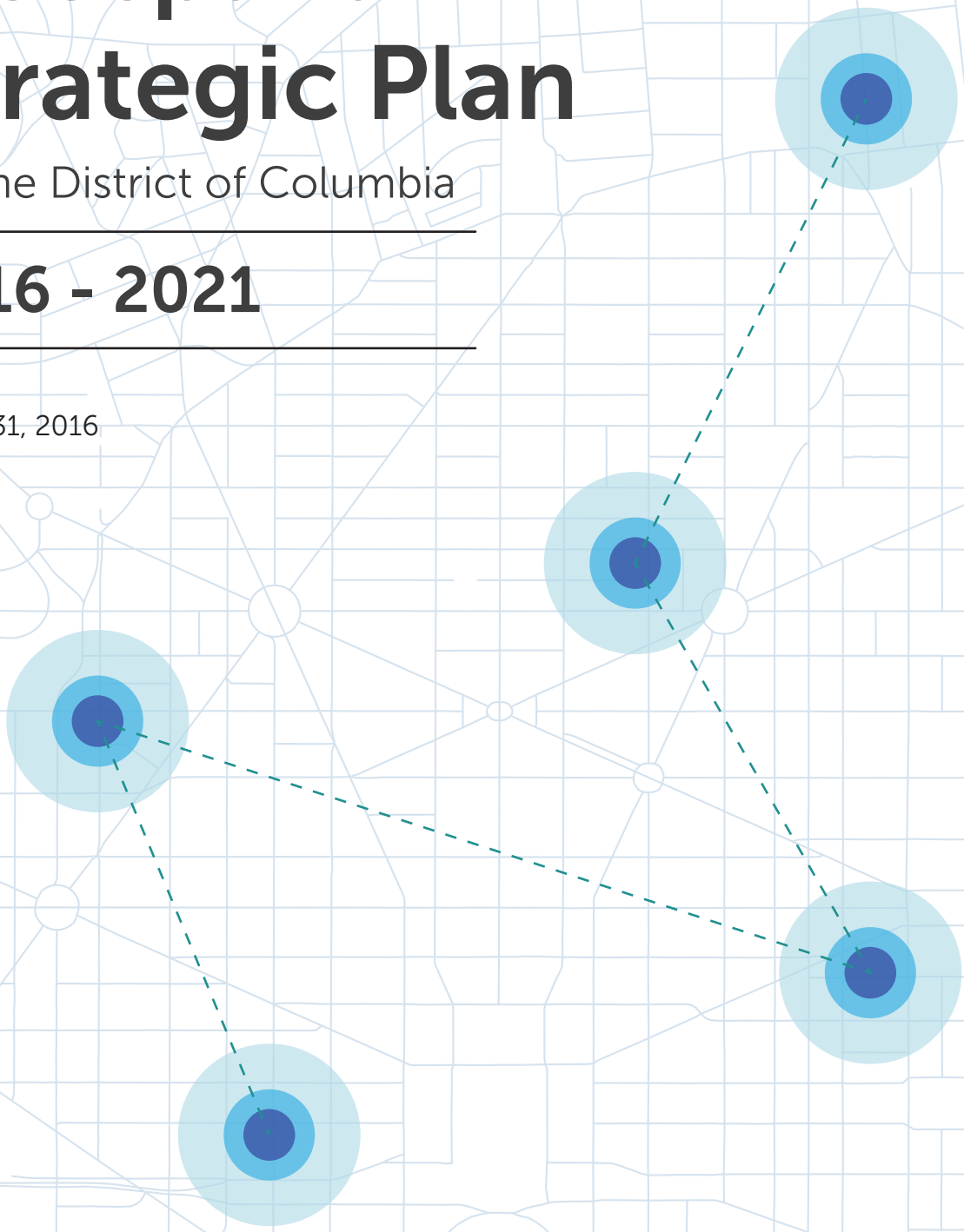
Geospatial Strategic Plan

for the District of Columbia

2016 - 2021

Final

March 31, 2016



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DC GIS

octo
DC OFFICE OF THE CHIEF TECHNOLOGY OFFICER

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1 EXECUTIVE SUMMARY

This Strategic Plan provides DC GIS, under the coordination of the Office of the Chief Technology Officer (CTO), with strategic guidance and program direction for the next five years. It takes into account the strategic goals and success factors that were established through the 2009 strategic planning process, evaluates progress on those goals, and incorporates substantial input on the path forward from current DC GIS stakeholders.

The strategic planning process for articulating District-wide GIS goals in DC goes back over 15 years. Some of the content in this current plan can be traced to previous plans, showing continuity with the past and measurable progress over time. The DC GIS program is an institution, building on a long-standing tradition and solid foundation. The following goals are the result of a collaborative and consultative process to concentrate District-wide efforts over the next several years on ways to both strengthen and sustain the DC GIS program for the benefit of DC government and the citizens it serves.

The five strategic goals presented in this plan are:

1. Focus on geospatial data governance and delivery in alignment with District priorities.
2. Provide outstanding infrastructure and service delivery to the DC GIS stakeholder community.
3. Be innovative, adaptive and maintain a multi-platform geospatial technology strategy.
4. Sustain geospatial coordination through the GISSC and nurture new partnerships within the District.
5. Support data-driven decision-making and performance measurement.

2 BACKGROUND

2.1 Introduction

This Strategic Plan, by design, focuses on ***what*** the overall DC GIS strategy should be for the next five years, whereas the companion Business Plan(s) zero in on ***how*** to accomplish the goals described in this document including phasing, staffing, cost and other resource requirements. In general, the near-term implementation strategy is to act on the recommendations as presented in the Business Plan for the first two strategic goals. Longer-term, the strategy will be to pursue the development of business plans for the remaining goals.

The initial Business Plan, stemming from this Strategic Plan, will focus on the first two strategic goals:

1. Focus on geospatial data governance and delivery in alignment with District priorities.
2. Provide outstanding infrastructure and service delivery to the DC GIS stakeholder community

The DC GIS Program supports a broad set of users, both within and external to DC government, with diverse technical skills, business requirements, and opinions. To capture these varied perspectives and needs, an open and participatory information gathering process was facilitated by the GISSC's Executive

Committee. Input was gathered through an online survey, through a facilitated workshop, and through many individual interviews with agencies and organizations.

2.2 Relevance of DC GIS

The DC Geospatial Information System (DC GIS) is the District government's program for geospatial data and applications. DC GIS manages the city's real world information by combining map visualization with the most common database applications, essentially connecting the “where” with the “what”. DC GIS joins governments around the world who use geospatial data and tools to improve decision making, service delivery, and citizen engagement. The relationship between map features and the underlying database attributes enable the public and DC government to query assets and information, improve the quality and lower the cost of services, plan for emergencies, and give citizens a more positive experience.

2.3 DC GIS Program Background

The DC GIS Program is an existing operation with a long history of providing GIS services for citizens and government alike. It is part of the technology ecosystem of the District, serving DC Government departments as well as non-DC organizations and the public at-large. The Program is supported by an essential federation of departments, each of which may collect and maintain geospatial data to meet unique mission requirements. Each is responsible for particular content to ensure reliable and authoritative source data, but not the entire DC GIS database.

The GIS Group within the Office of Chief Technology Officer (OCTO) provides overall support to this Program and its federated constituents, collaborators, and users at-large. It coordinates the sharing of geospatial data, enterprise geospatial software licensing, and provides DC agencies and the public a “one-stop shop” for disseminating geospatial data and enterprise applications.

2.3.1 Pre-2000

In the mid-1990’s, the National Capital Planning Commission (NCPC) and DC Government departments collaborated on aerial survey work to produce accurate planimetric basemap data. This basemap data was shared across departments to support a variety of mission-specific applications and functions, such as planning, permitting, property assessment, and public works. By 1996, this collaboration formed the basis of what became known as the Washington GIS Consortium (WGIS). In 1998, NCPC was tasked by the Office of Management and Budget (OMB) to develop goals and objectives for WGIS. For this purpose, the “*WGIS Strategic Plan, 2000-2005”* was developed, laying some important groundwork for data sharing and collaboration amongst GIS stakeholders in the District. This led to what later became known as DC GIS.

2.3.2 Post-2000

In 2002, the GIS Steering Committee (GISSC) was established by Mayor's Order 2002-27, "to optimize the development and promote effective usage of the District of Columbia Geographic Information System (DC GIS)."[1] It was signed less than 5 months after the September 11th attacks on the nation by Al Qaeda, when the already existing need for coordination and action to build and share geospatial data sets was greatly amplified.

The DC Office of Chief Technology Officer (OCTO) was the designated chair for the then newly created GISSC, with participation from three other permanent members, including the Office of the City Administrator, the Office of Planning, and the Department of Transportation. Additional members could be appointed by the Mayor or City Administrator. This achieved the objective of making the DC GIS decision-making and prioritization processes more inclusive and consensus-oriented.

In May 2005, the OCTO GIS Manager developed the *"Strategic Plan for the DC GIS Office of Chief Technology Officer, FY 2005-2006."* It described GISSC's role to include the following responsibilities:

- Serve as the primary decision-making body that establishes and implements DC GIS policies and standards, taking into account the needs and resources of all District agencies
- Define and approve GIS projects, and set priorities and timelines
- Work with DC agencies to establish responsibilities for specific GIS tasks, including maintaining essential data
- Seek multilateral input, participation, support, and usage by District government stakeholders
- Work with OCTO to coordinate activities among agencies
- Foster communication and cooperation among District agencies, Federal agencies, and other GIS users and data sources
- Promote integration of the GIS with District agency business processes

At that time, the GISSC gained traction as a voluntary group of interested GIS practitioners across DC Government departments, chaired by the OCTO GIS Manager. Meetings were held on a fairly regular basis, with information exchange and status reports on data, applications, and training being the main agenda topics.

[1] Mayor's Order 2002-27 Establishing the GIS Steering Committee, February 4, 2002.

A Memo[2] issued on May 8, 2009 formally expanded the permanent membership in the GISSC to include the agencies and authorities listed below, plus the United States Geological Survey as a non-voting member):

- Department of Consumer and Regulatory Affairs
- Department of Health
- Department of Public Works
- District Department of the Environment
- Fire and Emergency Medical Services
- Homeland Security and Emergency Management Agency
- Metropolitan Police Department
- Office of the Deputy Mayor for Planning and Economic Development
- Office of Tax and Revenue
- Office of Unified Communications
- Office of Zoning
- Water and Sewer Authority

The expanded permanent members were charged with reviewing and endorsing the DC GIS Strategic Plan and Federated Data Model, developing Bylaws for the governance of the GISSC, producing and adopting a DC GIS Business Plan, scheduling a GISSC annual budget meeting, and continuing to hold quarterly meetings open to all agencies and the public.

2.3.3 2009 Strategic Plan

The 2009 DC GIS Strategic Plan[3] was first published in draft form in September of 2008, and endorsed by the GISSC and republished in its final version in January 2009. The Plan made minor refinements to the DC GIS Mission Statement, finalizing the wording as follows:

> "The Mission of DC Geographic Information System (DC GIS) is to improve the quality and lower the cost of services provided by the DC Government, through the District's collective investment and effective application of geospatial data and systems. Furthermore, DC GIS will reach beyond the DC Government by continuing to make DC

[2] Memorandum from the Executive Office of the Mayor. "Expansion of the District of Columbia Geographic Information System Steering Committee", May 8, 2009.

[3] DC Office of the Chief Technology Officer (OCTO), "DC GIS Strategic Plan," GISSC approved version, January2009.

GIS data freely and publicly available to the fullest extent possible in consideration of privacy and security."[4]

In the Plan, recommendations were made to develop Bylaws and to create an Executive Committee for the GISSC. These measures were implemented to strengthen the governance of GISSC, and to assure formal participation and a voice for non-OCTO stakeholders in goal-setting and decision-making. The Bylaws defined the roles of GISSC officials and voting procedures when votes need to be taken. For example, the Executive Committee was formed, comprising three (3) members, including the DC GIS Chairperson from OCTO and two additional members to be voted on annually, selected from the other District agencies exclusive of OCTO. Since inaugurated, the GISSC Executive Committee roles have been filled by OCTO, the Office of Planning, and the Department of Transportation.

These formal mechanisms were put in place to ensure a transparent process whereby key decisions and their rationale are presented to GISSC before being finalized by OCTO. The current planning process is being directed by members of the GISSC Executive Committee in addition to OCTO staff.

In the 2009 DC GIS Strategic Plan, six (6) goals were developed in a similar manner to the current process, with input from key stakeholder departments, as well as stakeholders at-large. Part of the current planning process included the GISSC Executive Committee scoring itself on progress relative to these goals (see Section 3.3 on "Progress"). Here are the goals articulated as part of the last strategic planning process:

1. Ensure that state and local needs are met by focusing resources on geospatial data, systems, and program activities that are in alignment with District priorities
2. Develop and operate enterprise mapping data, geospatial applications, and Web services that enhance the utility, reduce the cost, and expand the interoperability of citywide and agency IT systems
3. Provide outstanding customer service and training that enable DC GIS users and stakeholders to leverage the full power of GIS technology
4. Sustain and improve GIS coordination and partnerships in the District of Columbia, the region, and the nation
5. Be innovative and adapt to the changing market for geospatial technology
6. Apply GIS in ways that increase revenue and reduce costs for the District

Two of these goals (numbers 2 and 3, above) were prioritized for further implementation planning, as part of the 2009-2011 DC GIS Business Plan cycle.

[4] Ibid., p.13.

2.3.4 2011 Business Plan

The 2011 DC GIS Business Plan[5] was first published as a draft in August 2009, as a follow-on action to the DC GIS Strategic Plan (January 2009), and published in its final form in July 2011. The goals addressed in this business plan were two of six programmatic goals articulated in the 2009 DC GIS Strategic Plan, including:

- Develop and operate enterprise mapping data, geospatial applications, and Web services that enhance the utility, reduce the cost, and expand the interoperability of citywide and agency IT systems
- Provide outstanding customer service and training that enables DC GIS users and stakeholders to leverage the full power of GIS technology

The Business Plan was intended to support the newly proposed annual GISSC Budget Meeting for DC GIS, which was called for in the 2009 Strategic Plan, to occur in the fall of each year. It was also the first example in the sphere of government geospatial programs where the principles of IT portfolio management were applied as a methodology to classify investments, both current and future. It was also the first Plan to define and use the conceptual construct of "geospatial platforms" for organizing program elements and facilitating budget management.

In the DC GIS context, a platform was defined as a base technology (or technologies) on which other technologies or processes are built. It was considered to be a whole "economic unit" in terms of aggregating budget costs to support it, including people, training, software, systems, and data. As platforms evolve different investment strategies would become more or less relevant, depending on both user demand and the technology life-cycle. The OCTO GIS Group, working within the District's IT ecosystem, saw itself as either managing or leveraging a variety of platforms to support the DC GIS mission, customers and stakeholders. The Business Plan could therefore potentially be updated and refined, annually, to eventually address all of the strategic goals for DC GIS in a 5-year planning cycle, and support the idea of an annual GISSC Budget Meeting.

[5] "DC GIS Business Plan: Data, Applications, and Services," OCTO, July 2011.

3 CURRENT STATUS & CONTEXT

3.1 A National Perspective

The Federal Geographic Data Committee (FGDC) has been coordinating national efforts toward building a National Spatial Data Infrastructure (NSDI). Major developments have taken place to redefine the nation's geospatial landscape in the last 20 years.

- In January of 2009 the National Geospatial Advisory Committee (NGAC) published a paper on "The Changing Geospatial Landscape."[6] It describes influential events such as the advent and proliferation of GPS, on board navigation, location awareness, and digital geospatial data.
- In December 2013, FGDC published the "National Spatial Data Infrastructure Strategic Plan for 2014-2016."[7] The goals and objectives in the plan define areas of critical importance to the continued development of the NSDI, including implementing Portfolio Management, which was first applied to geospatial assets and platforms by DC GIS in its 2011 Business Plan. Here are FGDC's goals for the federal geospatial community:
    - Goal 1 – Develop Capabilities for National Shared Services
    - Goal 2 – Ensure Accountability and Effective Development and Management of Federal Geospatial Resources (with Portfolio Management)
    - Goal 3 – Convene Leadership of the National Geospatial Community

The goals above are relevant to achieving coordination and efficiencies across federal agencies; however, the nation's geospatial landscape is much bigger than FGDC's purview. Citizen and commercial expectations have outpaced the capabilities of many federal agencies to satisfactorily deliver. Almost everyone is familiar with the notion of entering an address into various commercial apps to find a place and to get directions. Crowd-sourced data, and open data from governments and other sources have proliferated. Indeed, the landscape has dramatically changed over the past 20 years, with ubiquitous and accelerating demand for constant useful geospatial data from all sources, easily accessible from any device.

[6] National Geographic Advisory Committee, "The Changing Geospatial Landscape," January 2009.
[7] Federal Geographic Data Committee, "National Spatial Data Infrastructure Strategic Plan: 20114-2016," December 2013.

3.2 District Perspective

The benefits of coordinated action to build and sustain DC GIS and share geospatial data, applications, and expertise are evident well beyond homeland security. It is foundational to transparent government and open data movements. Our nation's democracy is founded on principles that include an informed and educated citizenry. DC GIS is a means for the District to ensure that geographic information is made available, openly and freely as a beneficial outcome of District government activities and policies.

DC GIS is historically at the forefront of national trends, providing leading examples of geospatial data assets as open data, cataloged for easy discovery, and made accessible to both DC Government departments and citizens, including web services and citizen-facing applications. For example, the DC Atlas Plus, the DC GIS Master Address Repository (MAR), and serving as an exemplar for the planned National Address Database (NAD). And as mentioned previously, the District led the nation in adopting and applying portfolio management to its investments in geospatial assets, and developing the notion of geospatial platforms for managing and delivering data, applications, and services.

DC GIS has continued to strive to build out its own vision of a Spatial Data Infrastructure for the District, including governance, shared data, applications, and services. These things continue to evolve in a changing geospatial landscape, where a level of geospatial maturity has been achieved. Innovation, a fully engaged GIS Steering Committee (GISSC) and stakeholder community are essential for success to continue, and to maintain national leadership.

3.3 The Impact of the Cloud

In the context of national trends, it is essential to consider the impact of the "cloud" on the District's geospatial strategic and business planning. OCTO was an early advocate for cloud-computing as a platform alternative for DC agencies, when other Cities were doubtful. Cloud computing is transforming the way businesses and governments manage information technology and deploy applications and the impact on the geospatial industry is significant. The cloud offers an environment which is extremely flexible and dynamically scalable, an advantage over previous GIS system architecture models. It is clear that adoption of cloud-based infrastructure, platforms and software will only accelerate in the coming years offering great opportunity for DC GIS as it plans and prioritizes initiatives for the next five years.

The cloud will continue to offer DC GIS new ways of delivering products and services and new opportunities for diversifying its use of geospatial technology. New cloud-based products, such as CartoDB and Mapbox, can be leveraged for their powerful analytical and visualization capabilities and potentially integrated into existing Esri-based workflows and applications, as well as the continued use of ArcGIS Online, which is Esri's cloud-based platform. As demand for specialized, cloud-based tools increases, OCTO GIS will likely face the growing complexity of integrating heterogeneous platforms. OCTO GIS web developers will increasingly be asked to leverage Platform as a Service (PaaS),Software as a Service (SaaS), and Content as a Service (such as imagery) to integrate disparate web services and deliver seamless experiences to users.

The impact of the cloud cannot be overstated in the context of IT and GIS infrastructure, platform and software planning. The companion DC GIS Business Plan document examines the current assets of OCTO GIS and addresses the impact of the cloud in more detail.

3.4 Data and Analytics

Data analytics is the process of examining data to uncover hidden patterns, previously unknown correlations and other useful information that can be used to make better decisions. Through data analytics and Big Data, analysts can now process and examine huge volumes of data that conventional analysis and business intelligence were unable to decipher. As the volume, variety and velocity of data collected and distributed by DC GIS grows, users will need guidance and tools to identify the information that "matters" most and understand how best to leverage data analytics.

During the information gathering phase of this project, DC GIS stakeholders described the variety of ways that data is already being analyzed to support better decision making including crime incident tracking, walkability scores, distribution of staff caseloads, and measuring the success of initiatives such as the "bag law". Rather than simply tracking data as a source of information or simple inventory, agencies are thinking about how to use the data to measure performance and improve services. They are recognizing the value of data analytics and are very interested in increasing this capacity.

DC GIS will continue to play a pivotal role in providing access to the required data, tools and training and with the adoption of cloud-based platforms and technologies, they will have the capacity to deliver. Technology will provide the path for users to move beyond simple search and discovery of data to more advanced geo-processing and analysis including modeling, data mining, predictive analytics, forecasting and optimization.

3.5 The Open Data Policy

DC GIS has been an exemplar of Open Data in practice for more than 10 years. The District Government recently published a Draft Open Data Policy[8] (January 2016), and the Policy's Guiding Principles have long been reflected in the DC GIS mission statement and implemented practices, including transparency, collaboration, openness, and discoverability – at least in terms of data provision and governance. DC GIS, and OCTO as its caretaker, has operated with both a Strategic Plan and Business Plan that address long-term data strategy, formulated with input from both DC government and non-government

[8] https://drafts.dc.gov/docs/draft-open-data-policy

stakeholders, who are represented on the formally chartered and managed GIS Steering Committee (GISSC), which is chaired by OCTO.

The long-standing DC GIS strategy, which has been implemented and sustained for many years, includes unfettered access to geospatial data for government, public, and private users – basically, the DC GIS data catalog, which is an inventory of available geospatial data, and the actual data sets have been available to all, for many years. The data holdings are discoverable, accessible via web services and APIs, and downloadable, too. The GISSC, as part of the current planning cycle, has defined the need for a subcommittee on DC GIS Data, to advise on prioritization and provisioning of geospatial data sets.

In the DC GIS 2011 Business Plan, in Section 3.0 on "Key Technology Trends," a subsection described the "Coming of Age of Open Source for GIS." However, there was no explicit goal that specified the adoption of specific open source software alternatives. Now, the Districts' draft Open Source Policy states a requirement for an Open Source Program, and this needs attention with regard to DC GIS. The primary software and application formats used by DC GIS have been proprietary, with rights controlled by Esri. Esri itself, and its community of developers, has made progress in publishing more open source code during the past few years[9] but it's core products are still proprietary licensed technology. Going forward, as part of the current DC GIS Business Plan, there will be an explicit goal to adopt specific open source software for geospatial data and applications (i.e. PostGIS and GeoServer). An Open Source Program for GIS will require work and commitment on the part of OCTO GIS, which is now planned.

3.6 Progress

The GISSC Executive Committee reviewed the programmatic goals and individual success factors put forth in the 2009 Strategic Plan to evaluate the status of each. In general, great progress has been made in the past 6 years and the majority of goals have been accomplished or are ongoing. This progress is confirmed by DC GIS stakeholders from agencies and from organizations outside of District government – the program receives high marks for responsiveness, support, accessibility and professionalism across the board. The goals accomplished since the 2009 Strategic Plan should be recognized as the program continues its important work going forward

[9] https://esri.github.io/

The table below shows the results of this evaluation process and the current status of the 2009 goals.

Status
Red = Not Started/Not Successful
Yellow = Partially Complete/Partially Successful
Green = Complete/Successful

Programmatic Goals	Success Factors	Success Factor Status
Goal 1: Align with District Priorities: Ensure that state and local needs are met by focusing resources on geospatial data, systems, and program activities that are in alignment with District priorities.	□ Focus on desired outcomes in support of CapStat	
	□ Further the transparency of District Government	**Ongoing**
	□ Support educational initiatives	**Ongoing**
Goal 2: Enterprise GIS: Develop and operate enterprise mapping data, geospatial applications, and Web services that enhance the utility, reduce the cost, and expand the interoperability of citywide and agency IT systems.	□ Develop and maintain mapping programs	**Ongoing**
	□ Deploy high-demand applications	**Ongoing**
	□ Continue to develop Web Services	**Ongoing**
	□ Expand and enhance DC GIS available data	**Ongoing**
	□ Deploy mobile laptop apps for First Responders	
	□ Adopt a standard for feature-level metadata	
	□ Deploy Web-based version of the MAR batch geocoder	
	□ Improve business processes with GIS and achieve greater uniformity and usability in interfaces	
	□ Add underground utilities data as feasible	
Goal 3: Customer Service: Provide outstanding customer service and training that	□ Train GIS users	**Ongoing**
	□ Provide technical support and consulting	**Ongoing**

enable DC GIS users and stakeholders to leverage the full power of GIS technology.	□ Expand GIS within clusters	**Ongoing**
Goal 4: **GIS Coordination: Sustain and improve GIS coordination and partnerships in the District of Columbia, the region, and the nation.**	□ Formalize governance of GISSC and increase transparency of GIS decisions	
	□ Reach out to new partners, and old	**Ongoing**
	□ Achieve intra and inter-governmental GIS planning	**Ongoing**
Goal 5: **Innovation and Adaptation: Be innovative and adapt to the changing market for geospatial technology.**	□ Leverage data democracy	**Ongoing**
	□ Leverage professional and citizen participation	**Ongoing**
	□ Leverage private investment on GIS	
	□ Help 'bridge the digital divide' in the District	**Ongoing**
	□ Migrate to commercially-supported mapping services when appropriate	**Ongoing**
Goal 6: **Fairly enforce the tax code and reduce costs: Apply GIS in ways that increase revenue and reduce costs for the District.**	□ Deliver value from DC GIS investments	**Ongoing**
	□ Manage technology risk	**Ongoing**
	□ Retire low value systems	**Ongoing**

3.7 Existing Infrastructure

3.7.1 OCTO GIS Program

The OCTO GIS Program provides District agencies and the public a 'one-stop shop' for geospatial data, enterprise applications and licensing. The OCTO GIS Program is responsible for supporting existing centralized infrastructure and implementing new infrastructure that supports and enhances the DC GIS program's stakeholders. Agencies benefit from the wealth of enterprise geospatial data and web services, as well as technical support, GIS software licensing, training, and application development expertise. The public and broader GIS community benefit from access to public-facing web applications, open geospatial data, and improved DC government services. The services described below cover the many components of the Group's ongoing effort.

The services provided by the OCTO GIS Program include the following:

- Support to the GISSC as mandated by Mayors Order 2002-27

- Coordination, outreach, planning, program management, and standards development

- Cloud-based mapping platforms:
  - A variety of Cloud-based platforms are available for mapping and geospatial analysis including CartoDB, ArcGIS Online, Mapbox and Tile Mill. As described earlier in this document, Cloud-based mapping platforms and tools are being rapidly developed and deployed. The options for building and sharing maps will continue to expand and improve.
  - Currently, ArcGIS Online for Organizations serves as the primary Cloud-based platform for building and sharing maps. Examples of applications deployed into the ArcGIS Online Gallery include: Capital Improvement, 311 Service Request, Automated Traffic Enforcement Cameras, Vision Zero Safety, School Modernization, Snow Emergency Roads, Great Street Corridors, Biking, Trash Collection Incidents, and many others.

Figure 1. ArcGIS Online map gallery

  - Custom web mapping applications including Atlas Plus, Business Incentives Map, Candidate Campaign Contributions Search, Circulator Route Map, Connect DC Tech Locater Map, Crime Map, DC 311 Mapping, Aging and Disability Resource Centers, Health Search, Boundary Information System, School Profiles, Broadband Map, Flood Risk Zones, and many others featuring public resources and relevant data.

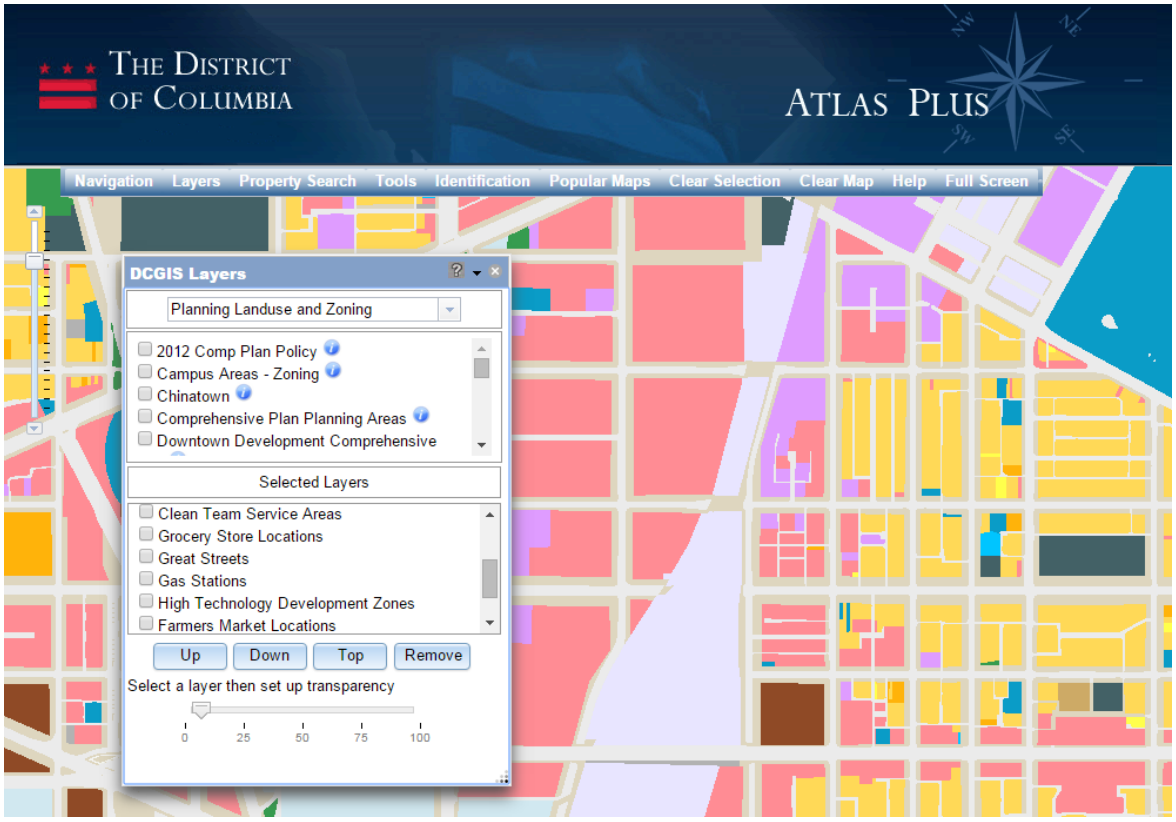


Figure 2. Atlas Plus custom web mapping application provides access to a broad variety of map themes and data layers.

- Master Address Repository
- Vector Property Map Guide
- Esri Enterprise License Agreement (unlimited access to Esri software)

Figure 3. Master Address Repository (MAR) Location Search interface.

- Design, development, and maintenance services for the District's central GIS
  - Provide central data store
  - Public and intranet web sites (DC Atlas Plus)
  - Geospatial web services (also called common services)
  - Desktop and thin client GIS applications for specialized applications
  - Systems design and maintenance for the central GIS
- Customer service
  - Training courses for agencies on GIS theory or technical concepts, GIS software, applications, data
  - As-needed technical support to agencies
  - Technical consulting services
  - Citizen customer services
  - Public and non-governmental organizational support
- Data services
  - Acquisition, maintenance, and quality control of enterprise geospatial data and metadata

- Harvesting agency data and metadata
- District of Columbia Open Data catalog

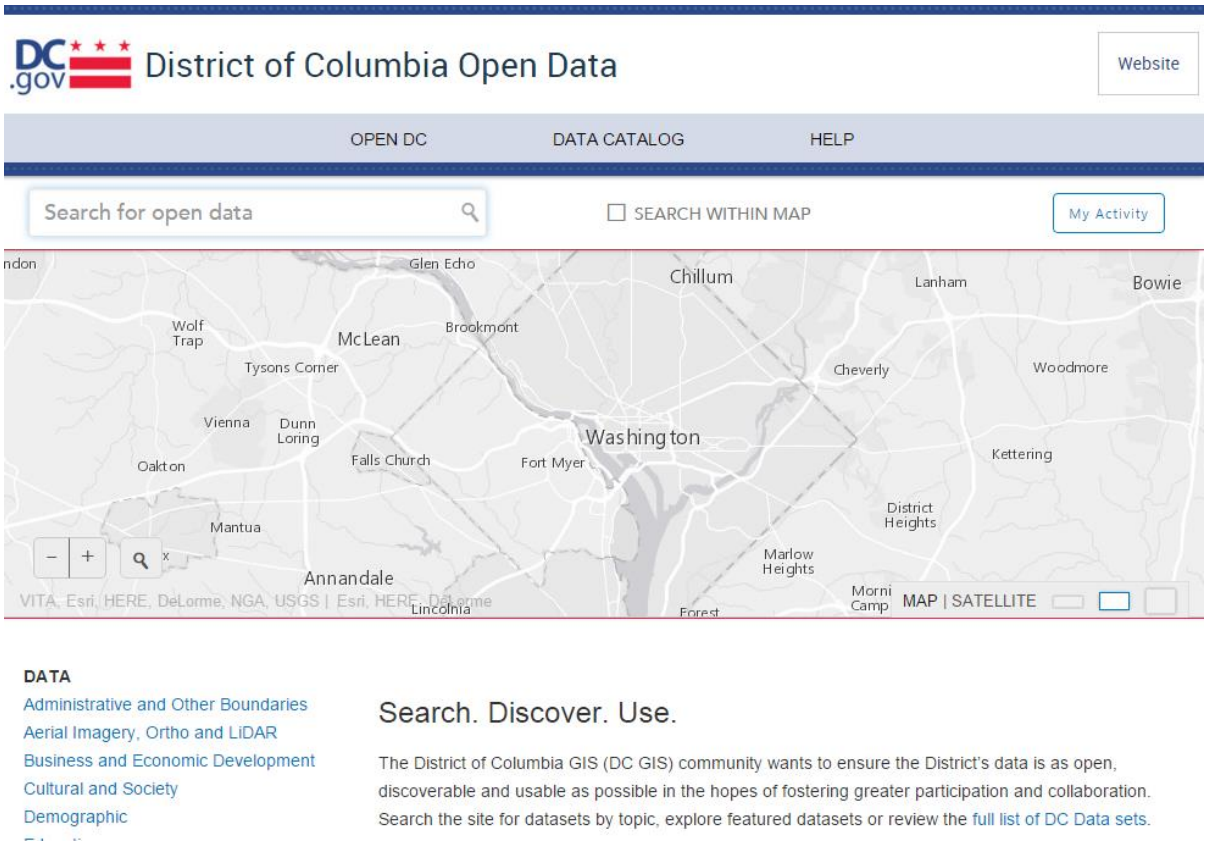


Figure 4. The District of Columbia Open Data Catalog

- Direct support for individual agencies with projects of multi-agency importance
  - Funding, project support, staff augmentation, on call support
- Procurement / Project management
  - Contracting officers technical representative / project management, multi-agency buys (data, software, services), technical review and approval of agency specific requests

The OCTO GIS Program falls under the District's Chief Technology Officer and GIS activities must align with the broader OCTO priorities and goals. The "Four Pillars of OCTO" guide decision-making and resource allocation and help the organization focus on delivering high-quality services to District agencies and the public.

1. Customer Services
2. Efficiency
3. Accountability
4. Security

The organizational structure and priorities of the GIS Group very much reflects these same pillars. Within the GIS Group there are five areas of expertise with dedicated staff and resources.

1. **Citywide Data Warehouse (CDW) / Business Intelligence (BI):** Aims to provide timely and accurate information for District decision-making and supports executive and agency management in the implementation of business processes.
2. **Data:** Focuses on data maintenance, data integration, and quality control of data
3. **Customer Service:** Focuses on communication out to DC GIS stakeholders and provides technical support and training to District agencies
4. **Development:** Enables agencies (through platforms, tools and templates) to develop applications and tools to support agency-specific business.
5. **Infrastructure:** Maintains the platforms and infrastructure required for data distribution, application development and system integration.

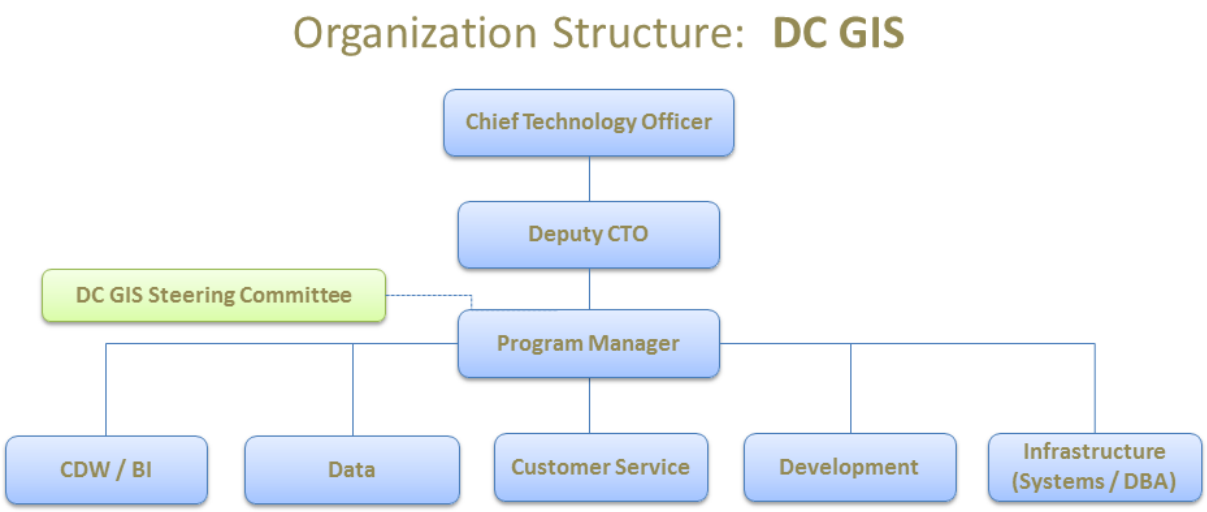


Figure 5. DC GIS Organizational Structure Diagram

The skilled staff within the GIS Program typically stay focused on tasks within their area of expertise, but are able to support other areas as needed. For instance, the eight Data Analysts spend approximately 70% of their time on data tasks and about 15% on customer service. The three Support Analysts dedicate approximately 70% of their time to customer service and training but also contribute significantly to data maintenance. The group's two developers typically spend 90% of their time on application development tasks but also contribute to infrastructure maintenance. Of the two Systems Administration staff, one is primarily dedicated to infrastructure maintenance while the other typically splits time between infrastructure and data tasks. The group's Program Manager and Project Manager dedicate the majority of their time (70%) to Program Management but also support data, customer service, and development tasks.

From an organizational perspective, DC GIS includes the Citywide Data Warehouse (CDW) and Business Intelligence (BI) unit, operating somewhat independently of the other units. CDW/BI staff support the group's original mission to "democratize government data by providing a centralized access point for enterprise-wide data with a focus on providing real-time operational data from multiple agencies and sources that enables decision support and government transparency" working closely with the City Administrator's office, OCTO GIS staff and other District agencies to supply data and business intelligence tools. The original CDW Data Catalog and Data Feeds have now been migrated to the DC Open Data Catalog (http://opendata.dc.gov/) maintained by OCTO.

In addition to the day-to-day technical support for District agencies, OCTO as a whole and the GIS Program in particular are in a position to support the high level priorities and goals set by the District's Administration. Alignment with District Priority Goals (DPGs) is a key factor in attracting the executive level attention needed for the long-term support of the District's GIS Program. The District Priority Goals include:

District Priority Area: A Healthy Community
1. Promote health equity
2. Transform emergency medical services in the District into a premier system
3. Reduce the rate of HIV infection, and improve the health of those living with HIV
4. Establish DC as a world class age-friendly city
District Priority Area: A Safer, Stronger DC
1. Make DC a model city for police-community relations
2. Reduce domestic and sexual violence, and improve outcomes for survivors
3. Make DC the safest big city in America
District Priority Area: A Strong Economy for All
1. End Homelessness
2. Produce, preserve and protect 7,500 affordable housing units by 2018, so that current and future residents can call DC home – regardless of income level
3. Reduce the unemployment rate in Wards 7 and 8 by 35%
4. Increase DC's employment by 40,000 jobs by 2018, and create a thriving business climate for entrepreneurs
District Priority Area: A World Class Education System
1. Prepare every child for kindergarten
2. Make public middle schools the premier choice for parents and students
3. Close the achievement gap, and empower all students to succeed
4. Graduate all high school students ready for college and career
5. Equip all adults with the knowledge and skills necessary for employment and post-secondary education.
District Priority Area: Sustainable Neighborhoods

1.	Increase the number of District residents who commute by public transit, bike or by foot
2.	Zero transportation system fatalities and serious injuries by 2024
3.	Make DC the greenest city in the US, with healthy air and waterways
4.	Make DC more efficient, effective, and responsive to residents' needs through the use of smart technology

OCTO as a whole and the GIS Program can support these priority areas and move the District toward these goals by focusing on the following essential outcomes:

1. Provide strategic IT leadership, drive technology innovation and open government initiatives for the District government, to enhance the delivery of services and adoption for the city's residents, businesses, and visitors.
2. Provide and maintain a ubiquitous, reliable, and secure computing environment to ensure continuity of government operations and safeguarding the District's equipment, facilities, and information.
3. Improve service delivery through purposeful and strategic city-wide agency alignment.
4. Manage or oversee IT initiatives, programs and assets strategically, efficiently and economically to lower the cost of government operations.

By achieving these outcomes, DC GIS will not only accomplish its own programmatic goals but will demonstrate how geospatial data, tools, platforms, and analysis are instrumental to solving the District's most fundamental and challenging problems.

3.7.2 DC Departments and Agencies

DC GIS is made up of the OCTO GIS Program providing centralized services and agencies contributing authoritative data for building business-specific applications. The following list is not all-inclusive, but it is representative of the current users of GIS data and technology within DC Government. All are stakeholders in DC GIS, and most are members of the GISSC. The requirement for continued coordination through DC GIS and the GISSC is self-evident, based on the number of agencies already engaged in GIS activities. Many have in-house capacity for GIS development and utilization. All benefit from the availability of centralized data, geospatial licensing and services through DC GIS.

- City Administrator, Office of the (OCA)
- Consumer and Regulatory Affairs, Department of (DCRA)
- Deputy Mayor for Planning and Economic Development, Office of the (DMPED)
- Environment, Department of (DOEE)
- Fire Emergency Medical Services (FEMS)
- Health, Department of (DOH)
- Human Services, Department of (DHS)

- Homeland Security and Emergency Management Agency (HSEMA)
- Metropolitan Police Department (MPD)
- Parks and Recreation, Department of (DPR)
- Planning, Office of (OP)
- Public Works, Department of (DPW)
- Tax and Revenue, Office of (OTR)
- Transportation, Department of (DDOT)
- Unified Communication, Office of (OUC)
- DC Water
- Zoning, Office of (DCOZ)

A version of the diagram below first appeared in the Federated Geospatial Data Model (FGDM) document as well as the 2009 Strategic Plan. The notion of a Federated DC GIS data model with both centralized and distributed responsibility is still relevant to DC GIS. It should be noted that this shared system goes beyond a "Federated Data Model" and may be more appropriately characterized as a "Federated System" where all agencies contribute and benefit from shared data, applications, web services and systems.

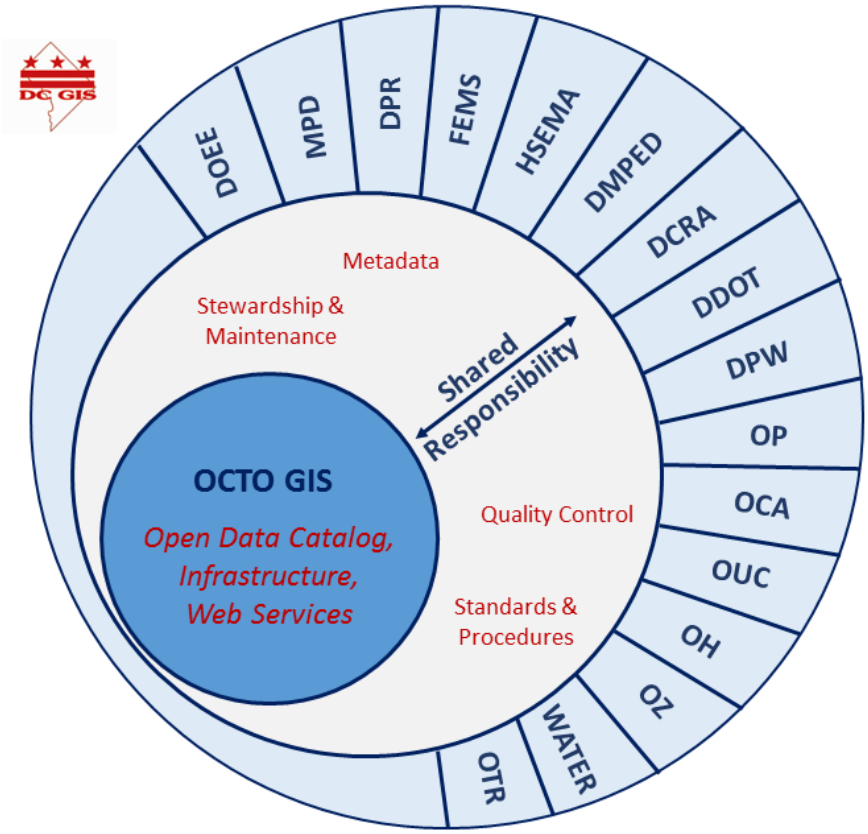


Figure 6. The DC GIS Federated Geospatial Data Model diagram

DC agencies have successfully integrated geospatial data and tools into their business processes. Survey results show nearly 93% of agency respondents are using geospatial data and tools for uses such as tracking inspections and complaints, analyzing travel patterns, mapping the distribution of events, viewing service area boundaries, and sharing information with the public. Stakeholder interviews revealed that GIS is supporting key workflows within nearly every department and agency. A sampling of GIS activities and applications include:

- The **Metropolitan Police Department (MPD)** uses GIS to support situational awareness, map trends, analyze long and short-term crime distribution, buffering incidents, mapping infrastructure (license plate readers, cameras, etc.), and geocode addresses.
- **Department of Health (DOH)** uses GIS to map healthcare sites (through an application built by OCTO GIS) and get key information to their target users (residents, caseworkers, social service agencies, and policy decision makers).
- **Fire and Emergency Medical Services (FEMS)** is leveraging the Master Address Repository (MAR) and mapping incident data out of Computer Aided Dispatch.
- The **Office of the Deputy Mayor for Planning and Economic Development** is leveraging OCTO open data to attract technology companies to the District and spur economic development.
- The **Department of Energy and Environment** is doing a tremendous amount with GIS including mapping underground storage tanks, supporting stormwater management, tracking water quality testing, monitoring the energy usage of government buildings, performing impervious surface analysis.
- The **Office of Planning** performs internal GIS analysis and mapping and publishes a variety of publicly available online mapping tools including Property Quest, Walk Score, and the DC Zoning Map.
- The **Department of Public Works** has deployed a mobile data collection application for field staff to track operations and activities and a public facing leaf collection status map.

Some agencies and departments have invested heavily in building in-house GIS expertise, such as the **Department of Transportation**. DDOT employs 6 GIS professionals (3 GIS analysts and 3 application developers) that can maintain data, perform analysis and configure and deploy web applications such as the Vision Zero Safety Map or the Transportation Online Permitting System (TOPs). These agencies can serve many of their needs independently but they rely heavily on the OCTO GIS Group to provide the enterprise data, infrastructure and software licensing to accomplish their goals. Even the most technically capable and independent agencies rely on a collaborative approach and strong communication with OCTO GIS.

There are however unmet geospatial agency needs. Many agencies don't feel they have the in-house expertise or capacity to meet all of their needs internally. In some cases data has become stale, applications have become out of date, and agencies don't have the time, expertise or resources to refresh or modernize. In other cases, agencies wish to do more geospatial mapping and analysis with their business data but don't have the technical knowledge to integrate non-geospatial data into a

mapping framework. The need for additional GIS training is cited as one of the major challenges to increasing usage of GIS.

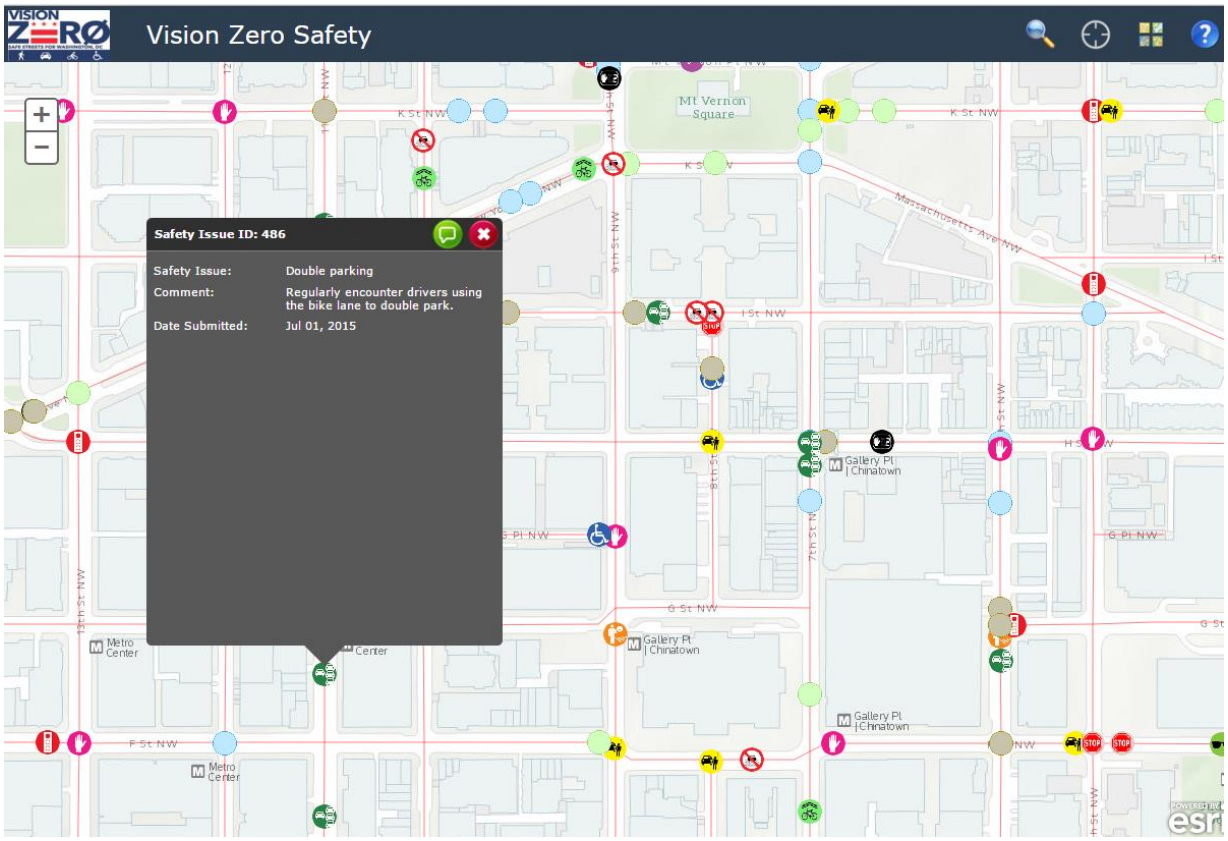


Figure 7. Vision Zero Safety Map built by the DC Department of Transportation

3.7.3 Non-District Entities

A variety of non-profit organizations and businesses engage with DC GIS to leverage the data and tools to meet their organizational goals. For the most part, these entities are data consumers relying heavily on the demographic, infrastructure and base data made publicly available and the technical support offered by DC GIS. By way of example, the Washington, DC Economic Partnership (WDCEP) is a public/private partnership dedicated to facilitating economic development in the District of Columbia. The organization receives approximately 60% of its funding from the Office of the Deputy Mayor for Planning and Economic Development (DMPED) and about 40% from real estate stakeholders. DC GIS supports the entity through data storage, maintenance of a retail web site, technical support and software licensing and enables them to achieve their near and long term organizational goals.

In addition to the number of non-District entities leveraging the DC GIS resources to support day to day business processes, OCTO GIS regularly fields calls or questions about data from college professors or students working in academia. While the scope of this strategic plan did not include in-depth interviews with many of these entities, their need for access to geospatial data and tools is well represented in this plan.

3.8 Strengths, Weaknesses, Opportunities, Threats

DC GIS has a long-standing community of interest and foundation of data, applications, and services to build on. It is a working program providing a variety of tangible access to data and functionality to both government and citizen users. There is a range of internal and external data consumers in DC and beyond, spanning the spectrum of sophistication. Servicing this diversity of evolving demands has resulted in the DC GIS program being broad-based and versatile, but challenged by differing perspectives, changing priorities, and a commitment to continuous improvement.

DC GIS also has a history of strategic planning that provides a basis for measuring progress and identifying evolving needs and priorities. Part of the strategic planning process is documenting strengths, weaknesses, opportunities, and threats (SWOT) through interviews, workshops, research, and knowledge of the geospatial industry. The meaning of each element of the SWOT acronym in the context of the DC GIS Strategic Plan is as follows:

- **Strength:** An inherent characteristic that is recognized as positive and can be leveraged to achieve goals and take advantage of opportunities. Leveraging strengths is generally a good strategic aim.
- **Weakness:** Also an inherent characteristic, but recognized as negative, and can be limiting to goal achievement and taking advantage of opportunities. Overcoming weaknesses is generally a good strategic aim.
- **Opportunity:** Primarily an attractive extrinsic possibility or situation that presents the enhanced likelihood of desirable outcomes related to goal achievement. It can also relate to the potential for leveraging a strength, or overcoming a weakness. Taking advantage of opportunities is generally a good strategic aim.
- **Threat:** Primarily an unattractive extrinsic possibility or situation that is detrimental to successful goal achievement and desirable outcomes. It can also stem from an unattended weakness. Mitigating threats is generally a good strategic aim.

In this Plan, the SWOT has been subdivided in the sections below into the key focal points of the strategic planning process, including: Governance; Data; Applications; Web Services & Systems; and Customer Service.

3.8.1 Strengths

<u>Governance</u>

- The OCTO GIS team is established and has supported data sharing and coordination across agencies through the DC GIS program and GISSC meetings for more than 10 years

- As an official entity, the GISSC was chartered by a Mayor's Order, has Districtwide support and participation, Bylaws, and a multi-departmental Executive Committee
- DC GIS has invested in multiple strategic and business plans since its inception demonstrating a commitment to the planning process and a recognition of the value and direction these plans provide.
- Awareness of DC GIS as a program is relatively high among Agency Directors, Chiefs of Staff, and major Program Directors

Data

- DC GIS has made geospatial data open and accessible for many years, and it is a long-standing policy, as stated in its Mission Statement, is *"to make DC GIS data freely and publicly available to the fullest extent possible in consideration of privacy and security."*
- DC GIS is publicly recognized and used as the source of DC's open geospatial data, which is accessible via web services and public APIs
- DC GIS has an established Federated Data Model to optimize data sharing and minimize duplication of effort, and upon which to base improvements
- DC GIS and its predecessors have coordinated flyovers and planimetric base map data for the benefit of DC Government users and other stakeholders in the District since the mid-1990s
- DC GIS data and services are used in revenue generating programs such as Public Space Permitting System and Impervious Area Charge
- DC GIS has invested in the development and maintenance of key enterprise data sets such as the Vector Property Map (VPM) and the Master Address Repository (MAR).

Applications

- Substantial uniformity of look-and-feel across applications built by OCTO GIS and stakeholder departments on their common platform, Esri's ArcGIS
- There are a few applications built on at least one alternative platform to Esri's ArcGIS, i.e. Google Maps

Web Services & Systems

- DC GIS embraces modern web services and public APIs as part of its system architecture
- The District pays for a comprehensive Enterprise License Agreement (ELA) with Esri and Google Maps API for purchasing GIS software, maintenance, support, advanced training and services

Customer Service

- OCTO GIS has participated in meet-ups and hackathons in the District

- OCTO GIS communication and notifications about new data, shared resources, and downtime due to outages is proactive and regular
- OCTO GIS community educational outreach is well-regarded
- There are long standing, working partnerships in the District between many stakeholders

3.8.2 Weaknesses

Governance

- There is no consensus amongst the agencies active in the GISSC on the level of commitment from executive leadership (i.e. Agency Directors, Chiefs of Staff and major Program Directors), nor whether it is needed
- While awareness of DC GIS as a program is relatively high among Agency Directors, Chiefs of Staff, and major Program Directors, awareness and/or participation in the GISSC is relatively low from this group, causing concern that the GISSC "lacks clout" to align agencies
- GISSC participation comprises mostly GIS-centric technologists with District agencies, and to a large extent the GISSC meetings cater to Esri ArcGIS users, the predominant community of interest
- There is a general feeling that there are too many IT policies where guidelines would suffice

Data

- There is a lack of two-way communication with the public on data clarification
- There is a belief that OTR is not adequately maintaining its property and tax data for sharing
- There continues to be inadequate underground utilities data
- Federal property boundary information continues to be absent
- Direct department-to-department exchange of GIS data is not unusual ("back-channel" data), and direct agency-to-citizen data exchange is increasing, too – both bypassing DC GIS as the exchange path
- Relationships between related data sets, such as between streets and addresses, are not tracked in terms of dependencies and the "ripple effects of changes such as potential broken connections"
- Standardization of nomenclature and unique IDs for linking is not consistent

Applications

- DC GIS applications tend not to be empathetic toward non-GIS professionals – "could do a lot better, especially for more general data discoverability"
- Police need better access to map apps in their vehicles

- Usability and UI/UX of many applications are antiquated

Web Services & Systems

- Some confidence was lost among DC GIS users during the summer when ArcGIS Server (AGS) outages were frequent and problematic
- The OCTO infrastructure is perceived to be aging, – "too much time spent on Operations and Maintenance, rather than making infrastructure better"
- DC GIS web services, while modern and effective, are not widely promoted
- The current stack is "not great if you are not GIS-centric"

Customer Service

- Due to OCTO-maintained infrastructure problems, a number of agencies had unhappy "customers" during the intermittent AGS outages over a prolonged period of time, resulting in direct losses (income) and indirect losses (trust, confidence, and morale)
- Awareness of OCTO GIS training programs and tailored services is relatively low in some agencies in need of training
- Customer demand and utilization statistics are lacking for DC GIS applications and web services

3.8.3 Opportunities

Governance

- With a new Mayoral Administration in place, a briefing or Mayoral Memo on DC GIS to raise awareness of an important DC asset could be timely
- Greater regional influence could be achieved by integrating Metropolitan Washington Council of Governments (MWCOG) into DC GIS and the GISSC
- Given the maturity of DC GIS and the GISSC, it is an opportune time to create focus groups or subcommittees on specific target areas, such as data and web services, to tackle important details on behalf of the larger group
- The GISSC could start collecting performance measures on how agencies are sharing and maintaining their data as part of DC GIS
- Conduct regular workshops or focus group meetings on specific topics, enlisting the appropriate agencies to lead as Subject Matter Experts (SMEs)

Data

- Making geospatial data more discoverable to the non-GIS professional, and citizens; and making metadata easier to understand

- Crowd-sourcing is an opportunity to increase civic engagement
- New offerings of 3D, time-enabled, real-time (e.g. tweet mapping – "what's trending?") data; regional and economic development data; certificates of occupancy; special needs (e.g. vulnerable populations) data; thermal imagery, operational (e.g. permits),and historic data are being asked for and could potential be supplied, depending on funding and prioritization
- Collaboration with the DC Office of Open Government
- Publish an open queue of what data is coming (and when); and accommodate direct feedback on data
- Implement clear data stewardship among the agencies
- Get the word out to DC GIS users on the availability of street-level imagery (i.e. CycloMedia)
- Leverage the growing body of knowledge on best practices from other City and State governments
- Potentially augment geospatial records retention, geo-archiving, and continuity of operations through DC GIS

Applications

- Responsive design for mobile applications will improve the interface for users in the field
- An "innovation lab" for prototyping and testing new applications, such as 3D immersive GIS and Big Data analytics and visualization, could accelerate technology modernization, diversification and adoption
- Leverage the private sector, the "crowd," and both intrapreneurial and entrepreneurial innovation in the provision of applications (e.g. the "America Competes Act")
- The AGS Collector app is opening doors to new approaches, i.e., "you don't always need a map to collect data" – an idea to build upon
- Make MAR data services more tolerant of non-standardized address syntax (i.e., more "Google-like")
- Make it easier to add data from non-GIS sources into GIS to increase the utilization and value of DC GIS for non-GIS professionals ; e.g. make it easier to overlay agency data on Google Maps
- Make Crime Map more citizen-friendly

Web Services & Systems

- The geospatial landscape is rapidly changing, and the opportunity for platform diversification for better economy while expanding capabilities has never been better, with new offerings made possible by cloud-computing and the Internet -- the "innovation lab" for applications (see above) is equally applicable to web services and systems in this regard

- Establish a “resilience plan” for disaster mitigation and recovery
- Improve tracking of usage and demand of web services and system components

Customer Service

- Communicate what’s coming (e.g. RESTful web services) on an ongoing basis
- Maintain a current and accurate list of points-of-contact (POCs) for each agency for each dataset in DC GIS; continue to publish alerts on the main DC GIS web page, but also push notifications to agency POCs (e.g. to mobile) on changes to DC GIS
- Compile and publish a list of Subject Matter Experts (SMEs) from across the agencies to strengthen community awareness of existing knowledge and experience
- Help build mid-level capacity within each agency to support agency customers
- DC GIS, while long-established, could benefit from greater awareness through “marketing communications” such as users telling stories with maps – “good news examples of applying DC GIS data and services”; and make these stories discoverable as part of a DC GIS knowledgebase
- Create video tutorials and other “customer self-service” tools
- Capture requests for maps, data, and services in a centralized place so that everyone can see and comment on similar needs or offer a solution
- If a registry of developers that access DC GIS web services was created, two-way communication could be increased for accessing user satisfaction and evolving needs
- Leverage web cross links, e.g. better integration with dc.gov for increased awareness of DC GIS
- Collaboration and geo-mentoring with local universities and other learning facilities, including K-12, could create shared value in terms of geo-aware future
- Invite another city (e.g. NYC, Boston, or Philadelphia) to present on their GIS program at a future GISSC meeting

3.8.4 Threats (Challenges)

Governance

- Funding support for DC GIS is not under the direct control of the OCTO GIS Program, and could theoretically be reallocated; i.e., DC GIS resources controlled by OCTO could get pooled to support other enterprise applications within OCTO, thereby diluting GIS initiatives and activities
- The possibility of a chargeback business model for GIS may weaken support for OCTO’s respected position in DC GIS oversight
- The GISSC agenda is dominated by “too much tech talk and not enough topics that might interest higher-ups”

Data

- OCTO cannot be an authoritative source of data in DC GIS – "it is the responsibility of the agencies to be the source of truth – the farther away from the source, the more problematic it is to be trusted"
- Not all agencies accept their responsibility to support DC GIS and to share agency data that is needed across the enterprise
- Sharing data is fundamental to the DC GIS concept of operations, data security and privacy; however, appropriate measures are needed in terms of both policy and technology to safeguard sensitive data and avoid vulnerabilities

Applications

- There is still some duplication of effort across the agencies -- "Like-minded people aren't always talking to each other, and might be trying to solve the same problems within their agencies"
- There are few non-Esri based applications, and not much effort to diversify or disrupt the status quo
- Agencies are resistant or unresponsive to modernizing their existing web applications maintained by OCTO GIS - halting progress

Web Services & Systems

- The resiliency and elasticity of ArcGIS Server (AGS) in terms of number of concurrent users that could be accommodated in an emergency is not known – "what if there is another 9-11-type event, or other disaster that impacts DC?"
- The spate of outages earlier this year has made a few agencies think seriously about standing-up or expanding their own systems
- There is potential vulnerability from "having all our eggs in the same basket" (i.e. the predominance of Esri-based systems)
- Aging infrastructure is seen as a vulnerability (note: this infrastructure has since been replaced)

Customer Service

- Misunderstanding or overselling "cool" new technology may result in less support or unrealistic expectations for established technology that gets-the-job-done on a daily basis

4 MISSION & GOALS

4.1 Mission Statement

The Mission of DC Geographic Information System (DC GIS) is to improve the quality and lower the cost of services provided by the DC Government, through the District's collective investment and effective application of geospatial data and systems. Furthermore, DC GIS will reach beyond the DC Government by continuing to make DC GIS data freely and publicly available to the fullest extent possible in consideration of privacy and security.

4.2 Long-term Programmatic Goals

1. Focus on geospatial data governance and delivery in alignment with District priorities.
2. Provide outstanding infrastructure and service delivery to the DC GIS stakeholder community.
3. Be innovative, adaptive and maintain a multi-platform geospatial technology strategy.
4. Sustain geospatial coordination and engagement with the GISSC and nurture new partnerships within the District.
5. Support data-driven decision-making and performance-based management.

4.3 Short-term Success Factors for Each Goal

1. **Focus on geospatial data governance and delivery in alignment with District priorities.**

   Success factors:

   a. *Create a GIS Steering Committee data sub-group to focus on data requirements, maintenance, stewardship, interdependencies and notification/communication.*

   b. *Seek commitment from agency leaders for sharing data of broad value.*

   c. *Maintain and expand the "one-stop shop" of current, accurate, and documented DC enterprise and agency geospatial data. Ensure the availability and currency of core data sets.*

   d. *Expand the development and deployment of web services making current data easily accessible for casual as well as programmatic users.*

   e. *Ensure that feature level metadata is current, readily accessible, and easily discoverable.*

   f. *Support the increasing demand for agency data analytics and performance measurement with geospatial data.*

g. *Continue to support the District's Open Data initiative by making high quality geospatial data publicly accessible and mapping/visualizing available open data.*

h. *Review and modernize the DC GIS Federated Data Model with input from the GISSC stakeholders.*

2. Provide outstanding infrastructure and service delivery to the DC GIS stakeholder community.

Success factors:

a. *Enhance the utility, reduce the cost, and expand the interoperability of geospatial IT assets.*

b. *Increase agency awareness of DC GIS services among both technical GIS users and executive level leaders.*

c. *Continue to provide excellent technical training, support, and services to District agencies; Adapt to evolving demands and stakeholder needs.*

d. *Develop and deploy enterprise applications focused on the needs of the general public.*

e. *Maintain a stable geospatial platform and resilient infrastructure to reliably support business processes throughout the District.*

f. *Create a GIS Steering Committee service delivery sub-group to focus on evolving requirements and service delivery challenges.*

g. *Enhance the branding and marketing of DC GIS to highlight the overall program value to agencies, the public and the D.C. community at large.*

3. Be innovative, adaptive and maintain a multi-platform geospatial technology strategy.

Success factors:

a. *Expand awareness and support utilization of alternative platforms (e.g. Google, CartoDB, Open Source) for consumption of DC GIS geospatial data and services through documentation and outreach.*

b. *Further enable agencies to map business data from non-geospatial sources and business systems on their own.*

c. *Leverage citizen participation in data creation, maintenance and quality control, where appropriate.*

d. *Enable and encourage "real time" mapping (e.g. "tweet mapping") to show trending of events or issues in the District.*

e. *Promote the availability of new tools and resources (e.g. street level and oblique imagery) to the broader DC GIS community through the GISSC and social media channels.*

f. *Create an innovation lab to test and apply emerging platforms and technologies that may be useful to agencies and the DC GIS community at large.*

4. **Sustain geospatial coordination through the GISSC and nurture new partnerships within the District.**

   Success factors:

   a. *Continue to facilitate GISSC meetings on a quarterly basis to provide a forum for the exchange of information and ideas among OCTO GIS, agencies and the broader DC GIS community with an emphasis on enterprise coordination and stakeholder participation.*

   b. *Foster citizen and civic engagement through relevant public-facing applications and responsiveness to public feedback and inquiries.*

   c. *Maintain dialogue with community-focused organizations and non-profits and stay abreast of evolving needs for data and web services; create opportunities to engage and build awareness with new organizations.*

   d. *Showcase community success stories and foster a community sense of shared value.*

   e. *Support educational initiatives within the District (e.g. "adopt a school").*

   f. *Attract interest in the DC GIS program with innovative community events and outreach (e.g. geospatial hackathons).*

5. **Support data-driven decision-making and performance measurement.**

   Success factors:

   a. *Enable agencies, through tools and training, to map agency-specific, non-geospatial data sources (e.g. departmental business data) to measure performance and improve outcomes.*

   b. *Leverage emerging geo-analytical and visualization tools to gain insight into events and patterns within the District and improve government responsiveness (see Success Factor 3f on innovation lab).*

   c. *Make use of emerging real-time data sources for situational awareness and decision making.*

   d. *Share agency use cases and success stories of data-driven decision-making and performance measurement (e.g. mapping changes in number of housing units, walkability scores, property values, transportation usage, parking availability, response to service requests, snow removal, etc.).*

5 REQUIREMENTS

This section describes the major components and considerations for understanding, sustaining and enhancing DC GIS, including existing infrastructure, data, applications, and organizational requirements. Requirements were gathering from the online survey, the stakeholder workshop, interviews with agencies and organizations and numerous conversations with OCTO GIS staff. Below are some of the high-level needs that emerge from the subsequent sections.

The need for:

- Executive support, funding, and governance
- Expanded geospatial data availability and services
- Shared GIS planning and development activity
- Staff support to augment GIS capacity
- Focus on desired outcomes

5.1 Data Requirements

Data requirements are expanded upon as part of the ***DC GIS Business Plan*** that is a companion document to this Strategic Plan.

Data requests:

- A shared understanding among DC GIS agencies that the role of the OCTO GIS Group is to support data sharing and coordination across all stakeholders – not act as the data steward for all geospatial data. Every DC GIS stakeholder has a role and responsibility in contributing to the success of the shared program.
- Along these lines, data ownership and stewardship should be made more explicit. It is OCTO GIS' responsibility to keep enterprise data and infrastructure stable, but it is every agency's responsibility to maintain and share data. "Back channel" data sharing between agencies or with citizens is inevitable but sharing agreements should be clear that geospatial data also needs to be shared directly with OCTO GIS. In its role as coordinator, OCTO must provide data standards for sharing.
- Many stakeholders expressed a need for more frequent data updates. Emphasizing a shared responsibility for data maintenance, will encourage agencies to contribute better quality data more often and OCTO GIS will be able to focus resources on maintenance and acquisition of enterprise data (such as elevation, imagery, planimetric, LiDAR, etc).
- Publicly share data issues based on feedback or QA/QC activities. This would allow users to assess the appropriateness of the data for their purposes.

- Make geospatial data more easily discoverable. There is an opportunity to build awareness and skills by improving search and discovery tools and also providing training on "finding the data you need."
- Remove outdated geospatial data and metadata from the enterprise. In general there is a reluctance to remove data for fear that someone might be using it; however, this causes confusion when trying to find the best data. Guidelines on layer usage for developers (e.g. do not rely on layer order/numbering for apps) would alleviate this potential reliance on old data sets.
- Make feature-level metadata easier to find and understand. Metadata needs to be high quality, discoverable, up to date, and trustworthy to provide value. Outdated metadata needs to be culled regularly.
- Document relationships and interdependencies between related data sets such as between streets and addresses in order to synchronize updates and improve overall quality.
- Standardize data nomenclature and unique IDs for linking between business data.
- Improve archiving of data to support historical spatial analysis and track change over time.
- Proactively support the use of geospatial data in combination with non-geospatial data through documentation, training and tools.
- Where possible, geo-enable Key Performance Indicators (KPIs) to analyze performance and visualize patterns/relationships.
- Replace Google Earth
- Promote new data resources and provide training/easy access (e.g. the availability of street-level imagery from CycloMedia)
- Enhance the Master Address Repository (MAR) to allow more flexible search criteria and improved results
- Access to current property and tax data via web services (data is accessible but data is not kept up to date by OTR)
- Access to additional data sets including
    - Federal properties within the District (need to resolve disagreement with the National Park Service over Federal property data)
    - Utility data (e.g. PEPCO). DC GIS needs a partner to accomplish this.
    - Access to real-time data (e.g. tweet mapping that reveals what's trending)
    - Regional data
    - Economic development data
    - Certificates of Occupancy

- Neighborhood boundaries. There are no definitive neighborhood boundaries but users require some consistent way to compare attributes between District areas. DC GIS needs to provide guidance (e.g. users can map neighborhood clusters, use census boundaries, or even police districts to represent the geography of the City.) DC GIS can meet this need by better understanding use cases for how the user wants to interpret the information, not based on how the information exists today.

5.2 Technological Infrastructure Requirements

Technology requirements are expanded upon in the ***DC GIS Business Plan***. As mentioned in the context of Data Requirements, the Business Plan is a companion document to this Strategic Plan, and it delves into greater detail for implementation purposes. The following outline represents input received from stakeholders during the strategic planning process.

Technology requests from stakeholders:

- Improve the quality of service and avoid repeating recent service outages. As so many agencies rely on the current infrastructure for daily business operations, outages can be extremely costly in direct ways (money and time) and indirect ways (trust, confidence and morale). Outages can cause agencies to consider standing up their own infrastructure. *[It should be noted that major upgrades in the summer of 2015 stabilized the system tremendously.]* Continued maintenance and regular modernization should be very high priority.
- Inputs from mobile devices to departmental systems are on the increase (e.g. 311 requests, field inspections, asset inventories). Infrastructure, templates and training should continue to evolve to support the adoption of mobile devices.
- Expand use and diversity of Cloud-based mapping technologies allowing. The trend toward deployment in the Cloud will continue to accelerate and users will demand options, high performance and support for data integration.
- Capture more information on how current web services are being used in order to better serve the needs of developers. The proposed developer "opt in" program in which developers can log their use of services and receive key updates is a step in this direction and will connect DC GIS with users of the web services.
- The resiliency of ArcGIS Server in terms of the number of concurrent users that could be supported in an emergency is not known. The system should be stress-tested and users assured of the stability and resiliency.
- Both the District Government and the public should use the same Web services and APIs to access data and services.
- Provide RESTful web services to allow developers to easily establish links between applications and business systems.

- Stay abreast of new platforms and technologies of interest and use to the stakeholder community. Agencies rely heavily on the Esri platform; it could be a risk to put "all of the eggs into one basket." It is important to make room for alternative client-side tools such as Leaflet, Mapbox and CartoDB. OCTO GIS could be more outspoken about how alternatives can be used alongside the Esri core platform and documentation should be as vendor-agnostic as possible.
- More frequent notifications and/or automated alerts of outages and changes to data and systems.
- Create a registry for/of developers using DC GIS data and services
- Regular database replication
- Establish a "resilience plan" for disaster mitigation and recovery
- Tools for "big data" analytical capabilities

5.3 Organizational/Governance Requirements

The OCTO GIS Program has supported data sharing and coordination across agencies through the DC GIS program and GISSC meetings for more than a dozen years. As an official entity, the GISSC was chartered by a Mayor's Order in 2002 to support DC GIS and OCTO's role as its primary caretaker. The GISSC has Districtwide support and participation, Bylaws, and a multi-departmental Executive Committee. Nonetheless, there is not consensus amongst the agencies active in the GISSC on the level of commitment needed from executive leadership for DC GIS to be sustainable.

DC GIS operates on a shared services model funded centrally within OCTO and provides common data, software, training, and tools at relatively no cost to District agencies. As a result, the District of Columbia is generating meaningful returns from geospatial investments through transparent data sharing and collaboration among the DC GIS community. DC GIS performs data maintenance and data enhancements, provides training to District agency employees, publishes web map and data services for integration with agency web applications, and provides guidance for data acquisition, development and coordination with stakeholders.

Although awareness of DC GIS as a program is relatively high among Agency Directors, Chiefs of Staff and major Program Directors, awareness and/or participation in the GISSC is relatively low, causing concern that the GISSC "lacks clout" to align agencies or to assure funding for DC GIS. Theoretically, OCTO GIS resources could get pooled or reallocated to support other enterprise applications within OCTO, thereby diluting GIS initiatives and activities. This risk could be addressed through more active advocacy for DC GIS in the overall OCTO budget process. Alternative approaches could include the implementation of a "chargeback" or "fee for service" model; an assessment based on agency use; licensing of key enterprise data; or a more formal interagency Memorandum of Understanding (MOU). It is generally believed, however, that the possibility of a chargeback, assessment, or licensing model for GIS would weaken support for OCTO's respected position in DC GIS oversight, and result in agencies that currently contribute data and applications to withhold their support. This points to the ongoing

importance of a regular GISSC Budget Meeting for DC GIS, to review program priorities and available funding.

Over the course of time, interest and participation in DC GIS and the GISSC has shifted to more front-line employees using the data and technology, rather than the executive leaders who helped to establish it many years ago. Some of these leaders, or their successors, have seen the GISSC become very focused on the technology more so than the original policy matters, and are now focused on other things that they feel require more of their C-suite attention. However, with a new Mayoral Administration in place, a briefing or Mayoral Memo on the DC GIS program to raise awareness of it as an important and essential DC asset could be timely to ensure sustainability and agency commitments.

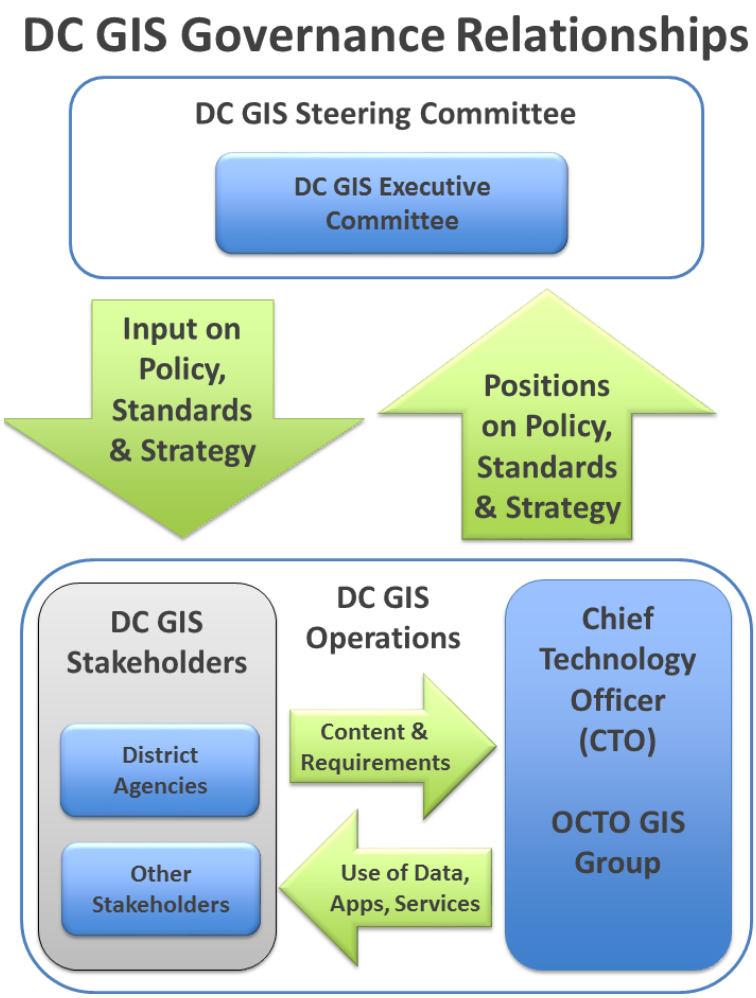
Given the maturity of DC GIS and the GISSC, it is an opportune time to create focus groups or subcommittees on specifically targeted program areas, such as data and web services, to tackle important details on behalf of the larger group to advance its overall effectiveness -- this is actionable.

In brief, specific organizational governance requirements include:

- Mayoral Memo on the DC GIS program (to raise awareness of it as an important and essential DC asset could be timely to ensure sustainability and agency commitments)
- Formally establish GISSC subgroups for Data and Web Services (to concentrate appropriate GISSC resources and attention on important DC GIS program areas)
- Modernize the DC GIS federated data model (to leverage new data platforms and organizing concepts for data)
- Reinvigorate Annual GISSC Budget Meeting for DC GIS (to assure participation in prioritization of spending to support DC GIS)
- Schedule annual vote on GISSC Executive Committee members (to continue multi-departmental representation)
- Workforce Development (to educate and train personnel on the value and uses of geospatial data and technology for problem-solving)
- Business Process Change (to incorporate geospatial data and technology into workflows to improve the delivery of government services to citizens)

5.3.1 Conceptual Diagram of Governance Relationships

The governance of GISSC is reasonably well-defined. The multi-departmental Executive Committee provides guidance and oversight to OCTO on the conduct of the GISSC and its agenda and assures executive-level participation. The Executive Committee also helps in the planning and prioritization of DC GIS program matters, such as helping to guide the strategic and business planning processes that support DC GIS; these planning processes also engage the entire GISSC as stakeholders, with opportunities to provide input via surveys, interviews, and workshops. The following diagram shows the operating concept and governance relationships for DC GIS.



5.3.2 Work Force Development

The importance of training was a common theme in the online survey results, the stakeholder workshop and the individual interviews with agencies. While the current training program supports a large number of users, suggestions were made for expanding the curriculum to engage new audiences and attract new users. Many agencies aren't fully aware of the resources (data, tools and staff) that are available to them or even what can be done with geospatial technology. Other agencies know what they want to accomplish but still rely heavily on OCTO GIS staff for GIS support as they don't feel they've gained the skills or expertise to meet their goals efficiently. The OCTO GIS Group would like to focus training efforts on building awareness of GIS value and capabilities (aimed at executive leadership) and helping agencies help themselves (aimed at "hands on" technical staff within agencies). By enabling agencies through a true federated system that leverages the federated data and templates to build what they need, DC GIS can build a thriving, distributed workforce that supports the needs of every agency.

Suggestions from the information gathering sessions also included:

- Offer a more advanced version of ArcGIS training for those that are ready to move beyond the "101" class. Perhaps offer a sequence of classes that build on core skills.
- Offer a "what can I do with GIS?" class that shifts focus away from the "how" and engages mid- and senior-level managers in thinking about the possibilities, use cases and overall value geospatial tools to their agencies.
- Showcase more agency specific use cases during training to spark ideas and enhance relevancy for students (e.g. economic development)
- Offer custom training for departments or agencies geared toward their specific data and analytical needs (e.g. class for the Metropolitan Police Department)
- Host a DC GIS open-house, at OCTO, where agencies will showcase their work and spark ideas amongst others
- OCTO GIS should consider a training class geared toward mapping key performance metrics and tapping the wealth of business data that resides within each agency.

5.3.3 Data-Driven Decision Support and Performance Management

Local governments in every part of the country are increasingly practicing data-driven decision support and performance management. According to survey of 211 CIOs nationwide, Business Intelligence and Analytics was the area of largest spending increase in 2015. These techniques are now an expected part of a manager's job and the District is no exception. Rather than simply tracking data as a source of information, agencies are repositioning to analyze the data to measure performance and improve services. This increase in performance management is no surprise given the Administration's emphasis on quality service and accountability. The broad usage of geospatial data and analytical tools to meet these demands is notable and serves as a testament to the high quality data, tools and skills distributed throughout DC GIS stakeholders.

The online survey, stakeholder workshop and interviews revealed a tremendous variety of ways agencies and organizations are using geospatial data to support data-driven decisions and performance management.

- Responsiveness and status of 311-related service requests
- Verification of meter locations for performance-based
- Grant distribution
- Agency resource allocation
- Crime incidents, arrests and calls for services
- Number of inspections by inspector
- Success of bag law data
- Fire hydrant usage

- Percent change in pervious vs. impervious pavement
- Health assessment through vital records
- Lead poisoning cases and lead screening rates by ward and census district
- Snow removal
- American Disabilities Act (ADA) right-of-way improvements
- Urban forestry
- Number of well permits
- Neighborhood access to healthy food
- Walk time to resources
- Distribution of staff caseloads
- Number of new housing units
- Number of active building permits
- Percent change year over year in building permits
- Number of pipeline development projects
- Expenditure (project cost) for development projects across the District
- Percent change in market rate for residential housing, retail, and commercial real estate
- Percent change in walkability scores
- Changes in transit scores
- Percent change in vacancy rates
- Tree maintenance activity

As demands for data-decision support and performance management increase in the District, DC GIS will continue to play a pivotal role in providing access the required data, tools and training.

5.4 Data Governance Requirements

The topic of data governance will be elaborated upon in the Business Plan for Data that will follow this overall Strategic Plan. In brief, key elements include:

- Formally establish GISSC subgroup focused on data with measurable outcomes
- Modernize the DC GIS federated data model
- Reinvigorate Annual GISSC Budget Meeting for DC GIS
- Address data gaps (e.g. utilities)

6 HIGH LEVEL IMPLEMENTATION STRATEGY

This Strategic Plan, by design, focuses on ***what*** the overall DC GIS strategy should be for the next five years, whereas the companion Business Plan zeros in on ***how*** to accomplish the goals described in this document including phasing, staffing, cost and other resource requirements. In general, the near-term implementation strategy is to act on the recommendations as presented in the Business Plan for the first two strategic goals. Longer-term, the strategy will be to pursue the development of business plans for the remaining goals.

The companion Business Plan will focus on the first two strategic goals:

1. Focus on geospatial data governance and delivery in alignment with District priorities.
2. Provide outstanding infrastructure and service delivery to the DC GIS stakeholder community.

6.1 Phasing

As with the prior Strategic Plan, this implementation plan presumes a five-year implementation period with most recommended activities occurring in parallel. The DC GIS Steering Committee members will review the recommendations and status annually to evaluate the relevance to the program and its stakeholders. This would be a special meeting with full participation of stakeholders encouraged.

6.2 Program Budget Plan

The current operating budget for OCTO GIS is $2.33 million for FY15. This supports 11 full-time equivalent (FTE) staff members supporting program management, data, customer service and application development (but does not include staff for the Citywide Data Warehouse). The budget also covers travel, contractors, training and software expenses. The operating budget for FY16 is expected to decrease significantly to $2.05 million. As large enterprise data expenses such as orthoimagery and planimetric data capture are no longer eligible for capital budget support, the OCTO GIS budget will likely be strained. It should be noted that DC GIS does not, in general, receive funding from agencies for the services provided but in the case that an agencies needs expand beyond what OCTO GIS can reasonably provide, the agency may contribute funding to cover the additional demands. Several agencies (e.g. DDOT) budget for GIS separately and their investments often benefit DC GIS as a whole (e.g. DDOT purchased Cyclomedia imagery but makes this resource available to all agencies). The Business Plan will outlay expected implementation costs and will phase recommendations, accordingly.

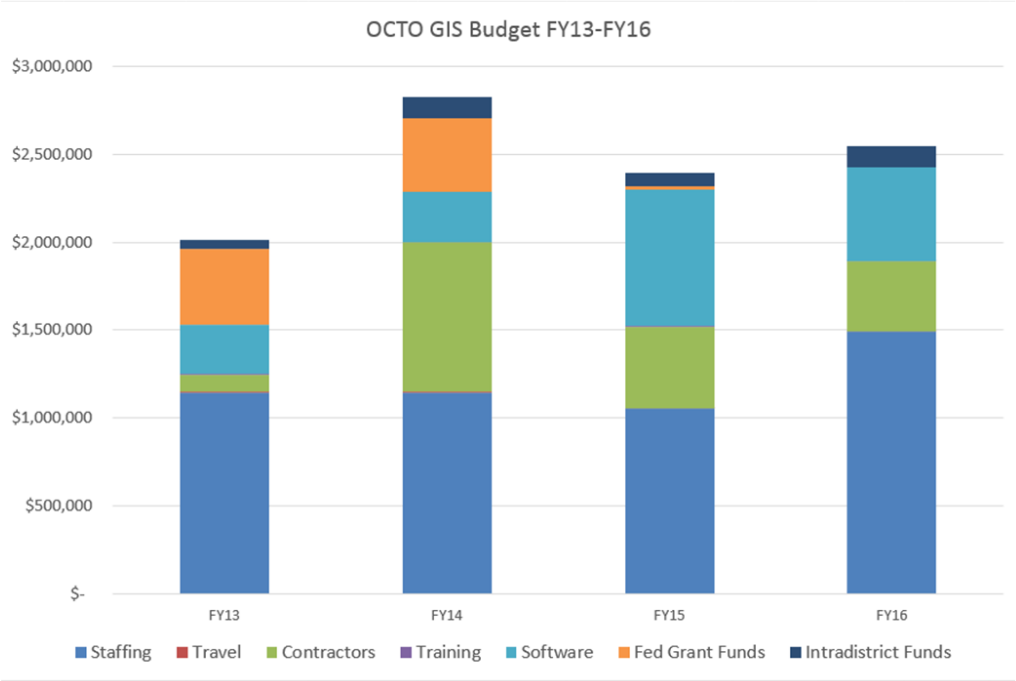


Figure 8. OCTO GIS Budget FY13-FY16

6.3 Marketing the Program

DC GIS remains one of the nation's premier GIS programs for comparable jurisdictions such as New York City, Boston and Philadelphia. As revealed throughout the strategic planning process, one of the biggest challenges moving forward – and an area where the program has fallen short at times—is the marketing outreach about the program's value DC Government and District citizens. A regular effort has been maintained to inform stakeholders of new and existing data and services, primarily through the GISSC. Nonetheless, a concerted effort to engage and inform stakeholders is recommended.

Valuable marketing and outreach activities may include:

- Promotion of this updated plan and progress documented since original 2009 Strategic Plan
- Continued use of the Steering Committee email distribution list for broad notification
- Series of presentations geared toward executive leadership and the new administration about history of the program, user success stories, innovative ideas and overall value to the District Priority Goals
- Use of social media to share information, successes, interesting maps/analysis on current District issues/events, tweet mapping
- Use of quizzes, surveys to engage stakeholders in informal manner (e.g. the "Are you smarter than DC GIS?" quiz that was distributed on GIS Day)
- Case studies about stakeholder success stories

- Press releases on newsworthy items
- Track DC GIS user demand with better metrics on utilization
- Sponsorship of hackathons within the community
- Developer "opt in" list for notifications aimed at developer tools, best practices, APIs
- Schedule presentation for DC agency CIO's
- Possibly engage other programs in OCTO with marketing arms like ConnectDC to assist with hosting a "DC GIS Open House" - not an OCTO open house

6.4 Measuring Success

On a periodic basis (e.g., quarterly), OCTO GIS shall report status using the following chart. Ratings are based on a qualitative assessment.

Programmatic Goals	Overall Goal Status (Green, Yellow, Red)	Success Factors	Comment and Status
Goal 1: **Focus on geospatial data governance and delivery in alignment with District priorities**		☐ *Create a GIS Steering Committee data sub-group to focus on data requirements, maintenance, stewardship, interdependencies and notification/communication.*	
		☐ *Seek commitment from agency leaders for sharing data of broad value.*	
		☐ *Maintain and expand the "one-stop shop" of current, accurate, and documented DC enterprise and agency geospatial data. Ensure the availability and currency of core data sets.*	
		☐ *Expand the development and deployment of web services making current data easily accessible for casual as well as programmatic users.*	
		☐ *Ensure that feature level metadata is current, readily accessible, and easily discoverable.*	
		☐ *Support the increasing demand for agency data analytics and*	

		performance measurement with geospatial data.	
		☐ *Continue to support the District's Open Data initiative by making high quality geospatial data publicly accessible and mapping/visualizing available open data.*	
		☐ *Review and modernize the DC GIS Federated Data Model with input from the GISSC stakeholders.*	
Goal 2: **Provide outstanding infrastructure and service delivery to the DC GIS stakeholder community.**		☐ *Enhance the utility, reduce the cost, and expand the interoperability of geospatial IT assets.*	
		☐ *Increase agency awareness of DC GIS services among both technical GIS users and executive level leaders.*	
		☐ *Continue to provide excellent technical training, support, and services to District agencies; Adapt to evolving demands and stakeholder needs.*	
		☐ *Develop and deploy enterprise applications focused on the needs of the general public.*	
		☐ *Maintain a stable geospatial platform and resilient infrastructure to reliably support business processes throughout the District.*	
		☐ *Create a GIS Steering Committee service delivery sub-group to focus on evolving requirements and service delivery challenges.*	
		☐ *Enhance the branding and marketing of DC GIS to highlight the overall program value to agencies, the public and the D.C. community at large.*	
Goal 3: **Be innovative, adaptive and maintain a multi-platform geospatial technology strategy.**		☐ *Expand awareness and support utilization of alternative platforms (e.g. Google, CartoDB, Open Source) for consumption of DC GIS geospatial data and*	

		services through documentation and outreach.	
		☐ *Further enable agencies to map business data from non-geospatial sources and business systems.*	
		☐ *Leverage citizen participation in data creation, maintenance and quality control, where appropriate.*	
		☐ *Enable and encourage "real time" mapping (e.g. "tweet mapping") to show trending of events or issues in the District.*	
		☐ *Promote the availability of new tools and resources (e.g. street level imagery from CycloMedia) to the broader DC GIS community through the GISSC and social media channels.*	
		☐ *Create an innovation lab to test and apply emerging platforms and technologies that may be useful to agencies and the DC GIS community at large.*	
Goal 4: **Sustain geospatial coordination through the GISSC and nurture new partnerships within the District.**		☐ *Continue to facilitate GISSC meetings on a quarterly basis to provide a forum for the exchange of information and ideas among OCTO GIS, agencies and the broader DC GIS community with an emphasis on enterprise coordination and stakeholder participation.*	
		☐ *Foster citizen and civic engagement through relevant public-facing applications and responsiveness to public feedback and inquiries.*	
		☐ *Maintain dialogue with community-focused organizations and non-profits and stay abreast of evolving needs for data and web services; create opportunities to engage and build awareness with new organizations.*	

		☐ *Showcase community success stories and foster a community sense of shared value.*	
		☐ *Support educational initiatives within the District (e.g. "adopt a school").*	
		☐ *Attract interest in the DC GIS program with innovative community events and outreach (e.g. geospatial hackathons).*	
Goal 5: **Support data-driven decision-making and performance measurement.**		☐ *Enable agencies, through tools and training, to map agency-specific, non-geospatial data sources (e.g. departmental business data) to measure performance and improve outcomes.*	
		☐ *Leverage emerging geo-analytical and visualization tools to gain insight into events and patterns within the District and improve government responsiveness (see Success Factor 3f on innovation lab).*	
		☐ *Make use of emerging real-time data sources for situational awareness and decision making.*	
		☐ *Share agency use cases and success stories of data-driven decision-making and performance measurement.*	

7 APPENDICES

7.1 Strategic Planning Methodology

The DC GIS Strategic Planning document update approach followed the process recommended by NSGIC and FGDC, as was done with the previous Strategic Plan in 2008. Key process elements included the following:

- Online survey: launched in August 2015; closed in September 2015
- Stakeholder workshop: August 2015 (as part of the quarterly Steering Committee meeting)
- Departmental and stakeholder interviews, and scheduled phone interviews: August – September 2015
- Ad hoc web meetings and phone calls with the project committee: throughout the project duration (July 2015 through December 2015)
- Presentation of draft strategic plan to the GISSC: December 2015
- Document review and topical research: throughout the project duration (July 2015 through December 2015)

7.2 Glossary of Acronyms

Acronym	Meaning
AGS	ArcGIS Server
AGOL	ArcGIS Online
BZA	Board of Zoning Adjustment
CAD	Computer-Aided Dispatch, Computer-Aided Design
CAMA	Computer Assisted Mass Appraisal (System)
CIO	Chief Information Officer
COP	Common Operating Picture
CTO	Chief Technology Officer
DC	District of Columbia
DC GIS	District of Columbia Geographic Information System
DCCIP	District of Columbia Capital Improvements Program
DCOZ	District of Columbia Office of Zoning
DCPS	District of Columbia Public Schools
DCRA	Department of Consumer and Regulatory Affairs
DDOT	District Department of Transportation
DHS	Department of Human Services
DMH	Department of Mental Health

Acronym	Meaning
DMPED	Office of the Deputy Mayor for Planning and Economic Development
DDOT	District Department of Transportation
DOH	Department of Health
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
ESF5	Emergency Support Function 5
ESRI	Environmental Systems Research Institute
FCIP	Federal Capital Improvements Program
FDM	Federated Data Model
FEMA	Federal Emergency Management Agency
FEMS	Fire and Emergency Medical Services
FGDC	Federal Geographic Data Committee
FOIA	Freedom of Information Act
FR	First Responder
GIS	Geographic Information System
GIS/IT	Geographic Information System/Information Technology
GISSC	GIS Steering Committee
GOS	Geospatial One Stop
GSA	General Services Administration
HSEMA	Homeland Security and Emergency Management Agency
HSIP	Homeland Security Infrastructure Program
IMAP	Internet Message Access Protocol
IPMA	Infrastructure Project Management Administration
IT	Information Technology
ITS	Integrated Tax System
IZIS	Interactive Zoning Information System
MAR	Master Address Repository
MDT	Mobile Data Terminal
MOU	Memorandum of Understanding
MPD	Metropolitan Police Department
MRDDA	Mental Retardation and Developmental Disabilities Administration
MSS	Management Supervisory Service
MWCOG	Metropolitan Washington Council of Governments
NCPC	National Capital Planning Commission
NGA	National Geospatial-Intelligence Agency
NGAC	National Geospatial Advisory Council
NGPO	National Geospatial Program Office
NPS	National Park Service
NSDI	National Spatial Data Infrastructure
NSGIC	National States Geographic Information Council

Acronym	Meaning
OCTO	Office of Chief Technology Officer
OGC	Open Geospatial Consortium
OMB	Office of Management and Budget
OP	Office of Planning
OS	Office of the Surveyor
OZ	Office of Zoning
OTR	Office of Tax and Revenue
PIVS	Permit Intake Validation Service
PUD	Planned Unit Development
QA/QC	Quality Assurance/Quality Control
RPAD	Real Property Assessment Division
RPTA	Real Property Tax Administration
SAS	Statistical Analysis System
SDC	State Data Center
SDS	Smart Data Strategies
SHP	Shape file
SOD	Special Operations Division
SSL	Square, Suffix, and Lot
TNM	The National Map
TOA	Traffic Operation Administration
TPPA	Transportation Policy & Planning Administration
UFA	Urban Forestry Administration
URISA	Urban & Regional Information Systems Association
USGS	United States Geological Survey
VPM	Vector Property Map
WASA	District of Columbia Water and Sewer Authority
WDCEP	Washington, DC Economic Partnership
WGIS	Washington GIS Consortium
WMATA	Washington Metropolitan Area Transit Authority (a.k.a. “Metro”)

7.3 GIS Steering Committee Bylaws

DC Geographic Information System Steering Committee Bylaws (Final – October 15, 2009)

Section I: Purpose & Authority

The purpose of the District of Columbia Geographic Information System Steering Committee (GISSC) as established by Mayor’s Order 2002-27 is to “ensure (a) the DC GIS is developed and maintained to achieve its full potential in providing digital maps, geographic based information, and GIS applications to enhance the planning, decision making and business processes of District government agencies, and to

provide value to the citizens of the District of Columbia; (b) all mapping and GIS activities in the District government are cost effective, interoperable, and integrated with the DC GIS; and (c) the DC GIS is used effectively within District government." The committee also fosters information sharing and partnerships among local, federal, and regional organizations (public, private, and nonprofit) that seek to mutually benefit from geospatial systems and data.

Section II: Voting Membership

Agencies, not individuals, are members of the GISSC. Membership in the GISSC is established by Mayor's Order 2002-27. The four original members of the GISSC are:

- District Department of Transportation
- Office of the Chief Technology Officer
- Office of the City Administrator
- Office of Planning

On May 8, 2009, the city administrator exercised authority under Section 4 of the executive order and expanded the voting membership of the GISSC to include:

- Department of Consumer and Regulatory Affairs
- Department of Health - Department of Public Works
- District Department of the Environment
- Department of Fire and Emergency Medical Services
- Homeland Security and Emergency Management Agency
- Metropolitan Police Department
- Office of the Deputy Mayor for Planning and Economic Development
- Office of Tax and Revenue
- Office of Unified Communications
- Office of Zoning
- Water and Sewer Authority

Membership includes the responsibility to attend GISSC meetings. Department heads of member agencies automatically have standing. Should the department head not attend, he/she may designate a representative. It will be assumed that those attending have been so designated. Multiple representatives from a single agency shall be welcome at GISSC meetings, and each individual may participate fully. However, agencies may never have more than one vote. In such cases, the agency head or his/her official designee shall cast the vote. Should there be no official designee, agency staff may caucus and cast a single vote. In the unlikely event that an agency has neither an official designee nor a successful caucus, that agency may be disqualified from the vote by the GISSC chair.

Section III: Role of GISSC Officials

A. Chair: The manager of the DC GIS as recognized by the OCTO chief technology officer is automatically the chair of the GISSC unless the chief technology officer designates someone else. In addition, the chair is responsible for certifying the accuracy of minutes developed by the GISSC to document its meetings. The chair is responsible for ensuring adequate staff support to the GISSC, including the performance of the following functions: (1) notifying members of the time and place for each meeting; (2) maintaining records of all meetings, including subgroup or working group activities; (3) maintaining the roll; (4) preparing the minutes of all meetings of the GISSC's deliberations, including subgroup and working group activities; (5) attending to official correspondence; (6) maintaining official GISSC records and filing all papers and submissions prepared for or by the GISSC, including those items generated by subcommittees and working groups; and, (7) preparing and handling all reports.

B. Executive Committee: The Executive Committee under the leadership of the chair establishes priorities and identifies issues that must be addressed by the full GISSC. There shall be two members of the Executive Committee to be determined by annual vote. Executive Committee members must be employees of separate member organizations and may not be from OCTO. The other Executive Committee members assume the duties of the chair in GISSC matters when the chair is not available. Nomination for the Executive Committee will be called for prior to the vote and may be taken until the vote commences. Members may serve consecutive terms. Should an Executive Committee member become unavailable, a special election to fill the remainder of the term will be held at the next full GISSC meeting.

Section IV: Meeting Procedures

The GISSC will meet at least four times per year. OCTO will provide appropriate support for GISSC meetings and activities. Meetings will be called by the GISSC chair according to the following considerations:

A. Agenda: The GISSC chair and Executive Committee will develop meeting agendas with input from GISSC members. The chair will distribute the agenda to the members prior to each meeting and will publish an outline of the agenda with the notice of the meeting. Items for the agenda may be suggested to the Executive Committee or chair by any member of the GISSC. Items may also be suggested by nonmembers, including members of the public.

B. Member Participation: Members are expected to make a good faith effort to attend or send a representative to all GISSC meetings. Under exceptional circumstances, at the discretion of the chair, members may be allowed to participate in meetings via conference call or similar remote technology.

C. Minutes and Records: The chair will prepare minutes of each meeting and will distribute copies to each GISSC member. Minutes will be reviewed and approved by the GISSC. Minutes of GISSC meetings will be available to the public upon request. The minutes will include a record of the persons present (including the names of GISSC members, names of staff, and the names of members of the public from whom written or oral presentations were made) and a complete

and accurate description of the matters discussed and conclusions reached, and copies of all reports received, issued, or approved by the GISSC. Draft minutes will be distributed in advance of GISSC meetings in a timely manner.

D. Open Meetings: Unless otherwise determined in advance, all meetings of the GISSC will be open to the public. Members of the public may attend any meeting or portion of a meeting that is not closed to the public and may, at the determination of the chair, offer oral comment for a set period of time at each meeting. Members of the public may submit written statements to the GISSC at any time. Subcommittee and Executive committee meetings are exempt from this requirement.

Section V: Decision Making

Consensus is the preferred decision-making model for the GISSC, whereby general agreement amongst GISSC members is apparent without a formal vote. When consensus cannot be achieved, the chair may request a motion for a vote when a decision or recommendation of the GISSC is required. A quorum of members and a balance of viewpoints must be present for any vote at a GISSC meeting. A quorum will consist of a simple majority of the voting members. Each GISSC member is entitled to one vote. Votes will be decided by a simple majority of votes cast. Members must be present to vote. Proxy votes are not allowed. At the discretion of the chair, minority opinions may be included with GISSC decisions and recommendations. Requests for GISSC studies or reviews will be transmitted through the chair, and GISSC recommendations or decisions will also be transmitted to the OCTO chief technology officer. A majority of the members present is required for the GISSC to take a position or action.

7.4 Mayor's Order 2002-27

Mayor's Office 2002- 27
February 4, 2002
Mayor Williams signs a Mayor's order establishing the GIS Steering Committee
GOVERNMENT OF THE DISTRICT OF COLUMBIA
ADMINISTRATIVE ISSUANCE SYSTEM

Mayors Order 2002-27
February 4, 2002

SUBJECT: Establishment of Geographic Information System Steering Committee

ORIGINATING AGENCY: Office of the Mayor

By virtue of the authority vested in me as the Mayor of the District of Columbia by section 422 (11) of the District of Columbia Home Rule Act, approved December 24, 1973, 87 Stat. 790. Pub. L 93-198, D.C. Code, 2001 ED. & 1-205-22(11), it is hereby **ORDERED** that:

1. ESTABLISHMENT: There is hereby established in the government of the District of Columbia a Geographics Information System Steering Committee (GISSC), to optimize the development and promote effective usage of the District of Columbia Geographic Information System (DC GIS),

and assist the Office of Chief Technology Officer (OCTO) in establishing and enforcing standards, policies, procedures and protocols for the DC GIS, with such additional purposes and functions as set forth generally below. In addition, District departments and agencies shall have responsibilities, and may be required to take actions, arising from directives of the GISSC, as set forth generally below.

2. PURPOSE: The GISSC shall aim to ensure that: (a) the DC GIS is developed and maintained to achieve its full potential in providing digital maps, geographic based information, and GIS applications to enhance the planning. decision making, and business processes of District government agencies, and to provide value to the citizens of the District of Columbia: (b) all mapping and GIS activities in the District government are cost effective, interoperable and integrated with the DC GIS; and (c) the DC GIS is used effectively within District government.

3. SCOPE AND FUNCTIONS: The GISSC will meet, coordinate, form sub-groups, and promulgate binding directives to: (a) provide a centrally organized authority to assist OCTO in carrying out its mandate to develop and enforce policy directives and standards regarding information technology throughout the District government, pursuant to & 1813 of the Office of the Chief Technology Officer Establishment Act of 1998, effective March 26, 1999 (D.C. Law 12-175;D.C. Official Code & 1-1402), specifically with regard to policies, standards, procedures and protocols related to the DC GIS: (b) assign responsibility to the District agencies with regard to maintaining, updating, and providing GIS data to the DC GIS, and with regard to creating GIS applications, developing GIS capabilities, meeting schedules for GIS projects, and allocating resources for GIS related activities: (c) prevent duplication of GIS activities within District government, and ensure singularity and interoperability; (d) solicit multilateral input and participation throughout the District government in developing and enhancing the DC GIS: and (e) promote effective usage of the DC GIS within District government and integration of the DC GIS with District agency business processes, and other District technology initiatives, where appropriate.

4. COMPOSITION: OCTO, the Office of the City Administrator, the Office of Planning, and the Department of Transportation shall be permanent members of the GISSC. OCTO shall serve as the permanent chair of the GISSC. Additional members shall be appointed or removed by the Mayor or City Administrator. The GISSC may establish sub-groups, such as subcommittees, working groups and task forces that may include both members and non-members of the GISSC. The GISSC may opt to include non-District government organizations and individuals as non-voting members of sub-groups.

5. DEPARTMENT AND AGENCY RESPONSIBILITIES: District government departments and agencies shall follow the directives of the GISSC with regard to any and all activities that may involve or impact the DC GIS. This may include, but not be limited to, assigning resources, changing processes, maintaining and providing data, building and enhancing databases, purchasing and upgrading hardware and software, developing applications, providing training, hiring personnel, refraining and desisting from duplicative, non-cost effective, or non-interoperable GIS or mapping activities, transferring functions and projects to other agencies, following specified

procedures, standards and protocols, adhering to specified schedules, submitting requests for initiating GIS or mapping projects and activities, and serving on cub-groups of the GISSC or as members of the GISSC. All District departments and agencies shall coordinate with OCTO on an all GIS or mapping development activities, applications and procurements, and shall take corrective action to bring into compliance any elements or activities the OCTO or the GISSC deem not to be in compliance with standards for the DC GIS.

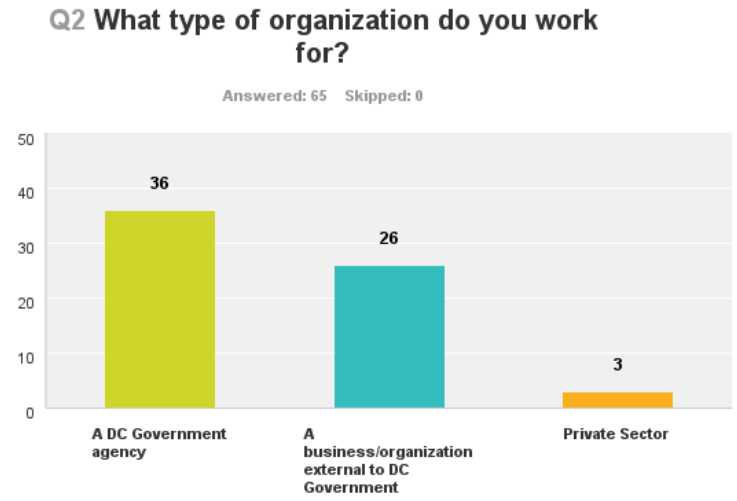
6. ADMINISTRATION: District government departments and agencies will provide administrative and staff support and other assistance to the GISSC upon request.

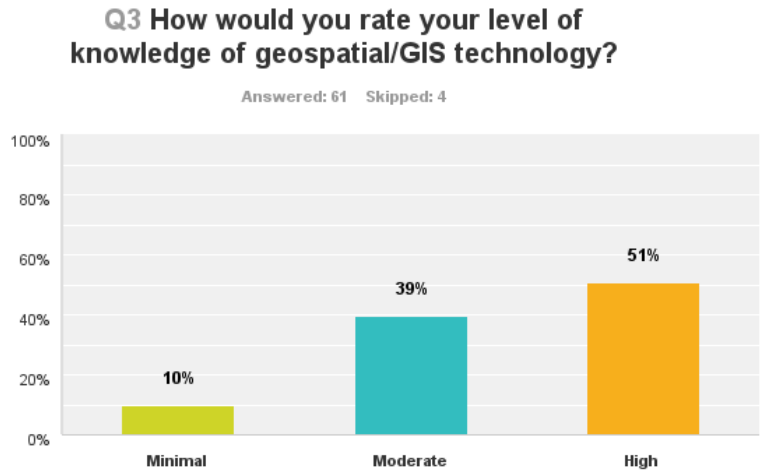
7. EFFECTIVE DATE: This Order shall become effective immediately.

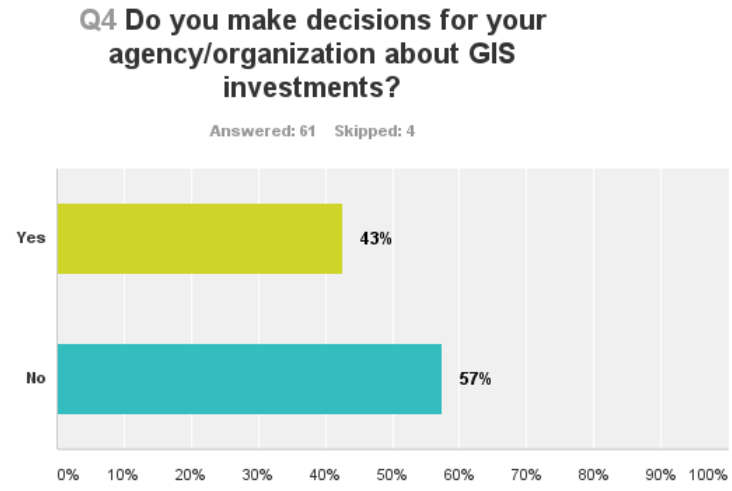
Anthony A. Williams
MAYOR
Attest: Beverly D. Rivers
SECTRTARY OF THE DISTRICT OF COLUMBIA

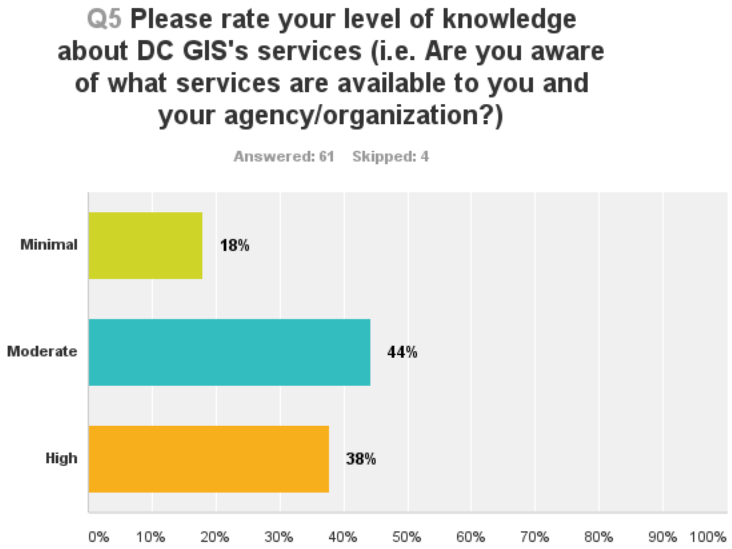
7.5 Survey Summary

The project stakeholder survey was launched in August 2015 and remained open through September. In total, 65 people responded to the survey representing stakeholders from a variety of District agencies, private businesses, and non-profits. Initial results were presented at the GIS Steering Committee meeting in late August 2015. Full results, including open-ended responses to questions, are presented below.



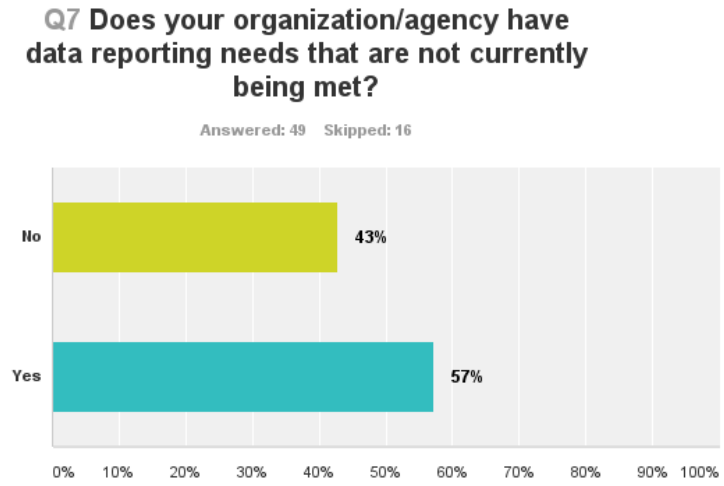






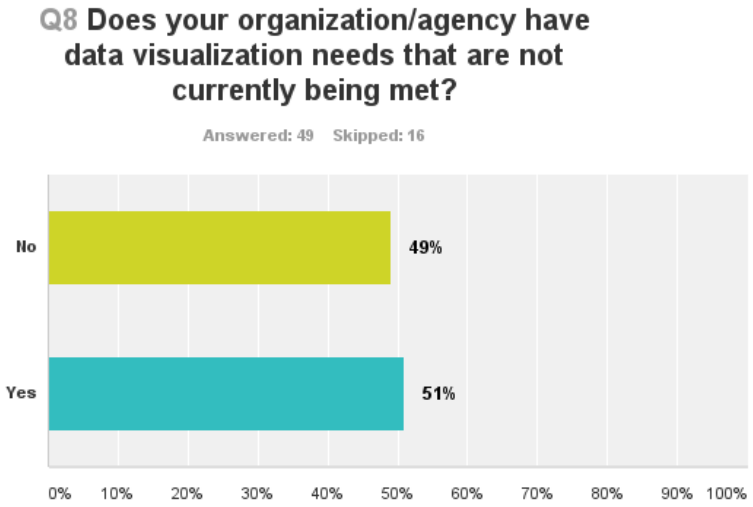
Q6 Open Responses

- Mostly on an administrative or program level
- For analyses of travel patterns and curbside uses, and for maps for the public to convey information
- Building footprints & addresses imported into OpenStreetMap
- Regularly use OCTO Mar Geocoder for geocoding vital records and ArcGIS platform for data analysis and research.
- Base data for projects with City agencies.



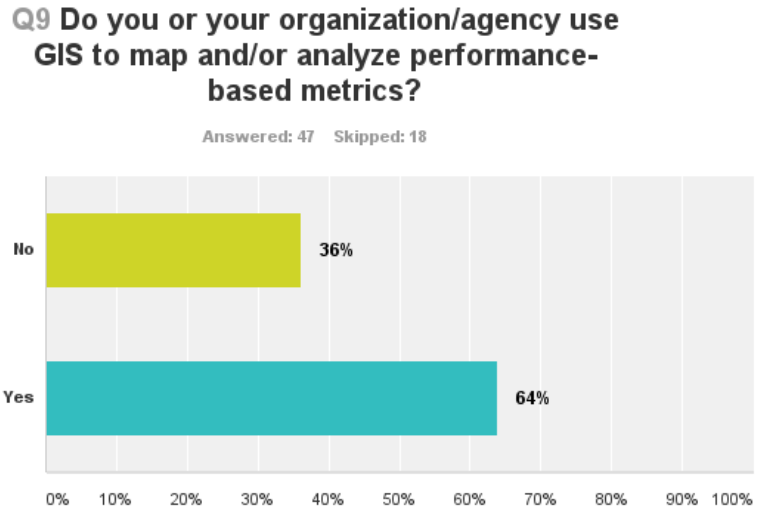
Q7 Open Responses

- We are working on an inventory of data that we have, then trying to figure out where more data is needed. Biggest need right now is to get more centralized access to data the agency collects.
- This question should include an explanation and example of "data reporting".
- Trying to get as much local government data in structured feeds to power mapping and data visualizations used by policymakers.
- Right now, our use of GIS is contingent upon individual staff having knowledge of GIS and being able to use it to complete their responsibilities.
- Reporting needs are being met, but require laborious workarounds due to a poorly configured database.
- I would like to understand the frequency at which our publicly facing data is consumed: how often are our street trees downloaded or linked to, etc.



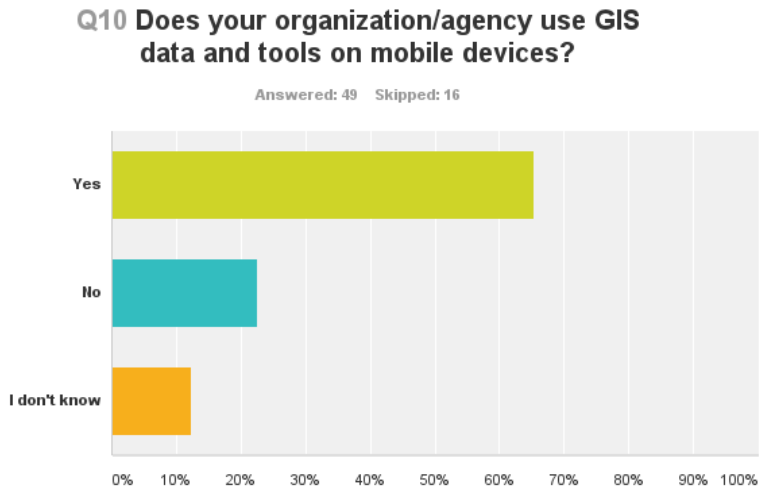
Q8 Open Responses

- Would like to use more of a storyboard approach to showing spatial data
- OCFO/OTR/RPTA needs Pictometry image updates. Unfortunately the DC GIS stakeholders requests to continue the Pictometry image capture contract was ignored by the decision makers.
- Interested in developing interactive maps
- Our current data visualization is stale and has remained unchanged for the last several years
- I think we would like to up our game in terms of maps that tell a story in an immediately understandable and aesthetically pleasing way.
- Well, I'm working on them ;) Seriously, we need ESRI to deliver the 3D streaming content we need, and we need OCTO to stand up a portal for it.
- I feel it is important for the government to provide access to data in machine readable formats, data visualization can be provided by the government; however that might be best left to private industry and civic communities.



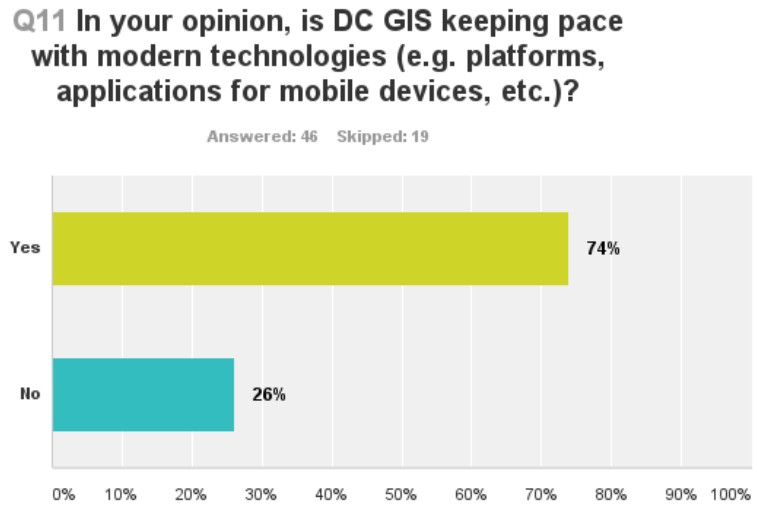
Q9 Open Responses

- Responsiveness and status of 311-related service requests.
- We just began using ArcGIS collector to verify meter locations for performance-based contract
- Crime, Arrests, Calls for Service, and other relevant metrics (x2)
- We are mapping bag law data, watershed locations, fire hydrant usage, pervious and impervious pavement, home owner polygons, many many more
- Right now we map our activity periodically (like at the end of the fiscal year) to do analysis metrics but we want to make that process more frequent to make data-driven decisions on a more regular basis (e.g. all the time!).
- We do it all the time to visualize availability of healthy food, walk time, our own caseloads, etc.



Q10 Open Responses

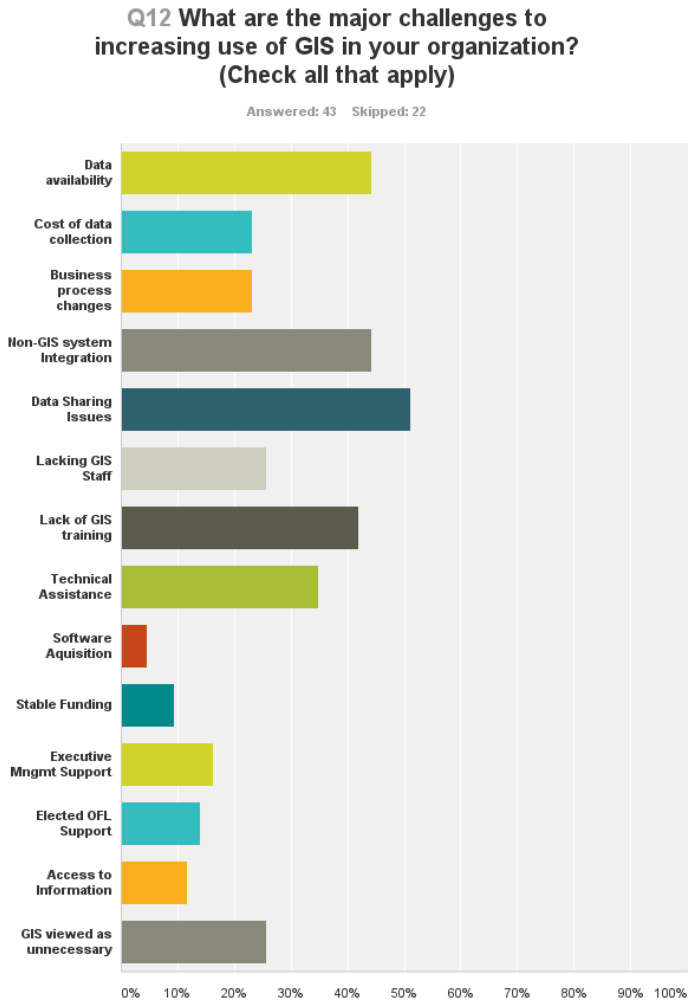
- ArcGIS Collector app for signs and other curbside data
- my bureau was working on a mobile application but we haven't discussed using GIS tools
- We want to! We just ordered ipads and will be using them imminently
- Mostly phone-based access to web-based content. Not currently collecting data via mobile devices, but that could change.



Q11 Open Responses

- We actually have more organization/culture issues than technical ones. We are still stuck with a centralized mindset. Responsibility for content and its maintenance is inevitably decentralized, but our platform hardly reflects that. I also don't see much attention outside of the ESRI realm, and I think we need to include true Open Source content a bit more.

- DCGIS is keeping pace but as an agency we aren't. We don't have agency-level capacity for GIS development.

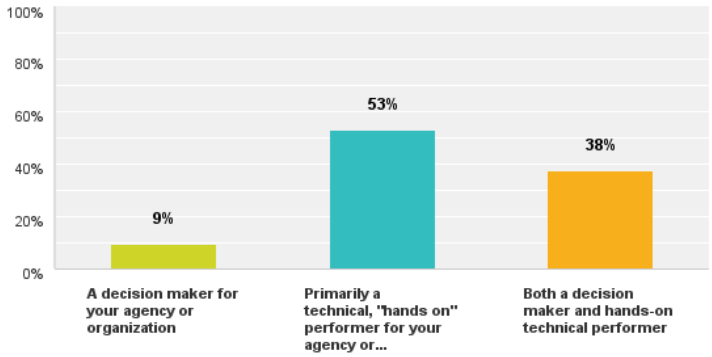


Q12 Open Responses

- The OCTO ArcServers keep going down at a much too frequent rate, greatly impacting use of GIS based technology and websites.
- Poor interdepartmental coordination and collaboration
- It's not a high priority. It's costly. People don't know the benefits.
- stability of system, performance of system

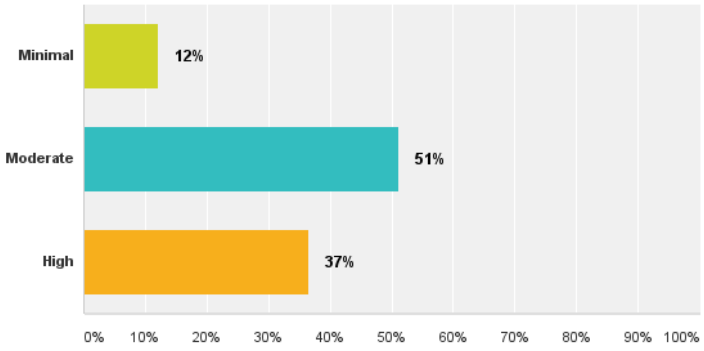
Q13 Do you consider yourself to be:

Answered: 53 Skipped: 12



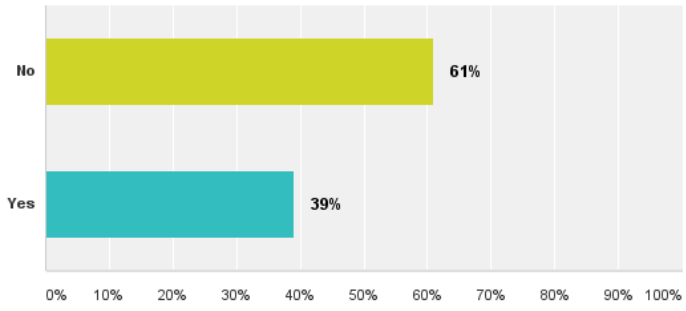
Q14 How would rate your level of hands-on technical skill with geospatial/GIS technology?

Answered: 41 Skipped: 24



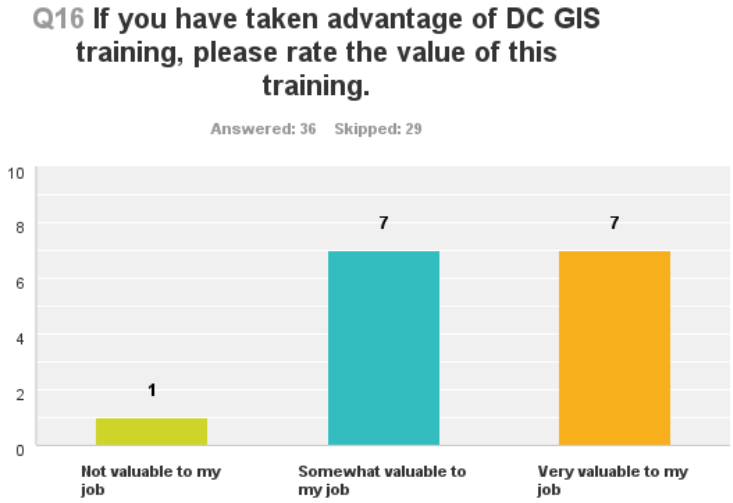
Q15 Have you participated in any DC GIS training?

Answered: 41 Skipped: 24



Q15 Open Responses

- Online learning prevalent, Esri resource heavy

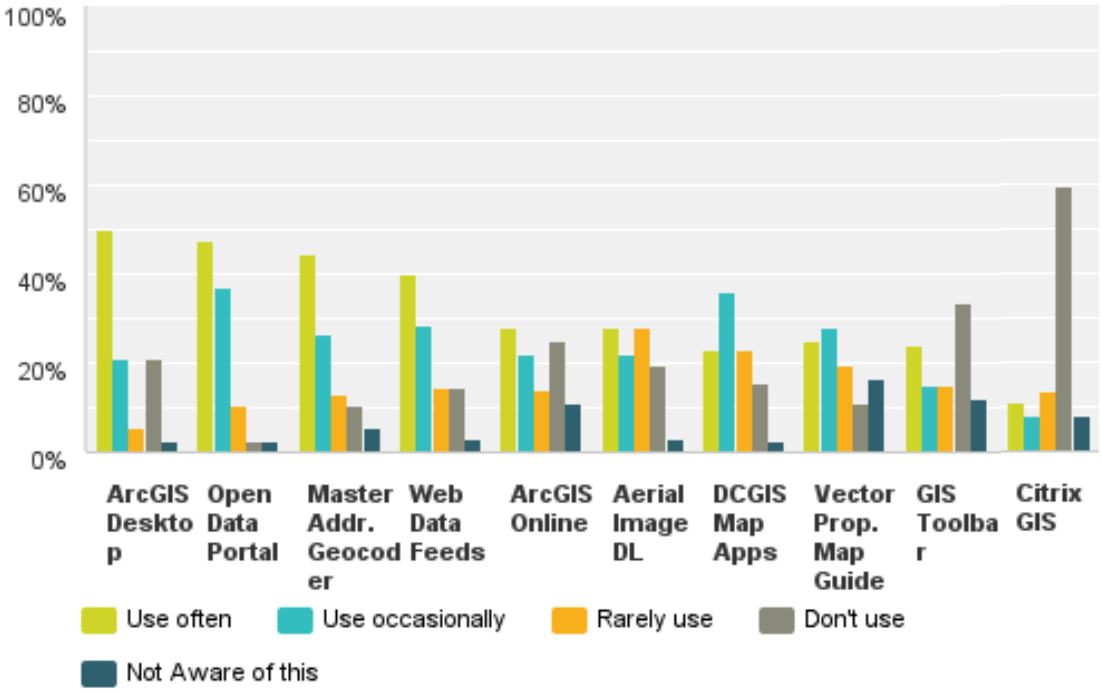


Q17. Please suggest any other knowledge-sharing or training opportunities you think would be beneficial for you and your organization.

- Data visualization
- ArcGIS Online
- More advanced tools/techniques, such as spatial analysis
- There are lots of great ways to learn about Geo in DC. GeoDC meetup, maptime, etc.
- Geospatial analysis, periodic GIS applications/tools updates
- More trainings located at the agencies. Also, more trainings for experienced users of GIS about topics like Spatial Analyst, Python, Model Builder, web map development etc.
- I've talked for years about a back-channel communications venue for GIS developers for DCG.

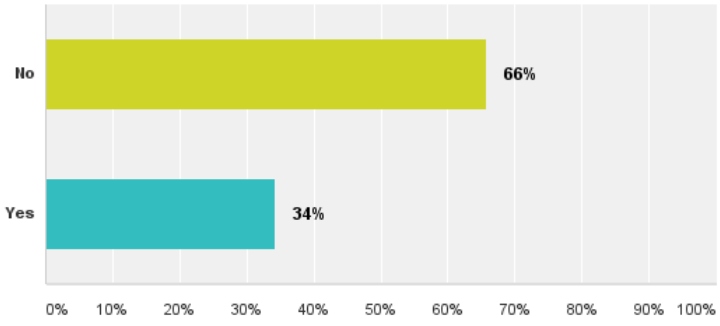
Q18 Which DC GIS Geospatial tools do you use regularly?

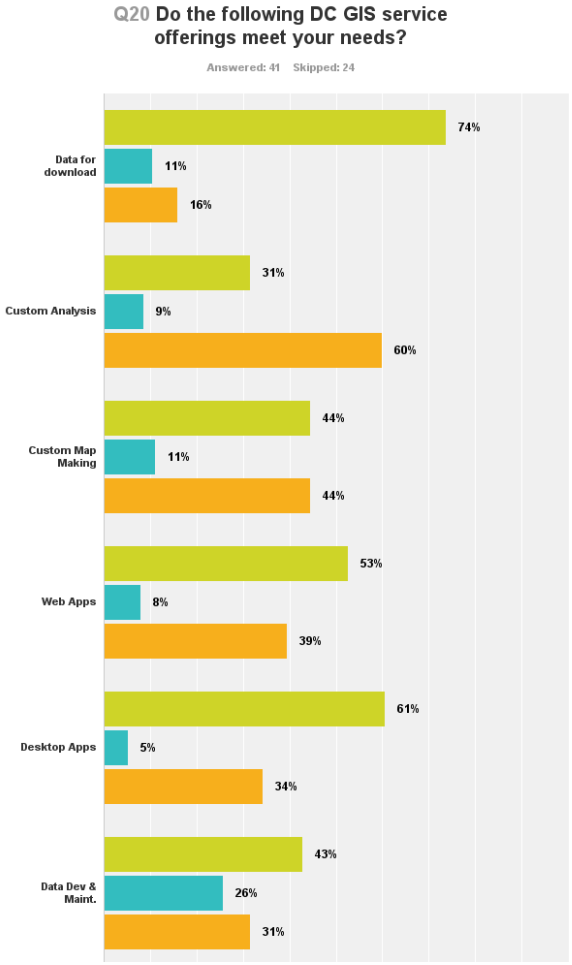
Answered: 40 Skipped: 25

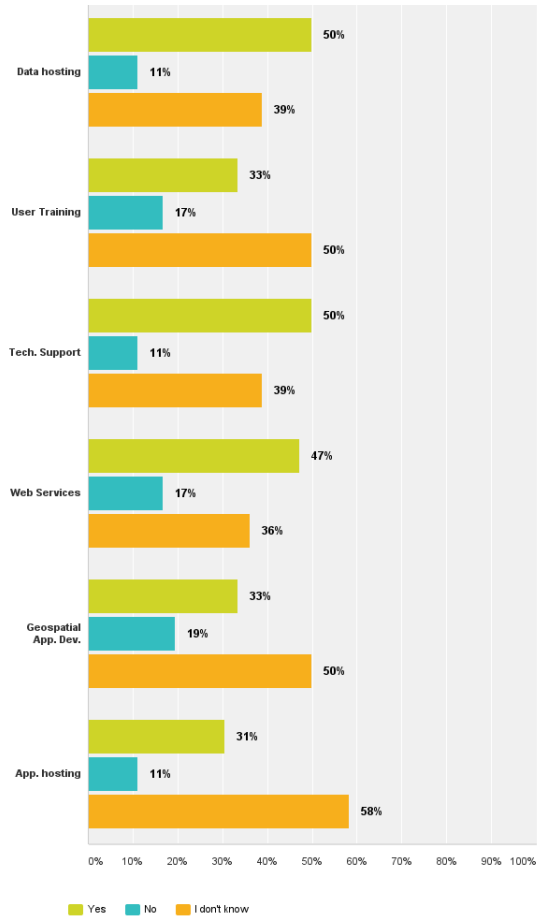


Q19 Have you ever built an application that uses DC GIS's web services?

Answered: 41 Skipped: 24







Q20 Open Responses

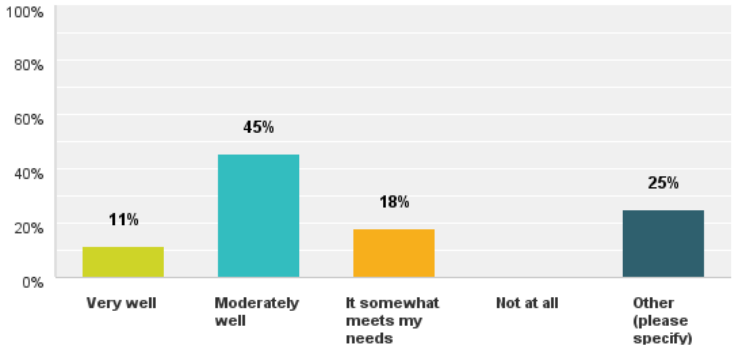
- I have seen some scope confusion of late. The Office of Planning has always provided maps-on-demand to the public and sister agencies, and analytical services to sister agencies. Our understanding was that OCTO was providing data services, data purchasing, and limited application development services. It's a little confusing to see parallel mapping and analytical efforts. FWIW, we are set up to track our mapping efforts systematically (unlike OCTO.) We love love local desktop installs for us, and have no use for Citrix. OCTO has hosted apps and services for us, which we appreciate, but service reliability has been somewhat variable.
- There are fancy words there! I'm totally uncertain about everything I just read, but I'm excited at the possibility of their existence and my proximity to them! 💻
- Web services are currently spotty and frustratingly unavailable at odd times
- The instability and performance issues of late are holding back our organization, which accounts for my "no" answers above

Q21. What GIS-related technical challenges have you encountered?

- Just remembering how to run analyses when I don't use GIS all that frequently. Also, sometimes not sure what data source is the most up-to-date.
- The servers/web services have been going down with increasing frequency, impacting both internal and external users on an almost daily basis.
- Some of the data is out of date
- Occasionally, I experience challenges connecting to the web services using ArcGIS desktop. It seems to be a machine-specific problem. Generally, I'll download the data from the SDE.
- Integrating GIS into Quickbase (heavily used within the agency)
- Inconsistency of and latency of datasets
- Unreliable ArcGIS Server services; inconsistent handling of migration between OCTO data servers; inadequate metadata and attribution; no portal in place for streaming of 3d scene services; the usual ESRI gripes about software quality...
- Integrating GIS into Quickbase (heavily used within the agency)
- Compatibility with Quickbase applications

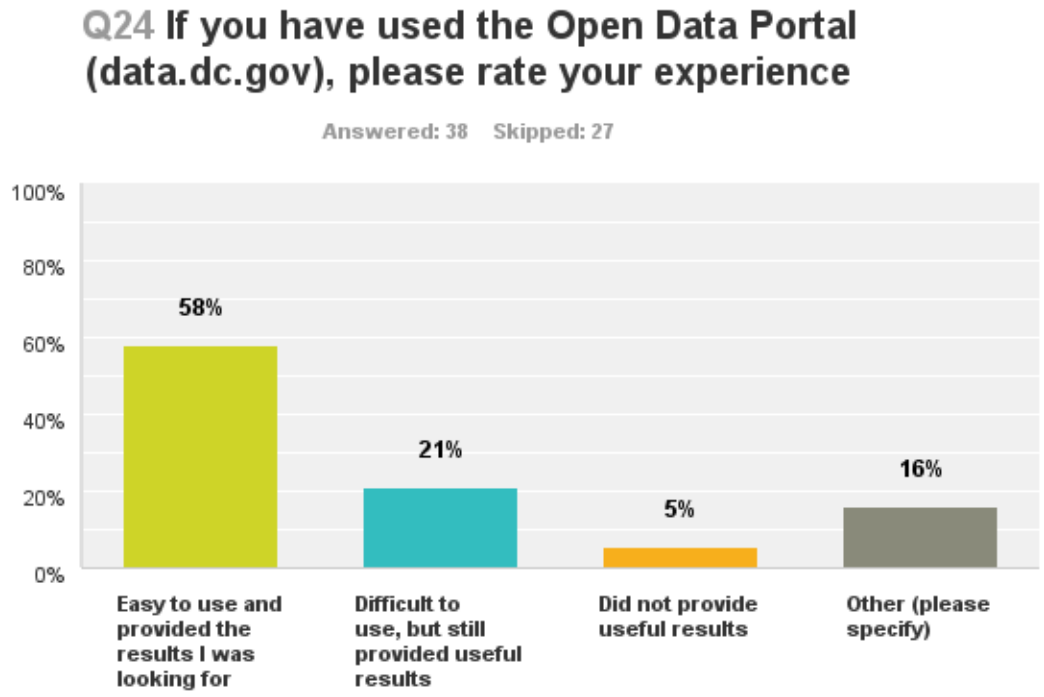
Q22 DC GIS maintains both an external website and an internal website for staff. Overall, how well does the site you use meet your needs?

Answered: 44 Skipped: 21



Q23. When visiting our website(s), what do you find most useful?

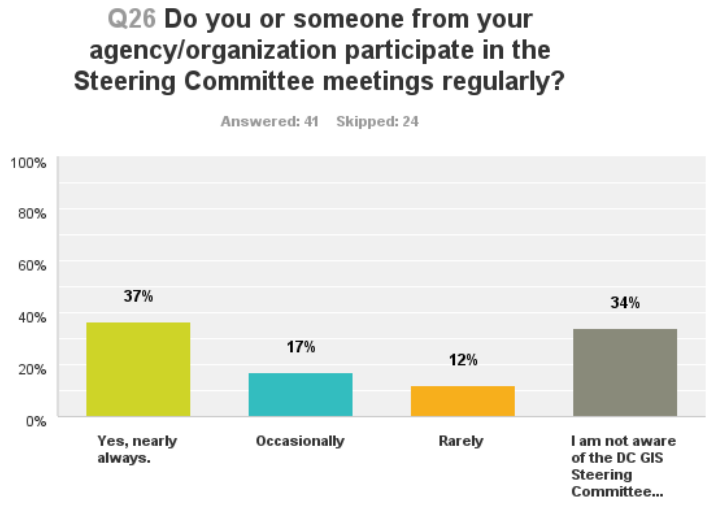
- The Open data Portal repeatedly
- Software downloads (core and add-ins) How To guides
- I usually just Google "OCTO" and the search parameter I'm looking for. If I have a specific question, I just email folks I know over there.
- Links and access to data and web services.

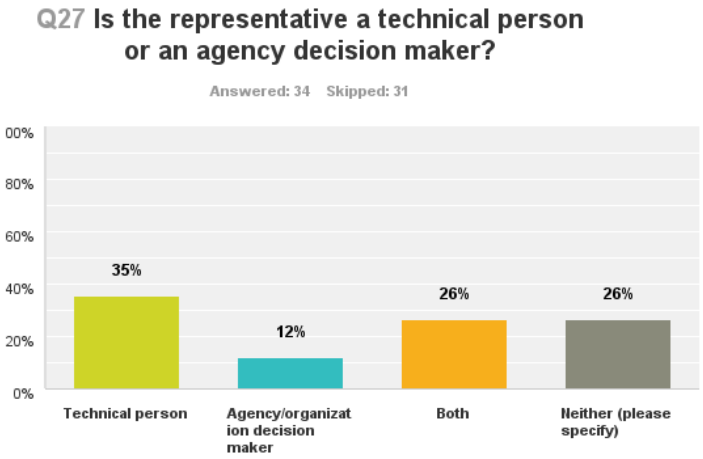


- Other responses are primarily that users haven't been/don't need/use the Open data portal

Q 25. Please list any ideas for improvements to the DC GIS Websites

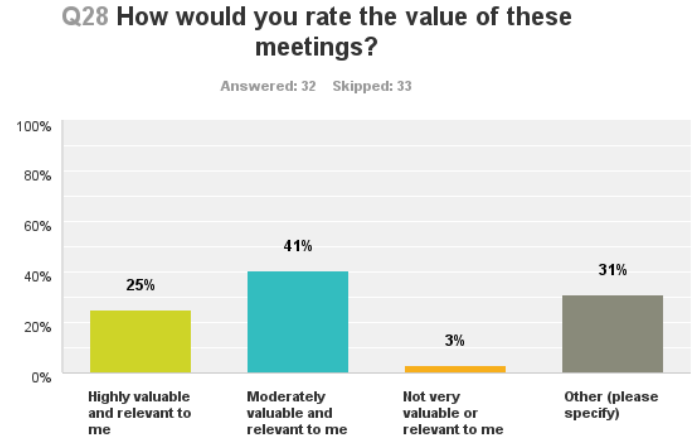
- Mired with glitches with little support for different browsers; minimalist design does not make it user-friendly
- Figure out way that DCAtlas can produce a dataset that can be exported to Excel of records identified by the "buffer" tool from (hopefully current) CFO property owner records and at least display date of last update each time
- Web services need to be more stable.
- More up to date data, have the bigger datasets in one file
- keep adding data, keep enhancing ability to pull data through APIs
- Actively solicit new data from the agencies on a regular basis. I'm sure that we have data that could be on the Open Data Portal but isn't.
- Bring back a traditional data catalog. Publish real metadata -- and distinguish date of publication (by OCTO) from date of publication (by source agency) from date of last update (by agency) and date of the ground condition represented in the dataset. Clarify that OCTO GIS is not the same as DC GIS, and try to build ownership in and recognition of that broader group.





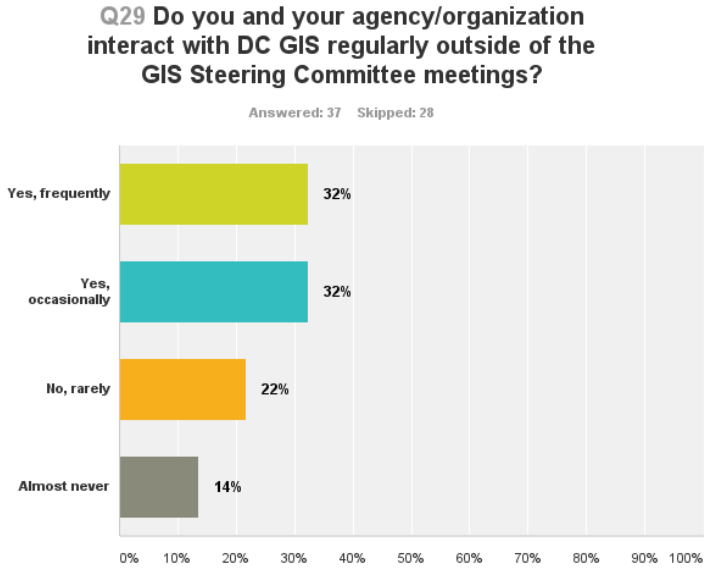
Q27 Open Responses

- Many of the "Neither" respondents were not sure how to answer.



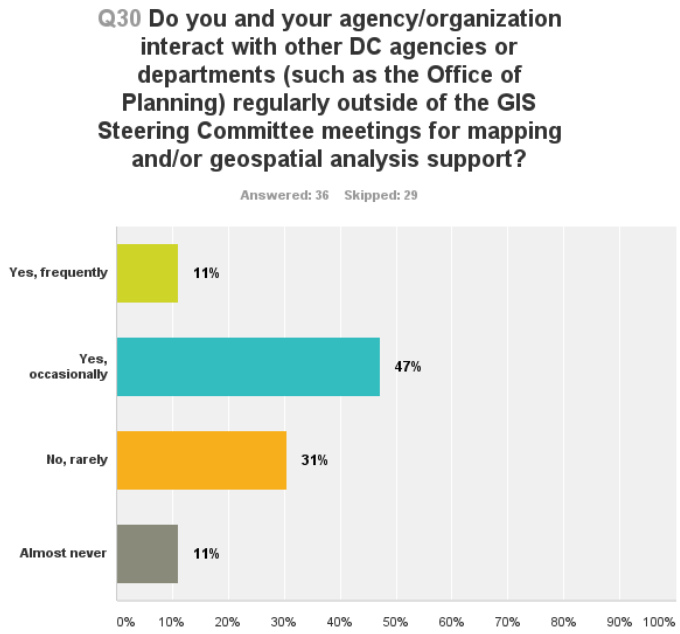
Q28 Open Responses

- Most of the “Other” Respondents haven’t attended
- I value them highly, but they are typically 1-way (with OCTO telling everyone else what has been happening.) That's a tiny part of the story -- we need for this to be an enterprise we collaborate in, not simply the OCTO GIS User Group.



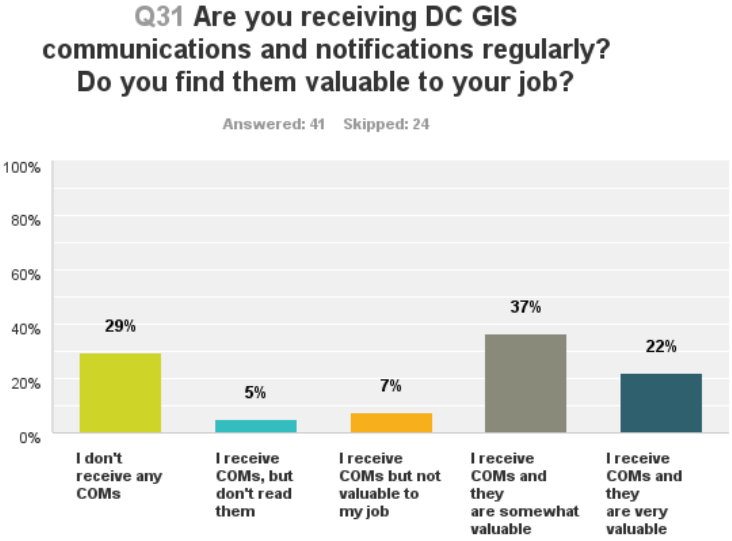
Q29 Open Responses

- Smart, good people doing lots of stuff. It is still frustrating to me, after years of outspoken advocacy on the GISSC, to find out about important technical decisions in passing or after the fact.
- we have worked with staff to provide on-site training and staff from our bureau regularly reach out for technical assistance



Q30 Open Responses

- Planning department active in providing geospatial data
- we got a nice crosswalk file from the planning department. the partner organization we are helping has gotten some health data and education data too.

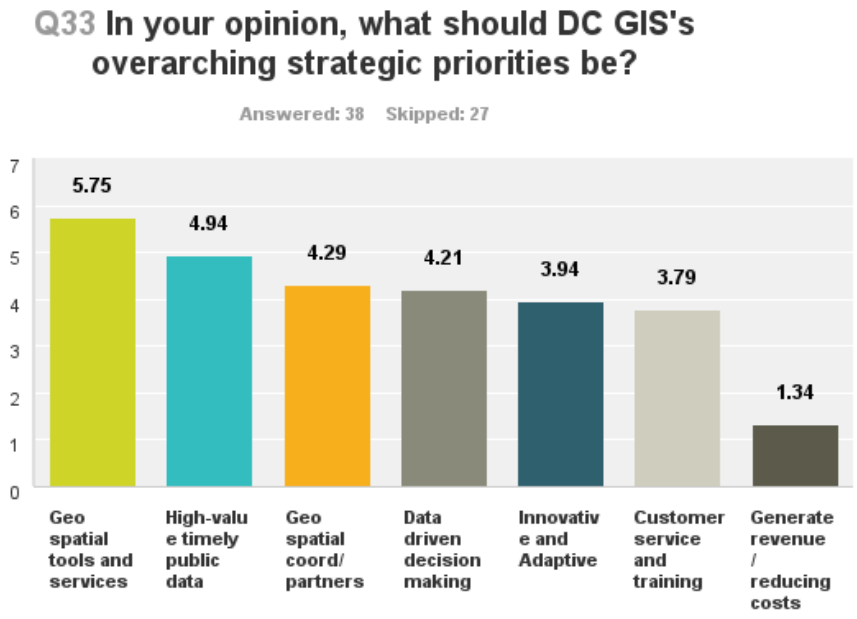


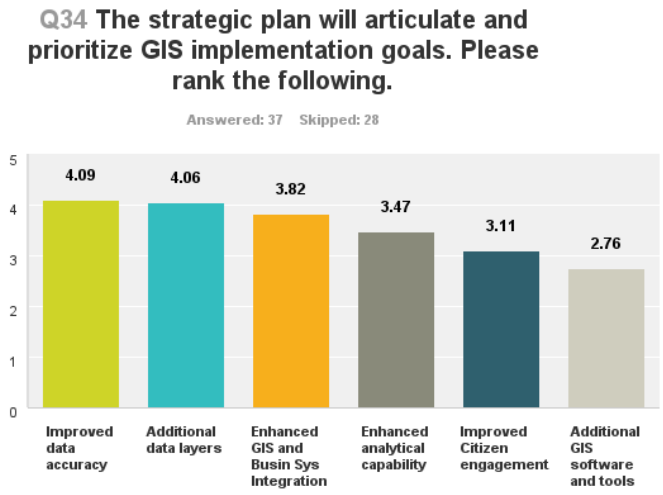
Q31 Open Responses

- I would like to receive them - I didn't know there were any - add my name to list mary.searing@dc.gov

Q 32. Please share your ideas for improving the DC GIS Steering Committee meetings and/or notifications.

- We need to focus more on results. Have deliverables/updates to keep agency data owners honest.
- I know of no place where there is a "bucket list" of old issues -- such as the absent Certificate of Occupancy issue. Such a list could help give focus, or allow some topics to be killed off by discussion, not starvation/inattention.
- Solicit input from the steering committee about future data collection (aerial imagery etc.), because sometimes there are ways that the data can be more useful to us if collected or organized in a certain way.
- Adopt a webinar approach to implementing DC GIS Steering Committee meetings due to challenges faced by some members in getting to the new DC OCTO site.
- Blast each agency's IT head to have them trickle down the message. I don't think very many people know that the meetings exist or what the point of them are.
- I've said this before -- the primary need for DCGIS is to resurrect a level of interest among the agencies that faded after OCTO got the mechanics of most things in hand. We can use that platform as a bully pulpit and "persuade" sister agencies to step up as needed. We might also be able to help the OCTO GIS program in the inevitable intra-agency tussles they'll have for resources.





Q 35. What products or applications have you seen elsewhere (external to DC GIS) that you'd like to see evaluated and considered by DC GIS?

- Mapillary (open source street view capturing)
- We use Open Street Map and Mapbox for most of our GIS work. We also do a fair amount of iOS and Android dev using maps
- ArcGIS GeoEvent Extension for Server
- Market Segmentation/Tapestry Data
- Photo-Mesh elastic MAP-R PIXELATE AIRSAGE Interior mapping - RF Spot, GEOMETRI
- Tableau

Q 36. What are the top 3 things you'd like to see advance with DC's GIS in the next 5 years?

#1.	#2.	#3.
Cross-agency collaboration/integration	Faster web services	Better documented/more available data
Engagement of local DC businesses involved in GIS		
The elements in 34 and 35 need to have "security" added		
Continued integration with new technology	Support for data-driven decision making	Broader knowledge among users of all the analysis tools

More and better data and a continuation of the data that is already maintained.	Increased coordination and cooperation between DC Gov. Agencies to gather and expand the data catalog.	Coordination with non-governmental organizations like Pepco and WMATA to get their sharable data or to partner with them to build data sets.
Web service/Server stability.	Web service/Server stability.	Web service/Server stability.
More public engagement	up to date datasets	Continuing to do what you do! It's great
Mobile	Mobile	Mobile
Training	Upgrades	Better visualization
Consistent commitment to open data availability	forums and user groups to get a sense of how people are using data	continue to be national leader as state/district/city-state able to do more than others
Enhance Analytical Capabilities within all agencies	Improve Performance of the Services	Implement Local Gov Apps and Maps
Agency specific trainings/updates on new GIS applications/tools		
More real time DC data		
Building agency-level capacity for developing and using GIS within business processes	Increased training that develops a base level of GIS competency for inexperienced users and provides valuable continuing education for experienced users	Catalog and disseminate data currently housed at the agency level but could be valuable for other DCGIS users
Integration	More Developer Tools	Manuals
Keep DC OCTO ArcGIS updated in conjunction with ESRI updates.	Encourage use of GIS to support evidence-based decision making.	Encourage Department Heads understanding and use of GIS for everyday decision making.
Interdepartmental aggregation	improved accuracy	custom applications
Improved data accuracy	Availability of data in near real time	More trainings offered
Not have it just be DC's GIS, but have it be each agency's GIS so that it is closer to "home" for the staff who need to use it.	Lead spread of GIS out into agencies by having dedicated GIS staff in each agency	Coordination with other jurisdictions (MD, VA, PG County) where political boundaries and technical data boundaries intersect

Partner with organizations that are teaching skills to incorporate open data into an academic curriculum	Fund an incubator or host regular hackathons that raise visibility and awareness while encouraging the public interaction with data	Establish a vision for open data and get the city to put money behind putting it to good use.
I want a GIS / Data Management Department within each agency	I want a GIS technician to be assigned to Department Divisions (much like how IT doles out their workload)	GIS integration into each agency's major goals. GIS needs to be a way of life, not a fancy toy for one project. We have public information officers who blast out tweets. We need to have GIS become the norm to planning and decision making much like social media is to garnering awareness to a cause.
Organizational change: renewed participation by source agencies in meaningful ways, including responsibility for the "real" versions datasets shared with everyone (and making sure they are actually shares with everyone.)	Organizational change: renewed emphasis by the Mayor on getting past parochial Agency interests to do what's most efficient for everyone. (No more "Our agency doesn't care about that data field, so we don't collect it when doing the other 90+% of the work.)	Organizational change: moving GIS from a separate (generally external) activity to the routine manifestation of ordinary Agency business processes
More Data - specifically from other agency partners	Access to real-time sensor data	Accuracy - spatial, attributes and accurate/useful METADATA!
API access to all data	Data latency	Citizen feedback for data updating
performance of platform	data acquisition (lidar, imagery on regular basis)	training
Real-time data updates	Full historic data access	Public collaboration around data driven government
more 3D data and services	increased amount of mobile apps	streamline workflows in departments by moving to digital data collection

Q 37. Please provide any additional relevant comments or information.

Response Text

Discuss and start to resolve the tension between open data and security.
Open data and working with the public and letting people know what's available is key and valuable. If DCGIS keeps doing that, and doing more outreach and keeping the data up to date, it will keep being one of the best GIS offices in the nation.
Please meet with each agency and offer an overview of what you can provide and what the steps are for agencies to be more involved with DC GIS's projects.
I'd like opportunity to review the draft plan.
I'd like to see a strategy on how local entrepreneurs and businesses can be considered as partners. I'd like to see dollars set aside to try to incubate ideas built on open data that demonstrate its value to inform policies and improve communities. While other cities such as Boston, New York, and Philly have organized organizations to strategically plan for civic engagement and innovation, DC has no such organization, does not partner with organizations seeking to establish this for the district, and lacks a vision and articulation of this as a priority.
I know how important GIS is, but I don't know how to use it. You have to show people (decision makers, heads of agencies) why GIS is important, why they should care about it, and how it will make their lives easier. You have to show people why they should put money into it. Do that, and you'll have job security for the rest of your working day.
Look forward to our conversation!
I believe it is less about the applications and more about the data. Governments should provide access to all of the data they collect and create in the most transparent way possible.
I love OCTO
It's great when DC GIS team attend local hackathons/civic brigades etc. to be available for questions on data availability, appropriate analysis and engage on collaborations.
Please stay consistent with the data collection efforts, i.e. Lidar, 3D building data, Imagery and planimetrics.

7.6 Document History

Version #	Date	Description	Responsible Party
First Draft	11/30/15	DC GIS Strategic Plan V1	AppGeo
Second Draft	1/28/16	DC GIS Strategic Plan V2	AppGeo
Final	3/31/16	DC GIS Strategic Plan Final	AppGeo

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