



**District of Columbia
Geographic Information System
Steering Committee
May 12, 2011**

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Introductions & Quorum



Minutes from last meeting



News and Notes



- DC GIS Central now running ArcSDE 9.3.1
- Next upgrade SD geometry
- Broadband map updated (<http://broadbandmap.dc.gov>)
- CAD map updated
- Improved MAR Batch Geocoder
- Citrix and DC GIS Tools Upgrades
 - Everyone should be on new Citrix
 - Changes to data loader
 - New base map choices
 - New Pictometry tool coming
- [ESRI License Web page and user statistics](#)
- Pictometry flight



Survey and Mapping IDIQ



- It is real and it works
- Almost \$1,000,000 awarded since January
 - Broadband mapping related projects (Applied Geographics)
 - NCR Geospatial Data Exchange (KCI-Photo Science)
 - DC GIS Business Plan (Applied Geographics)
 - Arc2Earth software and consulting (New Light Technologies)
 - DC boundary survey (A. Morton Thomas)
- Combination of competition and rational/iterative process leads has led to good projects

NCR Geospatial Data Exchange (VISION)



- Goal: Securely share dynamic geospatial web services and data:
1. collaborating across jurisdictions and disciplines to share geospatial information;
 2. moving towards live web services as a means to discover and consume geospatial data;
 3. reusing existing systems to the fullest extent practical;
 4. providing access to viewer-independent geospatial information for the NCR;
 5. create an indexing service and work processes for sharing so states, local jurisdictions, and other NCR partners will be able to submit metadata on their geospatial data and services and discover and or be notified what their neighbors have contributed;
 6. develop tools within COTS GIS packages for GIS analysts to quickly publish their trade craft to the region.

NCR Geospatial Data Exchange (VISION)



Upcoming workshops:

	Date, Time	Location
Session 1	Thursday, May 12 th 9:00 a.m. – 12:00 p.m.	Touchstone Headquarters 1920 N Street NW #600, D.C.
Session 2	Monday, May 16 th 9:00 a.m. – 12:00 p.m.	Fairfax Government Center 12000 Government Center Pkwy, Fairfax, VA
Session 3	Thursday, May 19 th 1:00 p.m. – 4:00 p.m.	Touchstone Headquarters 1920 N Street NW #600, D.C.

RSVP to Jennie_Kander@sra.com



DC GIS Summer Youth Program



- 5 high school and college age students
- 5 professional grade GPS receivers
- 6 weeks
- DC GIS Staff Provide Supervision
- WE NEED PROJECTS!
 - POINT DATA COLLECTION
 - SIMPLE GIS TASKS

DC GIS Business Plan: Current Status

- FGDC and USGS Cooperative Agreement Program (CAP) grant received for completing the business planning process that was started with DC GIS support
- Contract in place with AppGeo to update and finish the job
- Plan due July 31
- Time to get the motor running, again!



DC GIS Business Planning: Current Workplan

- 1st Business Plan Subcommittee (May 25)
- Interview of individual agencies (May 26)
- 2nd Business Plan Subcommittee (June 9)
- Update draft document and review with BPS and OCTO staff (late June 2011)
- Refine draft, present key points, and get feedback at next GISSC meeting (July 2011)
- Provide DC GIS Business Plan deliverable for GISSC and OCTO budget process (July 31, 2011)

**The best way to influence what DC GIS does
volunteer for Business Plan Subcommittee**





GIS Steering Committee Project Review



Project Status

Approved GIS Projects		
GIS Steering Committee Ranking	Project	Agency
1.0	DC GIS/OP Tools Upgrade for ArcGIS 10	OP
1.0	Complete Public Lands Mapping in VPM	OCTO
1.0	3D Building Design Workflow and Data Assessment for ArcGIS 10 & Sketch-up	OP
1.3	Automated KML Publishing	OCTO
1.3	Mobile Apps (iPhone, Droid, Blackberry)	OCTO
1.3	GIS Server Upgrades for Increased Power	OCTO
1.3	Vehicular Routing Data	OCTO
1.7	MAR Batch Geocoder Enhancements	OCTO
1.7	License Tracking and Management Application	OCTO
1.7	Ward and ANC Redistricting Related Projects	OP
1.7	Vehicular Routing Applications	OCTO/DPW
1.7	Topography Assessment and Plan	OCTO
1.7	American Community Survey Data Publication in DC GIS Central	OP
2.0	DC Boundary Survey	OCTO
2.0	Heavy Snow Plow Routes	DPW
2.0	Open 311 Web Sites / Apps	OCTO
2.0	Government Property with Agency Jurisdiction, Maintenance and Ownership	OTR/DRES
2.0	VPM Property Web Services Sample Client	OCTO
2.0	Replace ArcIMS Sites	OCTO
2.0	Pedestrian Traffic Counts	OP/DDOT
2.0	Sample Square & ROW Accuracy determine missing ROWs	DCRA/DDOT
2.0	Process review OTR images and indexing	OTR
2.3	Multimodal Data & Apps	OP/DDOT
2.3	New Existing Land Use Data	OP
2.3	Unified Model Planning	OCTO
2.3	National Hydrography Project w/ MD	DDOE



Big projects that weren't on list



- State Broadband Data Development (SBDD)
- NCR Geospatial Data Exchange
- Business Plan
- DDOE Field Data Collection



Redistricting Subcommittee
Report and Software
demonstration

Charlie Richman
Office of Planning



Data Report
Mario Field



Updated Datasets

- **Air Emission**
- **Capital Bike Share (weekly)**
- **Capital Project - 2011**
- **Block with Demographic**
- **Block Group with Demographic**
- **Business**
- **Combo**
- **Condo Lot**
- **DC Agency**
- **DC Circulator Line and Stop**
- **DHS Service Center**
- **Embassy**
- **Grocery Store**
- **Hazardous Waste**
- **Hotel**
- **Intersection**
- **Library**
- **Marina**
- **Notary Public**
- **Office of Aging Lead Agency Location**
- **Other Bus Line and Stop**
- **Pavement Marking**
- **Polling Place**
- **Post Office**



Updated Datasets

- Senior Service Network Site
- Single Member District – contact
- Solar Reflectivity
- Snow Emergency Route
- Street Centerline and Segment
- Street Light
- Street Tree
- Supermarket Tax Credit Area
- Targeted Employment Area
- Tax Increment Finance Area
- Toxic Release Inventory
- Tract with Demographic
- Traffic Cabinet
- Traffic Camera
- Traffic Pole
- Traffic Sign (query table)
- Traffic Push Button (query table)
- Traffic Signal (query table)
- Traffic Signal Arm (query table)
- Weather Feeds (temp, wind, water lev)
- Water Discharge
- Wireless Hot Spot
- Zoning (weekly)



Planimetrics

- **Building**
- **Bridge and Tunnel**
- **GeoControl Point**
- **Grate**
- **Obscure Area**
- **Railroad**
- **Road**
- **Sidewalk**
- **Stair**
- **Swimming Pool**
- **Wooded Area**
- ***Basketball and Other Recreation Court***
- ***Wheelchair Ramp***

- **Generalized Building, Road, Sidewalk, and Wooded Area**



Next Update

- **DC Boundary with 2010 Demographic Information**
- **Human Service Site**
- **Metro Bus Line**
- **Metro Bus Stop**



3D Building Pilot

Doug Goldsmith, KCI

Michael Shillenn, Photo Science



Scope/Approach

- Last phase of the 2010 Planimetric/Orthophoto Update Project
- Goal: develop & validate approach for a “targeted” update of the City’s 3-D building model using the 2010 pilot area (4 tiles)
- Using 2010 stereo imagery, develop new 3-D models in 4 tile pilot area for any buildings (>100 sq. feet) that were added and/or modified during planimetric update phase of 2008 buildings feature class
- DC GIS Steering Committee representatives visited PSI’s Bowie, MD facility to observe development process and finalize pilot approach
- 2005 Cyber City Model not updated but reviewed in pilot area
 - Building geometry & rendering appear very good
 - Many instances of conflicts with 2010 data
 - Tested building height elevations are generally close to 2010 stereo observed values
 - Some tested building’s bases were found to be irregular, (not flat) or floating, as observed on the 2010 orthophotos
 - 2008 limited model updates were not reviewed but may be useful in Citywide Model update
- Pilot Deliverables to DC included:
 - ESRI Multi-patch shape files
 - Google Earth kml file



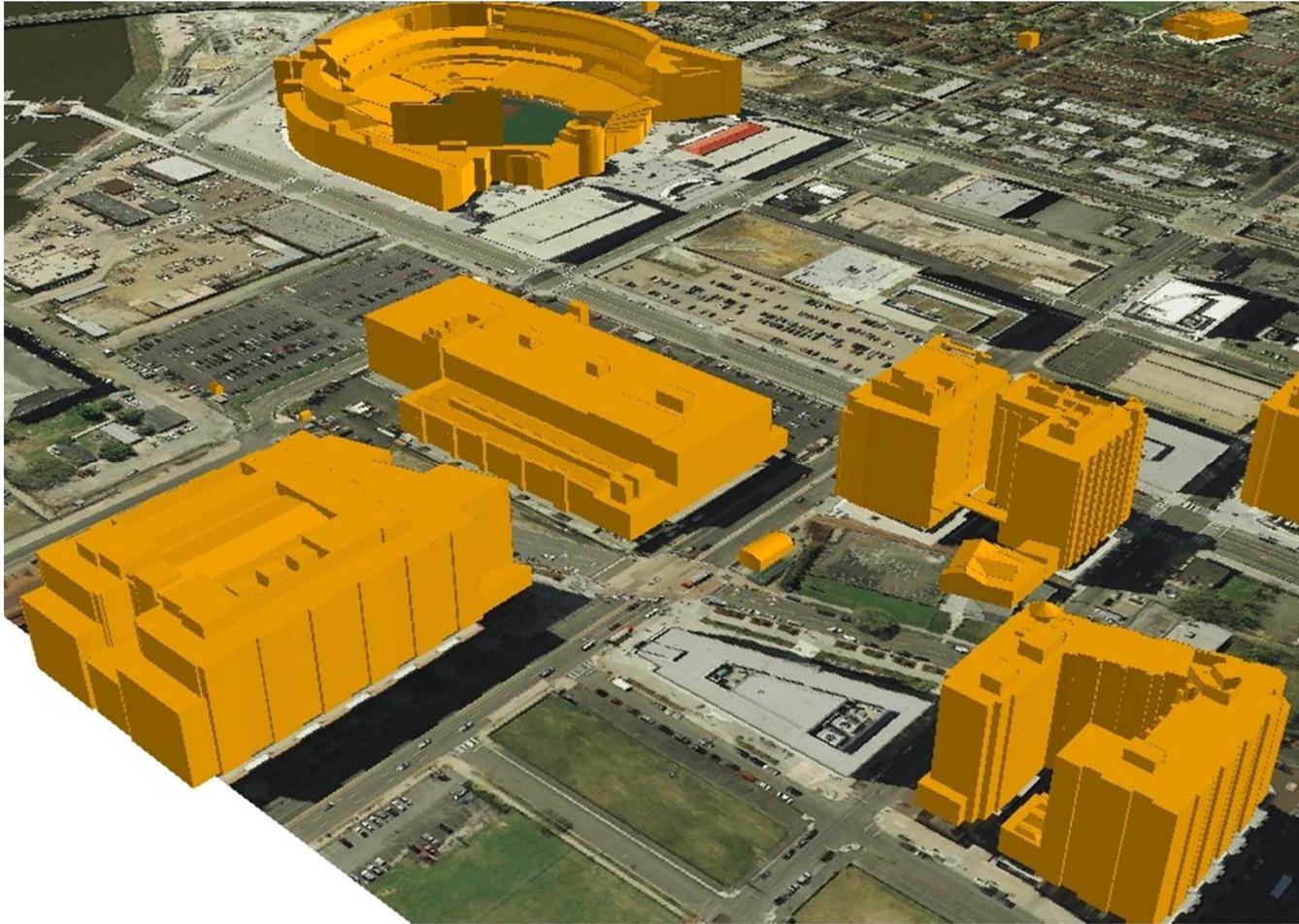
Change Metrics & Conclusions

- Pilot Area Change, 2008-2010:
 - Added 56 buildings, 34 were under 400 sq. ft (60%)
 - Modified 29 buildings, 1 was under 400 sq. ft (3%)
- Citywide Change, 2008-2010:
 - Added 2,395 buildings (projection of 1,437 < 400 sq. ft based on pilot)
 - Modified 2,711 buildings (projection of 81 < 400 sq. ft based on pilot)
- Conclusion/Recommendations
 - 2005 Cyber City Model could be used as the base line for a “targeted” update to building additions, modifications and deletions since 2005.
 - Comprehensive review of every existing building model against 2010 imagery may be cost prohibitive
 - Changes (add, modify and delete) to the City’s building feature class from 2005 to 2008 needs to be accurately identified
 - Verify that 2008 selective model updates meet current requirements
 - Reconcile changes from 2005 to 2010 prior to update
 - Corrections to the representation of existing buildings that do not exhibit physical change (2005-2010) should be discussed



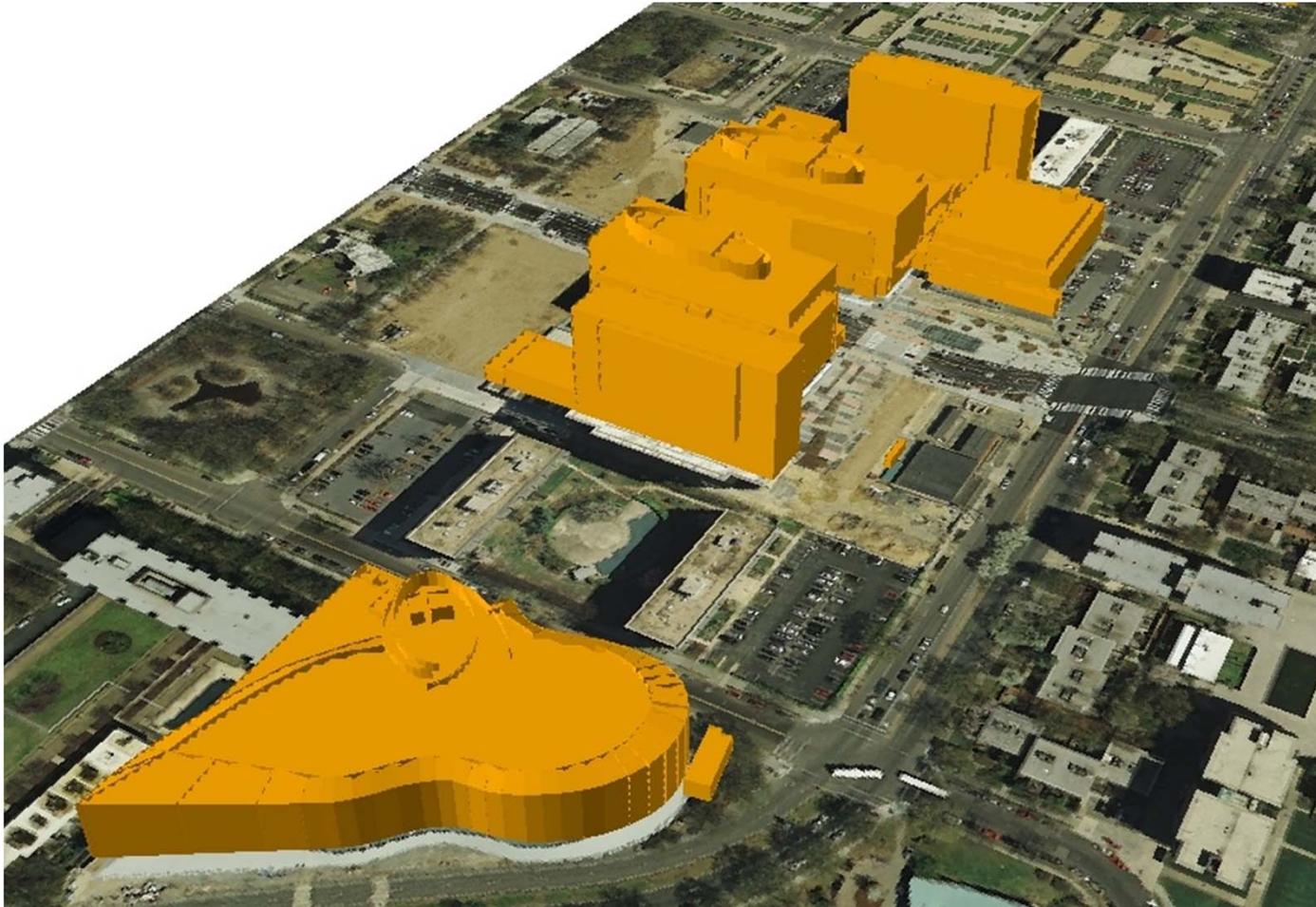


2010 Building Model Updates



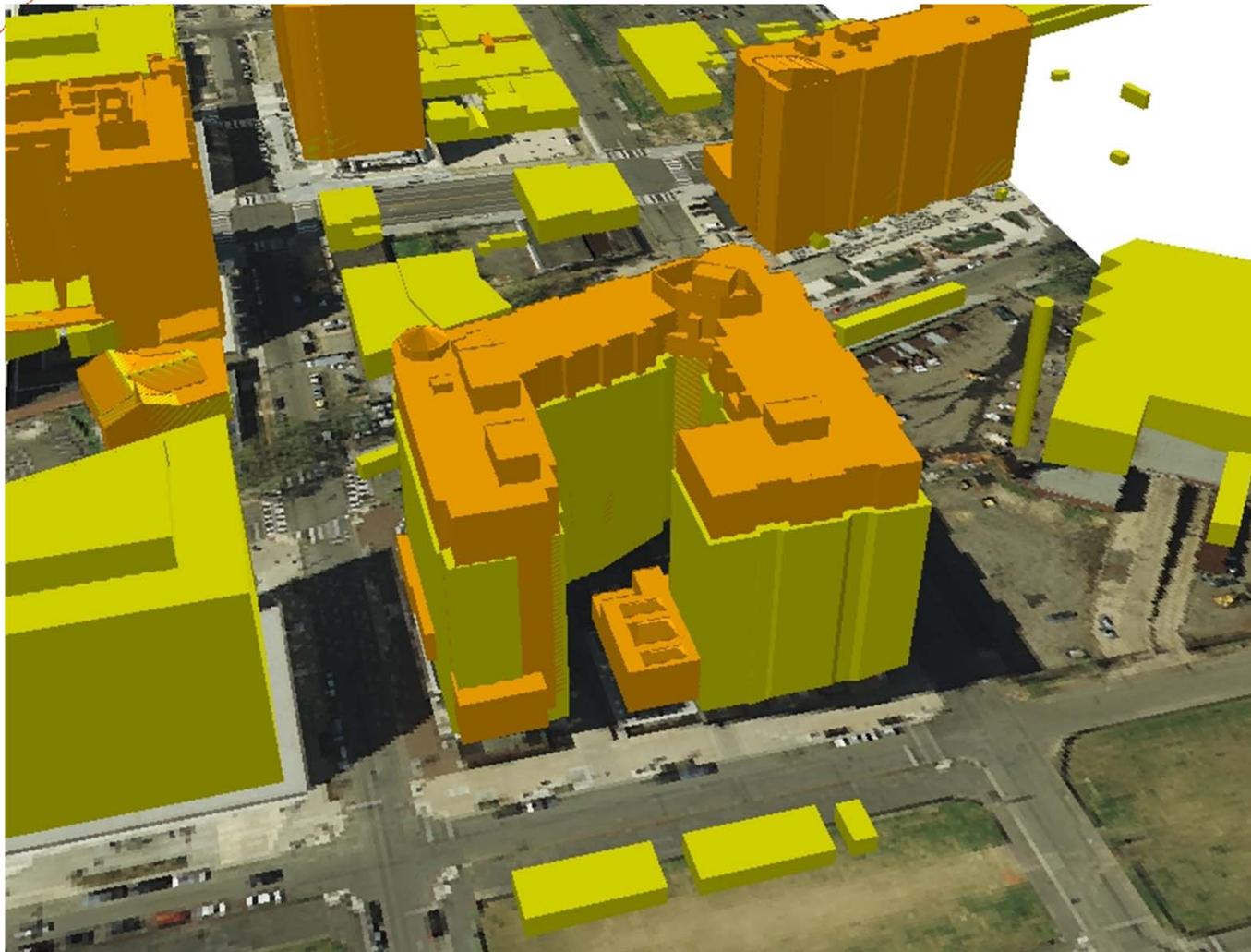


2010 Building Model Updates



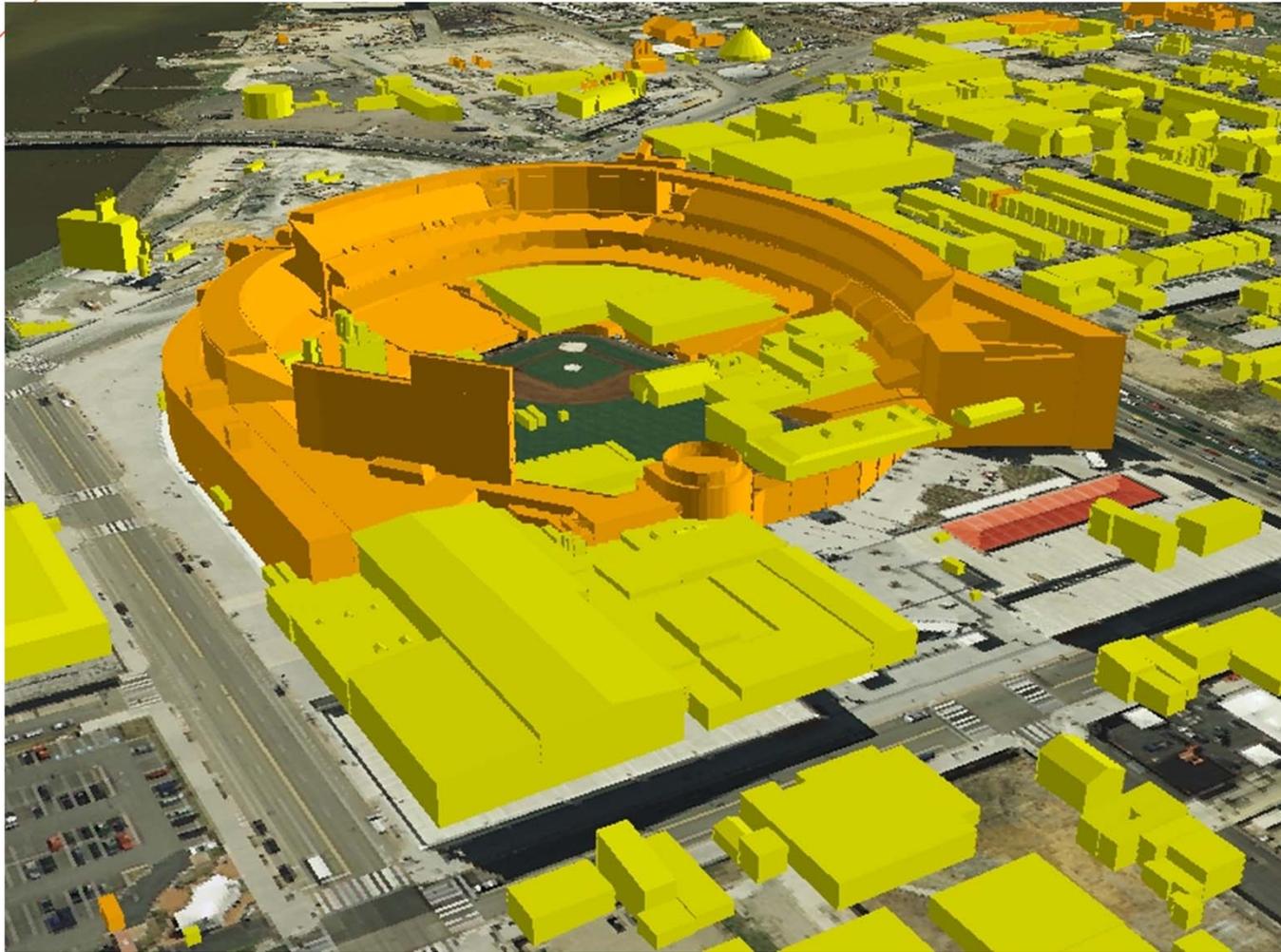


2010 Building Model Updates with 2005 Cyber City Models





2010 Building Model Updates with 2005 Cyber City Models





2010 Building Model Updates with 2005 Cyber City Models





Mobile Mapping

- Capture Street Level imagery, LIDAR or Camera based, with accurate X, Y, and Z values for every pixel.
- Photo Science will have their Mobile Mapping System available for Demo on 5/18 and 5/19.
- The Earthmine technology can also be shown later in early Summer.



Training Report

Eva Stern



Advanced Training, FY 2011



- 18 trained (by August 2011)
- 10 Agencies:

DCRA

FEMS

DDOE

MPD

DDOT

OCTO

DHS

OP

DOH

OTR

- More credits available October 2011 (FY 2012)



Upcoming WDA Classes



- Google DC: 5/17
- ArcGIS: 5/24-5/26
- No classes June or July



Other Events



- HSEMA Emergency Operations
- DOH Community Health Administration

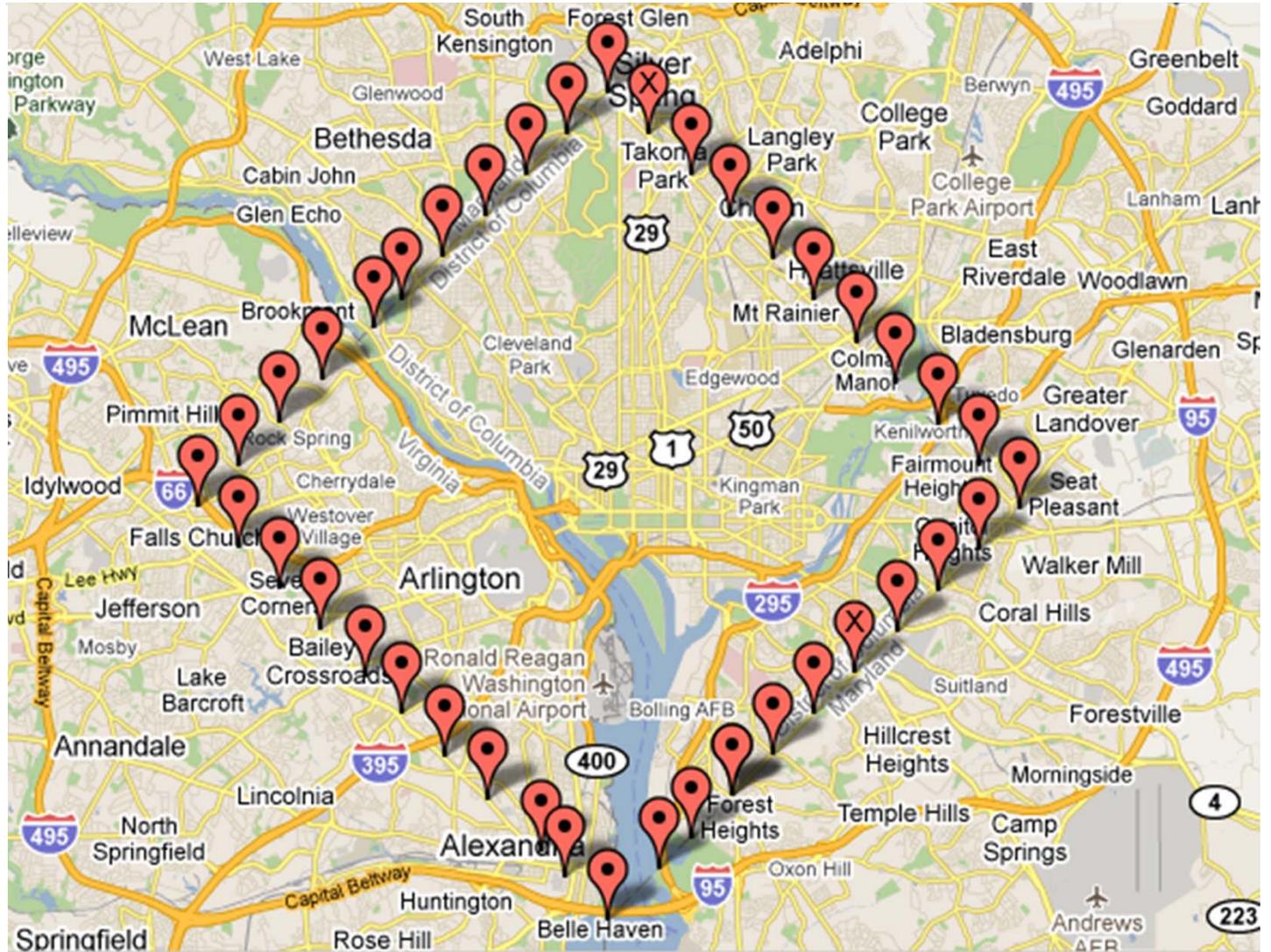


DC Boundary Project

Dan Schriever, AMT
Matt Crossett, OCTO

Boundary Stones

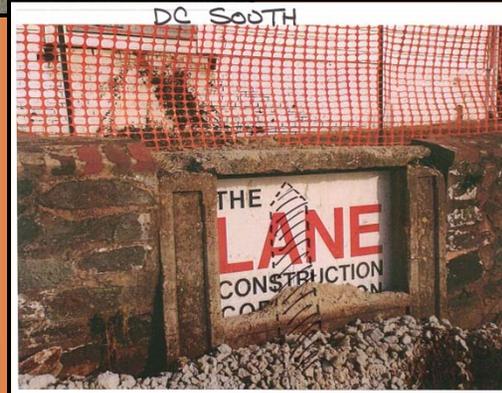
District of Columbia



Historical Info

- 40 Stones originally set by Andrew Ellicott in 1791 and 1792.
- Stones set at one mile intervals along the perimeter.
- South corner stone at Jones Point was set first by Benjamin Banneker.
- Started at south stone, then clockwise around the DC boundary.
- Currently 38 boundary stones in place. 39th (SE4) stone in storage, and 40th (NE1) is marked by a plaque.

Monuments



Boundary Stone Info

- 1915 the Washington DC Chapter of the Daughters of the American Revolution voluntarily assumed the responsibility of protecting stones by erecting an iron cage around each one.
- Original stones are 12”x12” in size and are uniquely marked with the side-facing District of Columbia displaying the inscription “Jurisdiction of the United States” and a mile number. The opposite side said either ‘Virginia’ or ‘Maryland’. The third and fourth sides displayed the year in which the stone was placed and the magnetic compass variance at that place.
- South stone currently located in opening in the seawall of the lighthouse at Jones Point Park on the Potomac River. Currently wrapped in burlap and buried / encapsulated in sand during construction of sire improvements associated with the completion of the Woodrow Wilson Bridge.
- Several stones have been moved or replaced.
- Suggested website for more detailed historical info
www.boundarystones.org site also contains supporting reference info for further historical research.



GPS and Conventional Surveying

- ❑ Horizontal Accuracy +/- 5 cm
- ❑ Vertical Accuracy +/- 9 cm

Survey Info

- Purpose: Accurately map DC boundary stones and incorporate into the DC GIS geodatabase.
- Not a boundary survey to re-establish official DC boundary line.
- Survey by GPS and conventional survey methods.
- Horizontal Accuracy = +/- 5cm
- Vertical Accuracy - +/- 9cm
- DC Surveyor's office will perform a "common sense" boundary review / analysis of surveyed stone locations.
- DC surveyors office will review analysis and findings with DC OCTO to see how closely it matched existing "GIS" DC boundary line and if a new "GIS" DC boundary line is warranted.
- Task draft submittal on April 11, 2011.
- Deliverables include:
 - ESRI geodatabase of boundary stone info.
 - Geodatabase projections in:
 - Maryland State Plane NAD 1983/91, meters
 - WMATA Low Distortion Projection (LDP), US feet
 - NAVD 1988 vertical datum (feet and meters for MDSPC and feet for WMATA system)
 - Digital pictures of boundary stones.
 - AutoCAD 2008 drawing of surveyed stones and coordinates (for DC Surveyor's Office)

DC GIS's Findings and Plan

- “How well do the stone locations align with the current GIS boundary line/poly?”
- If you just “connect the dots/stones”..
 - along NE, stones are inside existing boundary ranging from 6.6'-18.4'
 - along SE, stones are outside existing boundary ranging from 12.75'-18.48'
 - along NW, stones are outside existing boundary ranging from 4.43'-9.6'
 - bearing range from 1min 7sec off 45 degs to 3min 57sec off 45deg
- Fun fact: the distance between SE6 and SE7 is 5280.824ft....pretty good accuracy given the instruments they used way back then.
- Surprisingly, the data lines up very well with the Right of Way poly dataset (Eastern/Southern/Western Ave etc)
- Per DCRA's Surveyor's office guidance, we plan to "connect the points" to create the boundary. We are still waiting on Southern Stone location
- Other options considered were to take an average bearing or connect North-East Stone, East-South stone etc.
- We expect to have the dataset up on DC Central in the coming weeks once data is finalized.
- Coordination and Outreach Task – June