DC GIS Steering Committee Meeting
October 6, 2008

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Office of The Chief Technology Officer
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202-727-9307

Agenda

- **Introductions** – Barney Krucoff
- **DC GIS News** – Barney Krucoff
- **Data Report** – Mario Field
- **Training Report –** Eva Stern
- **New Zoning Layers** – Nyambi Nyambi
- **Draft Final Strategic Plan** – Richard Grady
- **Google (Earth) DC Launch** – Barney Krucoff
- **New Orthimages and Digital Terrain Model Repository** – Doug Goldsmith and Jim Cannistra
- **DC GIS Open House**

Introductions

DC GIS News

- We moved
- Google DC
- Schools Site
- New data download portal
- Residential units
  - Table now contains 164,166 records we estimate that it 80%-86% complete.
  - When we get up to 95% we will publish the table and continue to improve it.
- ArcGIS 9.3 is coming

DC GIS Data Report

Mario Field

Dr. Data

Data Updates

- New Zoning (matched to VPM)
  - Zoning
  - Planned Unit Dev
  - Overlay Zoning
- Abra – monthly
- Public School
- Charter School
- Street Centerline and Roadway Segment
- Comprehensive Real Property Update

Next Update

- Camera
- Public School
- Abra
- Zoning

Vector Property Update

- - Creation of 514 new Record Lots, Retiring of 621 Record Lots
- - Creation of 201 new Tax Lots, Retiring of 188 Tax Lots
- - Creation of 16 new Air Rights Lots
- - Creation of 19 new Reservation Lots
- - Retiring of 8 Parcel Lots
- - Creation of 17 Alley or Street Closures
- - Corrections to data anomalies
- - Updated Metadata

Vector Property Continued

- - 13 Squares and their contained features have been adjusted to better fit planimetrics.
- (0038, 0076, 0390, 0391, 0414, 0415, 0438, 0439, 0439-S, 0574, 5159, 5162, and 5643).
- - 6 Squares boundaries have been altered significantly because of incoming subdivisions (0705, 0767, 0768, 0769, 0771, and 0798).
- 5 Squares and Lots have been retired do to incoming subdivisions (0702, 0703, 0704, 0706, and 0802).
- - New OwnerPly layer was created and loaded; OTR attribution for this layer was conflated from the most recent Public Extract file dated 9/21/08.
- **DCRA Document Management System – over 400k property related images to browse!
- **OTR Index Card Application- coming soon

DC GIS Training Report

Eva Stern

DC GIS Training

- Final numbers for FY 2008:
  - 21 classes
  - 205 students (completed courses)
- Custom classes for:
  - FY 2008: FBI (Washington Field Office) & MPD
  - OPM & DYRS
- Review of class attendance FY 2008
- Survey
  - Users satisfied with available training and customer service
  - Students unclear on what the purpose of some classes are
  - Students having difficulty justifying multi-day classes to superiors

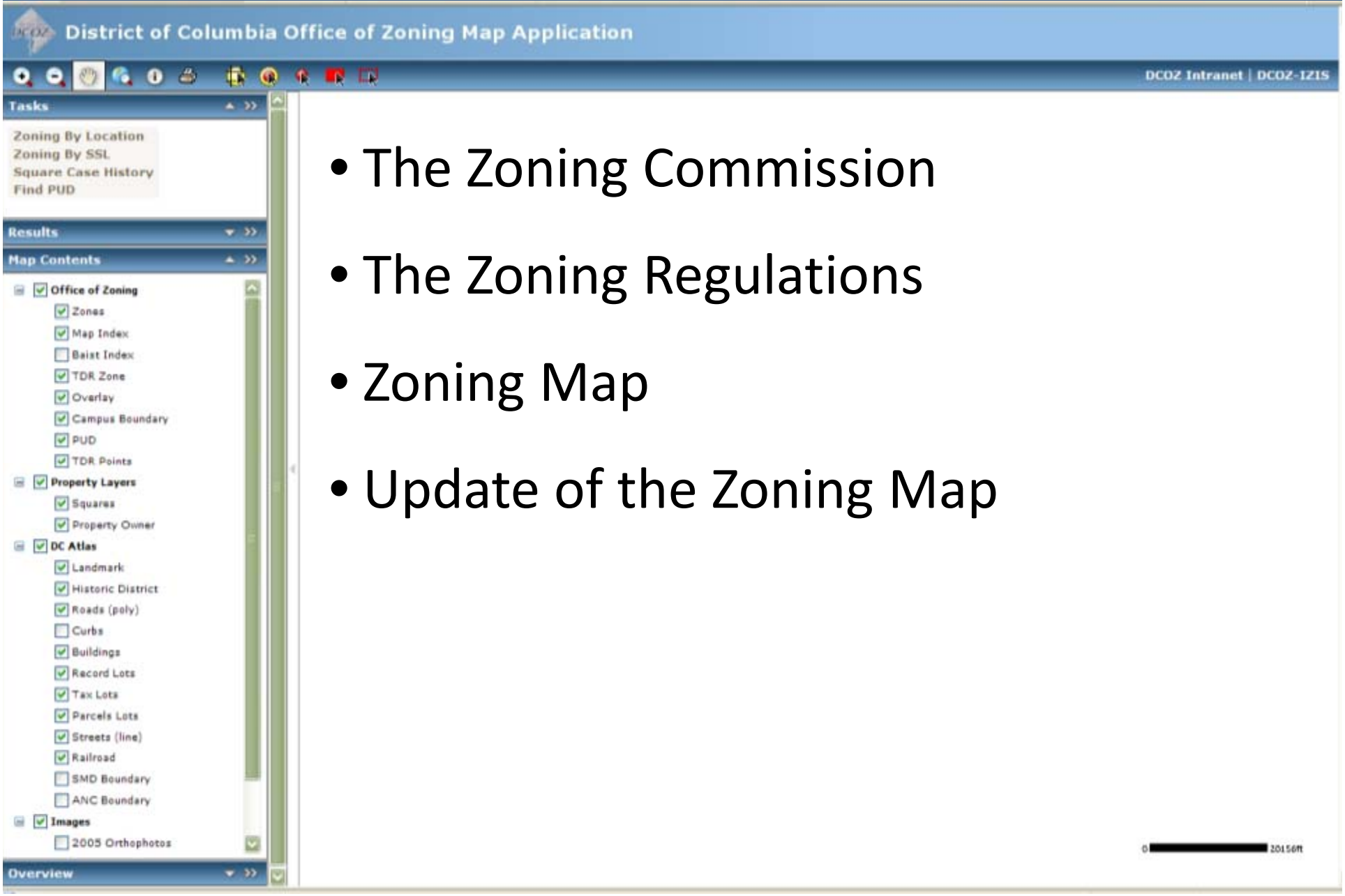
FY 09 Training Classes

- Overview of DC GIS Services and Applications
- ArcGIS I
  - used to be *Introduction to DC GIS using ArcGIS I*
- Mapping Address Data
  - used to be *Working with Address and Point-based Data*
- Designing Maps with ArcGIS

- Google DC

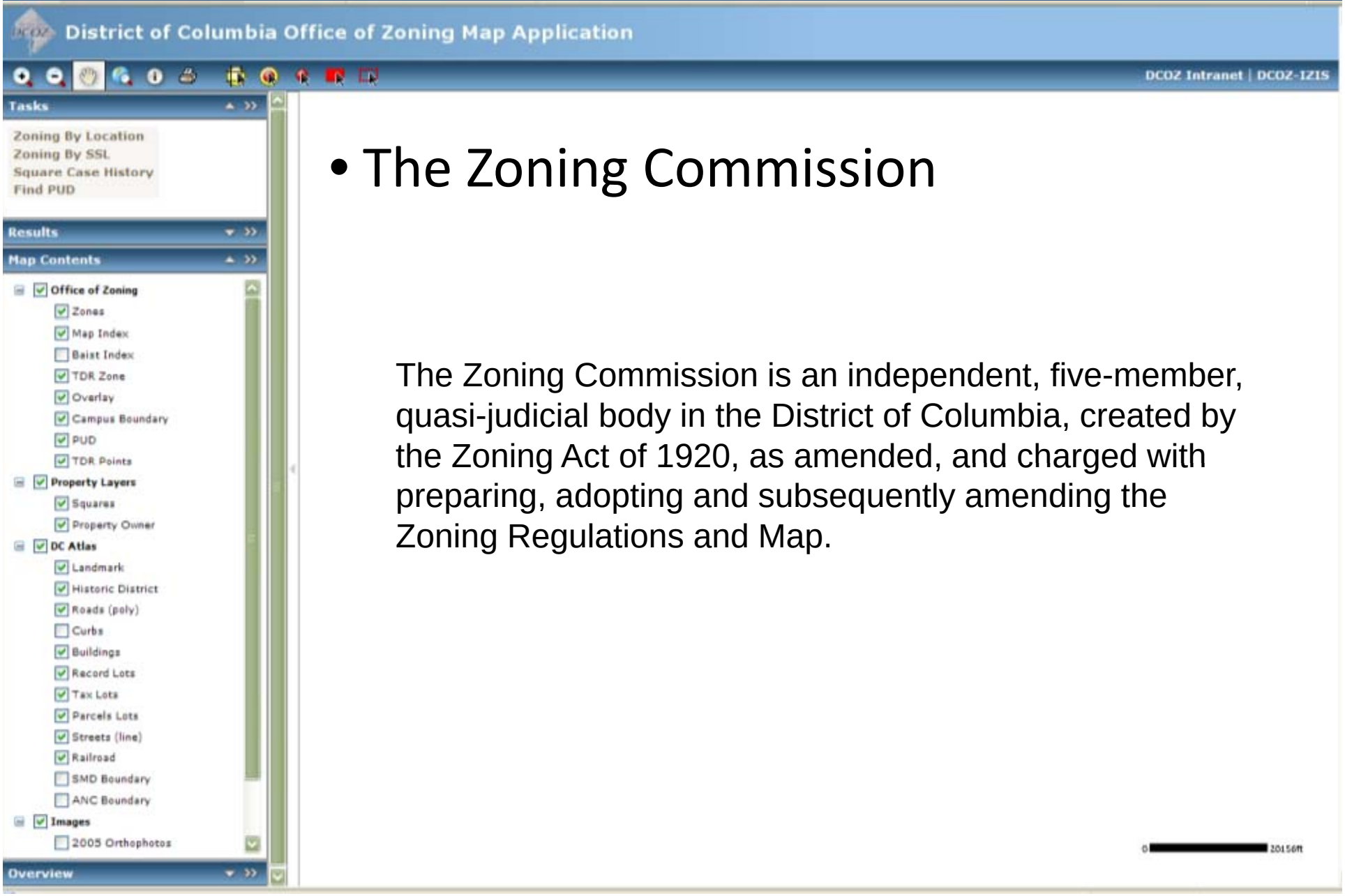
Zoning Map of the District of Columbia

Role of the Office of Zoning and Zoning Map



- The Zoning Commission
- The Zoning Regulations
- Zoning Map
- Update of the Zoning Map

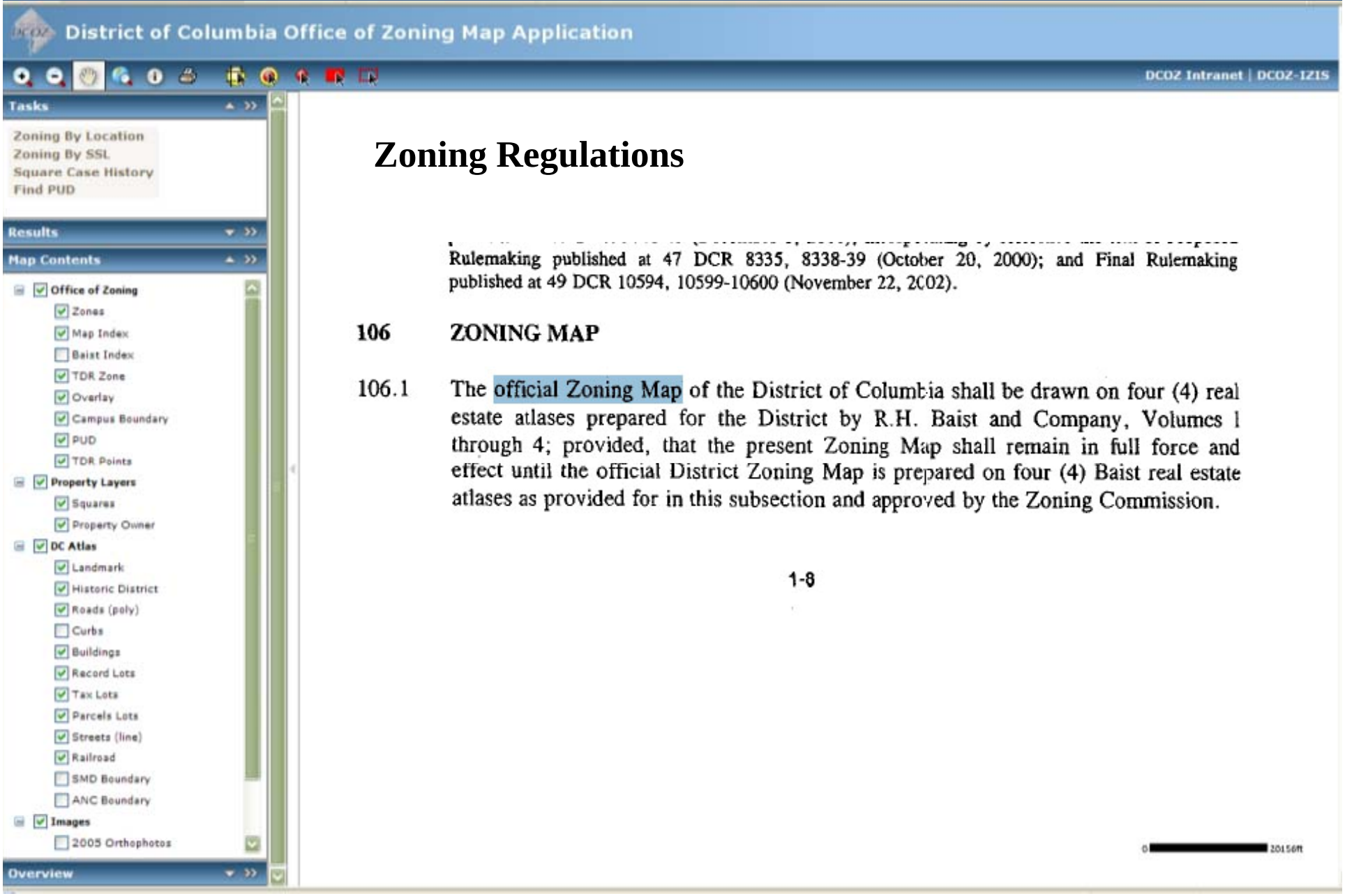
Role of the Office of Zoning and Zoning Map



- The Zoning Commission

The Zoning Commission is an independent, five-member, quasi-judicial body in the District of Columbia, created by the Zoning Act of 1920, as amended, and charged with preparing, adopting and subsequently amending the Zoning Regulations and Map.

Official Zoning Map



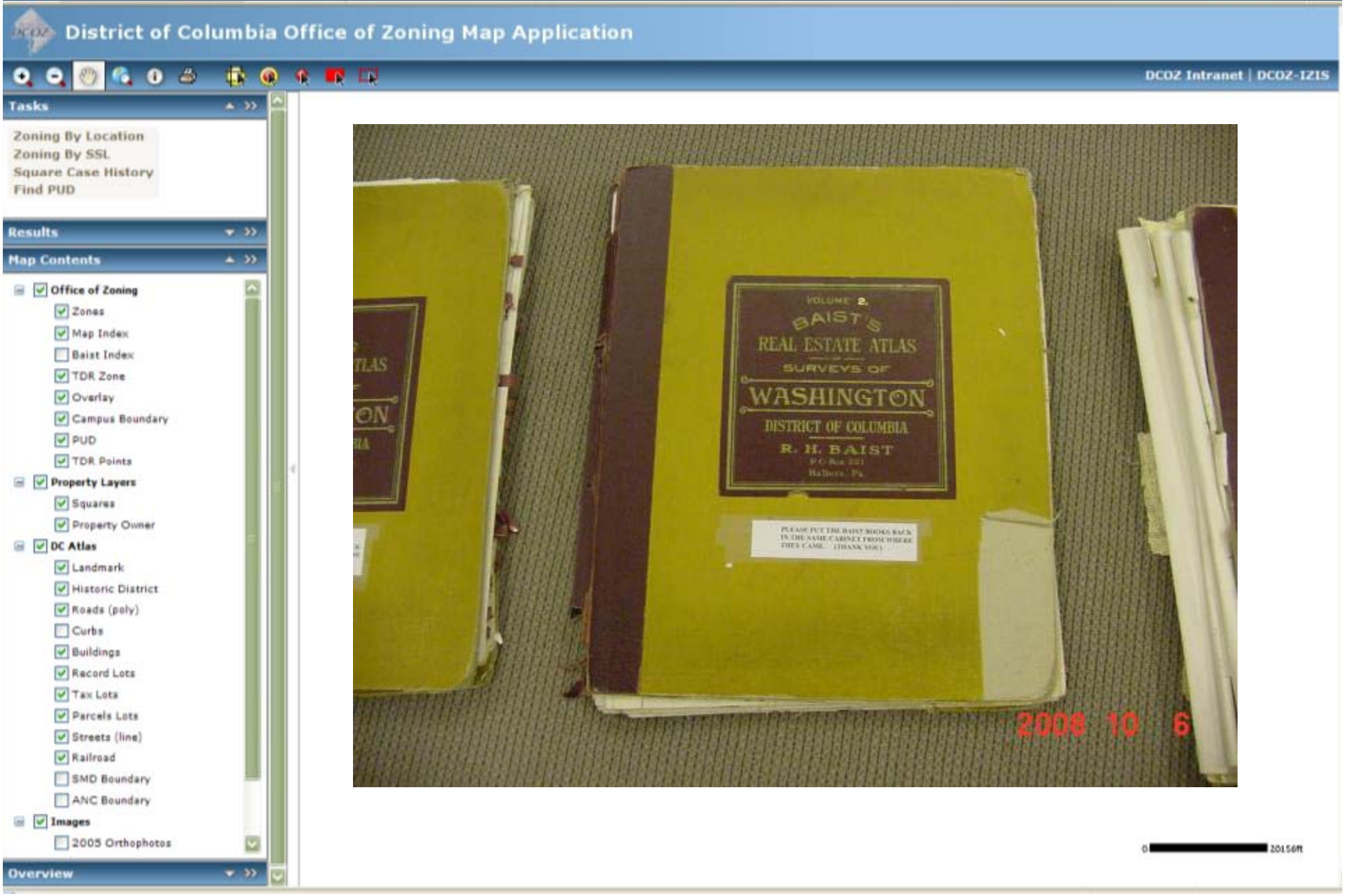
Zoning Regulations

Rulemaking published at 47 DCR 8335, 8338-39 (October 20, 2000); and Final Rulemaking published at 49 DCR 10594, 10599-10600 (November 22, 2002).

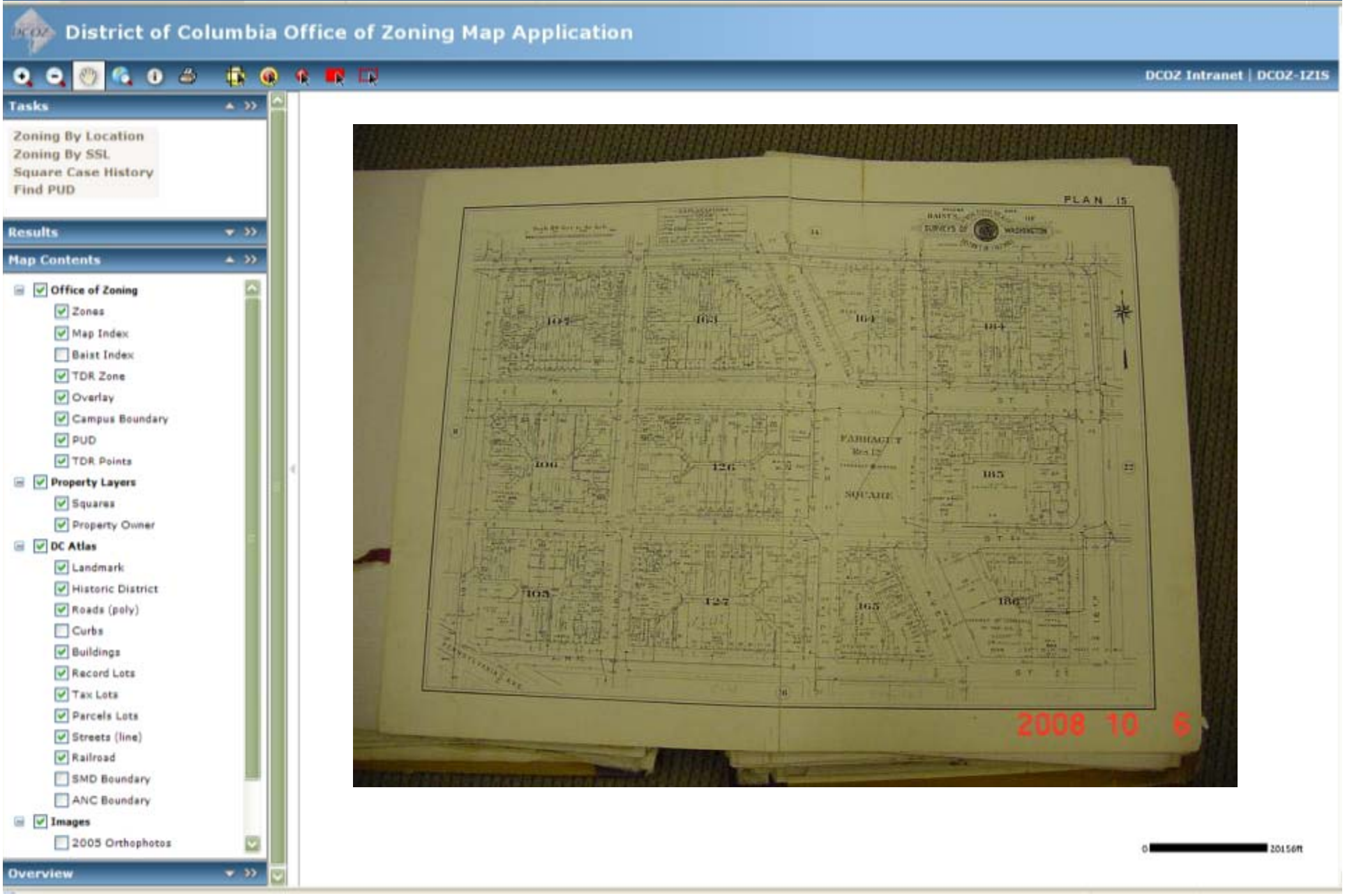
106 ZONING MAP

106.1 The official Zoning Map of the District of Columbia shall be drawn on four (4) real estate atlases prepared for the District by R.H. Baist and Company, Volumes 1 through 4; provided, that the present Zoning Map shall remain in full force and effect until the official District Zoning Map is prepared on four (4) Baist real estate atlases as provided for in this subsection and approved by the Zoning Commission.

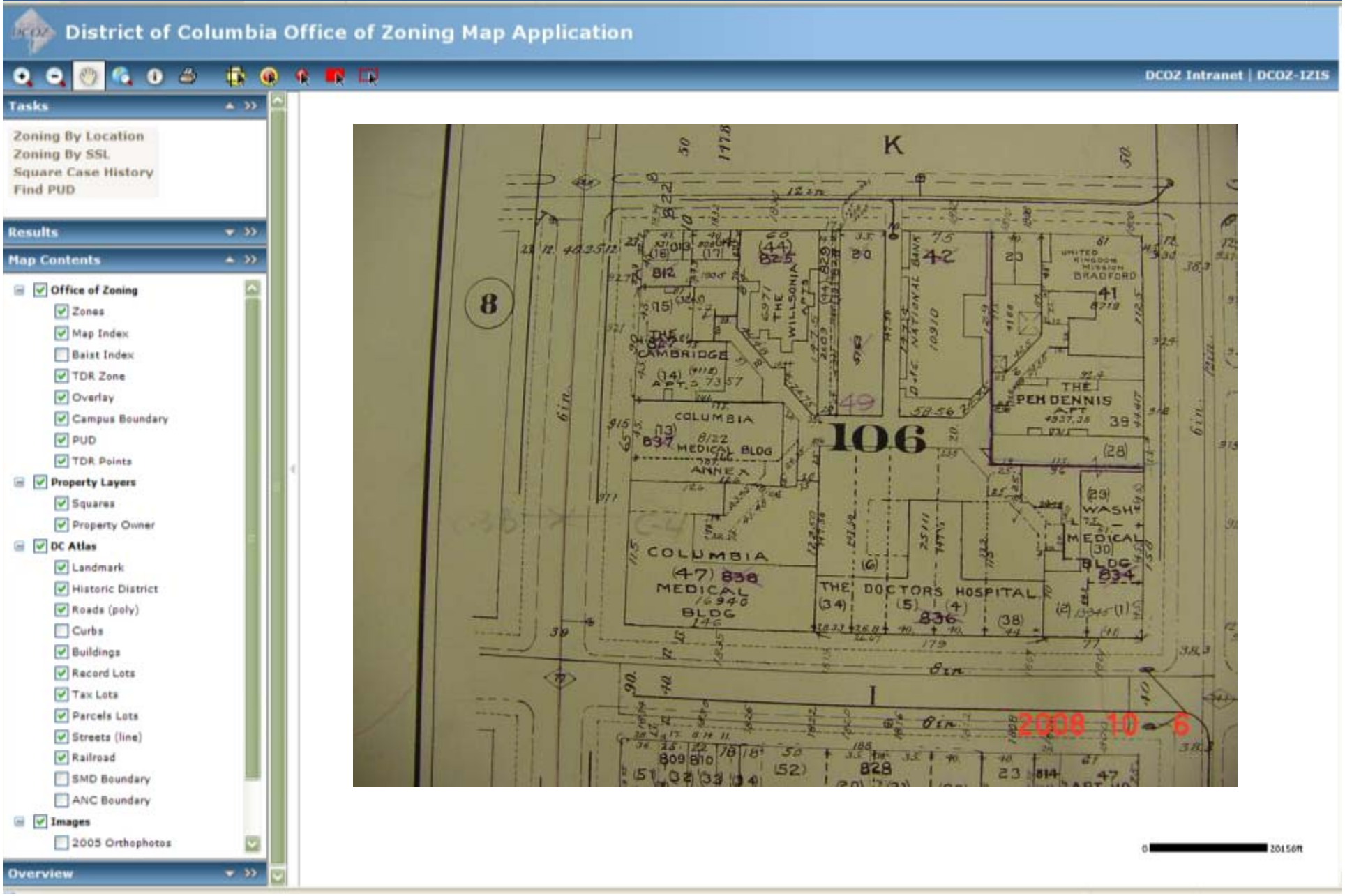
Official Zoning Map - Summary Zoning Maps



Official Zoning Map - Baist Books



Official Zoning Map - Summary Zoning Maps



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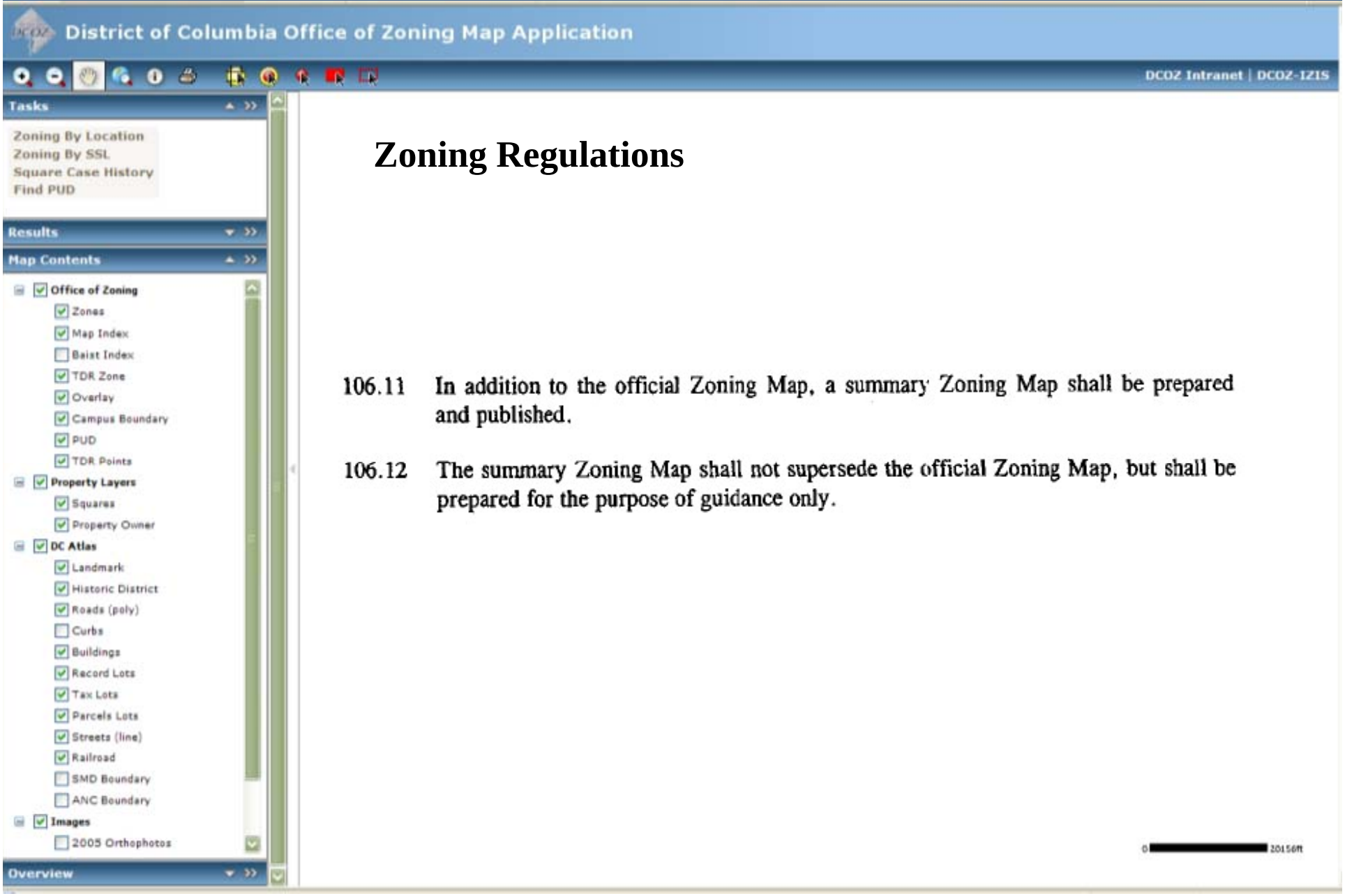

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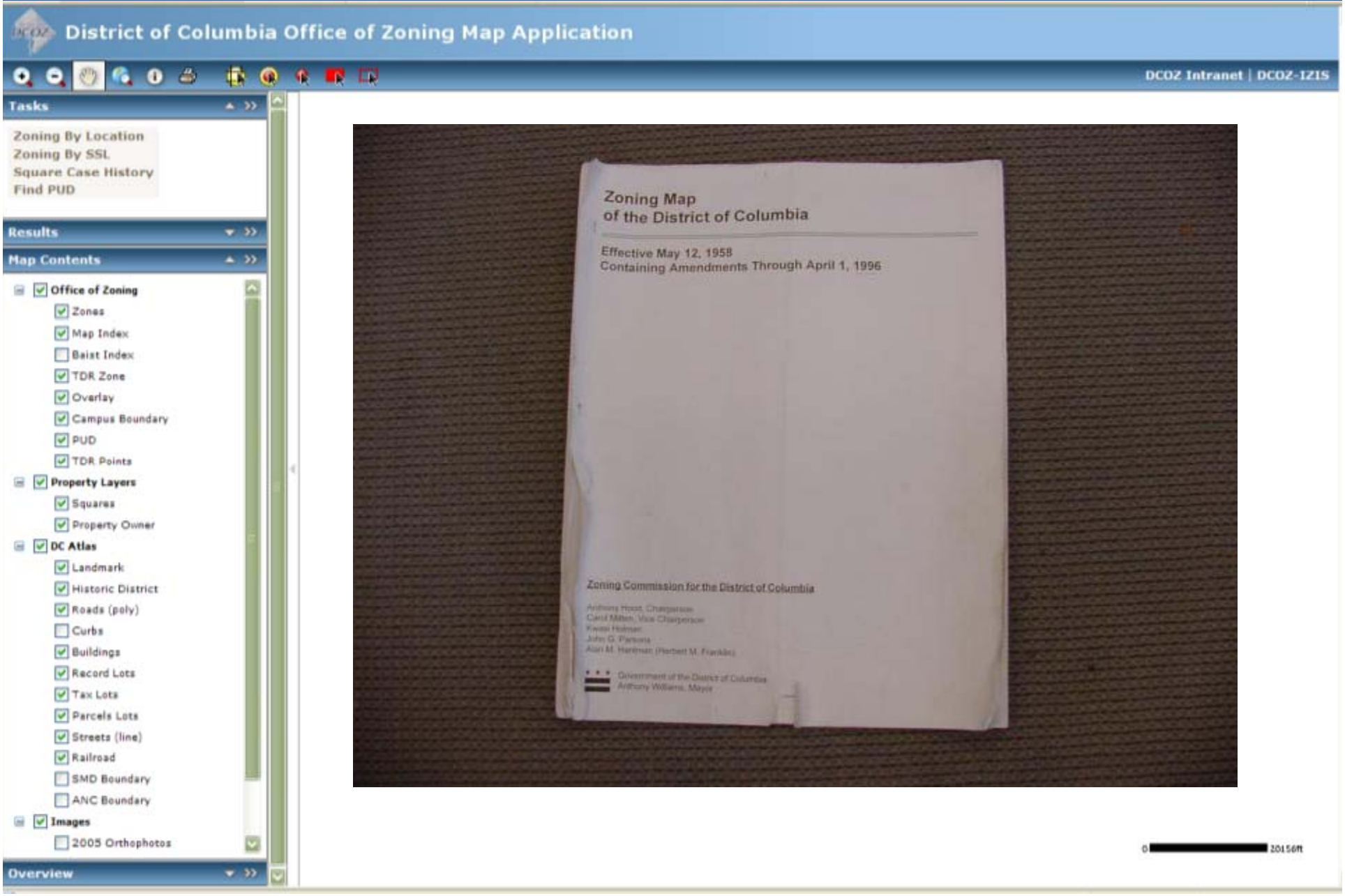

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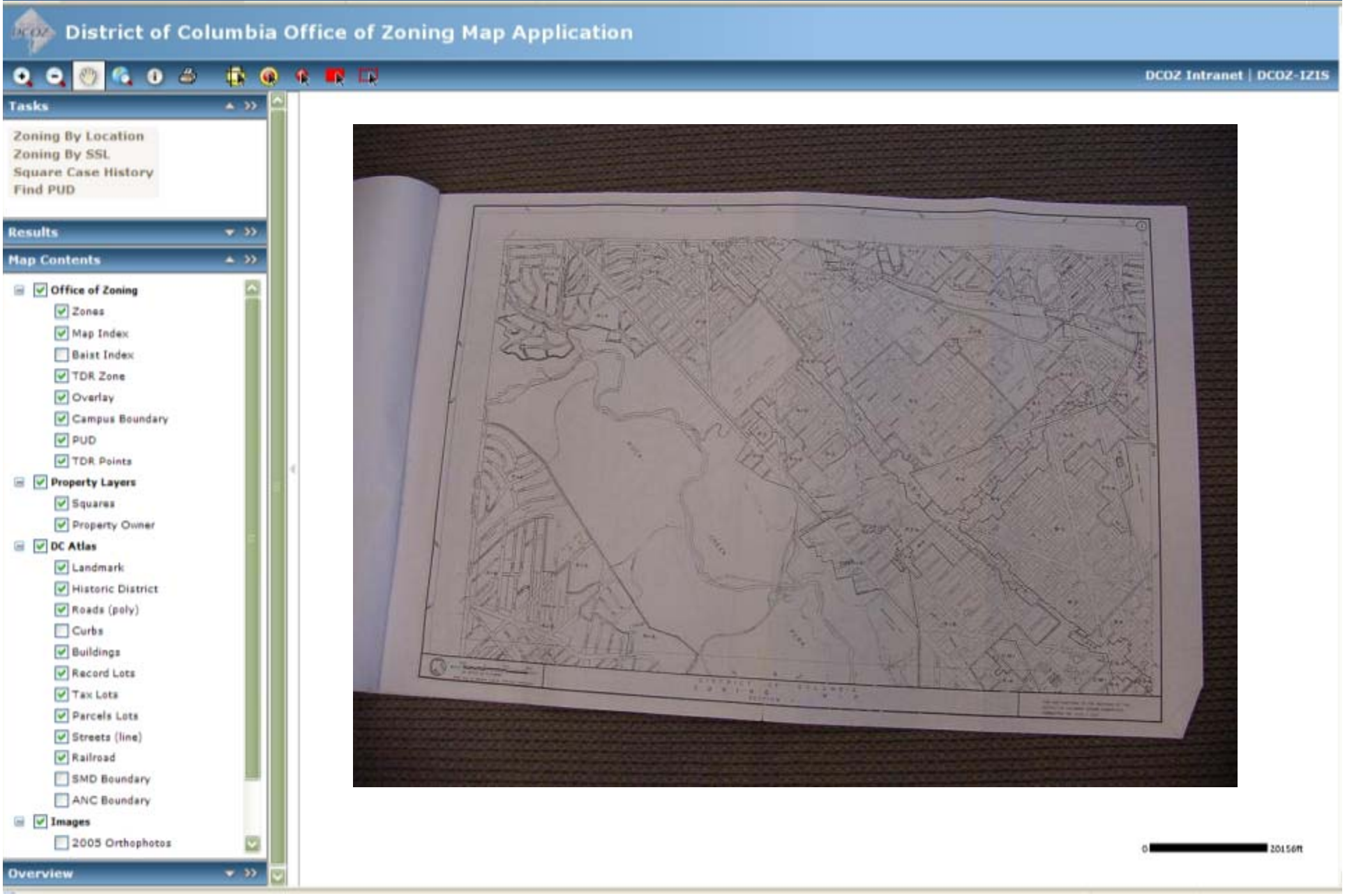

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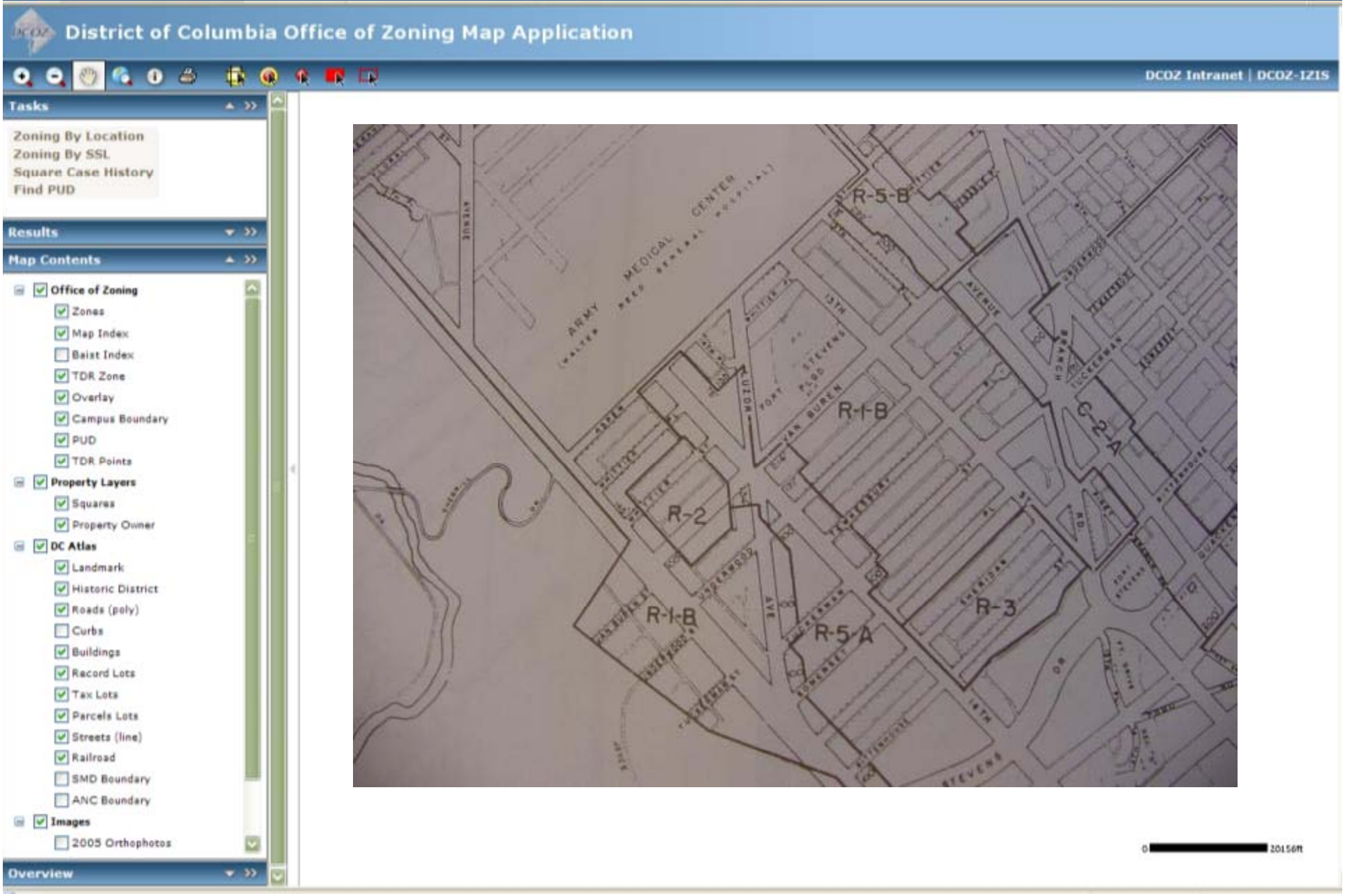
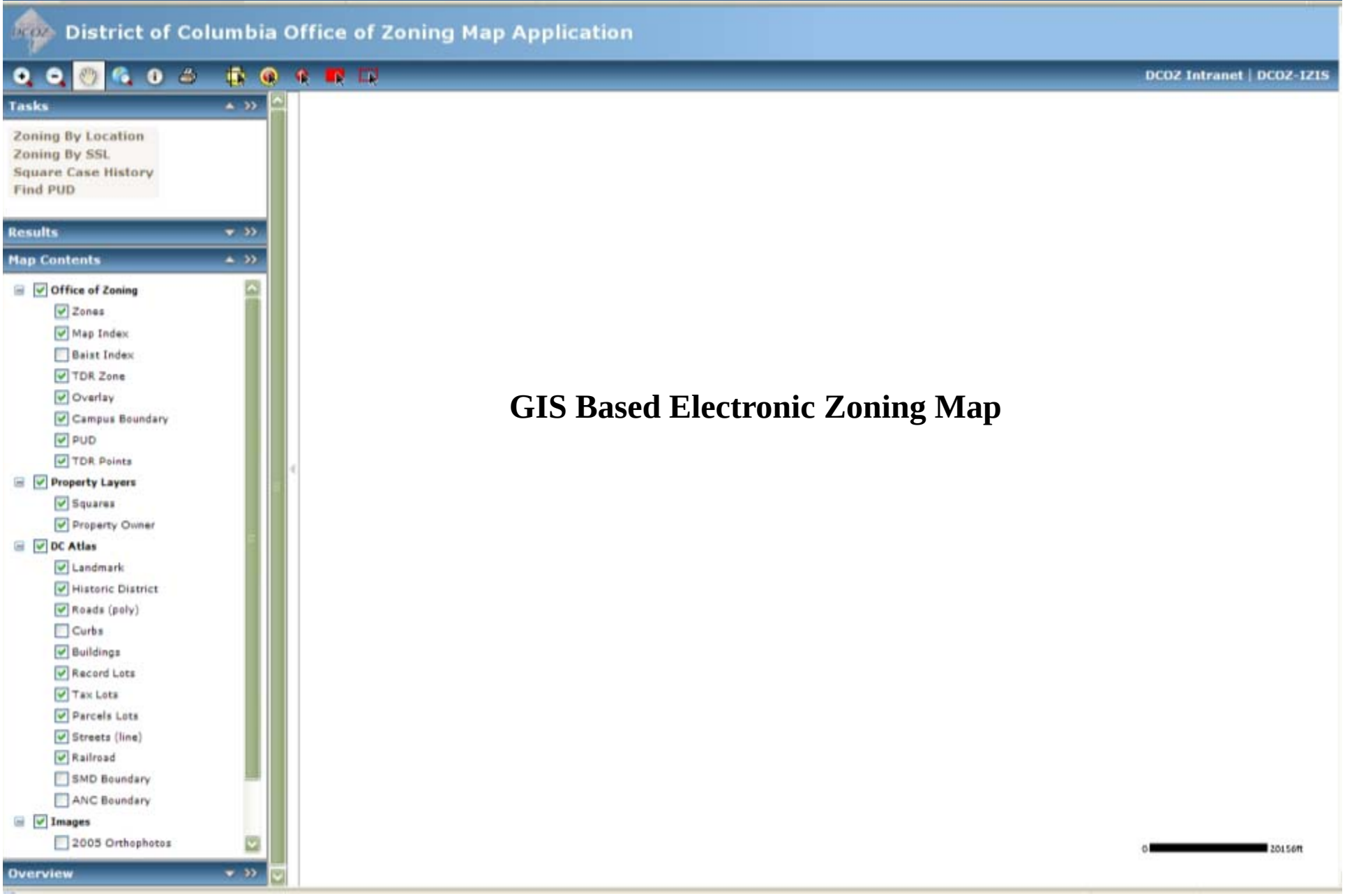


Electronic Zoning Map 1st Edition



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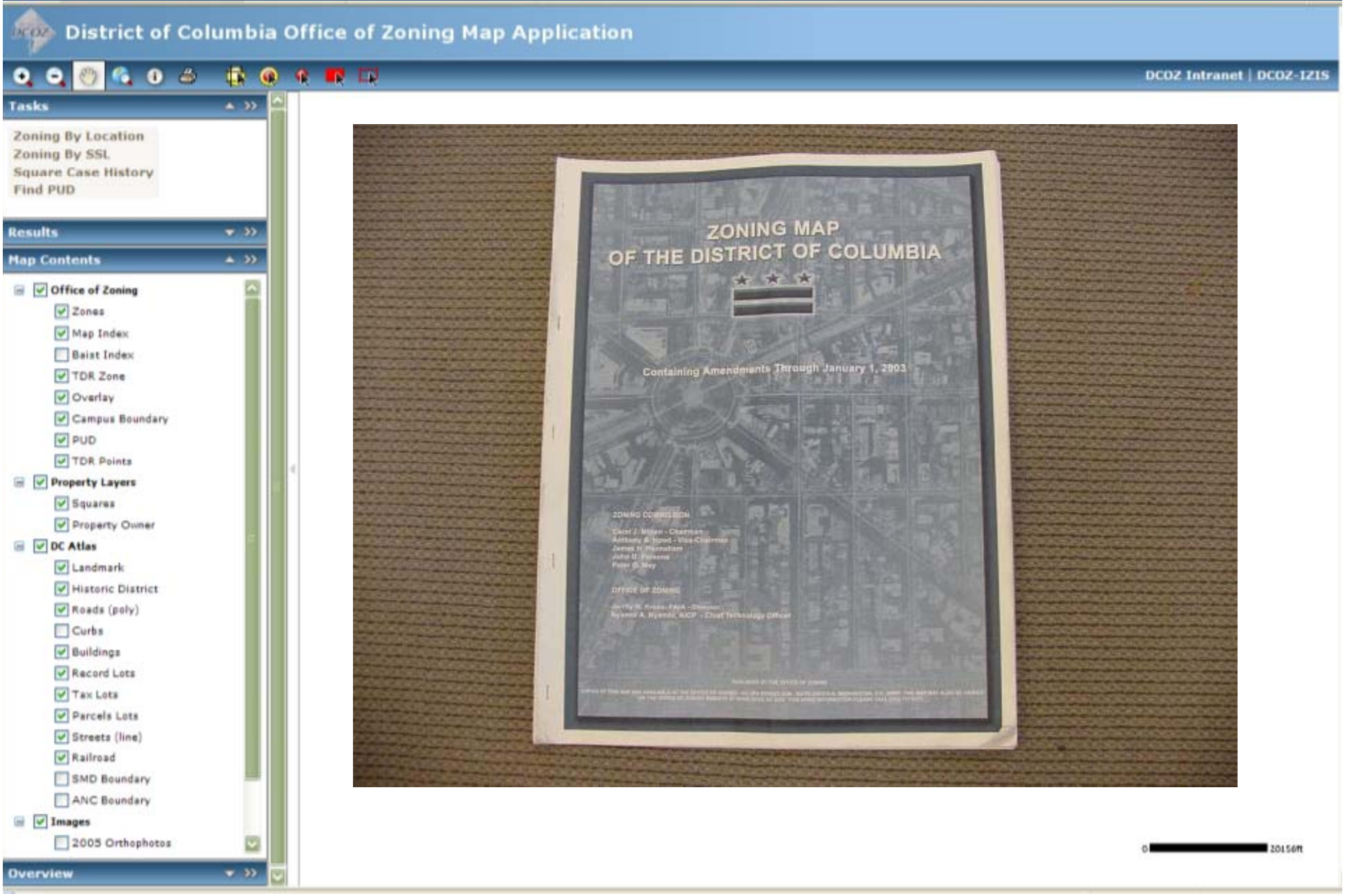

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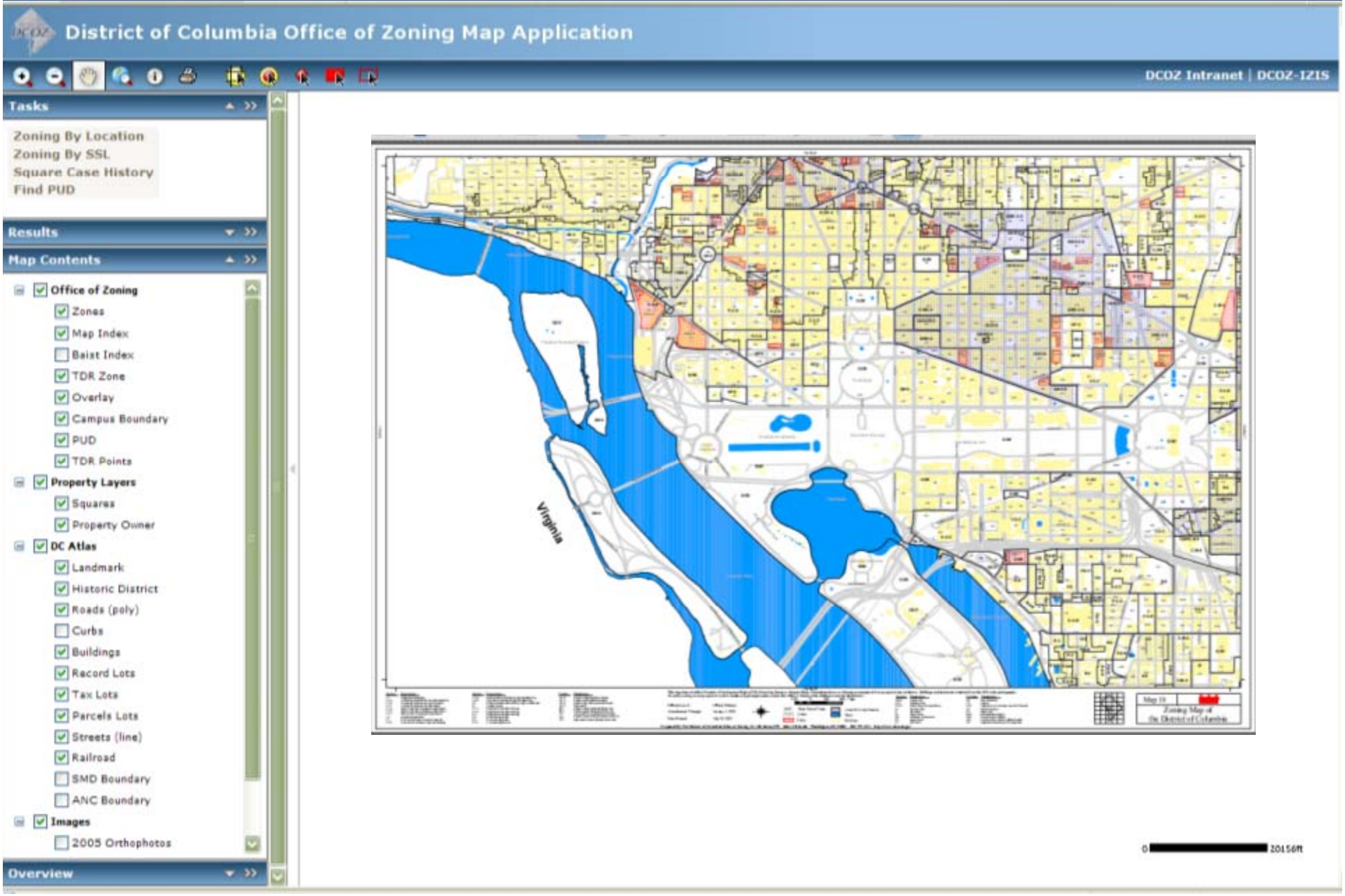

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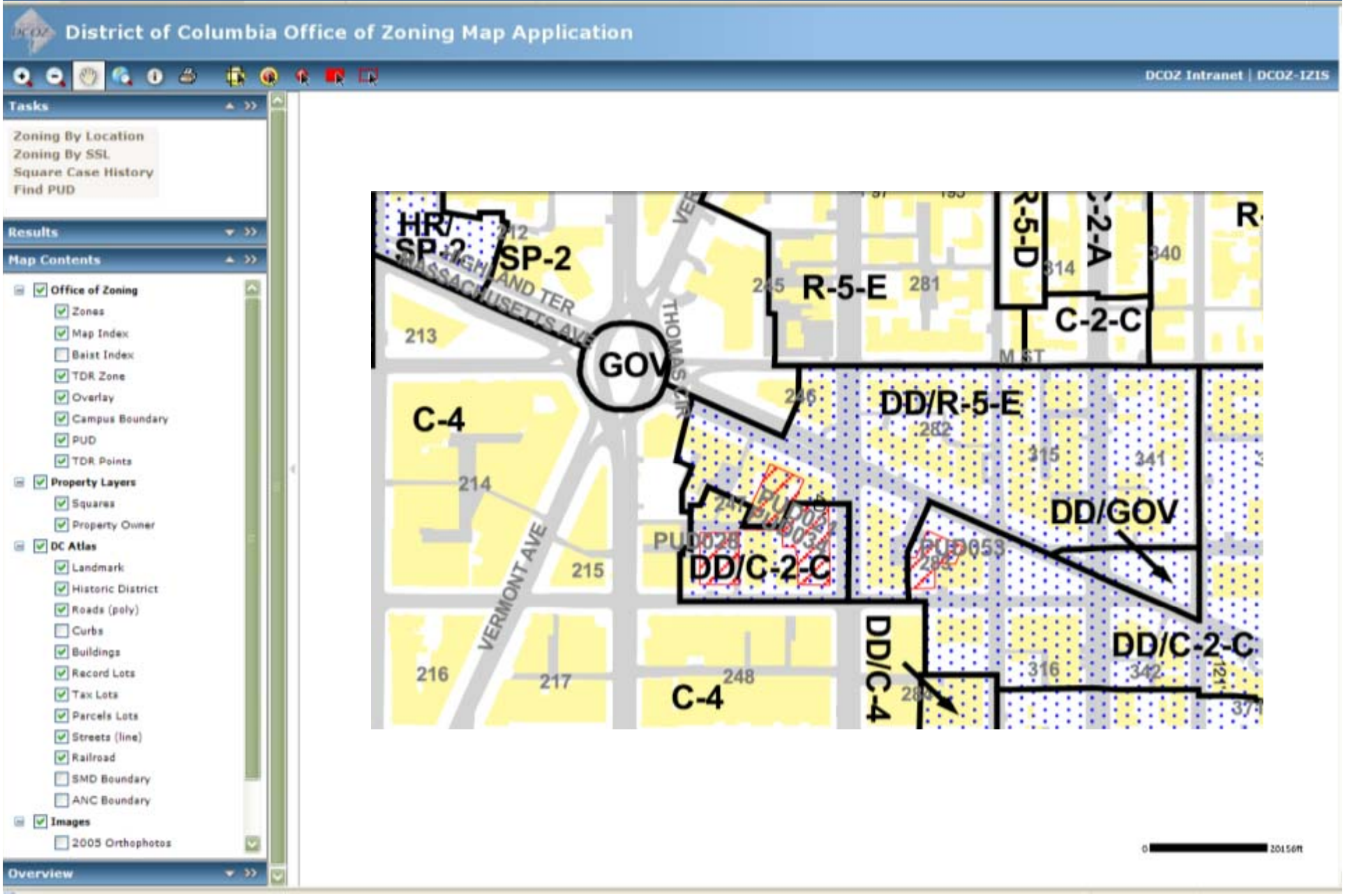
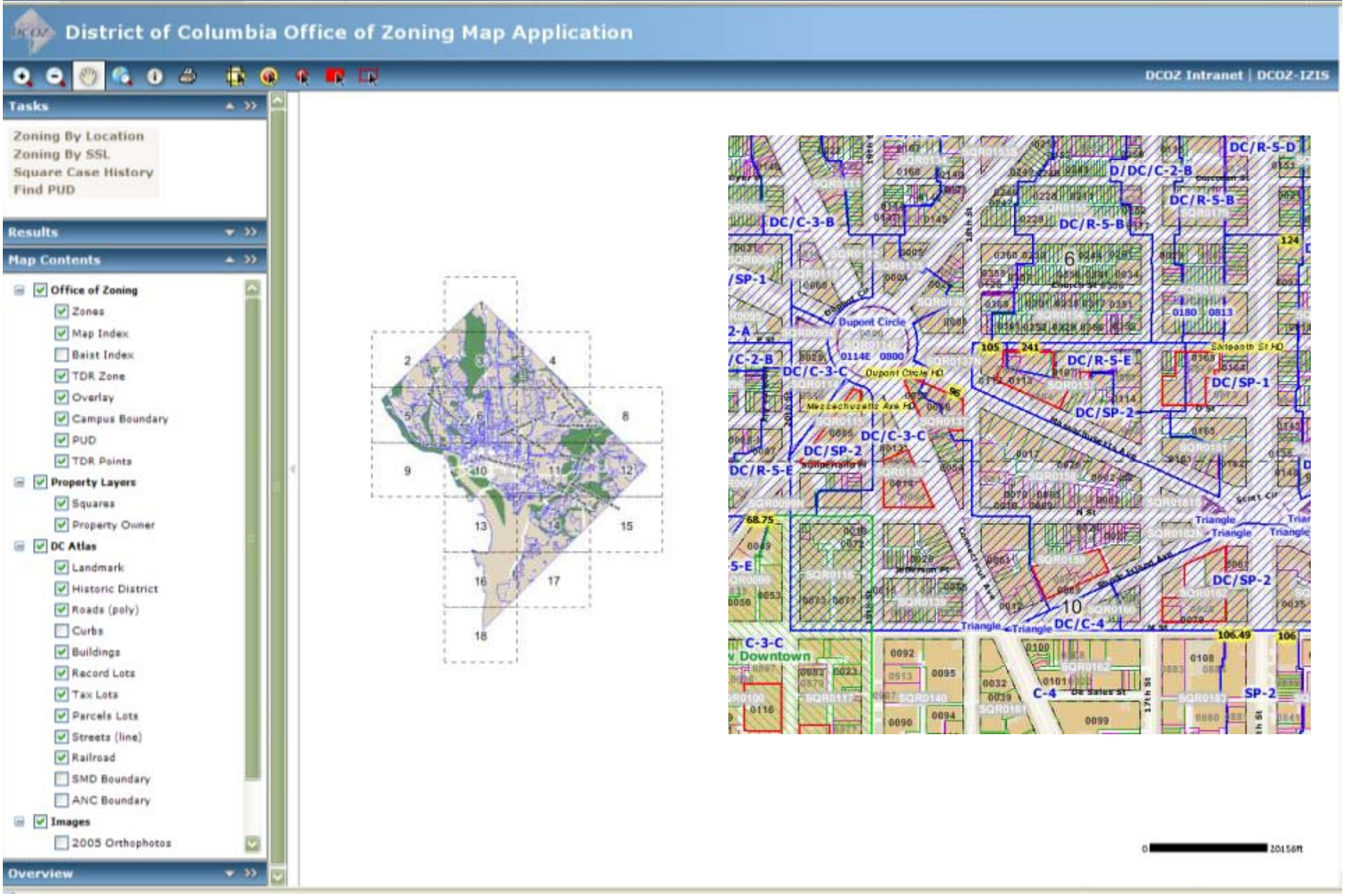


Electronic Zoning Map 2nd Edition



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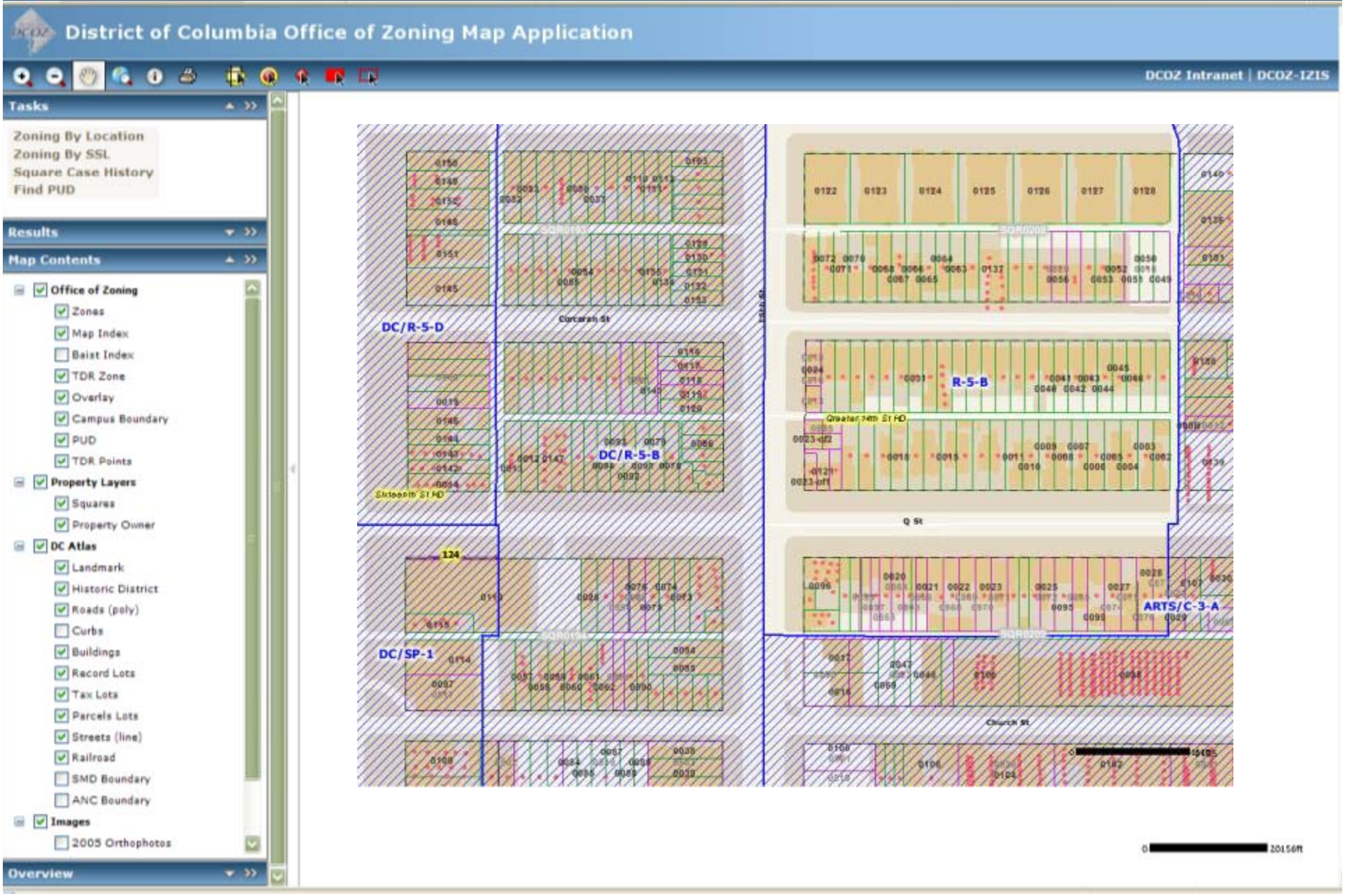

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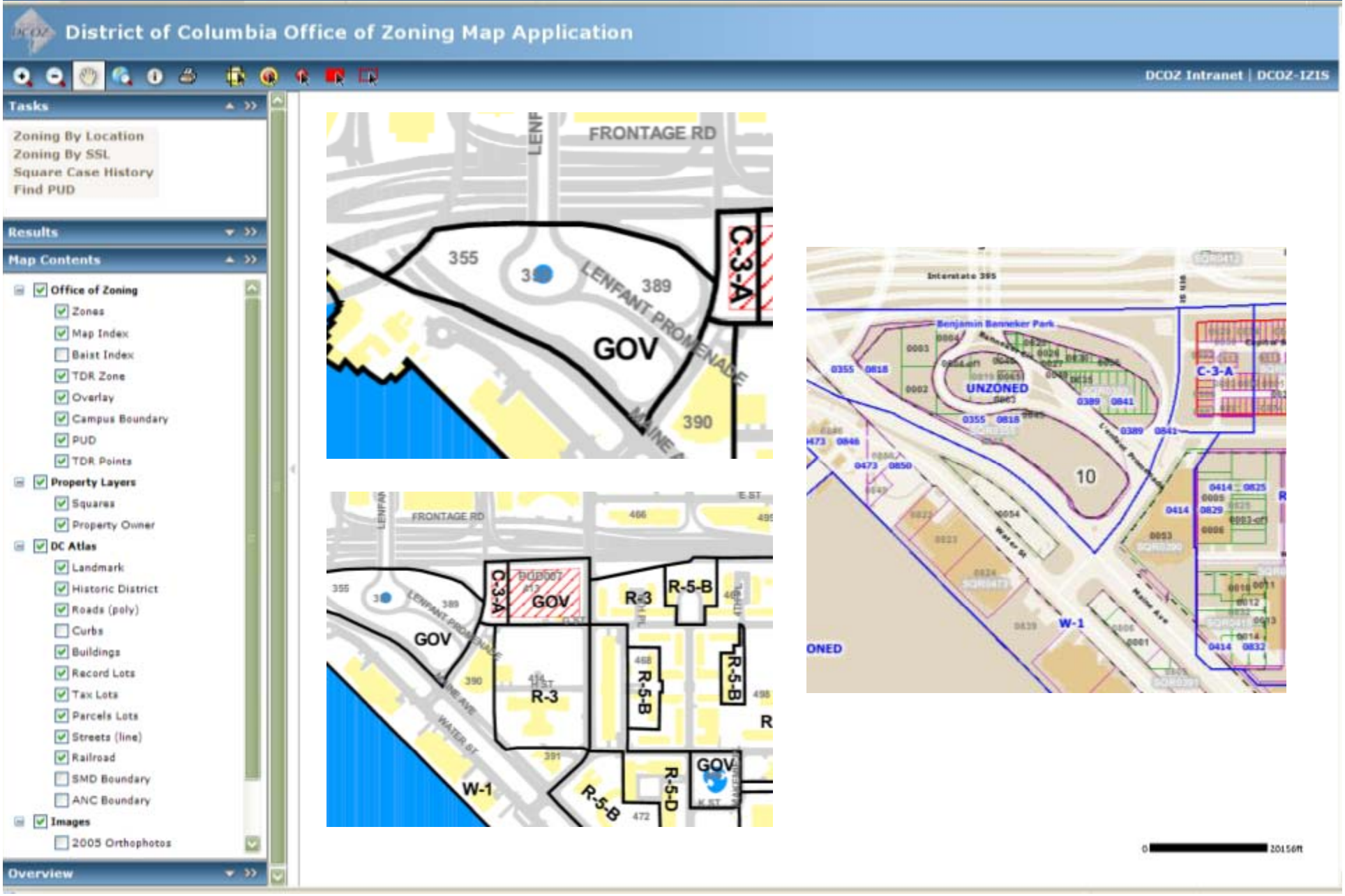


Washington D.C. Landbase Update Project

GIS Steering Committee 10/06/06

Jim Cannistra, Sanborn, CP
Shawn Benham, PM – Sanborn
Doug Goldsmith, PM - KCI

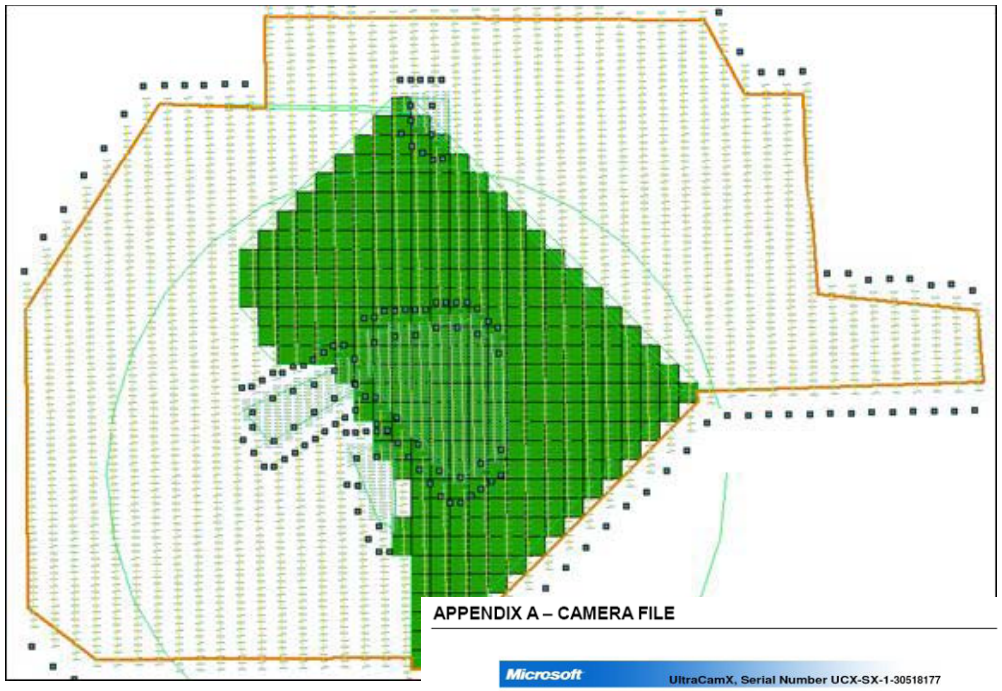
Project Overview

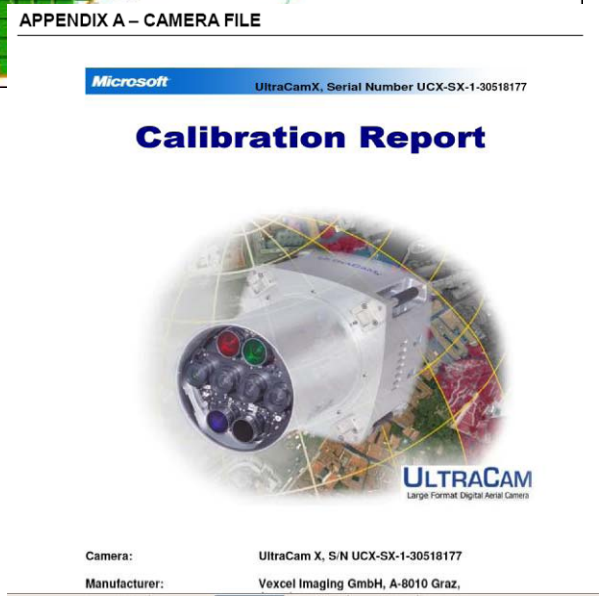
- Aerial Photography Acquisition
- Control Survey and Aerial Triangulation
- Digital Orthophoto Production
- Topographic Mapping
  - 2’ Contours
- Planimetric Updating
- 3D Building Model Update

- KCI – Surveying, Program Management, QA/QC
- Sanborn – Production, Photogrammetry

Aerial Photography Acquisition

- Spring 2008 Acquisition
  - March 9, 17, 21
  - May 24
  - Airspace clearance issues
  - 32 strips / 1500 exposures
- Digital Camera Used
  - Frame based Vexcel
- 80% overlap/ 60% sidelap in downtown area
- Airborne GPS and IMU
- 4 band imagery delivered to City




APPENDIX A – CAMERA FILE

Microsoft UltraCamX, Serial Number UCX-SX-1-30518177

Calibration Report

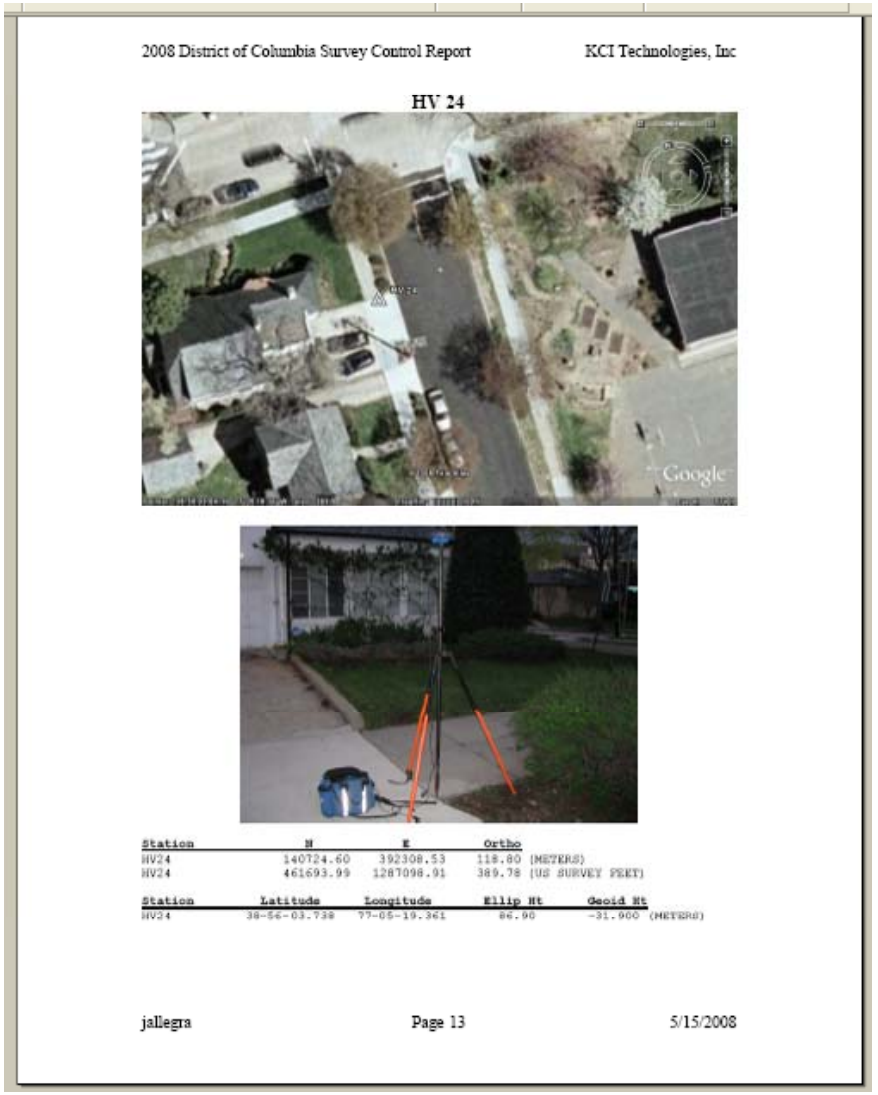
ULTRACAM
Large Format Digital Aerial Camera

Camera: UltraCam X, S/N UCX-SX-1-30518177

Manufacturer: Vexcel Imaging GmbH, A-8010 Graz,

Control Survey

- 26 GCPs
- NAD83/91 Md State Plane Horizontal (meters)
- NAVD88 (feet)
- Control report delivered



2008 District of Columbia Survey Control Report KCI Technologies, Inc

HV 24

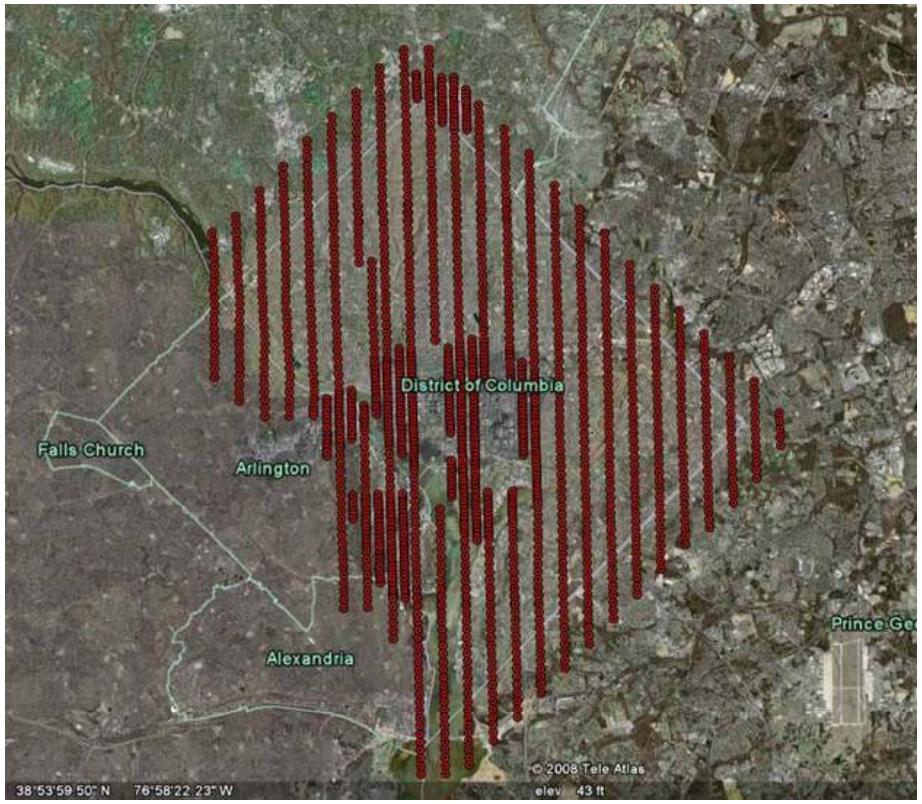
Station	N	E	Ortho	
HV24	140724.60	392308.53	118.80	(METERS)
HV24	461693.99	1287098.91	389.78	(US SURVEY FEET)

Station	Latitude	Longitude	Ellip Ht	Geoid Ht
HV24	38-56-03.739	77-05-19.361	86.90	-31.900 (METERS)

jallegra Page 13 5/15/2008

Aerial Triangulation

- New AT Solution Complete
- AT Block for City mapping
- Good fit with control and existing mapping
- ASPRS 100’ scale w/2’ contours



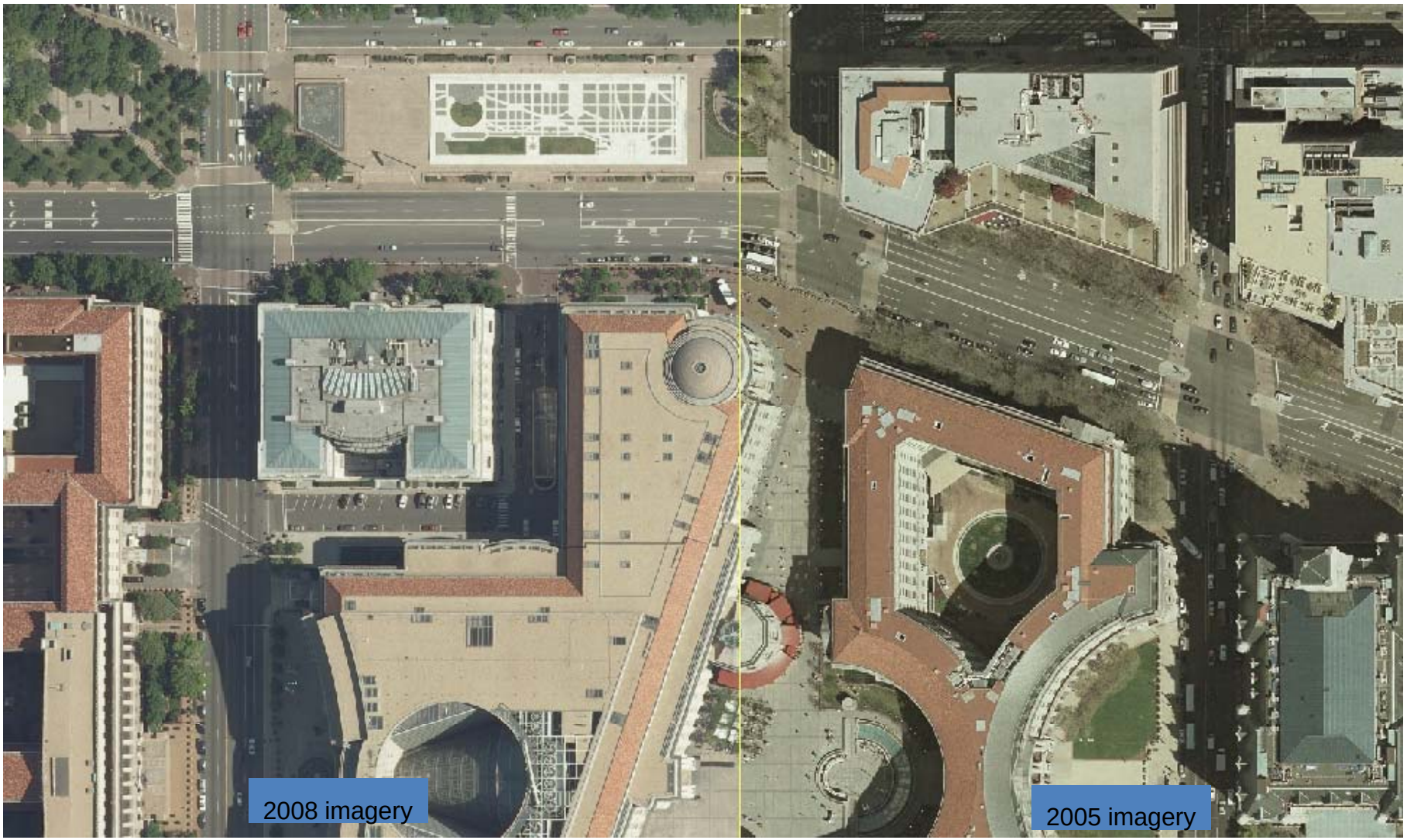
Digital Orthophoto Updates

- Existing tile layout
- 0.5’ pixel resolution
  - 1 meter in restricted area
- Multispectral 4 band files
- Used existing DTM
- Combination of leaf on/leaf off imagery
- Enhancements over existing orthos
  - Reduced building lean in overlap areas
  - Improved bridge modeling
  - Weekend flights minimized traffic
  - Improved image quality over film

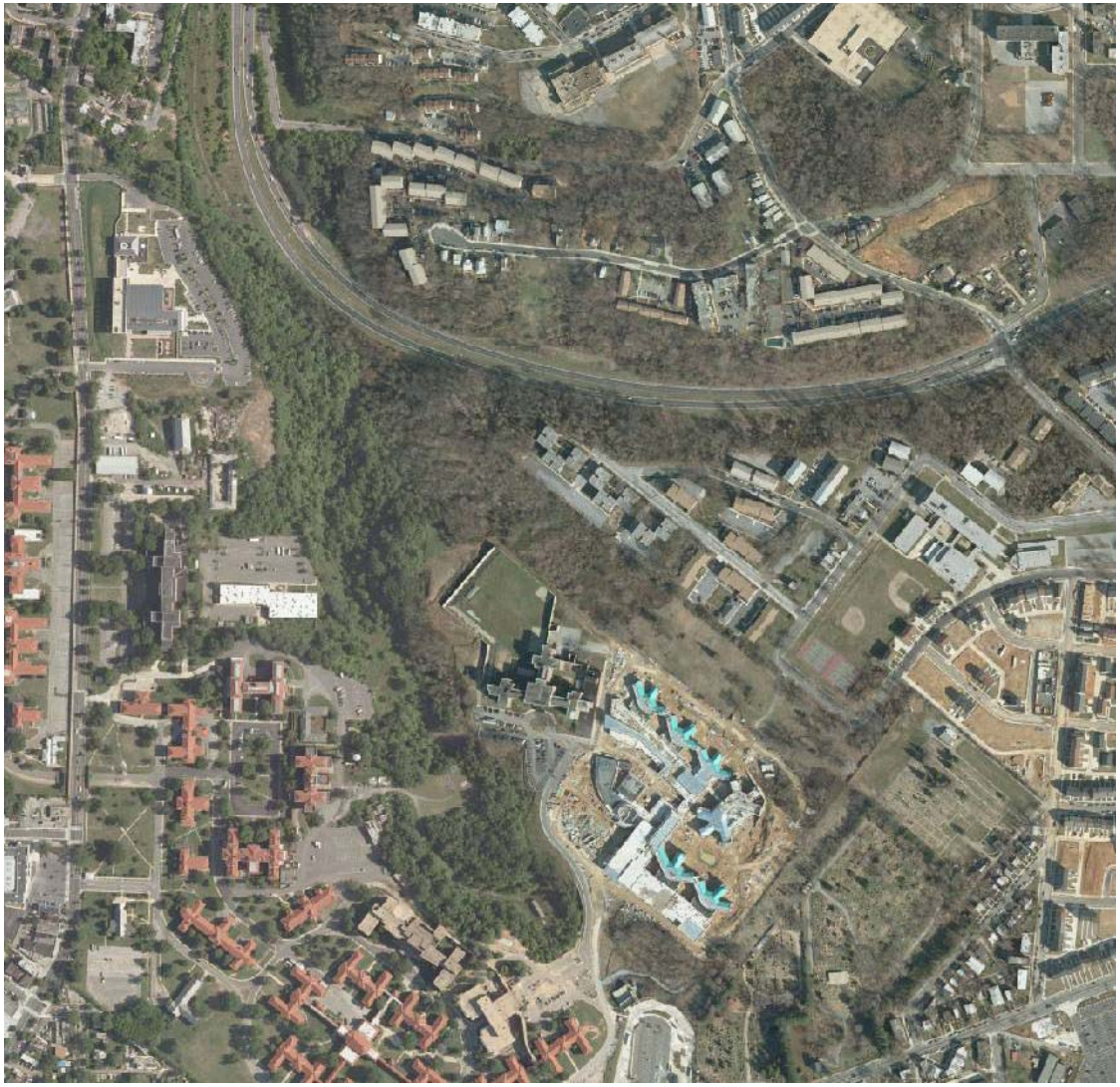
Digital Orthophoto Updates

- Multispectral Imagery
  - 4 band
  - Supports vegetation mapping
  - Supports automated processes
    - Impervious
    - Land cover

Digital Orthophoto Updates

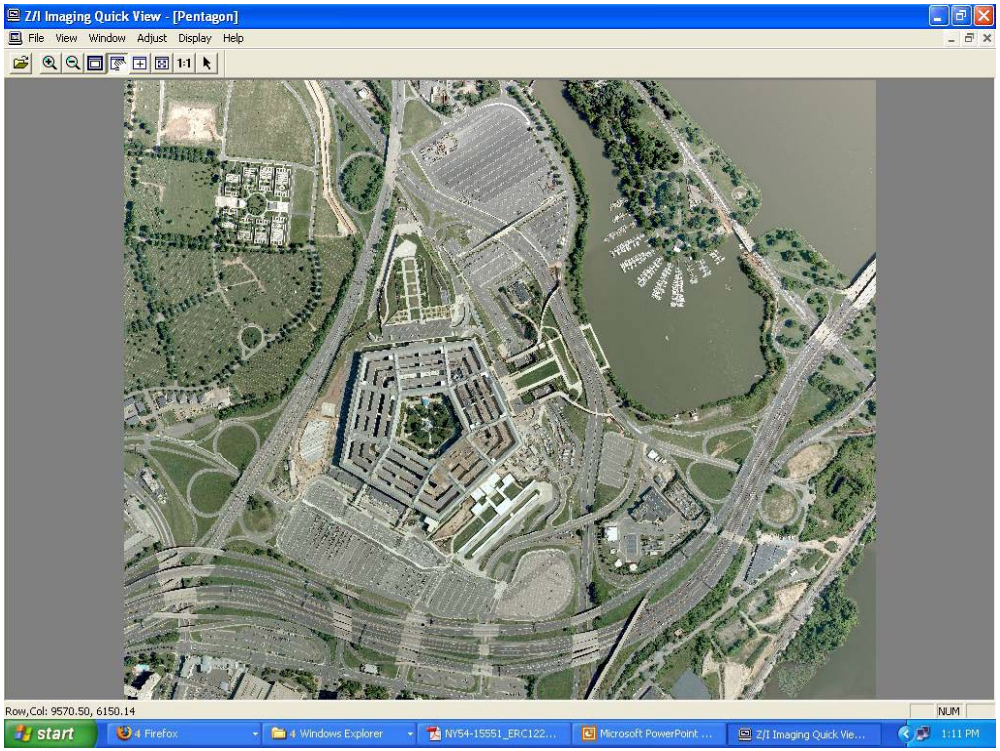


Orthophoto leaf on/leaf off



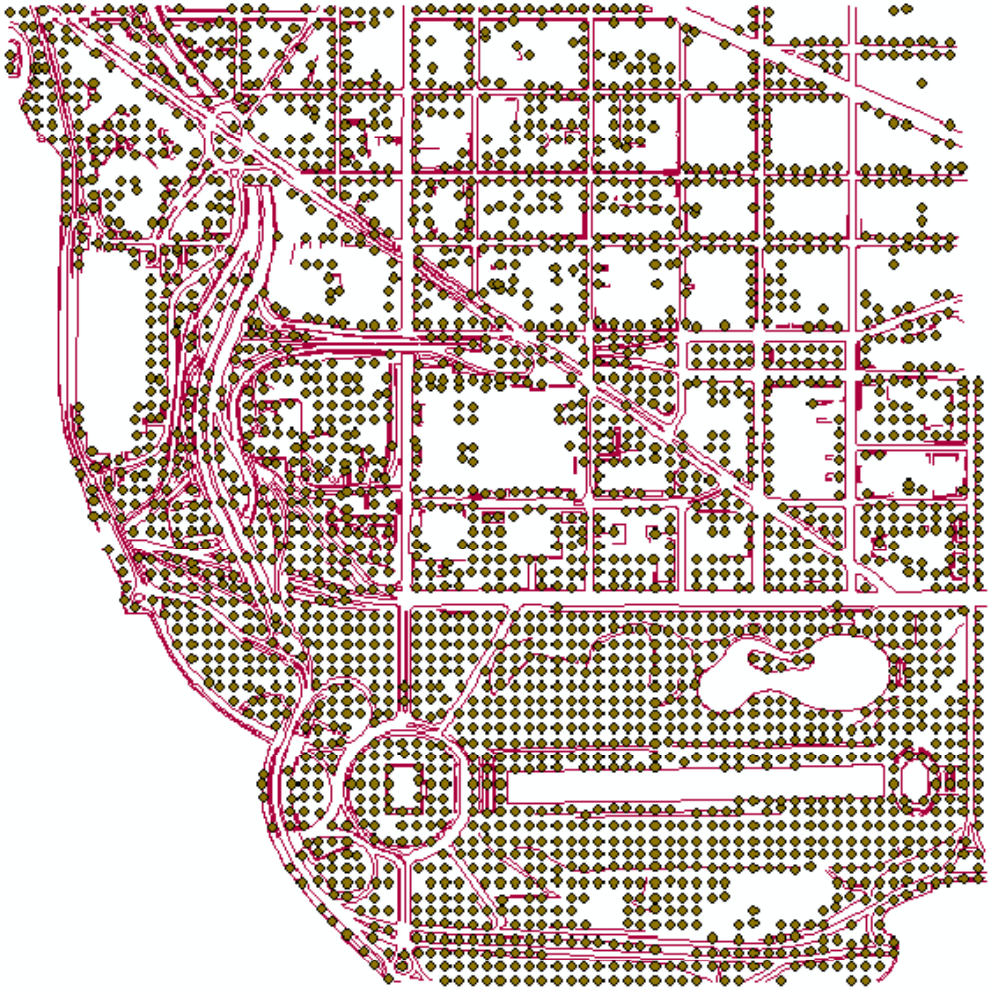
Pentagon Area Orthoimage

- Special Request from NGA & USGS
- Pentagon Area Orthoimagery
  - 9/11 Commemoration
- Existing LiDAR for orthorectification



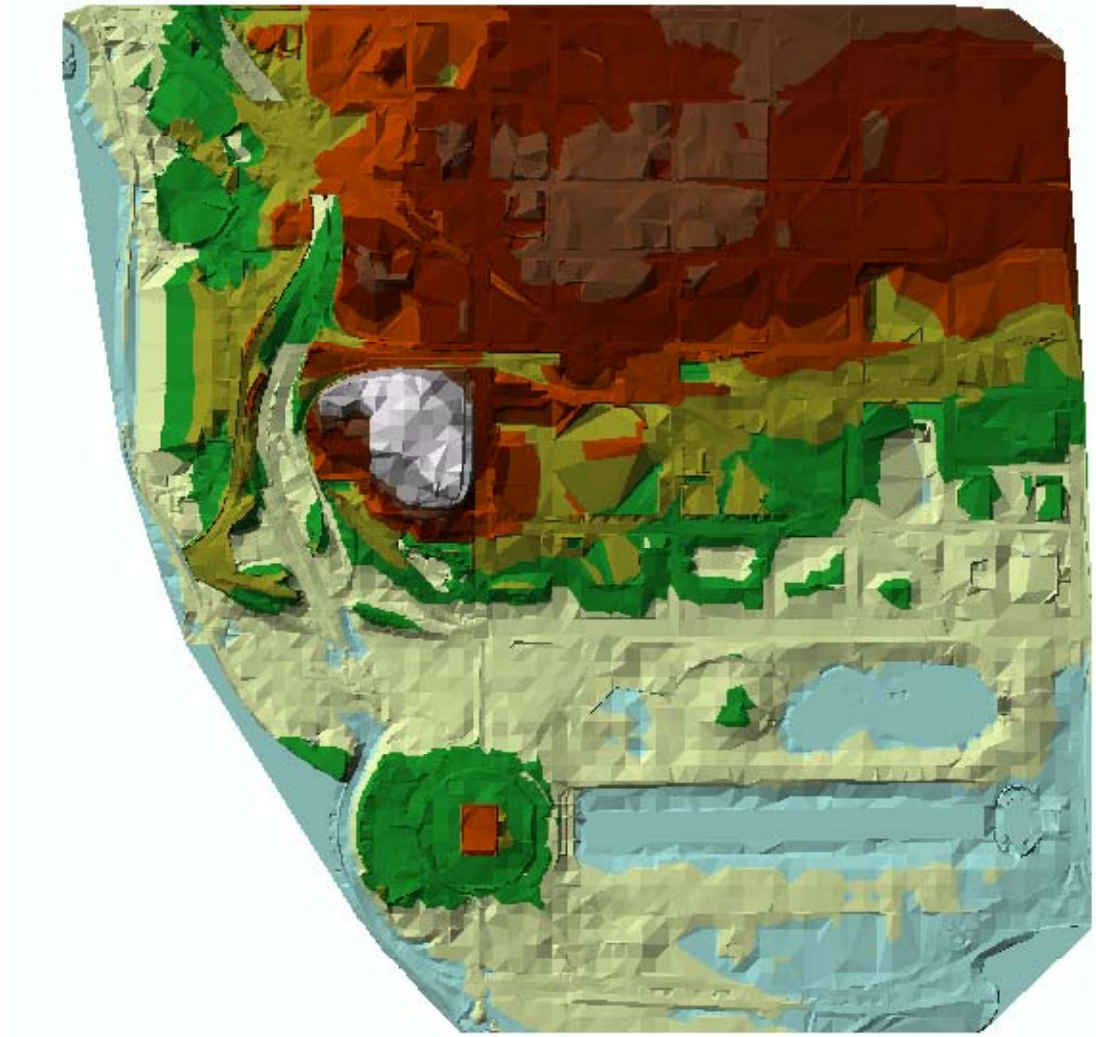
Topographic Mapping

- 3D compilation
  - Masspoints
  - Breaklines
- Geodatabase delivery
- New surface model



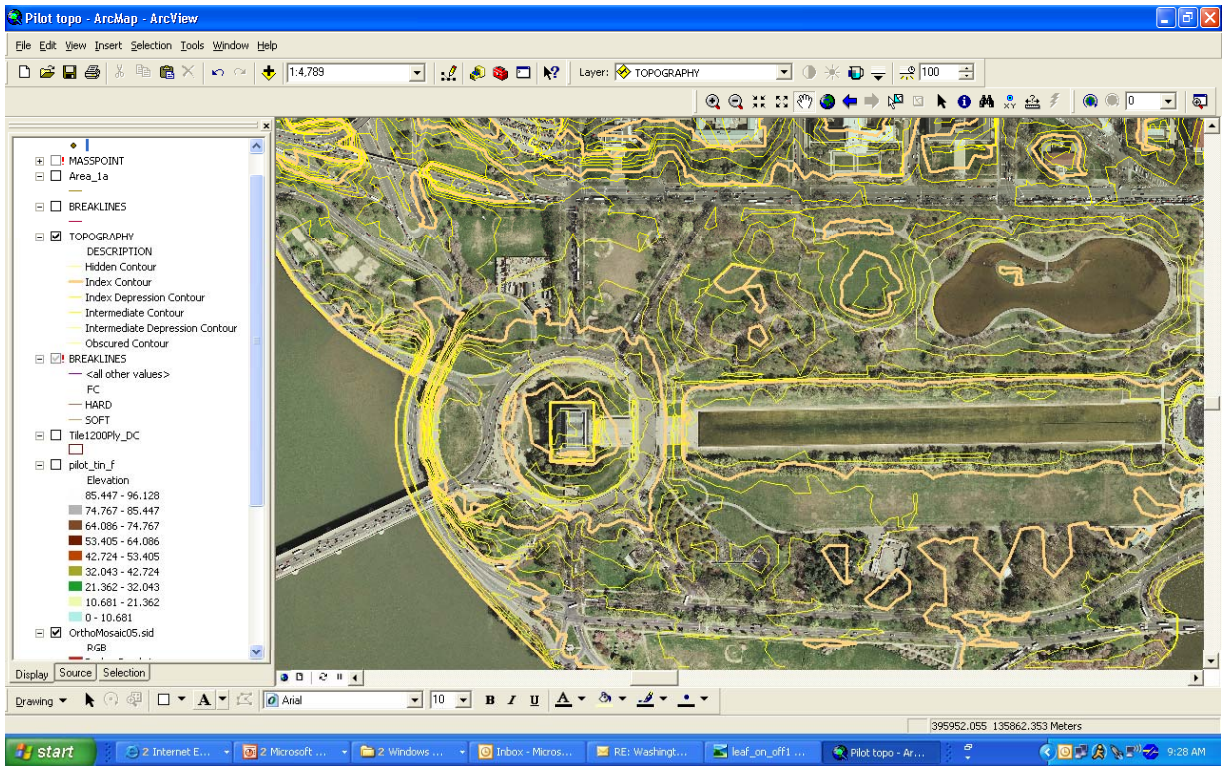
Topographic Mapping

- 3D compilation
  - Masspoints
  - Breaklines
- Geodatabase delivery
- New surface model
- Create TIN



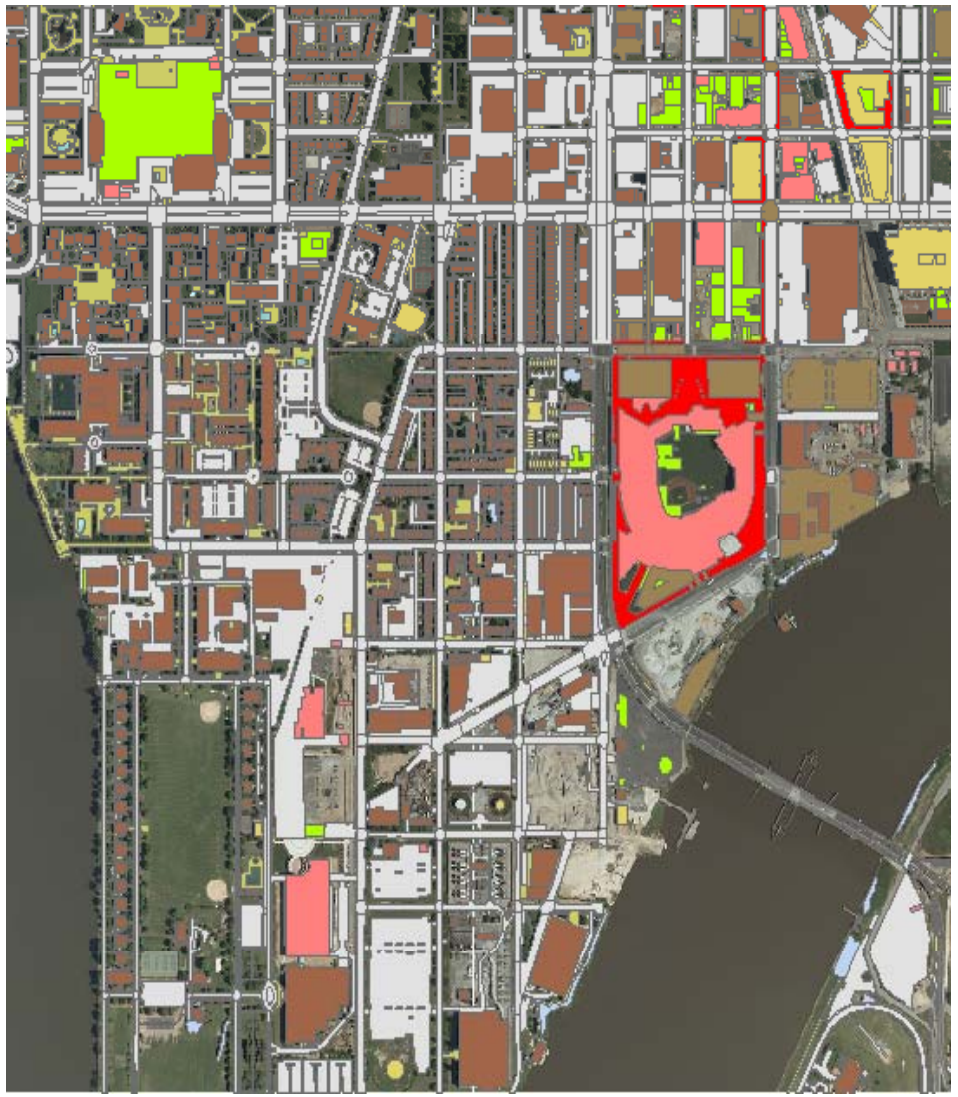
Topographic Mapping

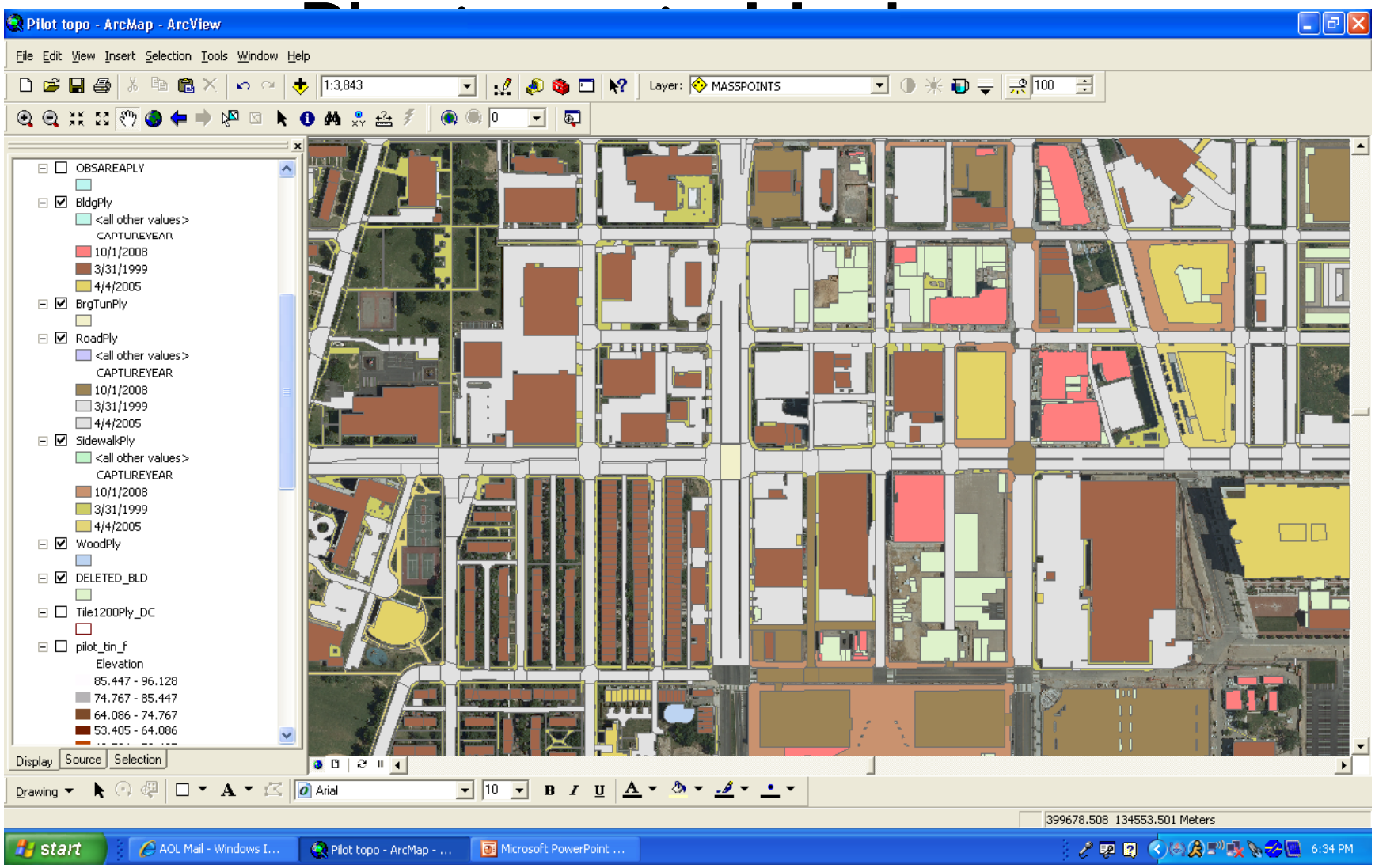
- 2’ CI
- DTM generated
  - Not as smooth
- Classified by type
- Attributed with elevation



Planimetric Updates

- Pilot Project complete
- 3D Compilation
  - model by model
- Geodatabase delivery
  - Buildings
  - Roads
  - Railroads
  - Sidewalks
  - Wooded area

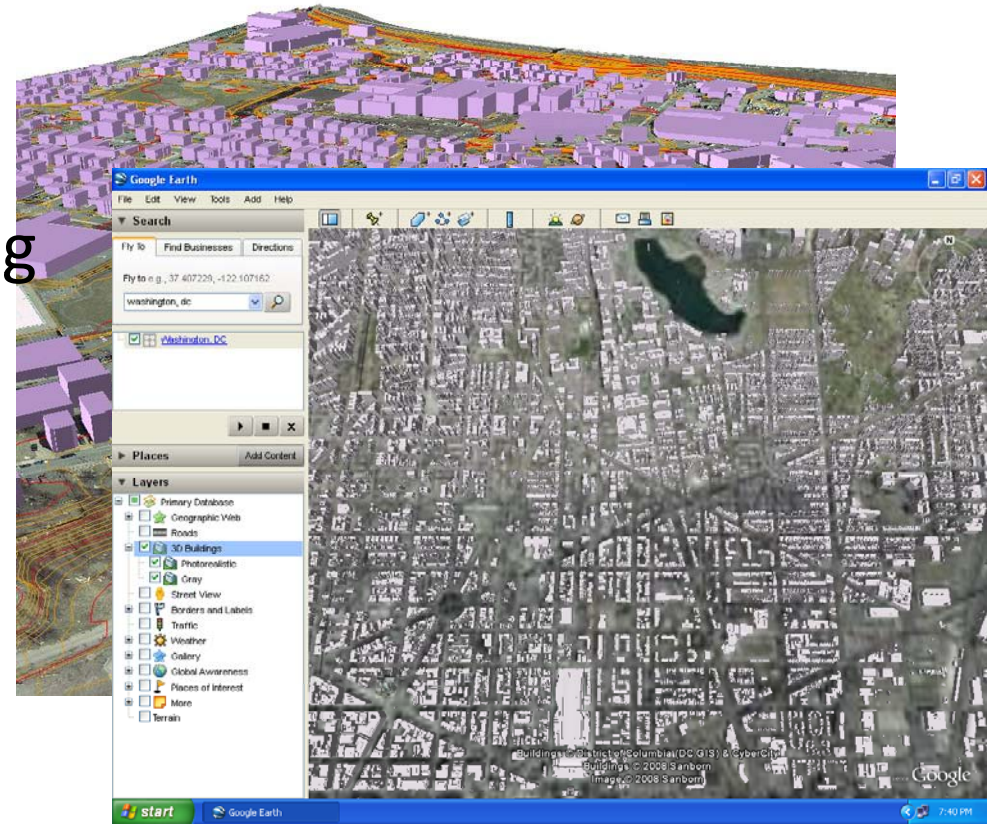



Pilot topo - ArcMap - ArcView
File Edit View Insert Selection Tools Window Help
1:3,843
Layer: MASSPOINTS
100
OBSAREAPLY
BldgPly
<all other values>
CAPTUREYEAR
10/1/2008
3/31/1999
4/4/2005
BrgTunPly
RoadPly
<all other values>
CAPTUREYEAR
10/1/2008
3/31/1999
4/4/2005
SidewalkPly
<all other values>
CAPTUREYEAR
10/1/2008
3/31/1999
4/4/2005
WoodPly
DELETED_BLD
Tile1200Ply_DC
pilot_tin_f
Elevation
85.447 - 96.128
74.767 - 85.447
64.086 - 74.767
53.405 - 64.086
Display Source Selection
Drawing
Arial
10
399678.508 134553.501 Meters
start
AOL Mail - Windows I...
Pilot topo - ArcMap - ...
Microsoft PowerPoint ...
6:34 PM

3-D Buildings

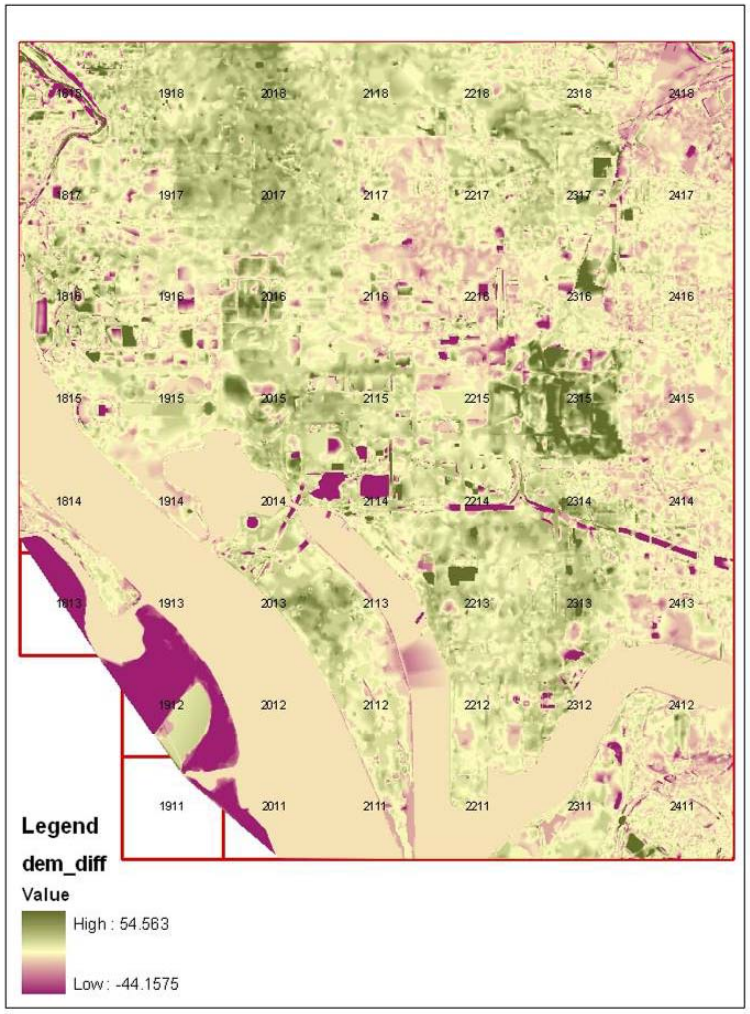
Building Models

- Elevation Attributes
- Update existing building model
- Update after planimetric complete
- Delivery in ESRI multipatch or KMZ format



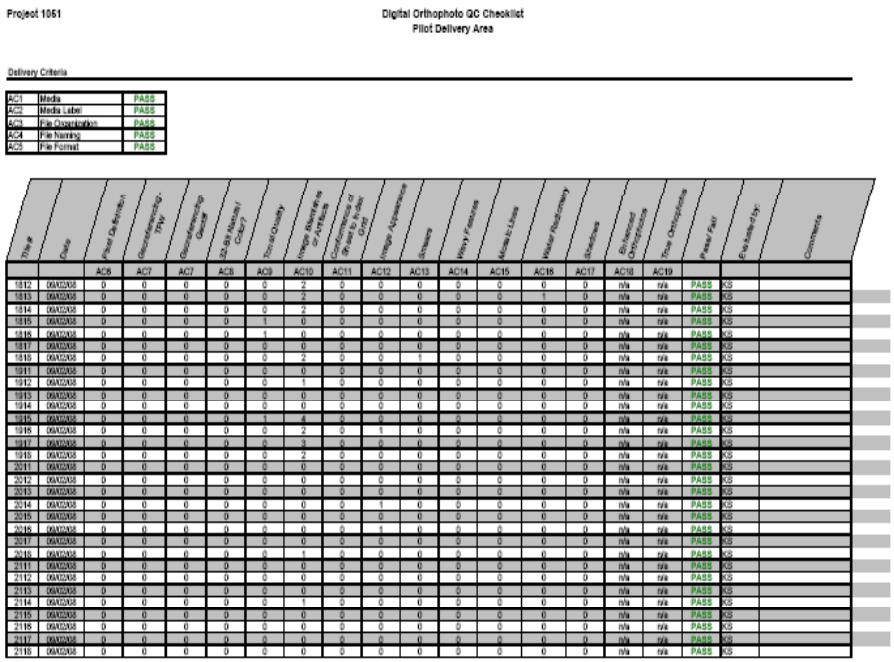
Quality Assurance/Quality Control

- Sanborn Internal Review
- KCI Independent Review
  - Quality
  - Completeness
  - Accuracy



Digital Orthophoto Review

- Sanborn Internal Review
- KCI Independent Review
  - Quality
  - Completeness
  - Accuracy



Project 1051

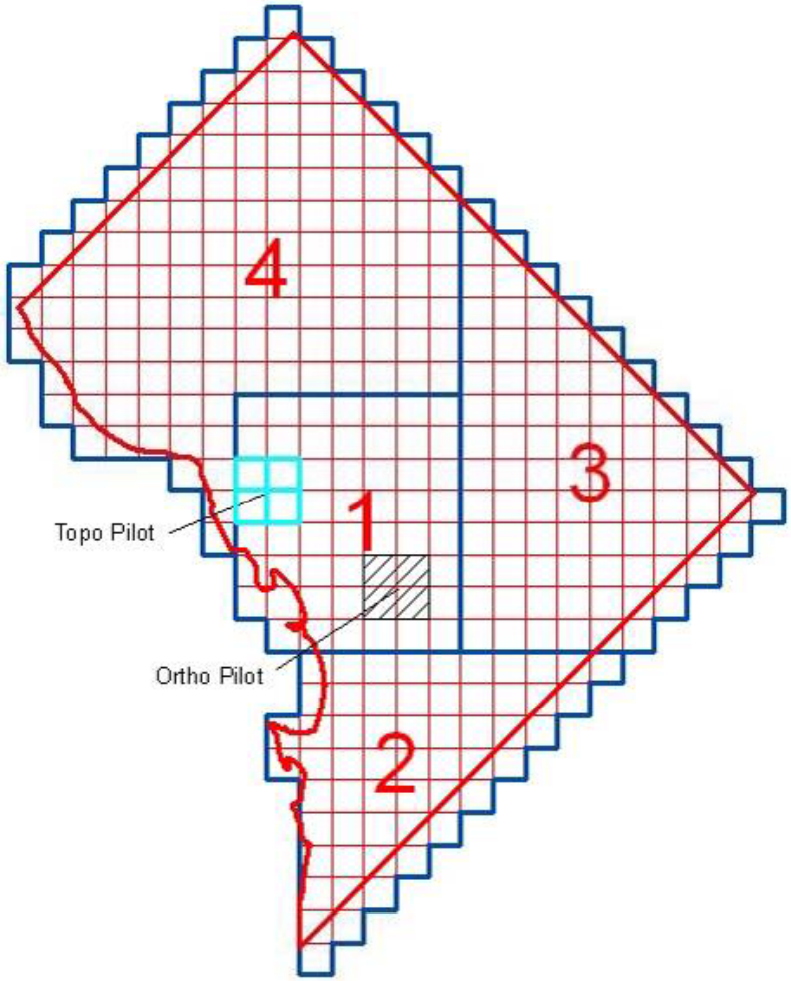
Digital Orthophoto QC Checklist
Pilot Delivery Area

Delivery Criteria

AC1	Media	PASS
AC2	Media Label	PASS
AC3	File Organization	PASS
AC4	File Naming	PASS
AC5	File Format	PASS

Tile #	Date	Pilot Definition	Georeferencing: Tiny	Georeferencing: Gauge	Sub-pix Accuracy: Color?	Tonal Quality	Hedge Alignment & Artifacts	Conformance of Seam to Edit Grid	Hedge Accentuation	Seams	Warp Features	Mosaic Lines	Water Radiometry	Shadows	Suggested Orthophotos	True Orthophotos	Phase Pass	Evaluated by:	Comments
		AC6	AC7	AC7	AC8	AC9	AC10	AC11	AC12	AC13	AC14	AC15	AC16	AC17	AC18	AC19			
1812	09/12/2008	0	0	0	0	0	2	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
1813	09/12/2008	0	0	0	0	0	2	0	0	0	0	0	1	0	n/a	n/a	PASS	KS	
1814	09/12/2008	0	0	0	0	0	2	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
1815	09/12/2008	0	0	0	0	1	0	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
1816	09/12/2008	0	0	0	0	1	0	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
1817	09/12/2008	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
1818	09/12/2008	0	0	0	0	0	2	0	0	1	0	0	0	0	n/a	n/a	PASS	KS	
1911	09/12/2008	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
1912	09/12/2008	0	0	0	0	0	1	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
1913	09/12/2008	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
1914	09/12/2008	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
1915	09/12/2008	0	0	0	0	1	4	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
1916	09/12/2008	0	0	0	0	0	2	0	1	0	0	0	0	0	n/a	n/a	PASS	KS	
1917	09/12/2008	0	0	0	0	0	3	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
1918	09/12/2008	0	0	0	0	0	2	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
2011	09/12/2008	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
2012	09/12/2008	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
2013	09/12/2008	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
2014	09/12/2008	0	0	0	0	0	0	0	1	0	0	0	0	0	n/a	n/a	PASS	KS	
2015	09/12/2008	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
2016	09/12/2008	0	0	0	0	0	0	0	1	0	0	0	0	0	n/a	n/a	PASS	KS	
2017	09/12/2008	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
2018	09/12/2008	0	0	0	0	0	1	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
2111	09/12/2008	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
2112	09/12/2008	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
2113	09/12/2008	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
2114	09/12/2008	0	0	0	0	0	1	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
2115	09/12/2008	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
2116	09/12/2008	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
2117	09/12/2008	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	
2118	09/12/2008	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a	n/a	PASS	KS	

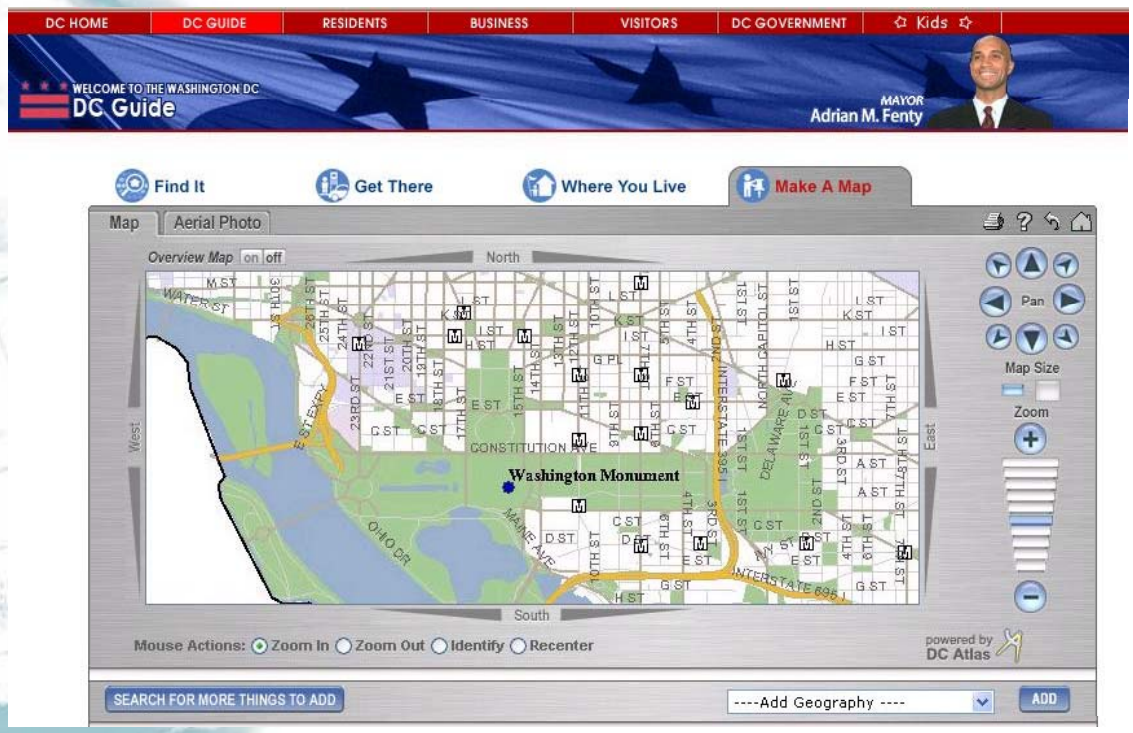
Delivery Areas



Project Timeline

	Area 1	Area 2	Area 3	Area 4
Orthos	Sept. 1	Oct. 1	Nov. 1	Dec. 1
Topo	Sept. 15	Nov. 30	Dec. 1	Feb. 15
Plan	Nov. 1	Nov. 30	Dec. 30	Feb. 15
3D Buildings	April 30	April 30	April 30	April 30

NSDI Cooperative Agreement Program:
GIS Strategic Plan
Final Version



Presented to DC GIS Steering Committee

October 6, 2008

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The DC GIS Strategic Plan
Final Version

Presented by:

Rich Grady

Applied Geographics, Inc.
Empowering People with Spatial Solutions

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Background And Plan Highlights

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GIS Strategic & Business Planning Process:
Project Background

- Support for the project was obtained from federal sources (c/o USGS) and OCTO
- Outreach to stakeholders was a key part of the process, to gather input and support for a collaborative **District-wide** effort

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Strategic Planning Process: Who has participated?

- DC Agencies
- Independent DC Agencies
- Federal Agencies
- Academic Institutions
- Private Sector
- Nonprofits
- Others Groups
- Citizens

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National Context

- National Spatial Data Infrastructure (NSDI)
- Federal Geographic Data Committee (FGDC) & National States Geographic Information Council (NSGIC) **"Fifty States Initiative"**
  - Cooperative Assistance Program (CAP) Grant Support
  - GIS Strategic Planning and Business Planning Guidance
  - Lessons Learned From Other CAP Grant Recipients

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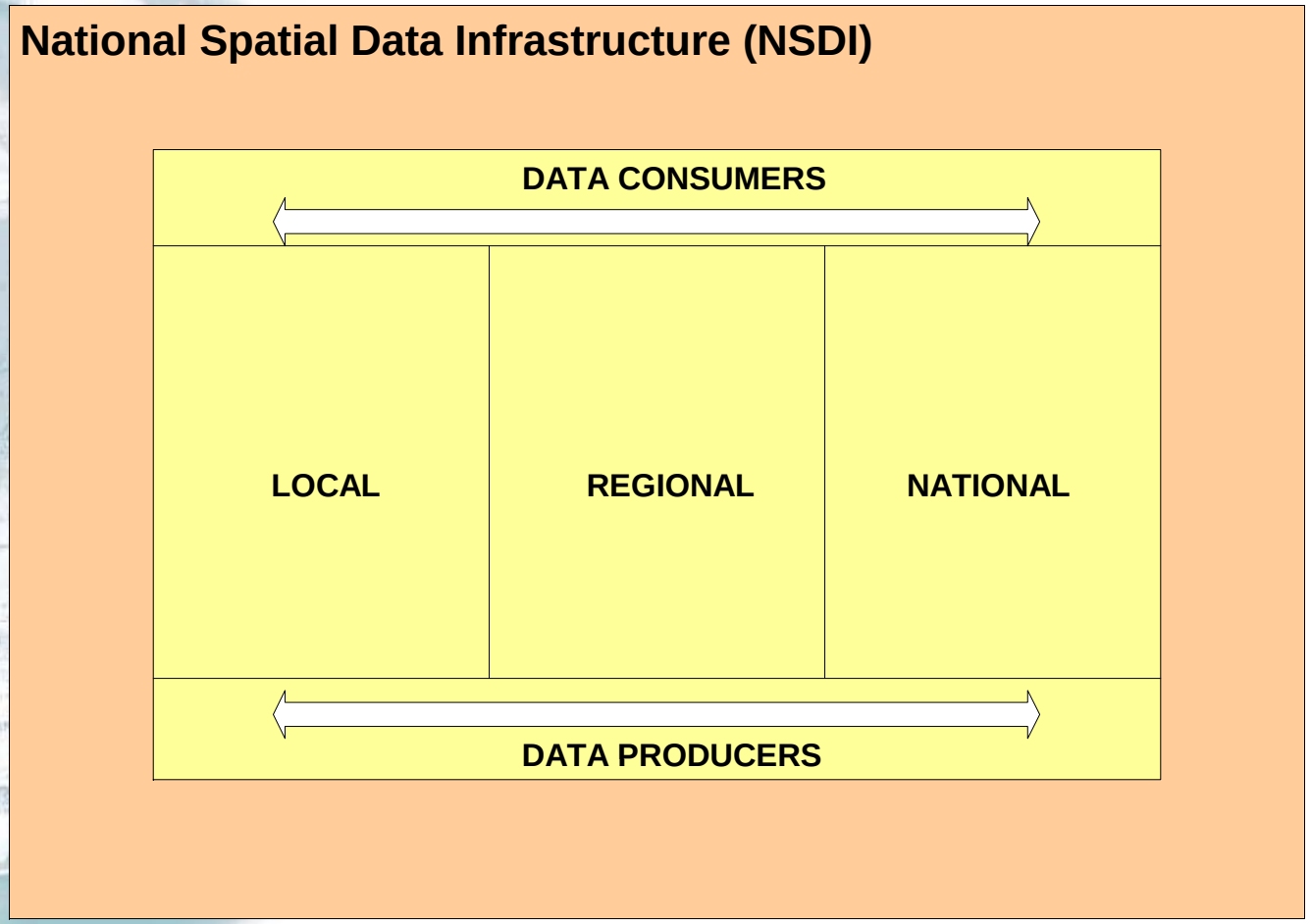
NSDI Goal: Cross-Governmental Data Sharing



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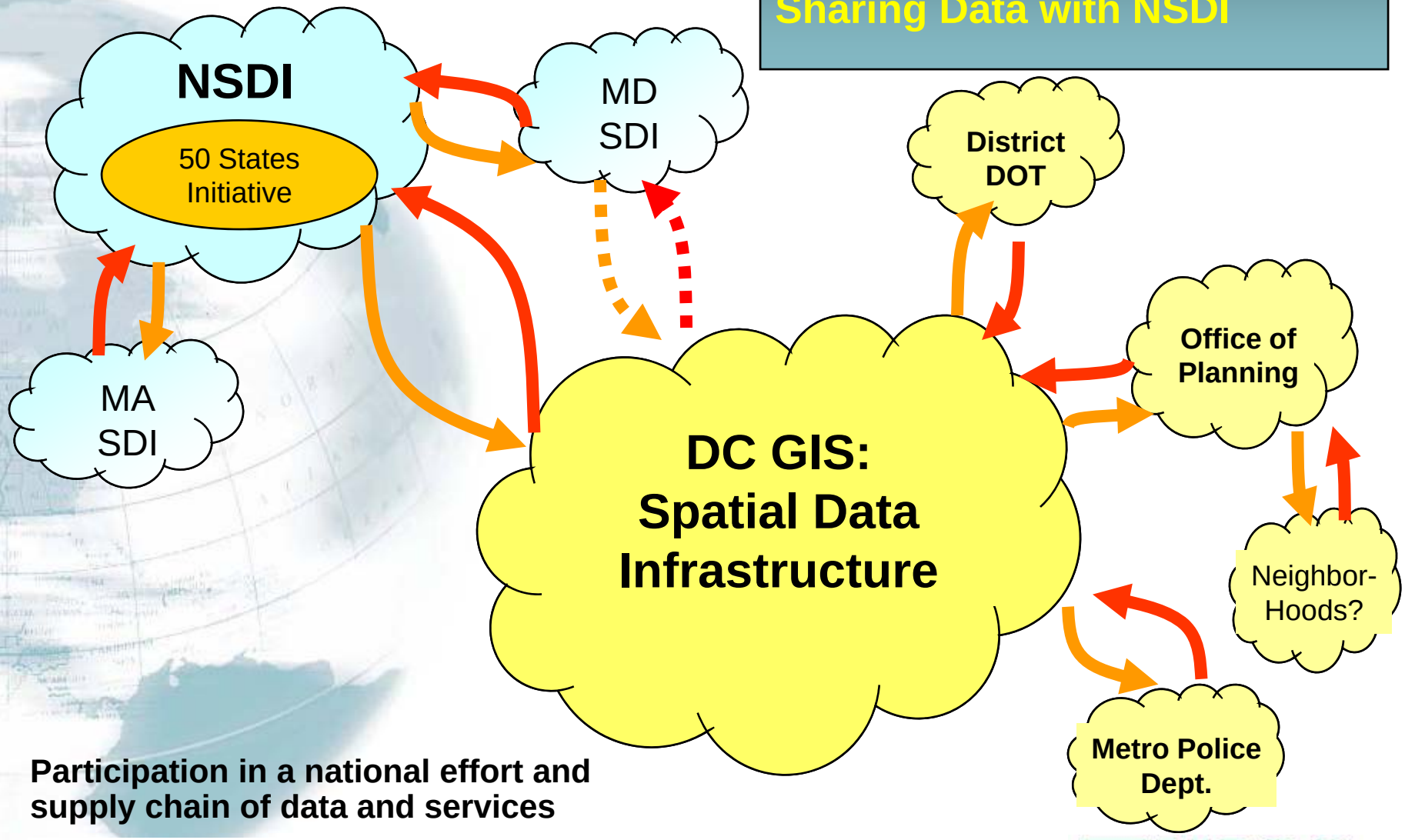
Part of a Bigger Picture:
Sharing Data with NSDI



- **Participation in a national effort and supply chain of data and services**

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Important District of Columbia Initiatives

- Mayor's Order 2002-27 establishing the GIS Steering Committee (GISSC)
- Ongoing DC GIS Activities:
  - **Planning & Coordination**
    - DC GIS Strategic and Business plans
    - District, regional, and national coordination
  - **Geospatial Data**
    - One stop shop for DC spatial data.
    - Large scale data development projects
  - **Enterprise Systems** (Public & agency)
    - Databases
    - Applications
    - Web services
  - **Customer Service** (DC Government only)
    - Training
    - Technical Support (help desk)
    - Consulting
  - **Emergency Support Function (ESF)**

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Strategic Planning Process: Overview

- Followed the guidance and **used the templates published by FGDC&NSGIC** in March 2006, on "Advancing Statewide Spatial data Infrastructures in Support of the National Spatial Data Infrastructure (NSDI);" key process steps included:
  - ***Stakeholder workshops*** -- in December 2007 and one in March 2008 (over 40 people attended each one)
  - ***GISSC meeting presentations and feedback*** – at project outset in September 2007, more recently in June 2008, and again today (October 6, 2008)
  - ***Departmental and stakeholder interviews, and scheduled teleconferences*** – January 208 – July 2008
  - ***On-line survey questionnaire*** – conducted in May 2008 (15 comprehensive responses to over 50 questions)
  - ***Ad hoc meetings and telecommunications*** – throughout the project performance period (September 2007 – July 2008)
  - ***Strategic Plan Working Group (SPWG) sessions*** -- one in January 2008 and one in June 2008
  - ***Document review and topical research*** *(e.g. data profiling and analysis of the DC GIS Data Catalog)*—throughout project (September 2007-July 2008)
  - ***Iteration on draft documents*** -- first, second, and final drafts (with interim drafts on parts of the plan documents)

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Strategic Planning Process: Details

- A Stakeholder Workshop was held on December 3, 2007 to provide overview of current situation, and to gather input for consideration in the planning process
- A preliminary set of Strengths, Weaknesses, Opportunities, & Threats (SWOT) was derived from Stakeholder input and existing documents
- Early in 2008, a Strategic Planning Working Group (SPWG) was formed from a subset of the GIS Steering Committee (GISSC)

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Strategic Planning Process: Details *(continued)*

- The SPWG met on January 23, 2008 to review preliminary SWOT assessment, and to provide feedback on needed refinement – attendees included:
  - Barney Krucoff (OCTO)
  - Roger Barlow (USGS)
  - Charlie Richman (Office of Planning)
  - Dave Koehler (DPW)
  - Erik Johnson (FEMS)
- Interviews were held with a key DC government stakeholder (DDOT) and a key Federal stakeholder (NCPC) for detailed perspectives
- Initial findings and recommendations were presented to GISSC on March 6, 2008

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Strategic Planning Process: Details *(continued)*

- Based on input from the GISSC Meeting in March, an on-line survey was conducted, along with additional phone interviews with a variety of stakeholders both in and out of DC Gov't
- The SPWG met again on June 11, 2008 to review Draft Plan and survey results, and to provide feedback on further refinement
- Draft Plan highlights were presented to GISSC on June 12, 2008
- Follow-up meetings were held with OCTO on June 25 & 26
- The additional input from June meetings was factored into the Plan's Final Draft during July, for final review by OCTO during the summer
- Final version being presented to the GISSC on October 6, 2008

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Strategic Planning Results: Refined Mission Statement

Old Mission Statement

- *The Mission of the DC Geographic Information System (DC GIS) is to improve the quality and lower the cost of services provided by the DC Government through the effective application of geospatial technology.*

New 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.

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Strategic Planning Results: Goals

- ***The planning process resulted in six long-term (five- year) goals to achieve continued success and improvements, as listed below:***
  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

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Strategic Planning Results: Action Plan

The planning process resulted in specific short-term (less than two- year) action items in alignment with long-term strategic goals, as listed below:

I. OCTO will:

- Seek endorsement of Mayors Order 2002-27 from the current Mayor, Adrian M. Fenty, after refinements as necessary
- Convene an Expanded Executive Board for the GISSC, chaired by OCTO and made up of senior representatives of the current permanent members (Office of the Chief Technology Officer, District Department of Transportation, Office of Planning, and the Office of the City Administrator) plus:

Department of Consumer and Regulatory Affairs	**Office of Tax and Revenue**
District Department of the Environment	**Office of Unified Communications**
Fire and Emergency Medical Services	**Office of Zoning**
Homeland Security and Emergency Mgt. Agency	**Water and Sewer Authority**
Metropolitan Police Department	**United States Geological Survey**
Office of Deputy Mayor for Planning and Econ. Devel.	**Department of Public Works**

- Schedule an official “GISSC Annual Budget Meeting” for September of each year to review the past year’s spending, and the DC GIS Business Plan’s spending plan for the year ahead

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Strategic Planning Results: Action Plan *(cont'd)*

II. The GISSC Executive Board will:

- Conduct a vote amongst the Executive Board to endorse and adopt this Strategic Plan as a guide to the continuing operations of DC GIS and GISSC governance reform, including by reference the official adoption of the DC Government Federated Geospatial Data Model and associated best practices
- Develop Bylaws for the governance of GISSC

III. The Full GISSC will:

- Meet at least quarterly
- Be open to all; including federal agencies, universities, non-profit organizations, private sector users, and geospatial vendors
- Serve as a forum for the exchange of information and ideas
- Provide advice to the GISSC Executive Board and to OCTO
- Adopt GIS technical standards

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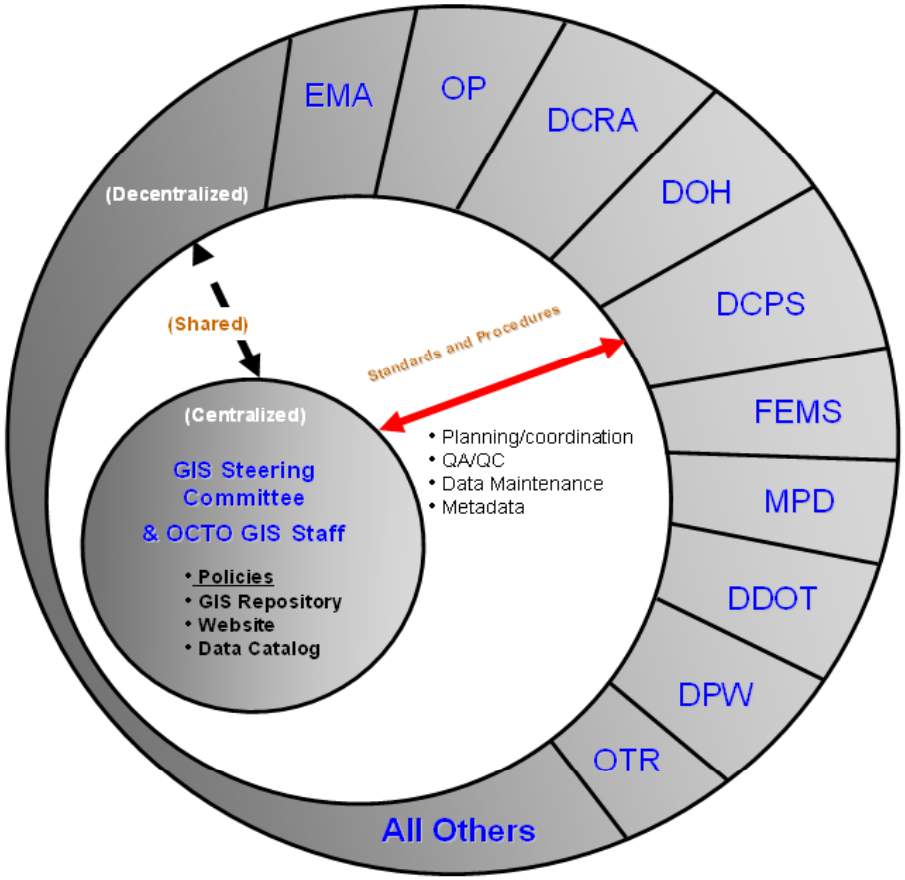
DC GIS Federated Data Model: Endorsed by the Planning Process

Federation: ***"A group of various bodies or parties that have united to achieve a common goal"***

- The Outer Rim
  - **Front line agencies**
  - **Federation Participants**
  - **Specific dataset responsibility**
- The Center
  - **GIS Steering Committee**
  - **OCTO GIS Staff**
  - **Hosting data and services**
  - **One Stop Geospatial Stop**
- The Standards Connect
  - **Adherence is federation membershi responsibility**
  - **Support efficient distribution**
  - **Enable common shared tasks**



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Strategic Plan: Measuring Success

- The long-term programmatic goals articulated in this Strategic Plan **will be reviewed annually by the GISSC Executive Board** (as proposed by this plan) to determine their enduring relevance to the overall DC GIS Program
- **The short-term action items and spending** will be reviewed at the GISSC Annual Budget Meeting in September of each year (proposed in this plan)

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Next Steps

- Discuss the Plan highlights

- Take a vote to adopt the Plan

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Discussion

Vote!

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Thank you!

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Other GISSC Business

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