City of Virginia Beach

Leveraging ArcGIS Server Technology

A Local Government Approach

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Virginia Beach

39th Largest city in the United States

438,000 Residents

LAND	ELEVATION	WATER
248	TWELVE	59
SQUARE MILES (642 KM)	FEET ABOVE SEA LEVEL	SQUARE MILES (153 KM)

BEACHES*

THIRTY-EIGHT

MILES *Atlantic Ocean and Chesapeake Bay

City by the Sea

Located in the southeastern corner of VA where the state meets the sea.

- Virginia Beach has a unique environment where residents & visitors have access to 38 miles of beaches in our oceanfront resort area, along with a beautiful town center, cultural centers, museums, a financial district, more than 100 miles of bikeways offering community connectivity, urban amenities, wildlife reserves and parks.

Local Government GIS

- GIS Division - 19 employees
- In addition - Public Safety, Public Works, Utilities, Parks & Recreation all have GIS employees within their departments

Enterprise GIS

New Web technology can be challenging to implement, especially for local governments. With numerous Departments dependent on Web services for daily business workflows and diverse applications that need to be integrated, change does not come easy.

Diverse Mapping Environment

ESRI ArcInfo

ArcMap

ArcServer

Explorer

ArcGIS Online

Pictometry EFS

Pictometry Online

Proval

Intergraph Geomedia

Maverick

CAD

Hansen Map Drawer

Accela

Envista

Achibus

OSIS

800+ Applications

ArcGIS for Server

- Virginia Beach has leveraged ArcGIS Server to deliver citizen web services as well as serve the needs of customers within the organization.

Best Strategic Value

In addition to the technical hurdles such as API choices, caching challenges, and database development, delivering the best strategic value requires balancing the sometimes competing needs of data security and web accessibility, manageability and scalability, all within the current local government environment of limited resources.

ArcGIS Server

- ArcGIS web technology provides the City of Virginia Beach with the tools to juggle some of these demands.

Community Basemap

Source Matters

- ESRI Community Basemap Program has become internationally important by incorporating local government data into a standardized worldwide web "*basemap*" ensuring users access to the most up-to-date information available from the source.

Technical Decisions

- API Choices
- Caching Challenges
- Database Development
- Data Security

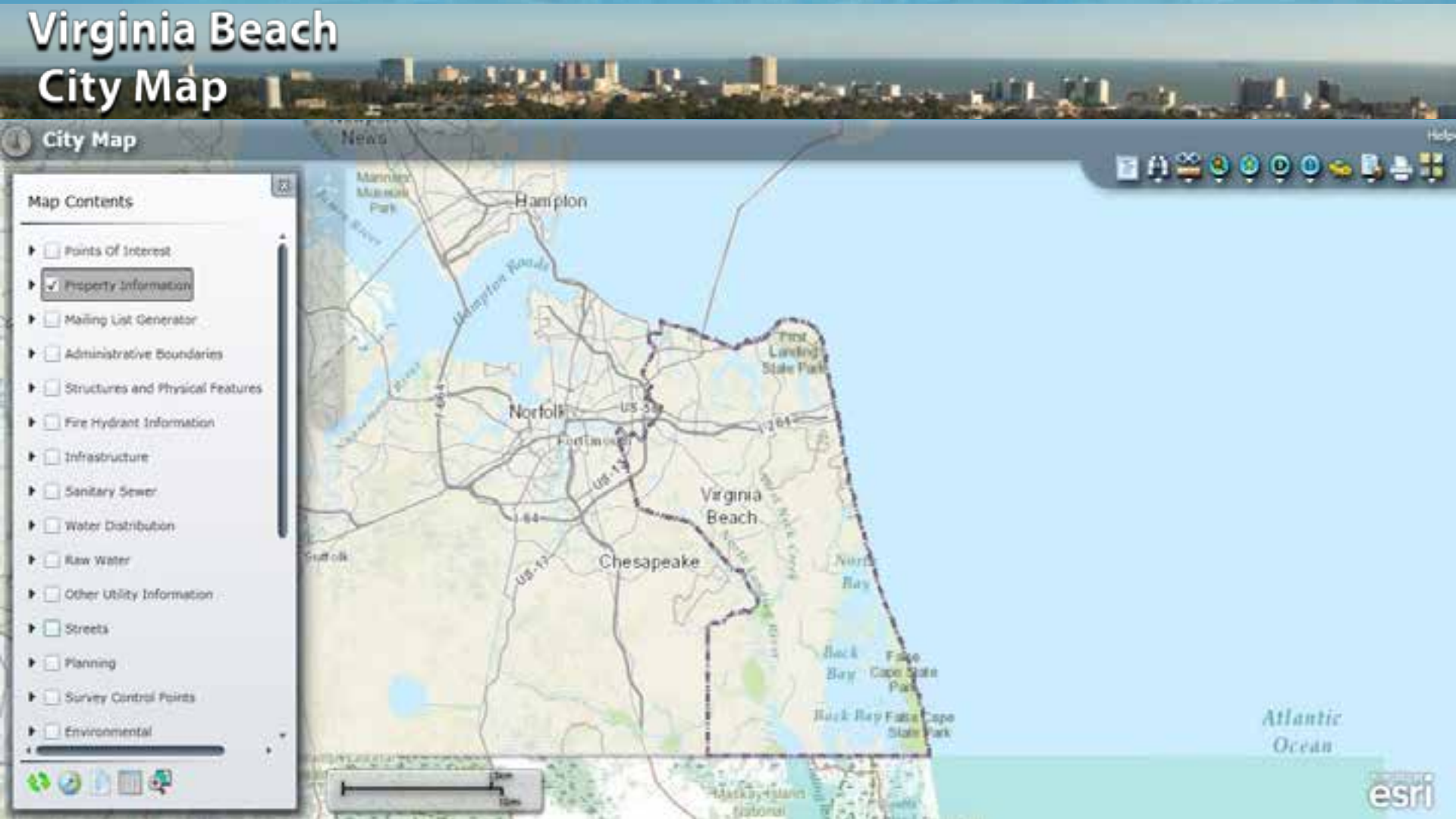
VBgov Public Web Site

Google API, ArcGIS Server, SharePoint

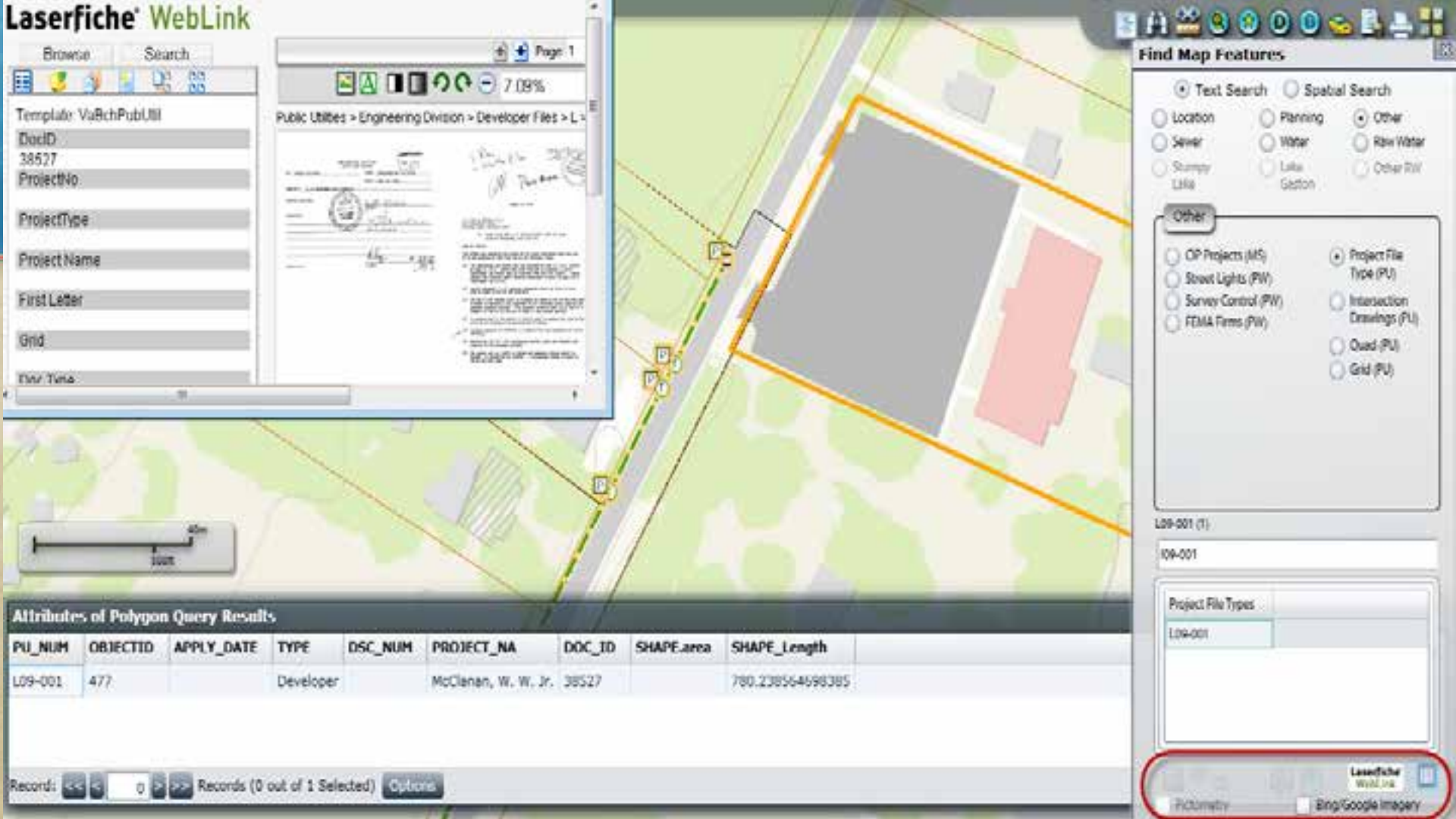
Internal Enterprise Web Site

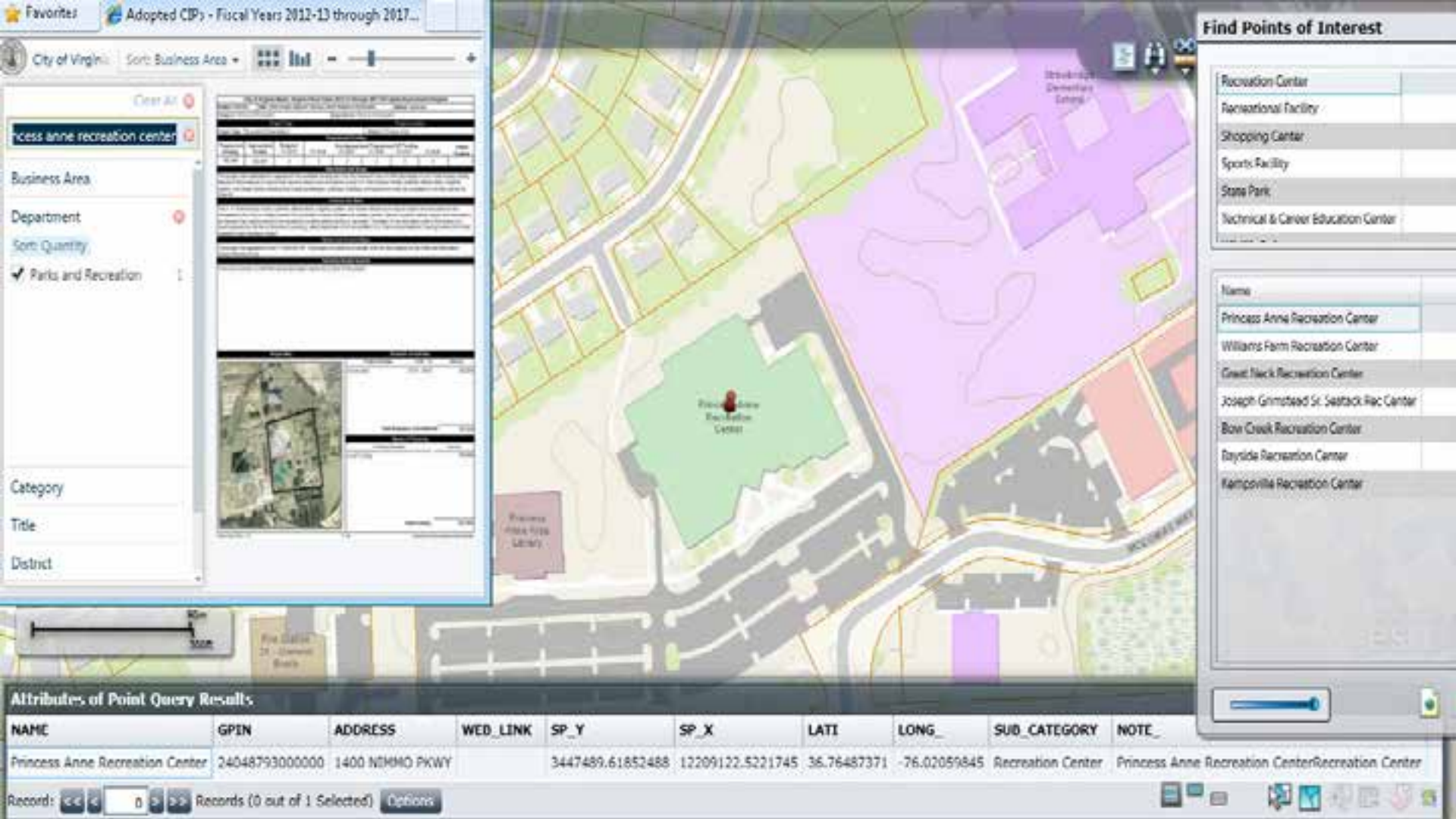
Silverlight API, Microsoft Expression Blend, Visual Studio, C#, ArcGIS Server

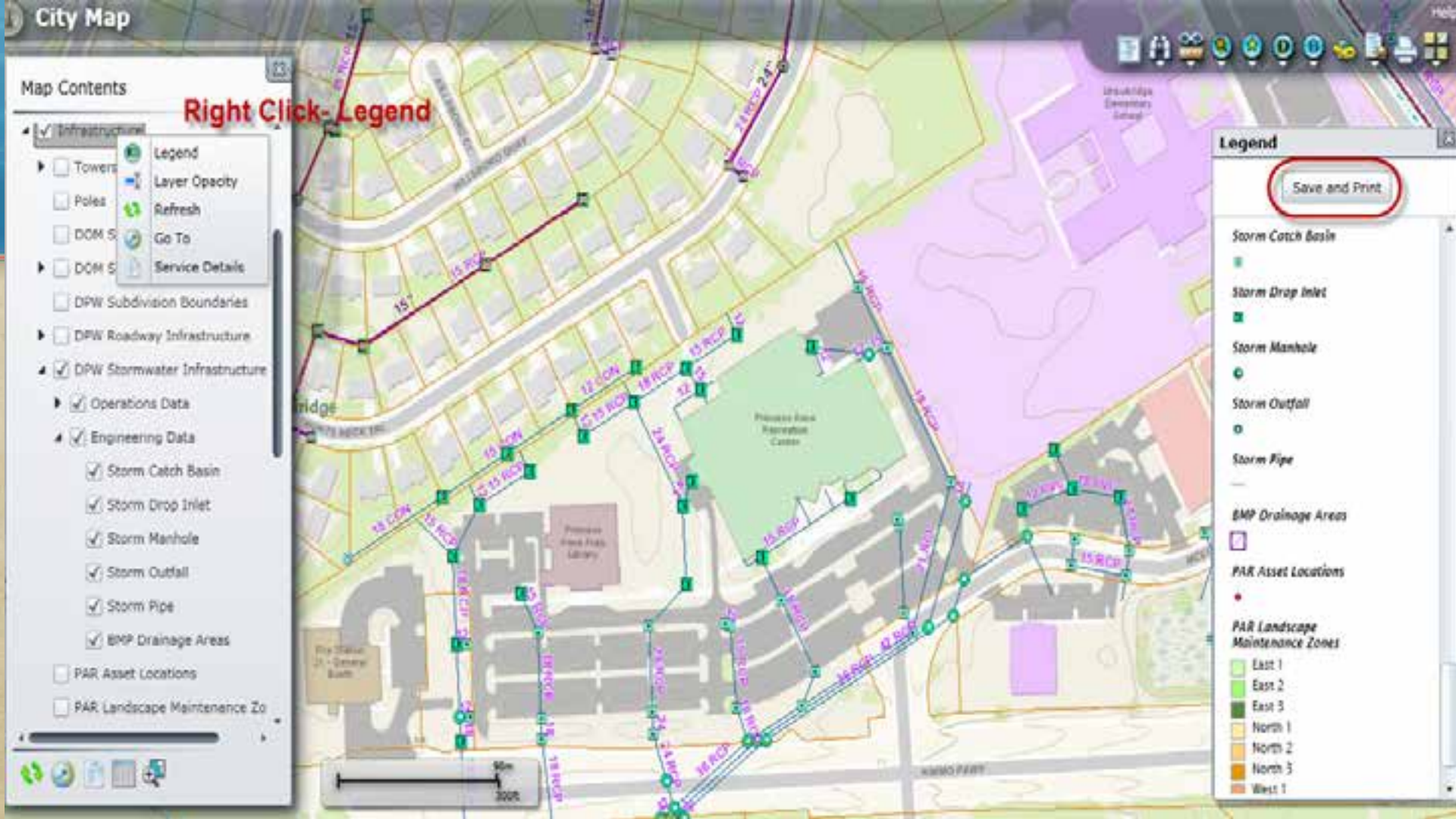
Virginia Beach City Map



City Map
Help
Map Contents
Points Of Interest
Property Information
Mailing List Generator
Administrative Boundaries
Structures and Physical Features
Fire Hydrant Information
Infrastructure
Sanitary Sewer
Water Distribution
Raw Water
Other Utility Information
Streets
Planning
Survey Control Points
Environmental
Find Map Features
Text Search
Spatial Search
Location
Planning
Other
Sewer
Water
Raw Water
Stumpy Lake
Lake Gaston
Other RW
Other
CIP Projects (MS)
Street Lights (PW)
Survey Control (PW)
FEMA Firms (PW)
Project File Type (PU)
Intersection Drawings (PU)
Quad (PU)
Grid (PU)
L09- (48)
L09-
L09-001
L09-002
L09-013
L09-010
L09-301
Laserfiche
30m
100ft


Laserfiche WebLink
Browse
Search
Template: VaRchPubUtil
DocID
38527
ProjectNo
ProjectType
Project Name
First Letter
Grid
Page: 1
7.09%
Public Utilities > Engineering Division > Developer Files > L
Find Map Features
Text Search
Spatial Search
Location
Planning
Other
Sewer
Water
Raw Water
Other
CIP Projects (MS)
Street Lights (PW)
Survey Control (PW)
FEMA Firms (PW)
Project File Type (PU)
Intersection Drawings (PU)
Quad (PU)
Grid (PU)
L09-001 (1)
I09-001
Project File Types
L09-001
Attributes of Polygon Query Results
PU_NUM
OBJECTID
APPLY_DATE
TYPE
DSC_NUM
PROJECT_NA
DOC_ID
SHAPE.area
SHAPE_Length
L09-001
477
Developer
McClanan, W. W. Jr.
38527
780.238564698385
Record:
Records (0 out of 1 Selected)
Options
Bing/Google Imagery


Favorites
Adopted CIPs - Fiscal Years 2012-13 through 2017...
Sort: Business Area
Clear All
Business Area
Department
Sort: Quantity
Parks and Recreation
Category
Title
District
Find Points of Interest
Recreation Center
Recreational Facility
Shopping Center
Sports Facility
State Park
Technical & Career Education Center
Name
Princess Anne Recreation Center
Williams Farm Recreation Center
Great Neck Recreation Center
Joseph Grimstead Sr. Seatack Rec Center
Bow Creek Recreation Center
Bayside Recreation Center
Kempsville Recreation Center
Attributes of Point Query Results
NAME
GPIN
ADDRESS
WEB_LINK
SP_Y
SP_X
LATI
LONG_
SUB_CATEGORY
NOTE_
Princess Anne Recreation Center
24048793000000
1400 NIMMO PKWY
3447489.61852488
12209122.5221745
36.76487371
-76.02059845
Recreation Center
Princess Anne Recreation CenterRecreation Center
Record:
Records (0 out of 1 Selected)
Options


City Map
Map Contents
Right Click- Legend
Infrastructure
Towers
Poles
DOM S
DOM S
DPW Subdivision Boundaries
DPW Roadway Infrastructure
DPW Stormwater Infrastructure
Operations Data
Engineering Data
Storm Catch Basin
Storm Drop Inlet
Storm Manhole
Storm Outfall
Storm Pipe
BMP Drainage Areas
PAR Asset Locations
PAR Landscape Maintenance Zo
Legend
Layer Opacity
Refresh
Go To
Service Details
Legend
Save and Print
Storm Catch Basin
Storm Drop Inlet
Storm Manhole
Storm Outfall
Storm Pipe
BMP Drainage Areas
PAR Asset Locations
PAR Landscape Maintenance Zones
East 1
East 2
East 3
North 1
North 2
North 3
West 1

Lessons Learned

- ArcGIS Server 9.3.1 services secured behind firewall do not allow display of symbols in the map contents.
- Work-around needed to print with a legend.
- Silverlight 2.4 Administrator development software did not function as expected once Microsoft Expression Blend & Visual Studio 2010 platforms were added.

Performance Check

- Corrective actions were needed following user acceptance testing to eliminate any additional load to the Oracle enterprise production server.
- A separate server was purchased to configure a SQL environment. This improved our performance in the application.
- The average display time for a map went down from 1.4 seconds to .399 seconds.

City of Virginia Beach

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Communications Information & Technology
Geospatial Information Service Division