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Putting New Jersey on the National Map


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Overview

- NJMapp – NJ Mapping Assistance Partnership Program
- NJGIN – NJ Geographic Information Network
- USGS CAP-funded initiatives
 - City of Camden
 - Statewide framework data via web services



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NJMapp

New Jersey Mapping Assistance Partnership Program

- Initiated in 2002
- Goal: create a statewide geospatial network for sharing and integration of spatial data.
- Partnership between the State and local governments
- State provides computer hardware, software, training and in-kind services
- Local government partners maintain and provide access to their spatial data layers.



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NJMapp – Project Tasks

- Visioning and planning/stakeholder meeting
- Hardware/software installation
- Data assessment
- Data conversion and development
- Map services authoring
- Metadata development and training
- Data viewer development and installation
- Training for node administration and maintenance



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NJMapp

State Provides

- Servers, rack, tape backup unit
- ArcIMS, ArcSDE, SQL Server
- Installation and configuration
- Data assessments
- Data conversion and development
- Metadata support
- Metadata cataloging
- Training
- Ongoing support

Partners Provide

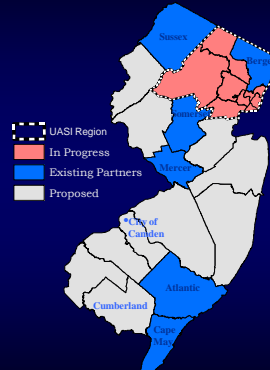
- Coordination, project management
- Access to data
- Participation in assessment process
- Establish internal GIT resource staff to insure program and data sustainability
- Agree to partner with municipalities and nonprofit organizations



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NJMapp – Where Are We Today?

- 6 counties active NJMapp partners
- 1 core city active NJMapp partner
- 1 county in progress
- 6 counties and 2 core cities within Urban Area Security Initiative (UASI) region active or currently in progress
- 9 remaining counties



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NJGIN

New Jersey Geographic Information Network

- A distributed network of federated servers
- Enables access to data directly from stewards of locally maintained data sets
- NJGIN Portal, hosted by NJ OGIS, provides metadata catalog and serves as the gateway for centralized access to locally hosted partner data – a data discovery tool
- NJGIN Nodes at each local government partner provide up-to-date data via live map services



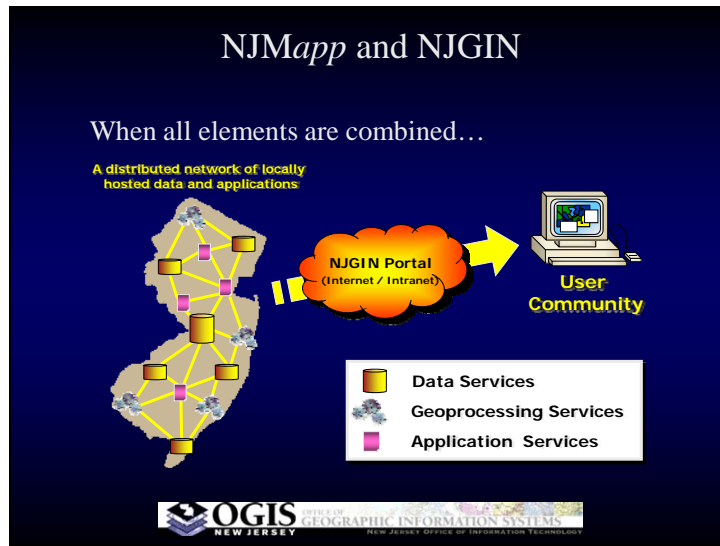
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NJGIN Portal – njgin.nj.gov

The screenshot shows the NJGIN Portal interface. At the top, there is a navigation bar with links for 'Home', 'Business', 'Government', 'State Services', and 'A to Z | Departments'. Below this is the 'njgin' logo and the text 'new jersey geographic information network'. The main content area is divided into several sections: 'Explorer' with a search bar and map view options; 'News' with a list of recent announcements; 'Events' with a list of upcoming meetings; and a 'Log In' section for registered users. There are also links for 'New user / register here' and 'Forgot Username or Password?'. The footer contains a disclaimer: 'This site is managed by the NJ Office of Information Technology, Office of OGIS and is best viewed with Internet Explorer version 8.0 or greater.' and links for 'contact us', 'privacy notice', 'legal statement', and 'accessibility statement'.



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Expanding the Reach of NJGIN

- First initiatives were funded by homeland security funding
- Recent activity funded by two USGS Cooperative Agreement Program Grants
 - Adding City of Camden into NJGIN, publishing local data to National Map
 - Publishing statewide framework data to The National Map using WMS and WFS services

OGIS OFFICE OF GEOGRAPHIC INFORMATION SYSTEMS
NEW JERSEY OFFICE OF INFORMATION TECHNOLOGY

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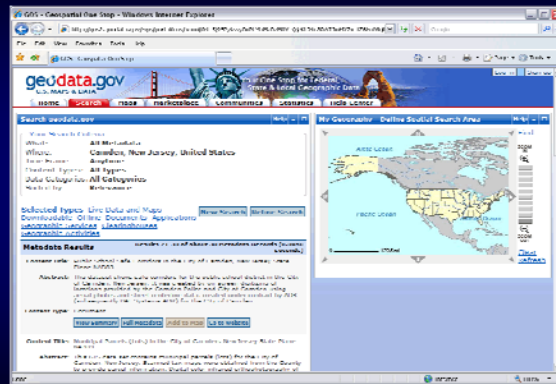
City of Camden

- Data assessment with all city departments
- Data development and conversion
- Hardware – database, application and web servers, tape backup, UPS
- Software – ArcIMS, ArcSDE, SQL Server
- Map Services – ArcIMS feature and image Services, WMS
- Metadata for map services and data
- Data viewers



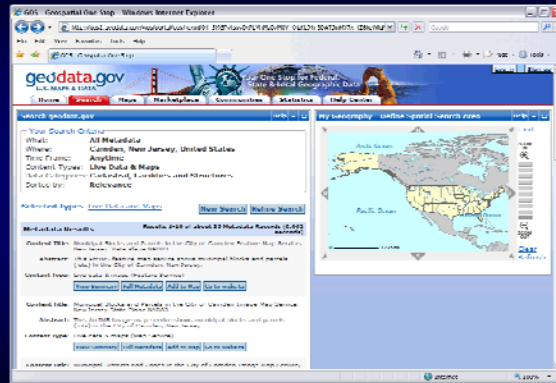
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Citywide Datasets – Catalogued on GOS



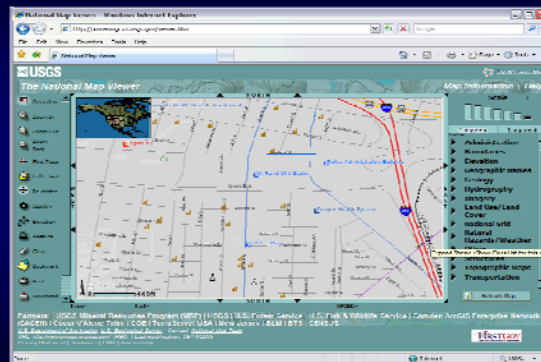
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ArcIMS Services – Catalogued on GOS



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Web Map Services (WMS) – Published to The National Map



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NJGIN with Local Branding

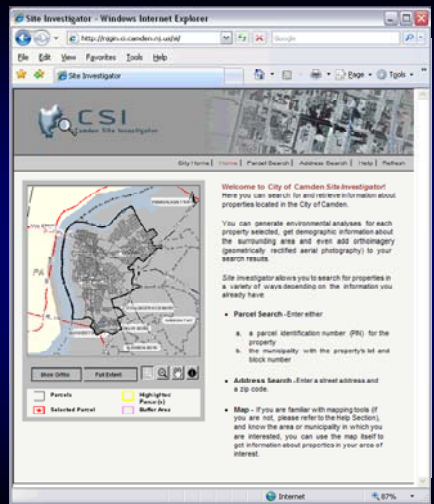
CAGEN:
Camden
ArcGIS
Enterprise
Network



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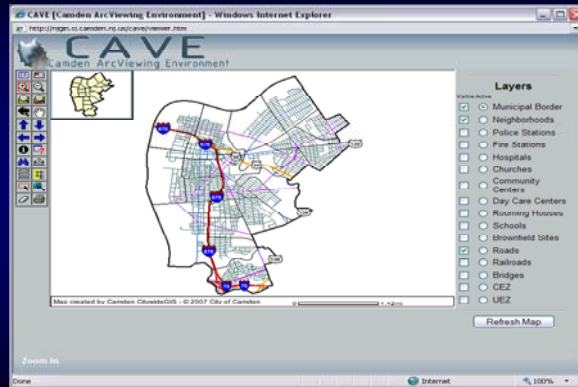
Custom Data Viewer

- “Site Investigator”
- Built by OGIS for NJGIN partner nodes
- Utilizes web services from local partner and OGIS



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General Use Data Viewer



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CAP 2006 – Putting New Jersey on The National Map

- NJ has relatively well-developed framework data, mixture of state and local stewardship
- NJGIN metadata catalog is routinely harvested by GOS
- Focus of this project is to get map services connected directly from NJGIN to The National Map
- Expansion of storage, WMS/WFS services



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Framework Data

- 2002 Orthophotography
 - False color IR
 - 1' pixels
 - Scale 1:2400
 - Lead agency: NJOIT-OGIS
- Elevation
 - Existing 10m DEM statewide
 - Lidar being done piecemeal, seamless DEM planned
 - NJDEP, NJOIT-OGIS, USGS, FEMA, NGA



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Framework Data (cont.)

- Hydrography
 - Captured from 2002 orthos, scale 1:2400
 - NHD attribution in process
 - Lead agency: NJDEP
- Land Use/Landcover (2002)
 - Photo-interpreted from 2002 orthophotos
 - Modified Anderson classification
 - Includes attributes from 1995 LULC
 - Lead Agency: NJDEP



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Framework Data (cont.)

- Municipal Boundaries
 - 566 municipalities
 - Update in process to match roads, hydro, surveyed data from open space and ag preservation programs
 - Lead agency: NJOIT-OGIS
- Road Centerlines
 - All publicly maintained roadways
 - Captured from 2002 orthos, updated with GPS
 - Standardized linear referencing system
 - Lead agency: NJDOT



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NJGIN Map Services

- 1930s Aerial Photography – IMS IS, WMS
- 2002 Orthophotos – IMS IS, WMS
- Boundaries – IMS IS, IMS FS, WMS, WFS
- Digital Elevation Model – IMS IS, WMS
- Hydrological Features – IMS IS, IMS FS, WMS, WFS
- Land Use/Landcover – IMS IS, IMS FS, WMS, WFS
- Road Centerlines – IMS IS, IMS FS, WMS, WFS
- Topographic Maps – IMS IS, WMS



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Enabling WMS

- Deploy ESRI WMS connector WAR file to application server
- Configure properties on admin page
- Enable services



ArcIMS WMS Connector Administrator

Connector Properties Update Service List

	Service	WMS Enabled?	Capabilities	Map
1	AtlanticCounty	<input checked="" type="checkbox"/> Enable WMS		
2	BergenCounty	<input checked="" type="checkbox"/> Enable WMS		
3	BurlingtonCounty	<input checked="" type="checkbox"/> Enable WMS		



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Enabling WFS

- ESRI WFS connector
 - No ability to restrict # of features returned to the client on the back end. Too many features will crash IMS.
 - Use third party front end client to restrict requests. With large layers, there is a potential that many features will not render.
- GeoServer WFS
 - Used by The National Map.
 - No apparent problems with # of features returned.



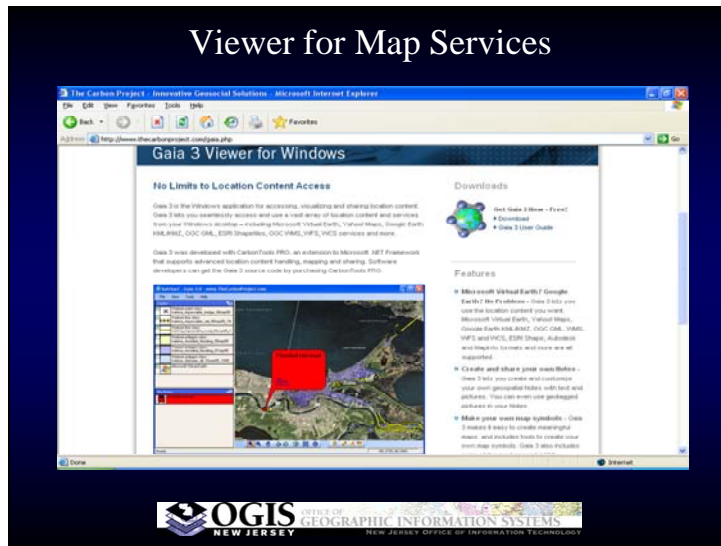
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Open Source Server



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Viewer for Map Services



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Final Thoughts

- Distributed network connects users directly to data stewards
- Challenges building/running the network
 - \$\$\$
 - Training/knowledge transfer
 - Executive sponsorship in local governments
- Connecting to nationwide initiatives (GOS, TNM) extends our reach
- ArcGIS Server for WMS
- GeoServer for WFS
- Will WFS be necessary in future?



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Thanks for Listening!

Questions? No? Good.

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