

Newark Geographic Information Network

NEWGIN

(Enterprise GIS Implementation)

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Abstract:

The City of Newark needed an enterprise GIS to utilize geo-spatial information as an invaluable tool in the analysis of data for strategic planning in all city departments. NEWGIN is built on an industry-leading platform that includes ESRI's ArcGIS, ArcSDE and ArcIMS applications as well as Orion's OnPoint software. The city agencies are benefiting from the use of an internet/intranet based web application (NewView) in the areas that relate to managing items such as parcel information, school locations, libraries, hospitals, census information, disease trends, surveillance and prevention, trends in animal control cases; to name a few. This presentation will focus on the city's business processes and initiatives in achieving this goal successfully and share thoughts on the challenges of distributed data in the enterprise GIS, and finding new avenues to make the best use of GIS technology for the city in making better decisions for its residents.

Introduction:

“NEWGIN”, The City of “Newark’s Geographic Information Network” was developed so that Newark could take “critical data”, used in our day to day decision making process and apply it against a geo-coded map of this great city. The NEWGIN portal is the City of Newark’s information source for all GIS-related activities. This GIS homepage and application gateway provides users with help about GIS, current events, support, and contact information.

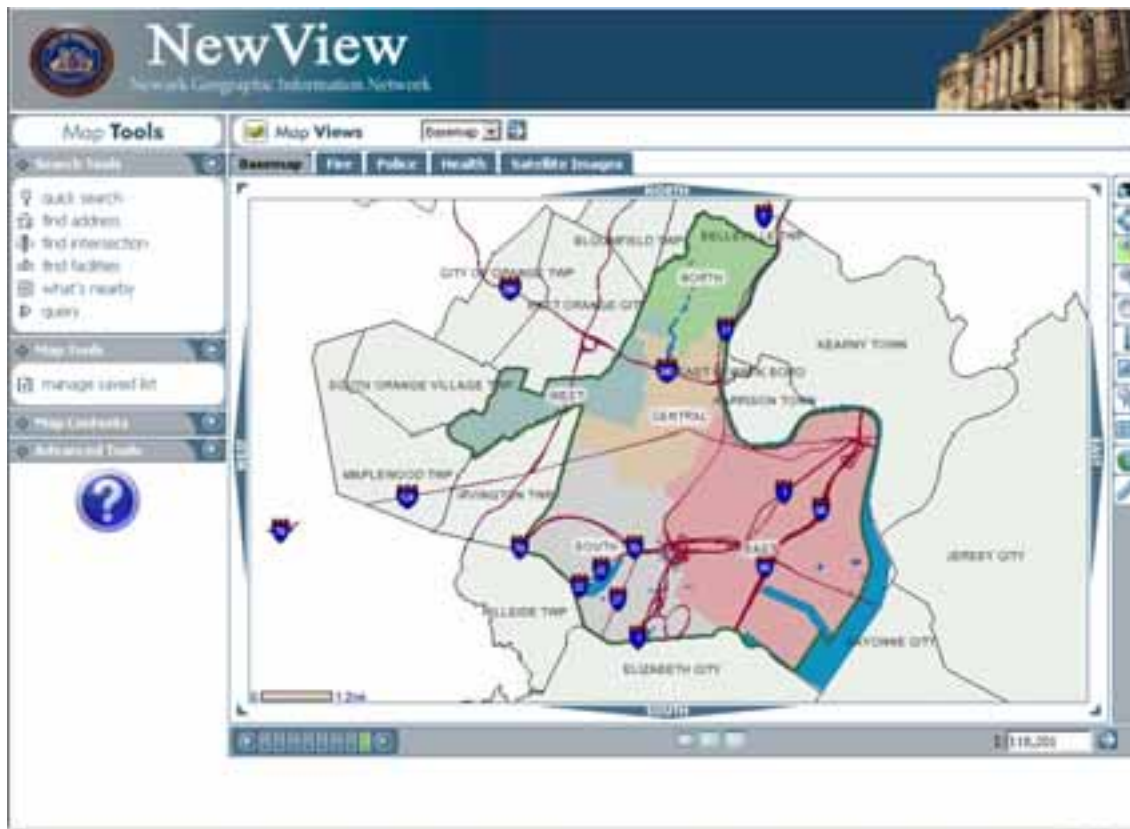
“NewView” is an online application that provides public Internet users and the State of NJ Homeland Security community with access to spatial data about critical infrastructure. This lightweight GIS data viewer has basic map functionalities such as; pan and zoom plus advanced querying and spatial analyses like buffering and feature selections. This user-friendly interface gives City of Newark personnel, residents, and other constituents a tool to find information regarding parcels and other geographically placed information. OMB was able to link to the State of New Jersey MOD-IV Property Tax System integrating the City’s CAD-based block and lot maps. The move from CAD to GIS allows for the basemap to be dynamically linked to a database instead of being simple, graphical representations. Users can now access spatial information using their own Internet browser without the need for GIS software, knowledge, or training.

The implementation of EPINet and NEWGIN provided the foundation for enterprise GIS in Newark. Under EPINet, the City was able to institute GIS data standards that provide secure, scalable, and enhanced use of Newark’s vast information warehouse. Newark’s implementation project plan was so successful that it was requested to be used as the implementation template for the rest of New Jersey’s UASI partners.

NEWGIN PORTAL

The screenshot shows the NEWGIN web portal in Internet Explorer. The browser title is "Internet Explorer provided by City of Newark". The address bar shows "http://gisweb/". The page features a navigation menu with "NewView", "CONTACT", "HELP", "NERP", and "REQUEST MAP". A large banner at the top displays the NEWGIN logo and a city skyline. Below the banner is a "Click Here to Enter NewView" button. The main content area is divided into several sections: "OVERVIEW OF GIS TECHNOLOGY" with a detailed paragraph, "GIS & HOMELAND SECURITY" with a sub-image and text, "NEWGIN HEADLINES!!" with two news items, and "About NEWGIN" with a sub-image and text. A central diagram shows a central cylinder labeled "Spatial Information Network" connected to various city departments: Department of Economic & Housing Development, Department of Health & Human Services, Department of Fire, Department of Police, Department of Engineering, Department of Neighborhood & Recreation Services, and Department of Water & Sewer.

The NEWGIN web portal was successfully launched on March 23, 2006 and also made available to the public at: <http://njin.ci.newark.nj.us>. NEWGIN is also available via an icon on the Newark Intranet site.



“NewView” is an application interface designed with a series of layers developed to provide geographic and statistical information about Newark’s infrastructure. It includes a “Parcel” search tool that combines tax assessment data with the actual block and lot and provides key ownership and tax information on properties throughout Newark. Collected data from areas like Health, Police and Fire can be further developed for strategic planning utilizing valuable information on critical infrastructure concerns.

Almost all Data used in the day to day decision making process of this government can now be displayed against a geocoded map of the city. This allows us to use our data for just about all areas of service such as 9-1-1 dispatch and response, Bio-hazards, Immunization, West-Nile Tracking, Tax Assessment, Inspections, Water table maintenance, Parade Routing (traffic), and Garbage pick-up; to name a few. This allows for a tremendous cost savings by better analysis and strategic planning of dispatched resources.

Adding Pictometry to the Enterprise GIS Network



Pictometry - (Downtown Newark)

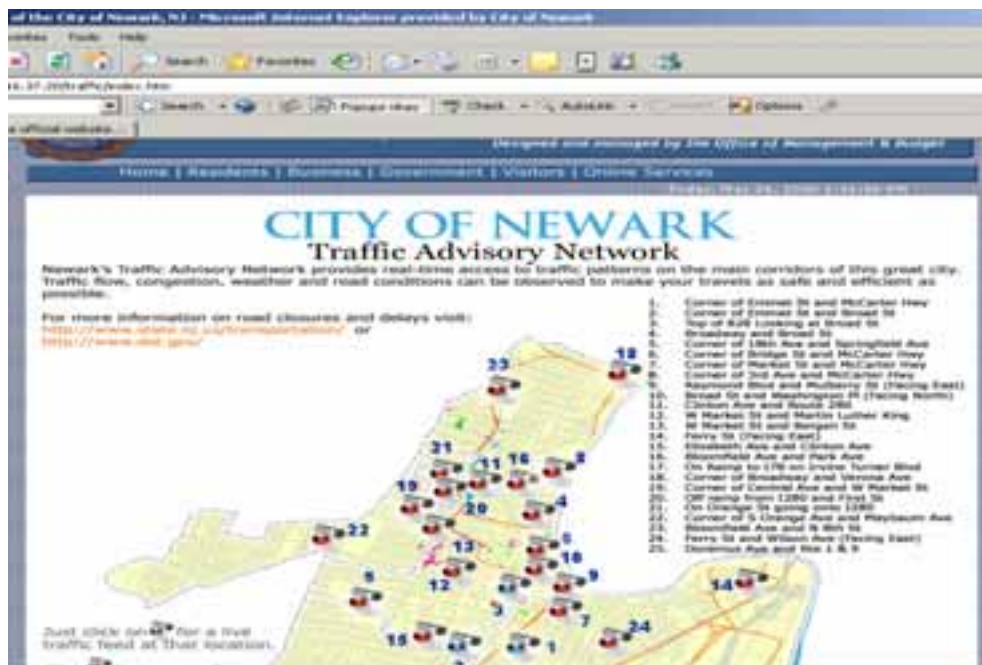
Essex County has chosen the City of Newark to host Pictometry to an already developed enterprise system and to allow other municipalities within Essex County the ability to have access to these orthogonal and oblique images. By adding Pictometry to our GIS network, the City of Newark, in accordance with Essex County, is doing everything in its power to give emergency personnel the tools they need. The City of Newark's GIS implementation and plan to add Pictometry's mapping solution as part of a joint partnership with Essex County to provide mapping services for all of Essex County, has received notice from several GIS industry websites.

Leveraging Investments

The City of Newark will continue to leverage its Service Oriented Architecture (SOA) through its use of the NEWGIN platform. OMB has taken this powerful geospatial platform and linked its “mission critical” datasets to a newly developed geo-database that can be used throughout the government enterprise. OMB pioneered the use of GIS for custom-developed applications, that re-engineered work flow processes to consume and deliver information in a way never before done in Newark.

Traffic Advisory

The City of Newark uses GIS for its Traffic Advisory Network, which provides real-time access to traffic patterns on the main corridors of Newark. Traffic flow, congestion, weather and road conditions can be observed to make everyone’s travels as safe and efficient as possible. Links to the camera have been placed on the City’s website www.ci.newark.nj.us for public access and are also available as a layer on “NewView.” Maps of “Proposed” Locations can be viewed by simply clicking on a red camera.



City of Newark, Traffic Advisory Network

Construction Cams

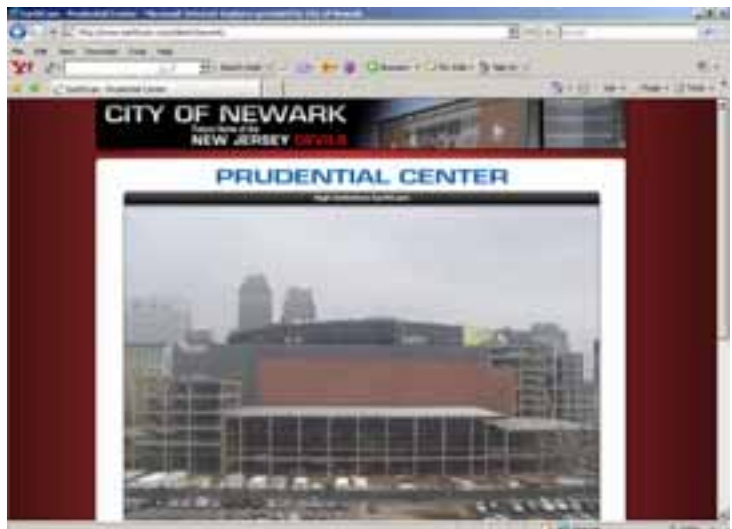


Construction Cameras have also been included as layer on “NewView.” This enables the engineers, developers and residents to chart the progress of development in designated areas around the city. A live feed and time-lapsed camera will show progression of these development projects.



Live Feed of the Newark Arena Construction Site

Future Newark Arena



Application Development

ANIMAL SECTION - NEW COMPLAINT

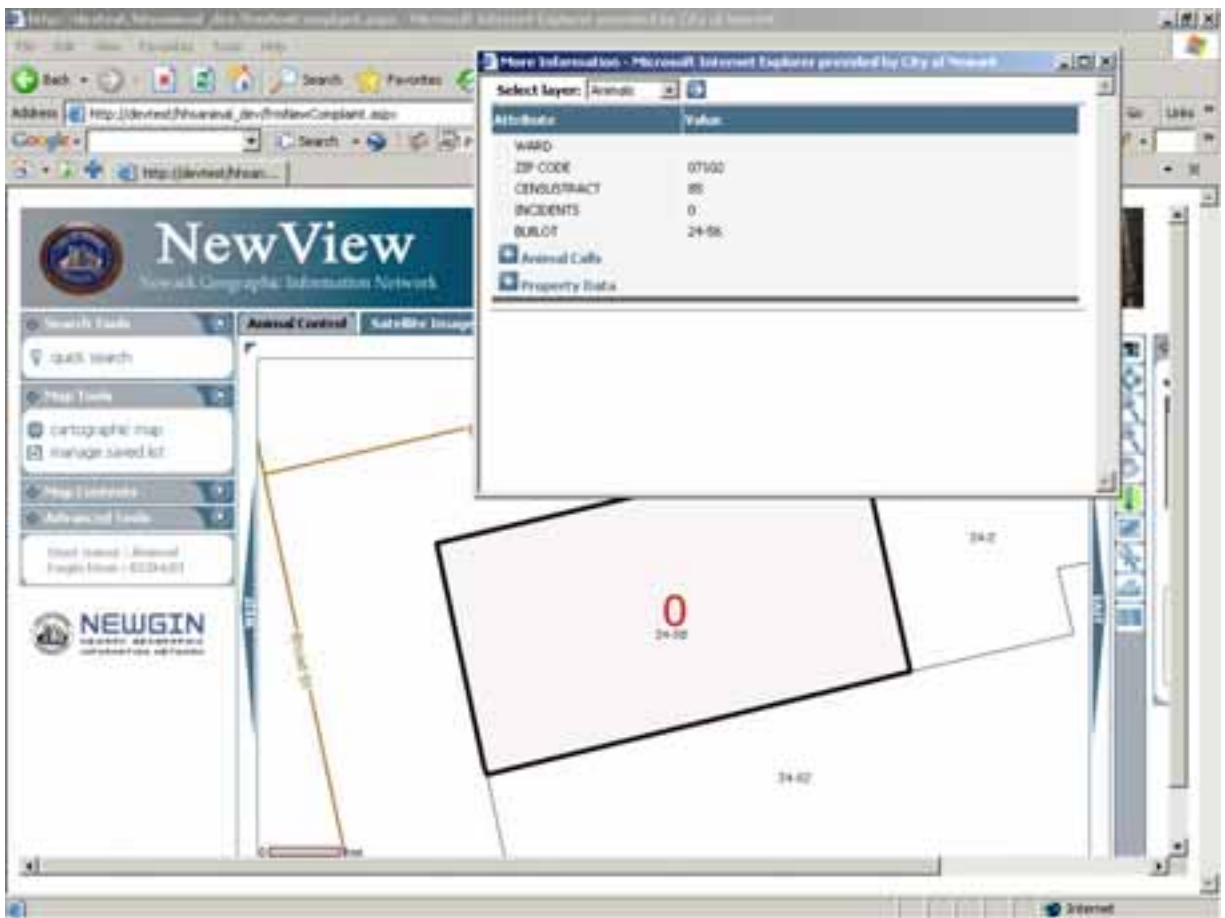
COMPLAINT DETAILS

Complaint #*	<input type="text"/>	Complaint Date*	<input type="text"/>
Complaint Created By*	<input type="text"/>	Status*	<input type="text"/>
Animal Type*	<input type="text"/>	Complaint Type*	<input type="text"/>
Call Originated From*	<input type="text"/>	Bulk Pick-up	<input type="radio"/> Week 1 <input type="radio"/> Week 2 <input type="radio"/> Week 3 <input type="radio"/> Week 4
Census Tract #	<input type="text"/>	# of Dwelling Units	<input type="text"/>
Premise Information	<input type="text"/>		

Anonymous Caller

Caller First Name	<input type="text"/>	Caller Last Name	<input type="text"/>
Phone Number	<input type="text"/>	Other Phone #	<input type="text"/>
Caller Identity	<input type="text"/>	Complainer Address	<input type="text"/>
Apartment #	<input type="text"/>	Complainer State/Zip	<input type="text"/>
Complainer City	Newark		

Health and Human Services benefited from the City's Web based development platform by acting as a "pilot" for internally developed browser based applications. **The Animal and Rodent Control Application (ARC)** was designed to meet the demand placed on that agency for an automated process in receiving and responding to ARC issues from the public. OMB worked with this office to understand their business process from call taking to dispatch, in order to develop an application that allows for complaint intake, the dispatch of an Animal Control Officer (ACO), Investigation findings and Reporting. The Animal and Rodent Control Application also records issues and then interfaces with the City's GIS application ([NewView](#)) to show actual location and history of complaints at that address.



Example:

If Dog is licensed, the ACO (Animal Control Officer) can find out owner information by typing in the dog's license number. ARC Application references an active table of all licensed dogs in the city. After information is collected, the ACO can issue fines based on a complete reference of "Title VI" Municipal Ordinance. Included are lists of more than 20 standardized reports and Census tract information that can be viewed from the GIS application ([NewView](#)). This same application model will be used to develop applications for Food and Drug, Weights and Measures and Lead Prevention; to name a few. The City of Newark continues to optimize its investment by integrating and developing innovative department specific GIS applications. The City is constantly working towards making data accessible to all users throughout the city with the help of the NEWGIN platform. The City continues to share its GIS expertise and knowledge with its enterprise users through scheduled trainings and meetings as well, to enhance the GIS workforce in the city.

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