District of Columbia
Geographic Information System
Steering Committee
June 21, 2011

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Introductions & Quorum
Minutes from last meeting
News and Notes

- Base map services updated
- Base map services reliability
- Redistricting
- NCR Geospatial Data Exchange (Web Page)
- Earthmine – Jose
- Merger of Citywide Data Warehouse
Citywide Data Warehouse

Agency Data

- MPD
- DDOT
- OUC
- DOH
- FEMS
- DCRA
- OTR
- OCTO
- OUCDDOT
- OTR
- OCTO
- DOH
- OUC
- MPD
- DDOT

Mission

Provide a centralized access point for enterprise-wide data with a focus on providing data that enables decision support and government transparency.
Mission Comparison

**DC GIS**
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 reaches 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.

**CDW**
To provide a **centralized access point for enterprise wide data** with a focus on providing data that **enables decision support and government transparency**.
Transparency How we started

1. Requests for information (Freedom of Information Act FOIA)
2. Published reports
3. Web pages and PDFs
1. Requests for information
2. Published reports
3. Web pages and PDFs

4. Single Dataset in a single format
   – Service request data (pot holes, trash pick up)
   – Really Simple Syndication (RSS)

5. Crime Data quickly followed
   – Type of crime
   – Generalized location of the crime
Democratize data through Catalogs

Simplify access so users can map data with a single click
Citywide Data Warehouse

More than

Government Transparency
CDW: Services

1. Take part in **Government Transparency**
2. Gather requirements and build **Dashboards**
3. Gather requirements and create **Reports**
4. Provide data **extracts** and analysis
5. Create custom **BI applications** and **ad hoc reporting environments**
6. View your data in GIS tools
7. Save money by eliminating manual updates and maintaining multiple instances of the same data.
8. Save money by eliminating some FOIA requests.
9. Utilize **common geocoding** and other standards across the enterprise.
10. Gain access to the same up-to-date data across all operational channels—city executives, line managers, and agency workers in the field—ensuring reporting consistency.
Reports and BI Applications

• Automated reports via email:
  – CapStat Daily Management Report
  – Your operational data automatically sent or updated Daily, Weekly, Monthly

• Access pre-defined custom reports or create ad hoc reports on the fly.
Dashboards: TrackDC
City View Dashboard

Agency Updates
February 6, 2009
Drug Free Zone, First District/ PSA 103
This Drug Free Zone shall be enforced beginning at 12:00 am on Friday, February 6, 2009, and concluding at 11:59 pm on Sunday, February 15, 2009.

February 2, 2009
Fatal Shooting on Tubman Road, SE: Case Closed
The case was closed on the scene with the arrest of 43-year-old Mozella Denise Jones, of the Tubman Road address. She has been charged with Murder II While Armed.

3 hours ago: DC Police, National Guard to Step Up Inauguration Security Detail
Jan 6, 2009: Lanier Subpoena Power Assailed

MPD
- Gross OT: 22%
- Local OT: 34%
- Personnel: 6% vacant

Gross NPS: $3.25 M available

Burn Rate
- 2% OT
- 20% CM
- 49% CM

Requisition Cycle Time
- X: <45 d
- Y: <150 d
- Z: =150 d

KPI Measures As of Oct 08
- 2
- 2
- 8

Monthly Operational Cost

Customer Service

Trends & Forecast

Action Items

Operations

KPIs
CDW Links

Data Catalog: Public access to city operational data through the Internet
http://data.octo.dc.gov/
District’s Apps for Democracy contest challenged residents to develop consumer-based applications. http://www.appsfordemocracy.org/
  - Apps for Democracy Press conference
Digital Public Square puts the citizen in the driver’s seat to discover how District agencies work, participate in the democratic process and connect with the government. http://dps.dc.gov/
CapStat Mapping Application was designed to allow citizens easy access to Government data and provide a tool for quick mapping by location and time. http://capstat.oca.dc.gov/mapping/
Summary Reports provides public access to city operational data in prepared reports. http://reports.citydw.octo.dc.gov/
Next Update

- Boundary Stone
- Fire Station
- IT Servus Area
- Landmark
- Library
- Notary Public
- Office of Aging Lead Agency
- Police Station
- Polling Place
- Street Centerline
- Street Segment
- Street Tree
- Street Light
- Tap It Water Site
- Ward
DC GIS

Arc2Earth Data Conversion Services

Mario Field DC GIS and
Tim Abdella NLT & JMT

DCAM-2010-D-0053-C01

June 20, 2011
Arc2Earth KMZ Data Enhancements

- Provide the District and its customers a more complete and enjoyable user experience.
- Provide attractive, consistent, high-performance data in KMZ format.
- Automated data refreshes
- For use in Google Earth and Esri ArcGIS Explorer.
What are KML and KMZ?

- **KML** stands for Keyhole Markup Language and is a variant of simple XML.

- **KMZ** is the compressed archive version of KML. It contains at least one KML file but can also contain many other ancillary files like images or HTML. KMZ files make KML smaller in size and more portable.

- **A KML Network Link** enables someone to tap into information in another file somewhere either on your local machine or on a computer somewhere else on the Internet.
What is Arc2Earth?

• The premier KML Conversion Tool for ArcGIS
  – The most comprehensive KML exporter for ArcMap. Convert data directly from ArcGIS using advanced KML tags like Regions and Time Stamps.
    • Converts ArcGIS symbology
    • KML Regions
    • KML Time Stamps
    • KML 3D Models
    • Info Window Creator

An ArcMap extension
Arc2Earth Toolbars

• **Arc2Earth**
  - Import, export, and sync with Google Earth

• **Map tile layer**
  - View commodity

• **Google Maps**
  - View in ArcMap

• **Data Services**
  - Use Google data
Arc2Earth Exporter

• Convert layers to KML / KMZ
  – All settings stored as .a2e configuration file
  – Full control over KML tags
  – Consistent look and feel between Google Earth and ArcMap
The Architecture
What is kmzGT?

• Tool developed to simplify management, production and KMZ data refresh
  – Windows desktop tool, uses ArcObjects and requires an Esri ArcView license
  – Designed to utilize existing DC GIS Layerfiles and directory structure
  – Called by windows scheduler to run as automated process
  – Fully documented

Deep dive by Chris Saylor
# kmzGT – Control Panel

![Control Panel Screenshot]

<table>
<thead>
<tr>
<th>Configuration Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Update Table Server</td>
<td>10.1.11.144</td>
</tr>
<tr>
<td>Update Table Service/Instance</td>
<td>5151</td>
</tr>
<tr>
<td>Update Table Database</td>
<td></td>
</tr>
<tr>
<td>Update Table Username</td>
<td>dcgis_user</td>
</tr>
<tr>
<td>Update Table Password</td>
<td>dcdgisuser</td>
</tr>
<tr>
<td>Update Table Version</td>
<td>sde.DEFAULT</td>
</tr>
<tr>
<td>Update Table Name</td>
<td>DLADMN.VW_RECENT_UPDATES_LAST7</td>
</tr>
<tr>
<td>Update Table Feature Class Name Field</td>
<td>FEATURE</td>
</tr>
<tr>
<td>Root A2E Configuration File Directory</td>
<td>E:\DCKMZr</td>
</tr>
<tr>
<td>Web Server Directory</td>
<td>E:\DCKMZr</td>
</tr>
<tr>
<td>Temporary/Local Export Directory</td>
<td>C:\Arc2EarthTemp.Storage</td>
</tr>
<tr>
<td>A2EEExporter.exe File Path</td>
<td>C:\Program Files (x86)\Arc2Earth LLC\Arc2Earth\A2EEExporter.exe</td>
</tr>
<tr>
<td>Network Link Directory</td>
<td>C:\testnetworklink</td>
</tr>
<tr>
<td>Export Log Directory</td>
<td>C:\testexportlog</td>
</tr>
</tbody>
</table>
kmzGT – Manual KMZ Export
kmzGT - Create KML Network Links
kmzGT – KMZ Directory Creation

[Image of the kmzGT v 1.34 - Control Panel, showing options for selecting root folders and directories, and a note that this will not overwrite existing data, only look for new layer additions.]
kmzGT – Change MXD path
kmzGT – Export Settings
kmzGT – Export Settings
Deliverables

- 300 *.KMZ files
  - Organizing Directory structure to match layerfiles
  - *.a2e configuration files
  - *.mxd ArcMap seed files
  - *.txt production log files
  - *.kmz processed data and supporting files
  - *.kml network links for access

- kmzGT.exe
- LayerChangeLog file.xls
- User Guide

Let’s see it!
Meeting Conclusion

• Additional Topics
• Comments
• Questions

Thank You
DC GIS Business Plan 2011: Update Status

21 June 2011
Presentation Outline

• Goals & Success Factors
• Platforms
• Investment Strategies
• DC GIS Value & ROI
• Summary
DC GIS Goals & Success Factors: Measuring Progress
DC GIS BP Goals from 2009

The Business Plan is a follow-on action to the District of Columbia GIS Strategic Plan (January 2009), and is focused on the following programmatic goals:

• 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

“Same for 2011-2012” (although some of the success factors may be revised, or new ones added)
# Data Success Factors (SFs) from 2009

<table>
<thead>
<tr>
<th>Success Factor</th>
<th>Mapping Data</th>
</tr>
</thead>
</table>
| **Success Factor 1:** | Develop and maintain comprehensive mapping data programs. Ensure the availability and currency of core datasets on a regular planned schedule, including the following examples:  
  a. Vector Property Map (VPM)  
  b. Master Address Repository (MAR)  
  c. Photogrammetric data such as streets, building footprints, elevation, and imagery  
  d. Agency originated layers such as administrative boundaries and zoning |
| **Success Factor 2:** | Maintain and expand the one-stop shop of current, accurate, and documented DC geospatial data. Continue to implement the DC GIS Federated Geospatial Data Model (FGDM) approach; adopt clear criteria to determine whether any dataset poses an unacceptable privacy or security risk |
| **Success Factor 3:** | Adopt a standard for feature-level metadata. Require such metadata for geospatial data sets, and provide tools to create and manage it |
| **Success Factor 4:** | Add underground utilities data as feasible. Work with DDOT, WASA, and utility companies to develop and maintain this data, seeking FOIA exemption to protect critical infrastructure security concerns |
## Geospatial Applications and Web Services

| Success Factor 5: | Develop and deploy high-demand applications for internal professional and external public use cases. Offer a DC Intranet version of Google Earth that combines the richness of DC GIS data with the ease of use of Google (for DC Government use only, due to licensing constraints in the Intranet case for Google); assess application demand for citywide deployments, agency clusters, and functional areas |
| Success Factor 6: | Continue the development and deployment of Web services. Support integration of DC GIS services into departmental business processes, such as permitting and customer/citizen relationship management, as well as public needs, with accessible Web services |
| Success Factor 7: | Deploy mobile laptop applications. Provide support for DC First Responders (FRs) mobile requirements *(and make it “mobile devices,” not just laptops)* |
| Success Factor 8: | Make it easier for non-GIS users to contribute spatially-oriented data. For example, deploy a Web-based version of the MAR batch geocoder that works with Microsoft Excel and Google Docs |
| Success Factor 9: *(Split into two)* | 1) Improve business processes with the use of GIS. 2) Achieve a greater degree of uniformity and usability in DC Government’s many interfaces  
   a. Develop a standard look-and-feel  
   b. Implement the new standard as mapping websites are built going forward |

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OCTO DCGIS Business Planning 2011
# Customer Support SFs 2009

<table>
<thead>
<tr>
<th>Success Factor 10:</th>
<th>Customer Support Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Train GIS users</td>
<td>a. Add entry-level course for using Google Earth</td>
</tr>
<tr>
<td></td>
<td>b. Continue other aspects of the DC GIS Training Program</td>
</tr>
<tr>
<td></td>
<td>c. Provide “executive-friendly” training</td>
</tr>
</tbody>
</table>

| Success Factor 11: | Provide technical support (Tier II -- help desk) and consulting. | 
| Deliver Tier II help desk support. | 

| Success Factor 12: | Expand penetration of GIS to where it is not utilized; prioritize one cluster of departments per year that could benefit from the use of GIS in their business processes and mission activities | 

COMPARE TO DATA/APPLICATIONS/CUSTOMER “To Do” LISTS

AppGeo

OCTO DCGIS Business Planning 2011
DC GIS Platforms
Platform Definition

- A platform is a base technology (or technologies) on which other technologies [, services] or processes are built.
- In addition, it may be construed as a whole “economic unit” in terms of aggregating budget costs to support it, including people, training, software, systems, and data.
# DC GIS Data Platforms 2009: Still Valid with Small Refinements

## Mapping Data Platforms

| 2. Property (*VPM, MAR, Zoning, Planning, ROW, Survey*) | 9. LiDAR |
| 3. Demographics | 10. Regional Data |
| 4. Ground Imagery | 11. Dynamic Data |
| 5. Transportation | 12. Partner Data (*e.g. Federal Government*) |
| 6. Routing (*Pedestrian, Vehicular, Mass Transit*) | 13. All Other (*OCTO Maintained, Agency Contributed*) |
| 7. Aerial Oblique Imagery | 14. 3D Buildings* (*formerly grouped with photogrammetric*) |

*Promote 3D Buildings to platform status.
DC GIS Data Characteristics

- Extensive
- Versatile
- Multiple sources
- Different update cycles
- Subject to Freedom of Information
- Free availability
- Leveraged by City Data Warehouse
## DC GIS Application Platforms 2009

<table>
<thead>
<tr>
<th>Platforms Supported by DC GIS: Some + and -</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Google Map</td>
</tr>
<tr>
<td>2) Google Earth</td>
</tr>
<tr>
<td>3) Citrix</td>
</tr>
<tr>
<td>4) EFS (Pictometry Family)</td>
</tr>
<tr>
<td>5) ESRI ArcGIS Desktop</td>
</tr>
<tr>
<td>6) ESRI ArcIMS (Retired/Unsupported)</td>
</tr>
<tr>
<td>7) ESRI ArcGIS Server (and Extensions)</td>
</tr>
<tr>
<td>8) ESRI ArcPAD</td>
</tr>
<tr>
<td>9) RouteSmart</td>
</tr>
<tr>
<td>10) Oracle RDBMS</td>
</tr>
<tr>
<td>11) VM Ware (OCTO Environment)</td>
</tr>
<tr>
<td>12) DC Guide DB (Retiring)</td>
</tr>
<tr>
<td>13) DC Guide WS (Retiring)</td>
</tr>
<tr>
<td>14) DC Guide Link (Retiring)</td>
</tr>
<tr>
<td>15) Master Address Repository (MAR)</td>
</tr>
<tr>
<td>16) Open Source (e.g. DoJo/JQuery)</td>
</tr>
<tr>
<td>17) ArcGIS On-Line</td>
</tr>
<tr>
<td>18) FLEX/Flash</td>
</tr>
</tbody>
</table>
## DCGIS Web Services 2009

### (Any New Requirements?)

<table>
<thead>
<tr>
<th>Description</th>
<th>Development Method</th>
<th>Accessibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Map</td>
<td>ASP.NET Web Service</td>
<td>General Public</td>
</tr>
<tr>
<td>Category Contents</td>
<td>ASP.NET Web Service</td>
<td>General Public</td>
</tr>
<tr>
<td>Category Features</td>
<td>ASP.NET Web Service</td>
<td>General Public</td>
</tr>
<tr>
<td>Feature Details</td>
<td>ASP.NET Web Service</td>
<td>General Public</td>
</tr>
<tr>
<td>Point Area Report</td>
<td>ASP.NET Web Service</td>
<td>General Public</td>
</tr>
<tr>
<td>Political Area Report</td>
<td>ASP.NET Web Service</td>
<td>General Public</td>
</tr>
<tr>
<td>Political Area Summary</td>
<td>ASP.NET Web Service</td>
<td>General Public</td>
</tr>
<tr>
<td>Coordinate Converter</td>
<td>ASP.NET Web Service</td>
<td>General Public</td>
</tr>
<tr>
<td>MAR Location Verifier</td>
<td>ASP.NET Web Service</td>
<td>General Public</td>
</tr>
<tr>
<td>VPM Lookup</td>
<td>ASP.NET Web Service</td>
<td>2</td>
</tr>
</tbody>
</table>

*Others since 2009?*

Partial List (See Website for Full List for Data & Web)
DCGIS Customer Services 2009

• Education
• General Consulting
  – Consider capability for Process/Workflow Consulting
• Technical Services
• Outreach
  – Consider “DC GIS Camp” (internal and/or external)
• Any others since 2009?
  – e.g. DRES ID/IQ Contract
DC GIS Investment Strategies
DC GIS Investment Objectives

• Centrally coordinated investment in data, applications, and services is pursued to achieve efficiency of production
  – Cover/contribute to acquisition costs
  – Leverage economies of scale
  – Concentrate expertise and resources
  – Collect once, use many times
  – Increase supply of what’s in demand

• Centrally coordinated maintenance of data, applications, and services is pursued to: preserve investment value and integrity
  – Cover/contribute to recurring costs
  – Apply life-cycle management
### Approx. OCTO DC GIS Budget Allocation 2009

<table>
<thead>
<tr>
<th>Program Element</th>
<th>Percent of Budget Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td>?%</td>
</tr>
<tr>
<td>Applications &amp; Web Services (Dev &amp; Sys)</td>
<td>?%</td>
</tr>
<tr>
<td>Customer Services</td>
<td>?%</td>
</tr>
<tr>
<td>Other (Admin, Supplies, &amp; Dues)</td>
<td>?%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>

TO BE UPDATED
Investment Strategies 2009: Still Valid

• **Invest** (build or enhance; develop new capabilities)

• **Maintain** (provide basic support; hold steady and keep the status quo; version upgrades only; no active development of new capabilities)

• **Migrate** (move or ‘reinvent’ onto a new or different platform)

• **Sunset** (migrate toward retirement; set expectations for shutting-off spending at some point)

• **Divest** (shut-off spending and “kill;” discontinue all spending and support)
Investment Pie (For Example)
## Asset Classes

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Strategic Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Innovation</strong></td>
<td>Major innovation to achieve progress and modernization; <em>leverage the full power of GIS technology</em></td>
</tr>
<tr>
<td><strong>Informational</strong></td>
<td>Provide better information; <em>enhance utility</em></td>
</tr>
<tr>
<td><strong>Transactional</strong></td>
<td><em>Reduce cost</em> of doing business</td>
</tr>
<tr>
<td><strong>Infrastructure</strong></td>
<td>Provide shared base capability; <em>expand interoperability</em></td>
</tr>
</tbody>
</table>
DC GIS Value & ROI
DC GIS Value?

- To specific agencies within DC Government
- To other government entities in Metro DC region
- To the DC citizens
- To the public at-large
- To businesses

*Please document and share your examples! We need to give this a boost.*
Concept of “Shared Value”

• Creating shared value: “…involves creating economic value in a way that also creates value for society by addressing needs and challenges”

Return on investment (ROI)

• Largest ROI is achieved when GIS infrastructure and data are utilized as much as possible
  – For expected activities with direct benefits
  – For unanticipated uses and indirect benefits
  – Agency usage as well as public/private sector usage

IMPORTANT TO SUBSTANTIATE
DC GIS Data Distribution rationale

- **Freely distributing** data, applications, and services will achieve efficiency of distribution and maximize return on investment
  - Rational utility maximization
  - No perverse outcomes
  - Lower marginal costs *(avoid added costs of administration of delivery and billing)*
  - Satisfy demand; don’t ration by charging
  - Fuel innovation
  - Encourage transparency and integrity in government

**EMPHASIZE THIS!**
General Business Planning Input

• Further develop the notion of shared value in the context of DC GIS
  – Who are the users (e.g. Google, the public, businesses, government)?
  – What is it used for (e.g. planning, business processes, grant applications)?
  – What has enterprise-level adoption (e.g. MAR)?
  – What are the success stories (do you have any stories, where DC GIS has made a positive difference)?
Summary
General Business Planning Findings

• Further develop “where we need to go” (e.g. strategic developments)
  – What should the next generation of tools and services be?
  – What about Open Source, 3D/Immersive GIS, and Process Consulting?
• Look at a two-year budget horizon
• Reconcile/consolidate the various lists in the draft Business Plan
• Factor-in Rob Mancini Input:
  – Be the best at GIS; get the word out
  – Reinvest where we are good
  – Impact the person on the street; deliver value to citizens
  – Recognize the importance of the public’s perception
Summary

• Business Plan updating is underway
• Stakeholder input is welcome
• We have a solid baseline for updating
• Breakout meetings on Data and Application/Web Services occurred on 24-25 May and 9-10 June; follow-up on 21-22 June
Thank You!

Rich Grady
rgrady@appgeo.com