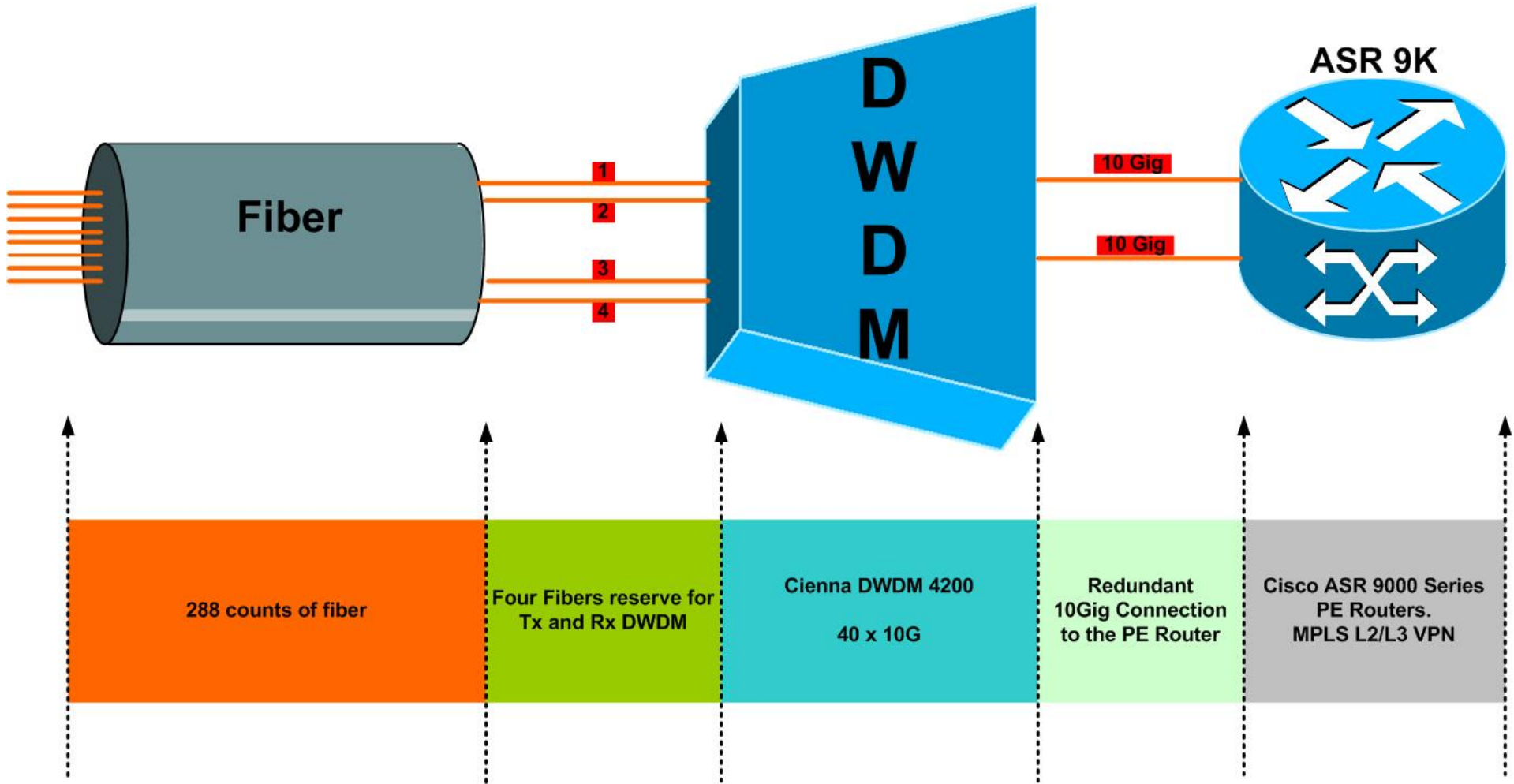


1 Page

Withheld in its entirety  
pursuant to FOIA Exemption 4  
(5 U.S.C. § 552 (b)(4))

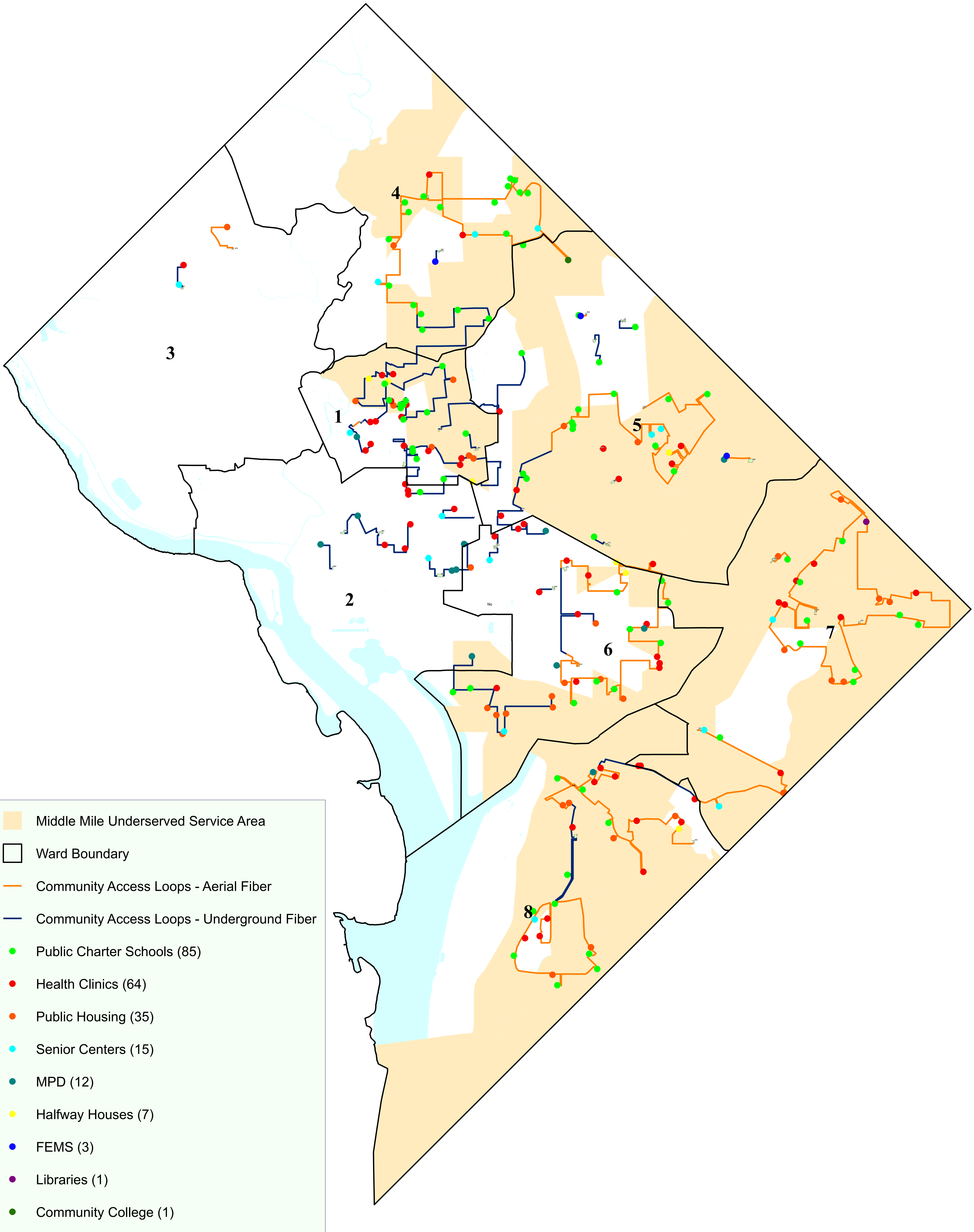
# PHYSICAL CONNECTIVITY



1 Page

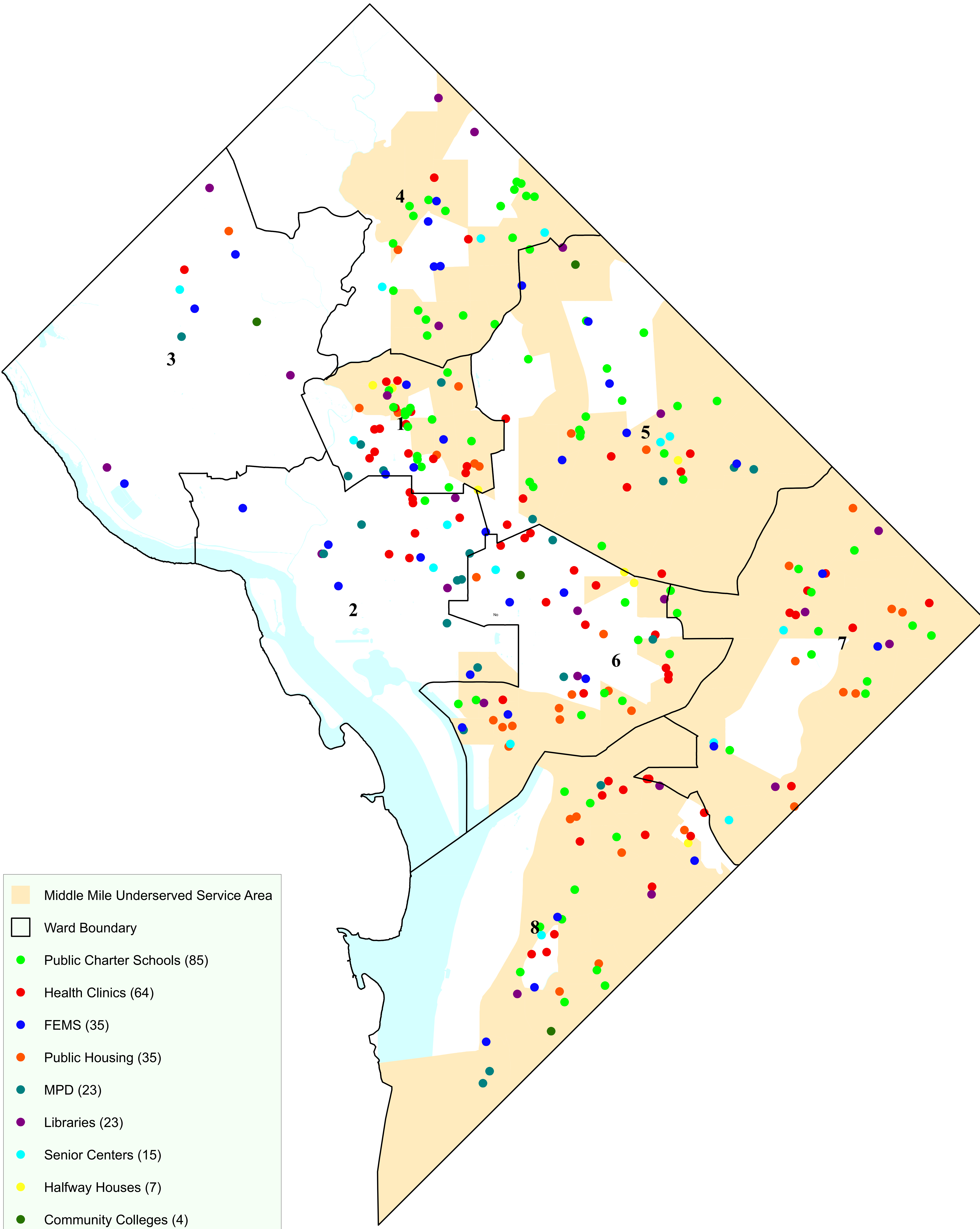
Withheld in its entirety  
pursuant to FOIA Exemption 4  
(5 U.S.C. § 552 (b)(4))

# DC-CAN ACCESS LOOPS



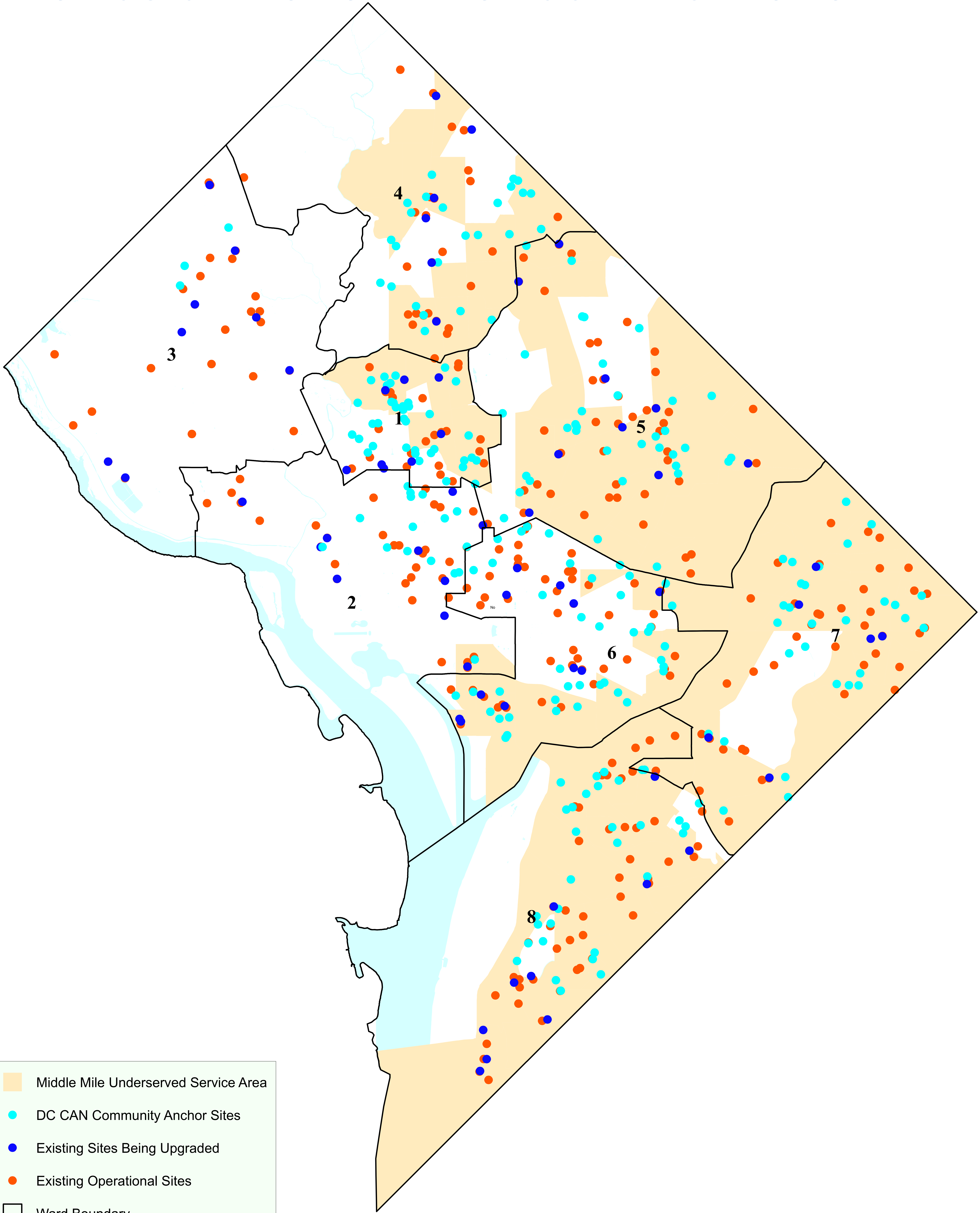


# DC-CAN COMMUNITY ANCHOR SITES



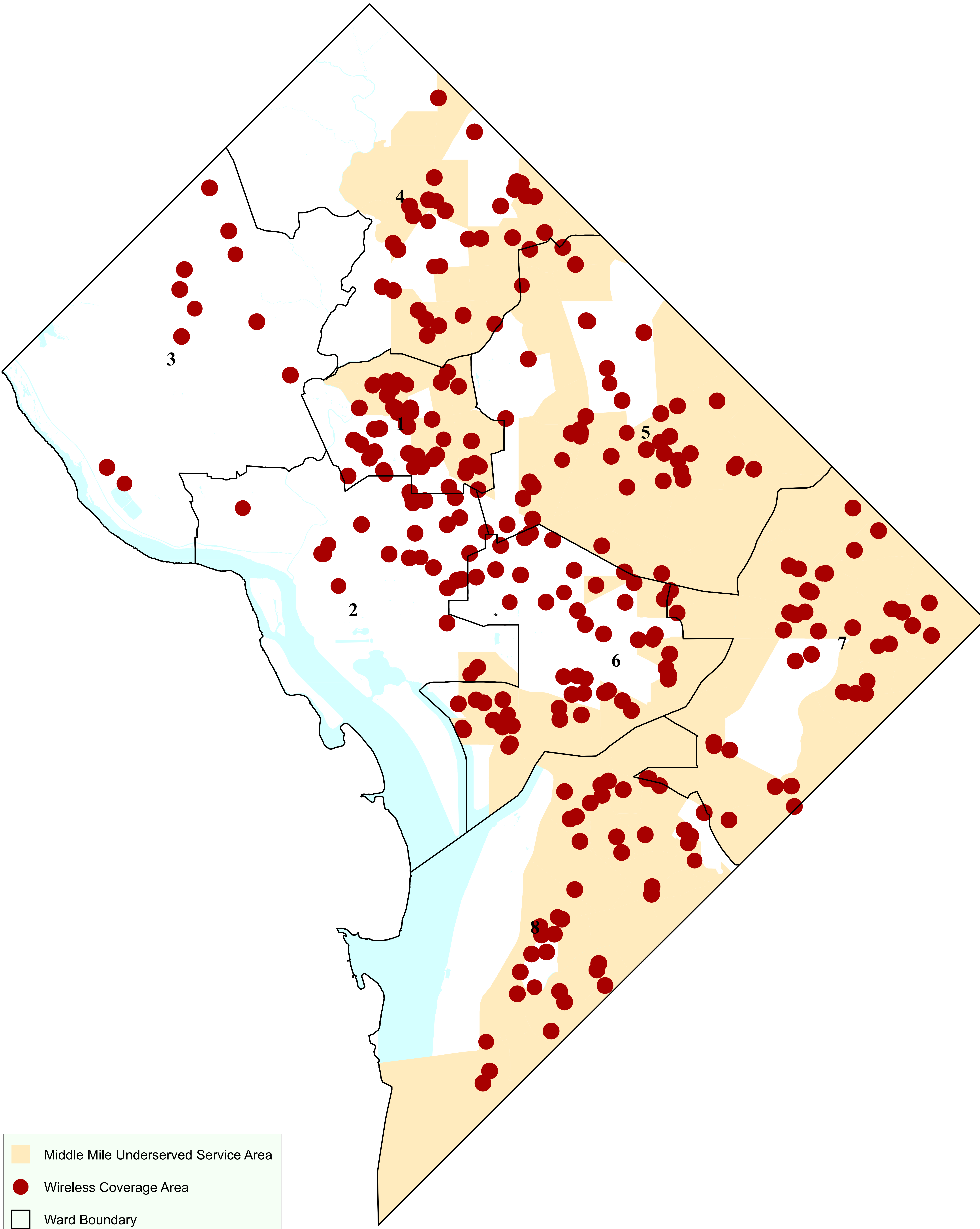
- Middle Mile Underserved Service Area
- Ward Boundary
- Public Charter Schools (85)
- Health Clinics (64)
- FEMS (35)
- Public Housing (35)
- MPD (23)
- Libraries (23)
- Senior Centers (15)
- Halfway Houses (7)
- Community Colleges (4)

# DC-CAN COMMUNITY ANCHOR SITES, EXISTING UPGRADE SITES AND EXISTING OPERATIONAL SITES



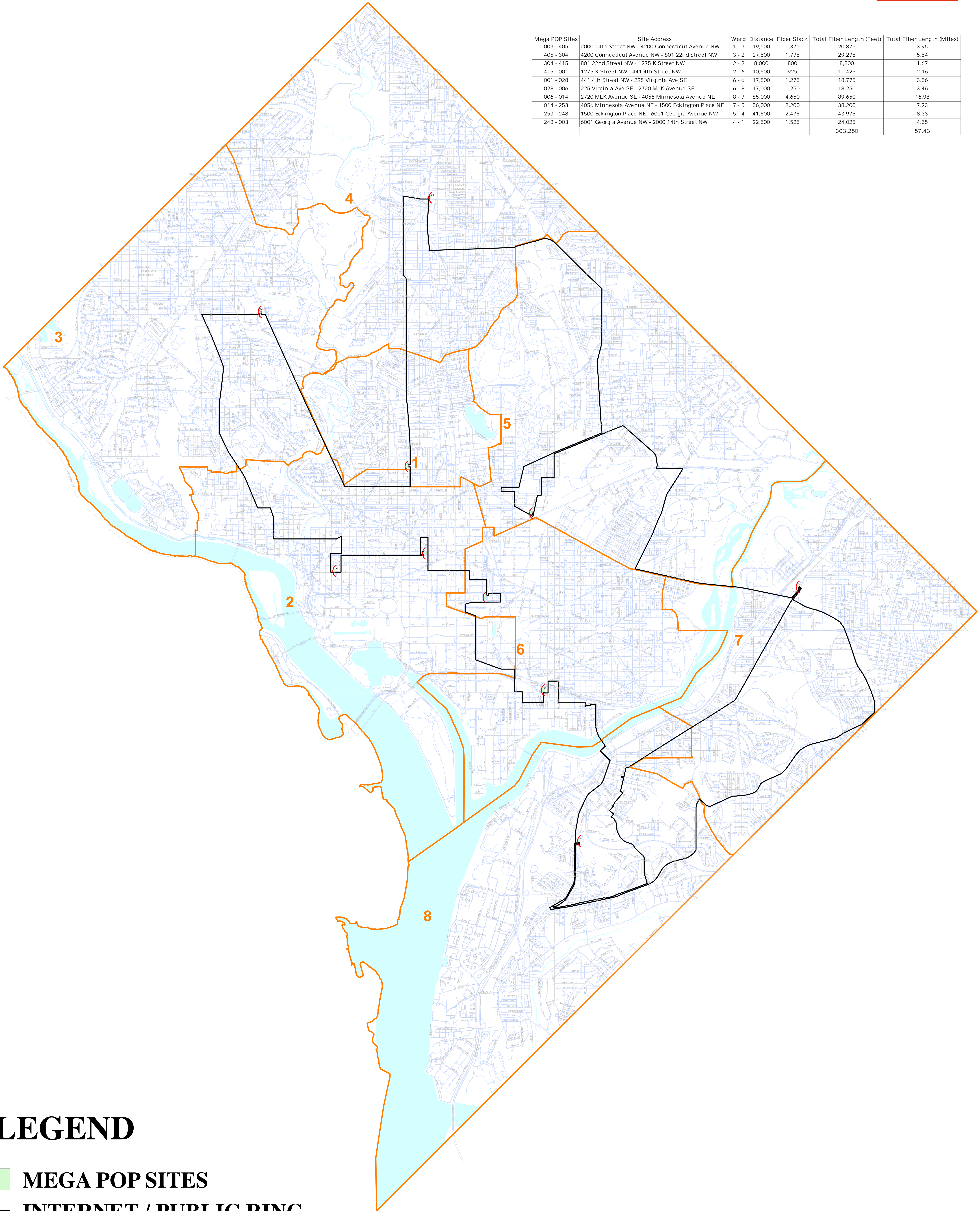


# DC-CAN WIRELESS COVERAGE AREA





Mega POP Sites	Site Address	Ward	Distance	Fiber Slack	Total Fiber Length (Feet)	Total Fiber Length (Miles)
003 - 405	2000 14th Street NW - 4200 Connecticut Avenue NW	1 - 3	19,500	1,375	20,875	3.95
405 - 304	4200 Connecticut Avenue NW - 801 22nd Street NW	3 - 2	27,500	1,775	29,275	5.54
304 - 415	801 22nd Street NW - 1275 K Street NW	2 - 2	8,000	800	8,800	1.67
415 - 001	1275 K Street NW - 441 4th Street NW	2 - 6	10,500	925	11,425	2.16
001 - 028	441 4th Street NW - 225 Virginia Ave SE	6 - 6	17,500	1,275	18,775	3.56
028 - 006	225 Virginia Ave SE - 2720 MLK Avenue SE	6 - 8	17,000	1,250	18,250	3.46
006 - 014	2720 MLK Avenue SE - 4056 Minnesota Avenue NE	8 - 7	85,000	4,650	89,650	16.98
014 - 253	4056 Minnesota Avenue NE - 1500 Eckington Place NE	7 - 5	36,000	2,200	38,200	7.23
253 - 248	1500 Eckington Place NE - 6001 Georgia Avenue NW	5 - 4	41,500	2,475	43,975	8.33
248 - 003	6001 Georgia Avenue NW - 2000 14th Street NW	4 - 1	22,500	1,525	24,025	4.55
					303,250	57.43



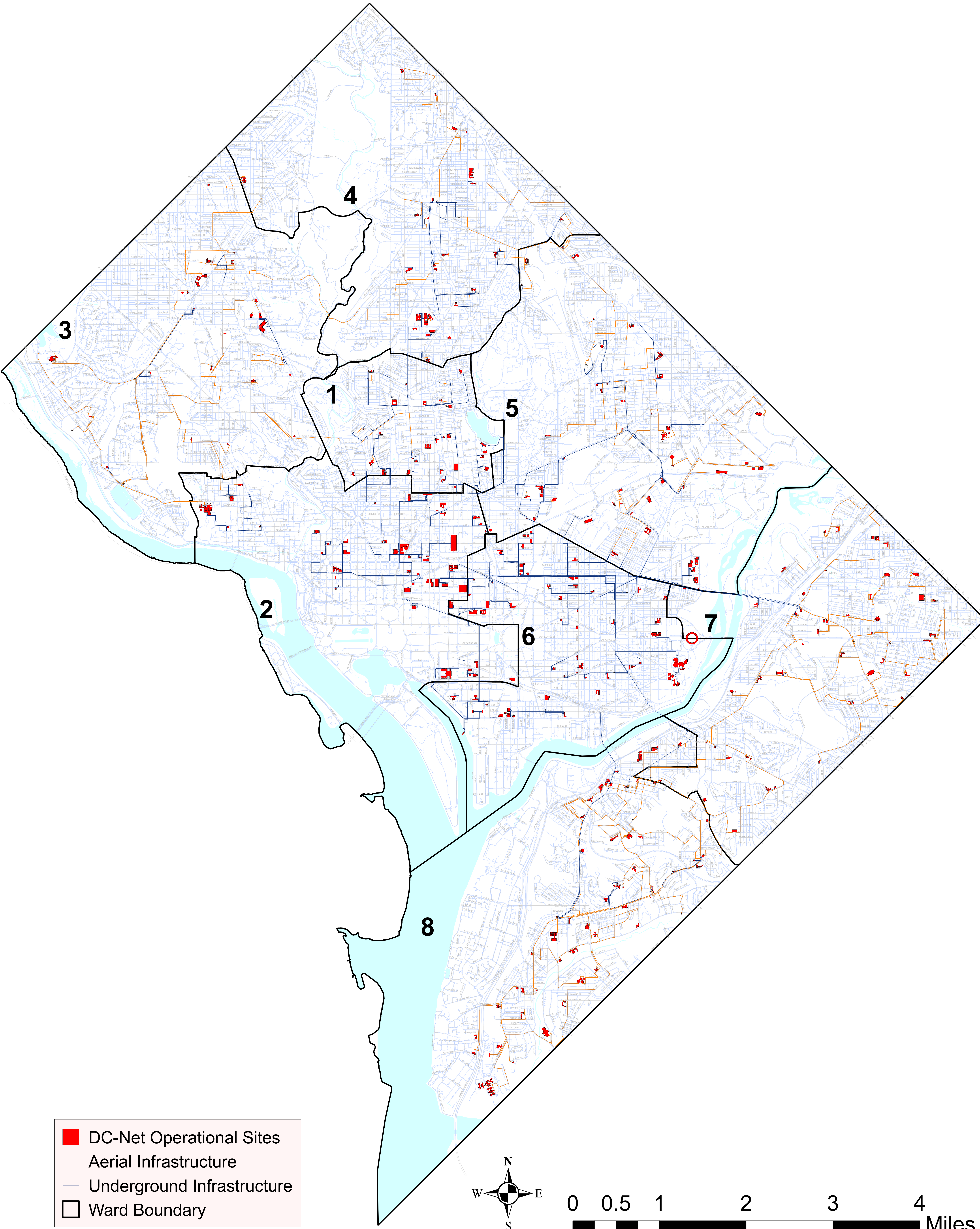
## LEGEND

- MEGA POP SITES
- INTERNET / PUBLIC RING

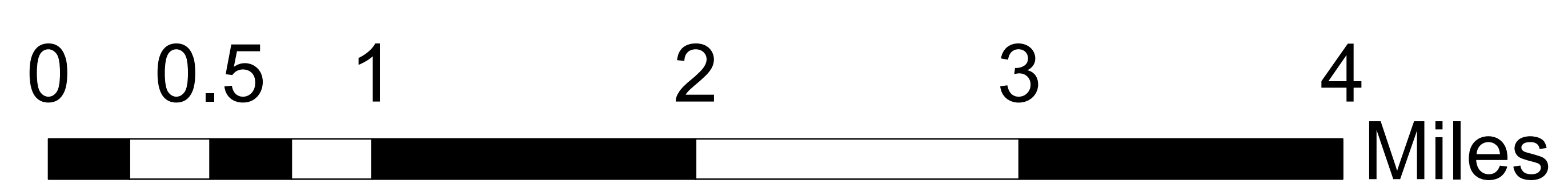
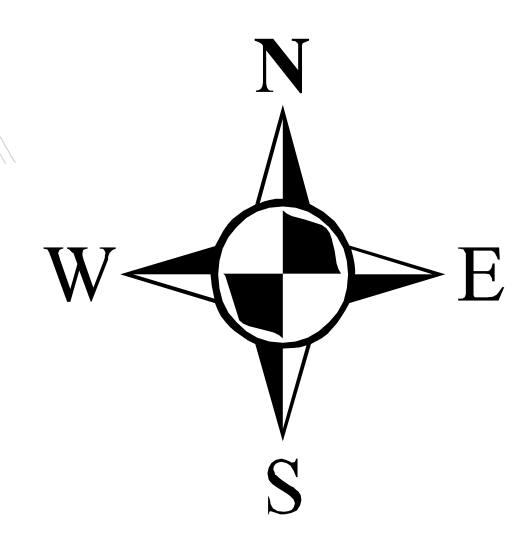


# DC-NET EXISTING FIBER INFRASTRUCTURE

MAY 2010



- DC-Net Operational Sites
- Aerial Infrastructure
- Underground Infrastructure
- Ward Boundary



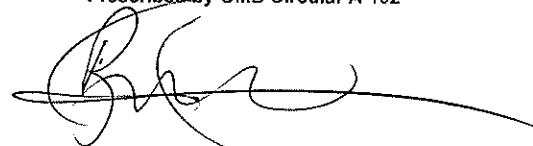


**BUDGET INFORMATION - Construction Programs**

OMB Approval No. 4040-0008  
Expiration Date 07/30/2010

*NOTE: Certain Federal assistance programs require additional computations to arrive at the Federal share of project costs eligible for participation. If such is the case, you will be notified.*

COST CLASSIFICATION	a. Total Cost	b. Costs Not Allowable for Participation	c. Total Allowable Costs (Columns a-b)
1. Administrative and legal expenses	\$ 1,036,800.00	\$ 0.00	\$ 1,036,800.00
2. Land, structures, rights-of-way, appraisals, etc.	\$ 0.00	\$ 0.00	\$ 0.00
3. Relocation expenses and payments	\$ 0.00	\$ 0.00	\$ 0.00
4. Architectural and engineering fees	\$ 1,629,320.00	\$ 0.00	\$ 1,629,320.00
5. Other architectural and engineering fees	\$ 0.00	\$ 0.00	\$ 0.00
6. Project inspection fees	\$ 1,816,750.00	\$ 0.00	\$ 1,816,750.00
7. Site work	\$ 7,103,184.00	\$ 0.00	\$ 7,103,184.00
8. Demolition and removal	\$ 0.00	\$ 0.00	\$ 0.00
9. Construction	\$ 0.00	\$ 0.00	\$ 0.00
10. Equipment	\$ 13,369,978.00	\$ 0.00	\$ 13,369,978.00
11. Miscellaneous	\$ 76,968.00	\$ 0.00	\$ 76,968.00
12. SUBTOTAL (sum of lines 1- 11)	\$ 25,033,000.00	\$ 0.00	\$ 25,033,000.00
13. Contingencies	\$ 0.00	\$ 0.00	\$ 0.00
14. SUBTOTAL	\$ 25,033,000.00	\$ 0.00	\$ 25,033,000.00
15. Project (program) income	\$ 0.00	\$ 0.00	\$ 0.00
16. TOTAL PROJECT COSTS (subtract #15 from #14)	\$ 25,033,000.00	\$ 0.00	\$ 25,033,000.00
<b>FEDERAL FUNDING</b>			
17. Federal assistance requested, calculate as follows: (Consult Federal agency for Federal percentage share.) Enter eligible costs from line 16c Multiply X <input type="text" value="69.74"/> % Enter the resulting Federal share.			\$ 17,457,942.00





## ASSURANCES - CONSTRUCTION PROGRAMS

OMB Approval No. 4040-0009  
Expiration Date 07/30/2010

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0042), Washington, DC 20503.

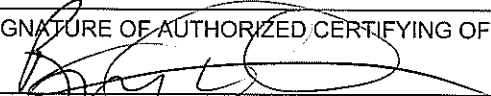
**PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.**

**NOTE:** Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the Awarding Agency. Further, certain Federal assistance awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, the right to examine all records, books, papers, or documents related to the assistance; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will not dispose of, modify the use of, or change the terms of the real property title, or other interest in the site and facilities without permission and instructions from the awarding agency. Will record the Federal awarding agency directives and will include a covenant in the title of real property acquired in whole or in part with Federal assistance funds to assure non-discrimination during the useful life of the project.
4. Will comply with the requirements of the assistance awarding agency with regard to the drafting, review and approval of construction plans and specifications.
5. Will provide and maintain competent and adequate engineering supervision at the construction site to ensure that the complete work conforms with the approved plans and specifications and will furnish progress reports and such other information as may be required by the assistance awarding agency or State.
6. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
7. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
8. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
9. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
10. Will comply with all Federal statutes relating to non-discrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681 1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

11. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal and federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
12. Will comply with the provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.
13. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333) regarding labor standards for federally-assisted construction subagreements.
14. Will comply with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
15. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
16. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
17. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq).
18. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-1 33, "Audits of States, Local Governments, and Non-Profit Organizations."
19. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

*SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL 	*TITLE CTO
*APPLICANT ORGANIZATION OCTO	*DATE SUBMITTED 03/24/00 0.00

## **BTOP Comprehensive Community Infrastructure Service Offerings and Competitor Data Template**

Please complete the complete the following worksheets--either of the Last Mile or Middle Mile Service Offerings worksheets may be omitted if the applicant is not proposing to provide service of that type.

For both the Last Mile and Middle Mile Service Offerings worksheets, the service offerings should include all relevant tiers and markets (*e.g.* residential, business, wholesale). Applicants should be sure to include details on any services that would be offered at discounted rates to particular classes of customers (*e.g.* community anchor institutions or third party service providers).

In the Last Mile Service Offerings worksheet, applicants are required to provide estimated average end user speeds. Average speeds should be the average sustained actual, non-burst speed that the end user would receive during a peak hour. For purposes of calculating these speeds, applicants should utilize their subscriber projections for year eight of the project, and develop subscriber utilization projections that are consistent with any additional services the applicant plans to offer. For wireless broadband services, this speed should be an average of the speeds available across the entire cell. Beyond these general guidelines, due to the multiplicity of technical solutions that may be proposed, the applicants may use discretion to determine the most reasonable manner to estimate actual speeds on their network. Applicants should explain the underlying assumptions used to calculate the average speeds in the space provided.

In the Competitor Data worksheet, applicants are required to provide data on both last mile and middle mile service providers, regardless of whether the applicant proposes to offer both last mile and middle mile services. In the column titled Service Areas Where Service Offered, applicants should list all of the Last Mile and Middle Mile Service Areas within their Proposed Funded area in which the listed services are available. Please ensure that the Service Area names are consistent with those provided within the application and the Service Areas attachment. If the actual availability of the listed services is limited (*e.g.* the service is only available within a particular Last Mile or Middle Mile Service Area), note this in the Other Comments column.

In contrast to several other attachment templates in this application, the data provided via this template will NOT be subject to automated processing. These templates worksheets are provided to demonstrate the level of data required and to provide a suggested format. Applicants are permitted to modify the template layouts in order to provide the most effective presentation of the data for their specific project. Applicants should, however, ensure that they provide at least as much data as these templates require. To the extent that you modify these templates please ensure that the print layouts are adjusted so that rows do not break across pages in a manner that will be difficult to understand. It is recommended that you provide these documents in PDF format when submitting a copy of your application on an appropriate electronic medium, such as a DVD, ROM, or flash drive.

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**Proposed Middle Mile Service Offerings**

Name of Service Offering	Distance Band or Point to Point	Minimum Peak Load Network Bandwidth Capacity (Mbps)	Monthly Pricing (\$)	Other Comments/Description/Features or Limitations
<b>Layer 1</b>				
Dark Fiber Service	Distance Band	N/A	Avg \$175 per strand per mile	Price varies based on construction costs in each ward. Pricing in underserved areas of ward 5,7 and 8 are lower than other wards.
Wavelength	Point-to-Point	1 Gbps	\$4,500 per access node	Wavelengths can be shared or dedicated and configured in a point to point or point to multipoint fashion as desired. Wavelengths are provisioned over a ring between desired locations as protected or unprotected. Peering can be done using Ethernet, FC/FICON, SONET or direct wave (OTN) interfaces. Bandwidth at 2.5 Gbps. Features: Physical path redundancy, dedicated 24 by 7 monitoring. 99.999% availability. Direct connectivity to District government data centers for District government services and resources; direct connectivity to core exchanges, available public and private peering points for interconnection and offsite data storage/recovery; private connection to other District government and community anchors on network; Edu-Net access for educational institutions - ability to peer with Internet(2), Mid-Atlantic Exchange (MAX GigaPOP), National Public LightPath, National LambdaRail.
		2.5 Gbps	\$5,200 per access node	Same as 1 Gbps wavelength service. Bandwidth at 2.5 Gbps
		10 Gbps	\$6,000 per access node	Same as 2.5 Gbps wavelength service. Bandwidth at 10 Gbps
<b>Layer 2</b>				
Layer 2 Service	Point-to-Point or Point-to-Multipoint	100 Mbps	\$2,200 per access site	Layer 2 services offered over the MPLS platform built over a protected DWDM ring. Can be configured as point to point or point to multipoint. Features: Physical path redundancy, dedicated 24 by 7 monitoring. 99.999% availability. Direct connectivity to District government data centers for District government services and resources; direct connectivity to core exchanges, available public and private peering points for interconnection and offsite data storage/recovery; private connection to other District government and community anchors on network; Edu-Net access for educational institutions - ability to peer with Internet(2), Mid-Atlantic Exchange (MAX GigaPOP), National Public LightPath, National LambdaRail.
		1 Gbps	\$3,200 per access site	Same as 100 Mbps EoMPLS. Bandwidth at 1 Gbps
		10 Gbps	ICB	Same as 100 Mbps EoMPLS. Bandwidth at 10 Gbps
<b>Layer 3</b>				

DC Community Access Network (DC-CAN)

VPN	Point-to-Point or Point-to-Multipoint	2 Mbps	\$400	Physical path redundancy; 24x7 network monitoring and customer support; guaranteed quality of service and packet delivery suitable for all traffic (including VoIP); demonstrated 99.995% network uptime past performance; Internet connectivity; Direct connectivity to District government data centers for District government services and resources; direct connectivity to core exchanges, available public and private peering points for interconnection and offsite data storage/recovery; private connection to other District government and community anchors on network; Edu-Net access for educational institutions - ability to peer with Internet(2), Mid-Atlantic Exchange (MAX GigaPOP), National Public LightPath, National LambdaRail; HIPAA-Net access for health customers; Public Safety-Net access for public safety entities; can be accessed at neutral collocation facility in underserved area, if desired.
		10 Mbps	\$600	Same as 2 Mbps VPN Access service
		100 Mbps	\$1,995	Same as 2 Mbps VPN Access service
		1 Gbps	\$4,995	Same as 2 Mbps VPN Access service
		10 Gbps	ICB	Same as 2 Mbps VPN Access service



Competitor Data

Competitor Data - Last Mile Service Providers

Service Provider	Service Areas Where Service Available	Technology Platform	Service Tiers	Downstream Speed	Monthly Pricing	Other Comments/Description/Features or Limitations
RCN	All four quadrants of Washington DC: NW, NE, SE, and SW	Hybrid Fiber Coax	Basic	1.5 Mbps	\$17.50	
			Mid	10 Mbps	\$32.45	
			High	20 Mbps	\$65.50	
RCN	All four quadrants of Washington DC: NW, NE, SE, and SW	Hybrid Fiber Coax	Low	1.5 Mbps	\$22.99	12 mo contract pricing; retail rates after 1 year
			Mid	10 Mbps	\$32.99	
			High	20 Mbps	\$52.99	
Verizon	All four quadrants of Washington DC: NW, NE, SE, and SW	DSL	Basic	1 Mbps	\$29.99	
			Mid	3 Mbps	\$39.99	
			High	7.1 Mbps	\$49.99	
Comcast	All four quadrants of Washington DC: NW, NE, SE, and SW	Hybrid Fiber Coax	Basic	1 Mbps	\$24.95	
			Mid	12 Mbps	\$42.95	
			High	16 Mbps	\$52.95	
Earthlink	All four quadrants of Washington DC: NW, NE, SE, and SW		Basic	56 Kbps	\$21.95	Dial-up
			Mid	1.5 Mbps	\$39.95	DSL
			High	5 Mbps	\$59.99	Satellite

Competitor Data - Middle Mile Service Providers

Service Provider	Service Areas Where Service Available	Technology Platform	Service Tiers	Distance Band or Point-to-Point	Minimum Peak Load Network Bandwidth Capacity	Pricing	Other Comments/Description/Features or Limitations
AT&T	Northwest Washington DC	MPLS		Point to Point	1.5 Mbps	\$665	This is a generic service pricing provided by AT&T. AT&T did not confirm if it will provide the services in the Southeast/Northeast areas of DC and/or any portions of their service that will be provisioned over Verizon network.
FiberLight	Northwest Washington DC						No fiber availability in underserved area and is either unable to provide service or would provide service over Verizon's network.
Global Crossing	All four quadrants of Washington DC: NW, NE, SE, and SW	MPLS	Entry Level	100 Mbps	100 Mbps	\$9,475.00	Global crossing indicated that they do have fiber in the areas of Southeast/ Northeast DC over which middle-mile services can be provided. The pricing provided here is based on their MPLS service.
Level3	All four quadrants of Washington DC: NW, NE, SE, and SW	Long Haul Fiber Network	Entry Level	100 Mbps	100 Mbps	Not available	Fiber infrastructure not present in underserved area. To obtain service customer would have to pay for fiber to be built into customer premises as a Non recurring charge. Speeds as advertised by provider.
			Highest Speed Plan	10,000 Mbps	10,000 Mbps	Not available	
			Other Plans (eg. Middle Tier)	2,500 Mbps	2,500 Mbps	Not available	
RCN	All four quadrants of Washington DC: NW, NE, SE, and SW	Hybrid Fiber Coax	Entry Level	100 Mbps	100 Mbps	\$2,580	Fiber infrastructure not widely present in underserved area. To obtain service customer would have to pay for fiber to be built into customer premises as a Non recurring charge. Speeds as advertised by provider. Pricing based on GSA schedule.
			Highest Speed Plan	10,000 Mbps	10,000 Mbps	\$23,154	
			Other Plans (eg. Middle Tier)	2,500 Mbps	2,500 Mbps	\$7,800	
TW Telecom	Northwest Washington DC	MPLS					No fiber availability in underserved area and is either unable to provide service or would provide service over Verizon's network. Indicated that it has no future expansion plans for fiber in SE or NE Washington DC
Verizon	All four quadrants of Washington DC: NW, NE, SE, and SW	TLS	Entry Level	10 Mbps	10 Mbps	\$1,000	Verizon provided no response for request for MPLS services. While Verizon is the ILEC in SE and NE Washington DC, it did not confirm the extent of fiber availability in these areas and/or where it will provide services in these areas. Also previous research has revealed that fiber infrastructure is not widely present in underserved area. The pricing provided here is for a Transparent LAN service (TLS). To obtain LAN service customer would have to pay for fiber to be built into customer premises as a Non recurring charge. Speeds as advertised by provider. Pricing is based on GSA schedule.
			Highest Speed Plan	1,000 Mbps	1,000 Mbps	\$4,200	
			Other Plans (eg. Middle Tier)	100 Mbps	100 Mbps	\$2,250	
Zayo Bandwidth	Northwest Washington DC	MPLS					No fiber availability in underserved area and is either unable to provide service or would provide service over Verizon's network. Provider also mentioned that it does not have any plans to expand into further areas in Washington DC.



# Comprehensive Community Infrastructure Budget Narrative

Applicant Name: District of Columbia Government  
Office of Chief Technology Officer (DC OCTO)

EasyGrants Number: 5116  
DC Community Access Network

Organization Type: District of Columbia

Proposed Period of Performance: 30 Months  
(FY 2011-Q1 – FY 2013-Q2)

Total Project Costs: \$25,033,000

Total Federal Grant Request: \$ 17,457,942

Total Matching Funds (Cash): \$ 7,513,090

Total Matching Funds (In-Kind): \$ 61,968

Total Matching Funds (Cash + In-Kind): \$ 7,575,058

Total Matching Funds (Cash + In-Kind) as Percentage of Total Project Costs: 30.26 %

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## 1. Administrative and legal expenses - \$1,036,800

- Provide a breakout of position(s), time commitment(s) such as hours or level-of-effort, and salary information/rates with a detailed explanation, and additional information as needed.

Administrative expenses are budgeted at \$1,036,800, for three labor categories. Program Manager will be roughly half-time over the two-and-a-half year project schedule (30 months); unit costs are based on procurement schedules. Project manager will be full-time for duration of project; again, unit costs are list prices. Financial analyst and compliance analyst will be responsible for financial controls, and satisfying compliance, reporting and other obligations imposed by acceptance of the BTOP grant.

<b>Admin &amp; Legal: Staff</b>	Hours	Years	Rate	Total Cost
Program Manager	1,920	2.25	\$90 / hour	\$ 172,800
Project Manager	3,840	2.25	\$90 / hour	\$ 345,600



Financial Analyst / Compliance Analyst	5,760	2.25	\$90 / hour	\$518,400
<b>TOTAL:</b>				<b>\$ 1, 036,800</b>

Services to support legal, contract review and other administrative matters will be supported by existing District of Columbia staff.

- Provide detailed description, calculation, and basis of evaluation for each Cash Matching Funds source.

No cash matching funds are committed for this expense category. It is entirely funded by BTOP grant money.

- Provide detailed description, calculation, and basis of evaluation for each In-Kind Matching Funds source.

No in-kind matching funds are committed for this expense category. It is entirely funded by BTOP grant money.

2. Land, structure, rights-of-way, appraisals, etc. - \$ 0

In this CCI Application for DC-CAN, there are no project expenses assigned to “Land, Structure, Rights-of-Way, Appraisals, etc.”.

3. Relocation expenses and payment - \$ 0

In this CCI Application for DC-CAN, there are no project expenses assigned to “Relocation Expenses and Payments”.

4. Architectural and engineering fees - \$ 1,629,320

- Provide description of estimated fees, rates, explanation of proposed services, and additional information as needed.

<b>Architectural and Engineering Fees</b>	Hours	Years	Rate	Total Cost
Engineering Services – services for fiber bundle installations, allocations	21,040	9.0	\$65 / hour	\$ 1,367,600
Network Configuration – configuration and implementation of base network infrastructure	450	0.25	\$90 / hour	\$ 40,500
Install DC-CAN DWDM Multiplexing Systems	10 instances	Not Applicable	\$15,000 / installation	\$ 150,000



– enable efficient fiber management and capacity management				
Install DC-CAN MLPS Routers – support communications infrastructure	10 instances	Not Applicable	\$ 780 / installation	\$ 7,800
Install Wireless Core	5 instances	Not Applicable	\$624 / installation	\$ 3,120
Network Turn-up and Assurance	450	0.25	\$ 90 / hour	\$ 40,500
Network Testing	220	0.12	\$ 90 / hour	\$ 19,800
<b>TOTAL:</b>				<b>\$ 1,629,320</b>

Unit costs are based on contract rate schedules; work efforts are based on experience within DC-Net.

- Provide detailed description, calculation, and basis of evaluation for each Cash Matching Funds source.

No cash matching funds are committed for this expense category. It is entirely funded by BTOP grant money.

- Provide detailed description, calculation, and basis of evaluation for each In-Kind Matching Funds source.

No in-kind matching funds are committed for this expense category. It is entirely funded by BTOP grant money.

5. Other architectural and engineering fees - \$ 0

In this CCI Application for DC-CAN, there are no project expenses assigned “Other Architectural and Engineering Fees”.

6. Project inspection fees - \$ 1,816,750

- Provide description of estimated fees, rates, explanation of proposed services, and additional information as needed.

<b>Project Inspection Fees</b>	Hours	Years	Rate	Total Cost
Verizon Inspectors	27950	13.0	\$ 65 / hour	\$ 1,816,750
<b>TOTAL:</b>				<b>\$ 1,816,750</b>

A core strategy of the DC-CAN proposal is the intent to run new fiber bundles only through existing Verizon conduit. This eliminates the need for new construction, minimizes service interruptions, and



eliminates disruption to environment. As DC-Net personnel (primarily contractors) will be installing new fiber, DC-CAN will arrange for Verizon inspectors to be on-site during fiber pulls, splices, etc., and to sign off that new infrastructure was successfully completed, and did not impact Verizon, or other, service. This expense funds those Verizon inspection efforts.

- Provide detailed description, calculation, and basis of evaluation for each Cash Matching Funds source.

No cash matching funds are committed for this expense category. It is entirely funded by BTOP grant money.

- Provide detailed description, calculation, and basis of evaluation for each In-Kind Matching Funds source.

No in-kind matching funds are committed for this expense category. It is entirely funded by BTOP grant money.

7. Site work - \$ 7,103,184

- Provide description of estimated fees, rates, explanation of proposed services, and additional information as needed.

Site Work	Units	Years	Rate	Total Cost
Underground Fiber Installation	503,200	c. 14	\$ 8.24 / foot	\$ 4,146,368
Aerial Fiber Installation	318,250	c. 5	\$3.86 / foot	\$ 1,228,445
ISP Costs	66,900	c. 1.5	\$ 2.14 / foot	\$ 143,166
Fiber Splicing and Testing	581	c. 0.3	\$ 65 / hour	\$ 37,765
Install New DC-Net Sites	223	c. 0.5	\$ 3,780 / site	\$ 842,940
Upgrade Existing DC-Net Sites (underserved)	68	c. 0.2	\$ 1,280 / site	\$ 87,040
Upgrade Public Safety M-3,-4 Sites	71	c. 0.2	\$ 780 / site	\$ 55,380
Upgrade Existing DC-Net Model1 Hub Site	18	c. 0.4	\$ 4,560 / site	\$ 82,080
Install Hand-holes	60	c. 2.8	\$ 8,000 / unit	\$ 480,000
<b>TOTAL:</b>				<b>\$ 7,103,184</b>

Unit costs are based on contract rate schedules; work efforts are based on experience within DC-Net.



- Provide detailed description, calculation, and basis of evaluation for each Cash Matching Funds source.

No cash matching funds are committed for this expense category. It is entirely funded by BTOP grant money.

- Provide detailed description, calculation, and basis of evaluation for each In-Kind Matching Funds source.

No in-kind matching funds are committed for this expense category. It is entirely funded by BTOP grant money.

### 8. Demolition and Removal - \$ 0

In this CCI Application for DC-CAN, there are no project expenses assigned "Demolition and Removal Fees".

### 9. Construction - \$ 0

In this CCI Application for DC-CAN, there are no project expenses assigned to "Construction". All new fiber will be pulled through existing telecommunications conduits. All fiber equipment and installation costs are recorded under #7 – Site Work.

### 10. Equipment - \$ 13,369,978

- Provide a list of equipment in the form of a table with description, number of units, unit cost, state whether it is being purchased or leased, and additional information as needed.

The following table lists all equipment for purchase for the DC-CAN project. All equipment will be purchased (none leased). All unit costs have either been sourced from Procurement Office, or obtained via quotation from supplying vendor.

Quantities were derived based on planned configuration for each site, multiplied by the number of sites (newly added; upgraded; etc). These site counts are based upon the planned set of Community Anchor Institutions, Points of Inter-Connections, and core DC-Net processing centers.

Total equipment cost is \$13,369,978.

Requested BTOP grants will fund \$ 5,871,888, and the remaining balance of \$ 7,498,090 will be funded by OCTO's cash match contribution. In the right hand column, the four sets of equipment which will be purchased using the District's Cash Match have "YES" in their cells, which are also colored yellow.





Equipment Type, Model	Unit Price	Quantity	Extended	Pricing Source	Cash Match
Cisco 3560 24 10/100 PoE + 2 SFP + IPS Image	\$5,790	291	\$1,684,890	DC cost per unit	Yes
GE SFP LC connector LX/LH transceiver (four)	\$565	1164	\$657,660	DC cost per unit	
Cisco 1520 Outdoor Series (w/ hardware)	\$3,500	291	\$1,018,500	DC cost per unit	
Chassis 4507R-E	\$5,497	3	\$16,491	DC cost per unit	
Supervisor (WS-X45-SUP6-E)	\$10,997	6	\$65,982	DC cost per unit	
IOS (S45EESK9-12250SG)	\$6,000	3	\$18,000	DC cost per unit	
48 Port PoE Blades (WS-X4648-RJ45V+E)	\$4,122	6	\$24,732	DC cost per unit	
SFP (GLC-LH-SM)	\$565	12	\$6,780	DC cost per unit	
Cisco 7606 redundant system 2RSP720-3CXL, 2PS	\$51,750	18	\$931,500	DC cost per unit	
48-port SFP Gigabit (two)	\$18,750	36	\$675,000	DC cost per unit	
48-port SFP FastEthernet (two)	\$6,750	36	\$243,000	DC cost per unit	
10GBASE-LR X2 Module (four)	\$3,000	72	\$216,000	DC cost per unit	
MPLS VPN: ASR 9010 (Super Core sites)	\$303,400	2	\$606,800	DC cost per unit	Yes
MPLS VPN: ASR-9006 (Core Sites)	\$249,550	8	\$1,996,400	DC cost per unit	Yes
DWDM: 10 sites 40-channel Ciena 4200 RS	\$321,000	10	\$3,210,000	DC cost per unit	Yes
Hubbell RE-BOX wall enclosure	\$357	223	\$79,611	DC cost per unit	
Patch Panel mounting bracket	\$40	223	\$8,920	DC cost per unit	
Equipment mounting bracket	\$46	223	\$10,258	DC cost per unit	
APC SMART UPS 1000 Rack Mount	\$507	223	\$113,061	DC cost per unit	
Network Management Card	\$224	223	\$49,952	DC cost per unit	
Mounting hardware/patch cord(s)/etc.	\$100	223	\$22,300	DC cost per unit	
Power (PWR-C45-1400DC-P)	\$960	6	\$5,760	DC cost per unit	
48-volt 155-aH battery string (two)	\$1,825	36	\$65,700	DC cost per unit	
Battery tray (two)	\$196	36	\$7,056	DC cost per unit	
Circuit Breaker 100-amp (5)	\$32	90	\$2,880	DC cost per unit	
48v 50amp rectifier module (two)	\$995	36	\$35,820	DC cost per unit	
Cisco 5500 Series Wireless Controller Redundant Power Supply	\$897	5	\$4,485	DC cost per unit	
Cisco 5508 Series Wireless Controller for up to 250 APs	\$38,997	5	\$194,985	DC cost per unit	
CAN Backbone Fiber Materials	\$2.10	303,250	\$636,825	Fiber bundles	
Access Loops	\$1.30	585,100	\$760,630	Fiber bundles	
<b>TOTALS</b>			<b>\$13,369,978</b>		
<b>TOTAL BTOP Federal Grant</b>				<b>\$ 5,871,888</b>	
<b>TOTAL DC Cash Match</b>				<b>\$ 7,498,090</b>	



- Provide detailed description, calculation, and basis of evaluation for each Cash Matching Funds source.

\$ 7,498,090 in District of Columbia cash will be used as a matching contribution toward the DC-CAN project. The source of the funds will be District of Columbia Government.

- Provide detailed description, calculation, and basis of evaluation for each In-Kind Matching Funds source.

No in-kind matching funds are committed for this expense category. It is entirely funded by BTOP grant money, and by District of Columbia cash match, as indicated above.

11. Miscellaneous - \$ 76,968

- Provide additional information as needed.

DC-CAN has accounted for three project cost items in its budget, as listed in the following table.

Miscellaneous	Hours	Years	Rate	Total Cost
BTOP Application and Proposal Preparation	536	0.25	\$ 115 / hour	\$ 61,640
Plug entry, to round proposal to nearest 000.				\$ 328
Policy and Procedure Changes to support ARRA / BTOP Compliance and Transparency obligations	200	0.10	\$ 75 / hour	\$ 15,000
<b>TOTAL:</b>				<b>\$ 76,968</b>

Re BTOP Application and Proposal Preparation, three contractors worked approximately four-and-a-half weeks to construct the proposal and application. Estimated at 536 person hours, at a blended average cost of \$115 / hour, BTOP proposal development costs are estimated at \$61,640. This item is being classified as an in-kind match, and no BTOP funds will be used for this.

\$328 was added to the budget as a plug entry, to bring the project cost to an even thousand dollars. This, too, is being classified as an in-kind match, and no BTOP funds will be used for this.

Re Policy and Procedure Changes, in the event of a BTOP grant award, it is expected that changes will be required to support new financial controls, additional financial reports, quarterly submissions to Recovery.gov, and other compliance obligations associated with acceptance of a grant. District of Columbia estimates 200 hours at \$75 per hour, or \$15,000, to implement these changes. This item is being classified as a cash match, and no BTOP funds will be used for this.



- Provide detailed description, calculation, and basis of evaluation for each Cash Matching Funds source.

The \$15,000 for Policy and Procedure Changes, to support implementation of ARRA and BTOP compliance and transparency efforts, are being classified as Cash Match. Source of these funds is the budget of the District of Columbia Office of the Chief Technology Officer (OCTO).

- Provide detailed description, calculation, and basis of evaluation for each In-Kind Matching Funds source.

The \$61,640 for the legitimate costs of the BTOP Application Preparation (from late January NOFA to submission) are being classified as in-kind matching funds. In addition, the \$328 plug entry is classified as in-kind matching, as well, for a total of \$61,968. Source of these funds is the budget of the District of Columbia Office of the Chief Technology Officer (OCTO).

### 13. Contingencies - \$ 0

In this CCI Application for DC-CAN, there are no project expenses assigned to "Contingencies".

### 15. Project (program) income - \$0

In this CCI Application for DC-CAN, there is no program income expected, or recorded in this category.