data layers (building footprints, road casings, sidewalk casings, and more). Mr. Field is accountable for the coordination among interested federal, state/local, and private parties with regard to the Planimetric Update, involving aerial photography, change detection, field verification, and overall quality control. Further responsibilities include adherence to Federated Data Model for District GIS standards in data sharing, maintenance, and metadata publication across government agencies.

Before joining the District, Mr. Field served as the GIS Applications Coordinator for the Government of Baltimore County. His primary role included the promoting of GIS technology integration through needs assessments and training through the county. He designed and implemented the county's quality assurance and control program for planimetric, topographic, and orthophoto data conversion projects.

Mr. Field has a B.A. from Virginia Tech and has done graduate course work in geographic science and environmental planning towards a master's degree at Towson University.

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David Jackson
Geospatial Analyst
Office of the Chief Technology Officer
District of Columbia Government

Project Role: GIS Data, Field Acquisition, and Metadata Development

David Jackson serves as a Geospatial Analyst for the GIS Program in the Office of the Chief Technology Officer. Mr. Jackson leads the Master Address Repository (MAR) team and is responsible for the daily maintenance of the MAR, a database of building addresses, alias names, and other location identifiers unique to the District of Columbia. Mr. Jackson also oversees the development and successful implementation of quality assurance and control methods for the research and verification of multiple datasets, most notably MAR maintenance procedures.

Before joining the District, Mr. Jackson served as a Geospatial Technician for Vargis, fixing topological errors for large Census TIGER data and editing coverages in preparation for map conflation (merging local datasets and Census TIGER data).

Mr. Jackson has a B.S. in computer cartography and geographic science from the University of Maryland at College Park.

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Brian C. Putz
Geospatial Analyst
Office of the Chief Technology Officer
District of Columbia Government

Project Role: GIS Data, Field Acquisition, and Metadata Development

Brian Putz serves as a Geospatial Analyst for the GIS Program in the Office of the Chief Technology Officer. Mr. Putz is a solutions-oriented analyst with more than 10 years of GIS experience, with a balanced background that includes data conversion, spatial analysis, modeling, cartographic production, image processing, field data collection, and exceptional presentational and writing skills. Mr. Putz's highlighted projects include the development and implementation of a central database for all properties owned by the Department of Public Works and updating the District's cartographic Basemap used throughout government GIS Web applications. His most recent work is in support of the State Broadband Initiative, mapping residential broadband connections by census tract and providing demographic data for each proposed service area.

Before joining the District, Mr. Putz served as a leading Geospatial Analyst for the Northrop Grumman Corporation in the implementation of a new automated 911 solution for the Navy Emergency Response Management System. His responsibilities included the integration of spatial datasets to CAD systems, technical support for customer base, and writing product-related and training documentation. Mr. Putz also worked as a remote sensing analyst for the University of Nebraska at Lincoln Center for Advanced Land Management Information Technologies program. His tasks included providing GIS and remote sensing support for the completion of research grant requirements.

Mr. Putz has an M.A. in geography from the University of Nebraska at Lincoln and a B.S. in geo-environmental sciences from Shippensburg University.

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Tianpu Liang
Geospatial Development, Systems and Applications Lead
Office of the Chief Technology Officer
District of Columbia Government

Project Role: GIS Applications and Systems Lead

Tianpu Liang serves as the Geospatial Development, Systems and Applications Lead for the GIS Program in the Office of the Chief Technology Officer. Mr. Liang's primary responsibilities include the overall maintenance of current District geospatial Web applications and the development of new cutting-edge Web services and apps for integration across multiple D.C. agencies. Mr. Liang's major projects include the deployment of the Washington, D.C., Citizen Atlas, an ArcIMS and RouteServer application with services such as neighborhood profiles, political summaries, real property search functions, and other reporting modules. His most recent work includes the integration of Google technology in Web applications such as the District of Columbia Public Schools Profile, the OCTO Wi-Fi Hot Spot Locator, and the Washington, D.C., Economic Partnership Retail Search sites.

Before joining the District, Mr. Liang worked as a geospatial Web developer for Michael Baker Jr. Inc. in Alexandria, Va. During his time there he supported the National Pipeline Mapping

System project by developing ArcIMS Active X Connector applications that allowed operators to view regulatory information about oil or gas pipelines.

Mr. Liang has an M.S. in information systems from Marshall University. He also has an M.B.A. in information technology from the Virginia Polytechnic Institute of Falls Church, Va., and a B.S. in computer science from the Luoyang Institute of Technology, in China.

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Timothy Koonce
Senior Database Administrator and Data Architect
Office of the Chief Technology Officer
District of Columbia Government

Project Role: GIS Applications & Systems

Timothy Koonce serves as the Senior Database Administrator and Data Architect for the GIS Program in the Office of the Chief Technology Officer. Mr. Koonce's technical expertise lies with the Oracle RDBMS; however, he currently works as the primary spatial database technical lead and data architect for several projects within the District Government. Mr. Koonce's major accomplishments include designing the data collection process for loading and converting spatial data from both Oracle and non-Oracle sources. Additionally, he has successfully authored the development of PL/SQL packages for accessing spatial data, implemented data maintenance routines, installed and configured the Oracle RDBMS (10G, RAC, Spatial), and designed the HA database environment (Oracle RAC, Data Guard, and RMAN). Further accountabilities include the continuous monitoring and troubleshooting of D.C.'s spatial databases and applications performance issues.

Before joining the District, Mr. Koonce worked as the Technical Manager for Accenture, supporting various clienteles in database administration and the supervision of 30 Oracle specialists. He worked to establish career objectives by creating education and training programs, monitoring progress, and providing career counseling as needed. Additionally, Mr. Koonce provided technical assistance with proposal writing.

Mr. Koonce has a B.A. in English literature from Baylor University. Additionally, he is an Oracle Certified Professional (OCP) for versions 8 and 8i, a Microsoft Certified Systems Engineer (MCSE), and a Product Specialist (MCPS) in SQL Server 6.5.

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Zhen Lo
Geospatial Systems Architect
Office of the Chief Technology Officer
District of Columbia Government

Project Role: GIS Applications and Systems

Zhen Lo serves as the Geospatial Systems Architect for the GIS Program in the Office of the Chief Technology Officer. Mr. Lo's primary responsibilities include the planning, designing, and management of the program's GIS servers by evaluating and deploying new emerging GIS technologies. Further accountabilities include the coordination with District agencies for implementing successful business processes having geospatial components. Mr. Lo's major projects include the first migration of physical GIS servers into a virtual infrastructure for reduced power consumption and an increase in systems availability and overall ROI.

Before joining the District, Mr. Lo worked as a Systems Architect for Michael Baker Jr. Inc. in Alexandria, Va. While in this position, Lo designed an enterprise GIS system to manage facility information on all Coast Guard bases. The system included an ArcIMS solution for viewing and querying data via a secure Internet connection.

Mr. Lo has an M.S. in managing information systems from George Washington University and a B.S. in environmental studies from York University.

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3. Expedient Data Delivery

The District's manageable size and integrated city, county, and state government will allow it to work quickly and meet the February 1, 2010, deadline for substantially complete data. The District will prioritize NTIA required deliverables. The District of Columbia's focus will be NTIA's defined requirements, followed by the other identified deliverables necessary to understanding broadband adoption in urban areas.

The only significant risk of failure would be a breakdown between the providers and the District government cooperation. NTIA significantly mitigated this risk with the clarifications to the NOFA. Seventy-five percent of the District's providers, including all the major providers, have been forthcoming to date. If relations with the provider community continue on the current trajectory (both nationally and in D.C.), the District will have data to submit on time.

Two significant procurements are planned; the Engineering Validation Contract and the Market Research Survey Contract. Both procurements will be small enough to handle quickly and will not require City Council review. Although D.C. plans to have both contractors in place quickly, only the engineering validation firm is absolutely required to meet NTIA's February 1 requirements. Lastly, the District's Office of Contracts and Procurements has assembled a dedicated team to handle stimulus procurements.

The Broadband Test Web Application is another possible point of failure because D.C. Employees and the public will be used for validation. This will be a simple modification of a

COTS product and DC GIS will start work in pre-award. Other applications development projects, including the D.C. Broadband Map and data feeds, will be delivered expediently, but are not absolutely required to meet the February 1, 2010, deadline.

The following table presents the District's self-assessment of its ability to meet the NOFA definition of "Substantially Complete."

Substantially Complete Data Set by 2/1/2010	**Risk Assessment**
a) 70% of broadband service providers	The District is on track to meet this goal. FCC reports there are 40 broadband providers in D.C. Several are not active. 75% of active providers responded to the PSC's initial request.
b) 80% of households in a state	Not a problem. D.C.'s contained size will ensure data is "statewide."
c) 90% of households in rural areas	Not applicable. There are no rural areas in D.C.
d) 95% of public community anchor institutions	Not a problem. DC GIS already maintains this data. Additional fields will be added to existing datasets by contacting the institutions and using the "Broadband Test Web Application."
Date	
"All data provided in the first collection should be accurate as of June 30, 2009"	If this is intended to be a snapshot in time, this will be difficult. D.C. expects data to change overtime and most data submitted on February 1, 2010, to be more current than that submitted before June 30, 2009. The District will seek clarification from NTIA.

4. Process for Repeated Data Updating

The District has devoted a large portion of the requested funding to recurring data updates. NTIA required deliverables will be updated every six months, but not every data update technique will be repeated for each delivery. As it is central to the program, provider data will be collected and updated for each delivery. Public input on the Broadband Test Web Application will be open at almost all times. However, other data collection techniques like field data verification will have a mobilization cost and can more efficiently be done annually.

The table below provides a cross-reference between the data delivery date and the data collection techniques that will be used to support those deliveries.

Data Gathering and Validation Technique	2010			2011-2014		Update
	February 1	March 1	September 1	March 1	September 1	Cycle/Comments
Provider Submission	Yes	Partial	Yes	Yes	Yes	Every Six Months
Check Provider Website	Yes	Partial	Yes	Yes	Yes	Every Six Months
Field Data Collection/Verification	Yes	Partial	No	Yes	No	Annually
Broadband Testing Site (Public Input)	Yes	No	Yes	Yes	Yes	Onging, report every six months
Broadband Testing Site (DC Employees from Home)	Yes	No	No	Yes	No	Annually
Broadband Testing Site (Check from Commity Anchor Institutions)	Yes	Partial	Yes	Yes	Partial	Canvas annually, check on those without service every six months
Survey	No	Yes	No	Yes	No	Annual
DC GIS Processing	Yes	Yes	Yes	Yes	Yes	Every Six Months
Existing DC or Federal Records	Yes	Yes	Yes	Yes	Yes	Every Six Months

5. Planning and Collaboration

The Office of the Chief Technology Officer is the eligible entity for the BDIA project; however, the effort will be a citywide initiative among broadband providers, non-governmental agencies, and citizens.

The District will form a committee of executive leaders, broadband providers, and non-governmental organizations to ensure that all parties are represented, that agencies coordinate, and that commitments are met.

The committee will be formed upon award and will meet at least once prior to November 1, 2009, at least three times before February 1, 2010, at least every six months in the year following February 1, 2010, and at least annually for the next four years. All meetings will be open to the public and will be held at the Public Service Commission or a similar location. Each meeting will include a period of open forum for public commentary.

Broadband Mapping Advisory Committee

Interim Chief Technology Officer, Chair – *Chris Willey*
Public Service Commission – *Betty Ann Kane*
Office of Cable Television – *Eric Richardson*
District Dept. of Transportation – *Gabe Klein*
Office of Planning – *Harriet Tregoning*

Non-Government Organization 1
Non-Government Organization 2

Broadband Provider 1
Broadband Provider 2

The District Chief Technology Officer (CTO) will chair the Committee. The CTO will also appoint the two NGO members after seeking the advice of the NGO community. The chairman of the Public Service Commission will appoint the two provider members after seeking the advice of the provider community. Providers appointed will represent different transmission technologies.

District of Columbia Government Agencies

Five city agencies will work closely together on broadband mapping, and others will assist as needed. Each of the agencies will have a seat:

- Office of the Chief Technology Officer (OCTO) is the information-technology agency for the District. OCTO houses the District's technical experts in fixed-facilities engineering, radio-frequency engineering, geographic information systems, software development, and information-technology project management. Each of these skills will be employed to support broadband mapping.

- Public Service Commission (PSC) is an independent (of the Mayor) agency that regulates most public utilities operating in the District, including telecommunication providers. The PSC will have the lead role for broadband provider relations.

- Office of Cable Television (OCT) oversees the District's cable television franchises, including two large cable-based broadband providers.

- Office of Planning (OP) is home to the DC State Data Center and is the District's lead for demographic data and analysis. The State Data Center works closely with the Census Bureau.

- District Department of Transportation (DDOT) manages the District's public right-of-ways where most fixed facility broadband infrastructure is located.

Broadband Providers

The engagement and support of the provider community is essential to the success of the project. The Public Service Commission will continue in its role as the District's primary liaison to the utility community. In addition to membership on the committee, meetings will be open to other providers who wish to attend.

The Public

The public is encouraged to participate in the mapping project by visiting the Broadband Test Web Application and reporting the level of service they receive at home, via wireless, or at community institutions.

The District of Columbia Broadband Map site will give the public capabilities to click on a report specific to locations with broadband service issues. The public will also be able to review the results of the mapping project (BDIA) and the status of broadband projects (BTOP, BIP, PCC) funded by NTIA in the District. Finally, Broadband Mapping Advisory Committee meetings will be open to all who wish to attend.

Conclusion

BUDGET INFORMATION - Non-Construction Programs

OMB Approval No. 4040-0006
Expiration Date 07/30/2010

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. State Broadband Data and Development	11.558	$	$	$ 2,400,276.00	$ 948,481.00	$ 3,348,757.00
2.						
3.						
4.						
5. Totals		$	$	$ 2,400,276.00	$ 948,481.00	$ 3,348,757.00

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SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1)	(2)	(3)	(4)	Total (5)
	State Broadband Data and Development				
a. Personnel	$ 224,295.00	$	$	$	$ 224,295.00
b. Fringe Benefits	63,262.00				63,262.00
c. Travel					
d. Equipment					
e. Supplies	148,419.00				148,419.00
f. Contractual	1,964,300.00				1,964,300.00
g. Construction					
h. Other					
i. Total Direct Charges (sum of 6a-6h)	2,400,276.00				$ 2,400,276.00
j. Indirect Charges					$
k. TOTALS (sum of 6i and 6j)	$ 2,400,276.00	$	$	$	$ 2,400,276.00
7. Program Income	$	$	$	$	$

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SECTION C - NON-FEDERAL RESOURCES

(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e)TOTALS
8. State Brosdbadnd Data	$	$ 948,841.00	$	$ 948,841.00
9.				
10.				
11.				
12. TOTAL (sum of lines 8-11)	$	$ 948,841.00	$	$ 948,841.00

SECTION D - FORECASTED CASH NEEDS

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$	$	$	$	$
14. Non-Federal	$				
15. TOTAL (sum of lines 13 and 14)	$	$	$	$	$

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT

(a) Grant Program	FUTURE FUNDING PERIODS (YEARS) (b)First	(c) Second	(d) Third	(e) Fourth
16. N/A	$ 257,956.25	$ 257,956.25	$ 257,956.25	$ 257,956.25
17.				
18.				
19.				
20. TOTAL (sum of lines 16 - 19)	$ 257,956.25	$ 257,956.25	$ 257,956.25	$ 257,956.25

SECTION F - OTHER BUDGET INFORMATION

21. Direct Charges:

22. Indirect Charges:

23. Remarks:

District of Columbia
Proposal to National Telecommunication and Information Administration
For the State Broadband Data and Development Grant Program (BDIA)
Opportunity Number **0660—ZA29**

Applicant Organization: **Office of the Chief Technology Officer (OCTO)**

Key Contact: Ken Boley, Director,
Title: Intergovernmental Initiatives
Phone: (202) 478-5879
Email: Kenneth.Boley@dc.gov

Secondary Contact: Barney Krucoff
Title: GIS Manager
Phone: (202) 727-9307
Email: Barney.Krucoff@dc.gov

Mapping Budget Narrative Mapping Fund

Please see the District's project narrative for a full explanation of Costs and in-kind contributions. The budget narrative provides additional information enabling a cross-walk to Federal budget categories. An excel spreadsheet is also attached.

The Mapping funding will be expended in the following categories:

Personnel Direct Salaries – $224,296

The majority of these funds will offset the direct salary of staff at the District of Columbia Public Service Commission who will manage contacts and relationships with broadband providers for the five years of the contract. A portion of the funds will also offset the costs of an OCTO staff software developer who will lead development of the DC Broadband Mapping Application.

Fringe Benefits – $63,262

The District's actual cost of labor including fringe benefits is equal to direct salary plus 22%.

Equipment – $148,419

Equipment costs include two computer servers and GIS software.

Contractual – $1,964,300

The District will issue RFPs for a Market Research firm and Engineering firm. Labor hour contractors working within OCTO will also be used for GIS analysis and software development. This also includes $500,000 in planning funds to spend on outreach and education to encourage the adoption and constructive use of broadband.