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Where, Why, and How: Business Applications Using Oracle Spatial Technologies

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Oracle Development

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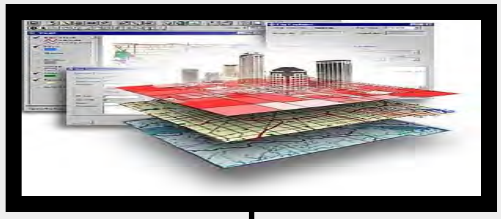
Oracle Spatial

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions.
The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.

Topics

- Oracle spatial technology positioning
- How to set up and use include spatial content in your database
- How to create maps
- How to use Oracle tools and applications with spatial data
- Your questions

What's the difference between what Oracle has and a GIS?



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FUSION APPLICATIONS

HTTP

Fusion Middleware

MapViewer

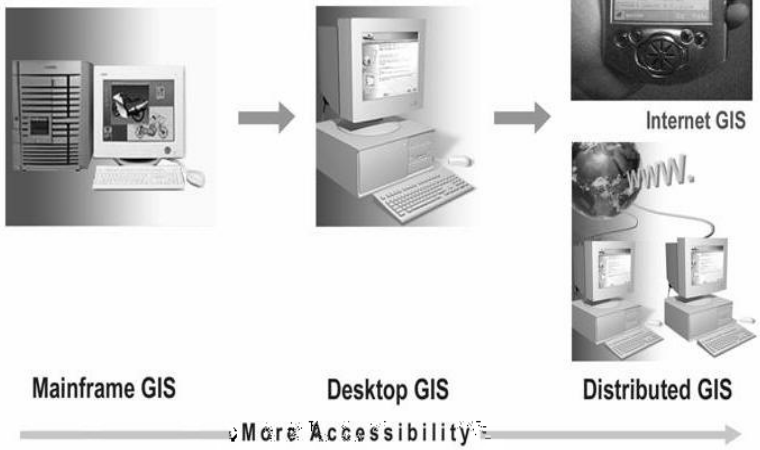
SOA
invoke

JDBC

Oracle Database

Oracle Spatial

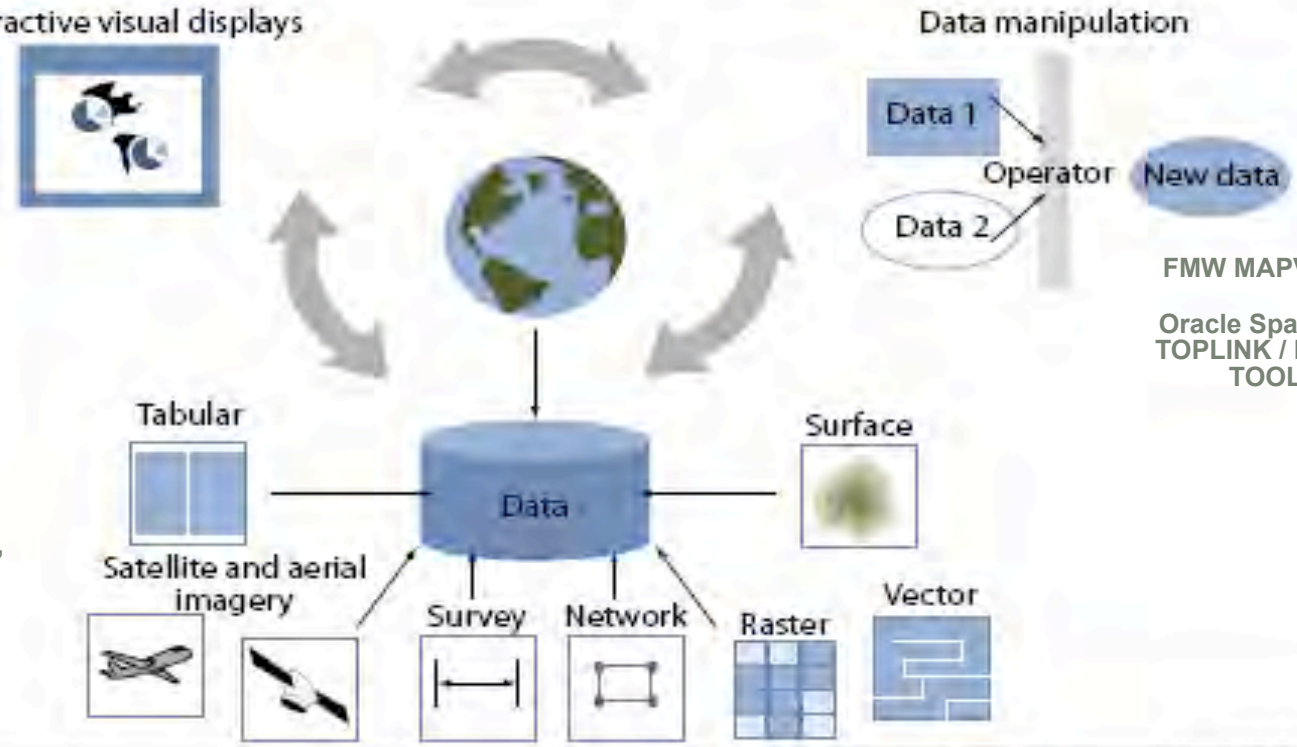
Raster Networks 3D



"A GIS is a unique kind of database of the world."

Oracle's "GIS" Core Functionality

Figure 1 GIS Core Functionality



FMW MAPVIEWER / GeoMAP

FMW MAPVIEWER / Oracle Spatial APIs / TOPLINK / PARTNER TOOLS…

ORACLE SPATIAL: NETWORK DATA MODEL, GeoRASTER, TOPOLOGY DATA MODEL, Linear Referencing, 3D

44386

Source: Forrester Research, Inc.

If I have addresses or things I want to map or query by location, how to I set up the database?

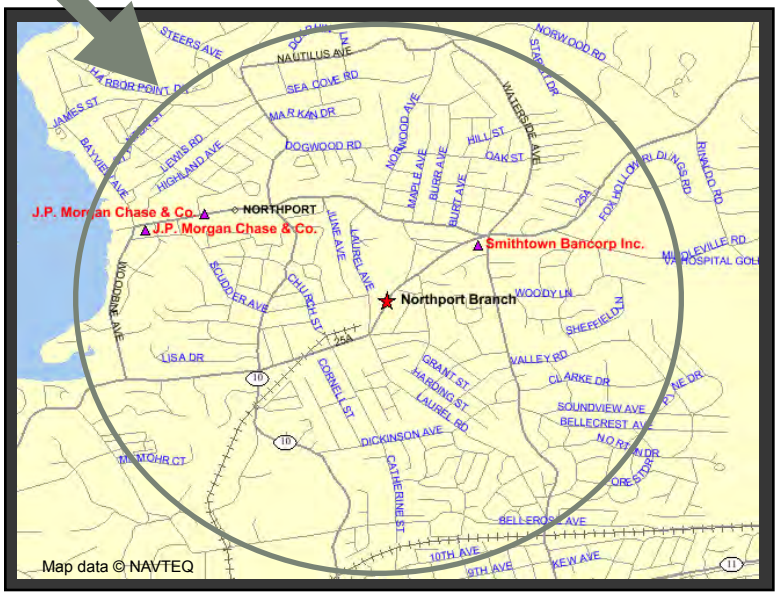
Name	Null?	Type
EMPLOYEE_ID	NOT NULL	NUMBER(6)
JOB_ID	NOT NULL	VARCHAR2(10)
MANAGER_ID		NUMBER(6)
DEPARTMENT_ID		NUMBER(4)
LOCATION_ID		NUMBER(4)
COUNTRY_ID		CHAR(2)
FIRST_NAME		VARCHAR2(20)
LAST_NAME	NOT NULL	VARCHAR2(25)
SALARY		NUMBER(8,2)
COMMISSION_PCT		NUMBER(2,2)
DEPARTMENT_NAME	NOT NULL	VARCHAR2(30)
JOB_TITLE	NOT NULL	VARCHAR2(35)
CITY	NOT NULL	VARCHAR2(30)
STATE_PROVINCE		VARCHAR2(25)
COUNTRY_NAME		VARCHAR2(40)
REGION_NAME		VARCHAR2(25)

What does the SQL look like?

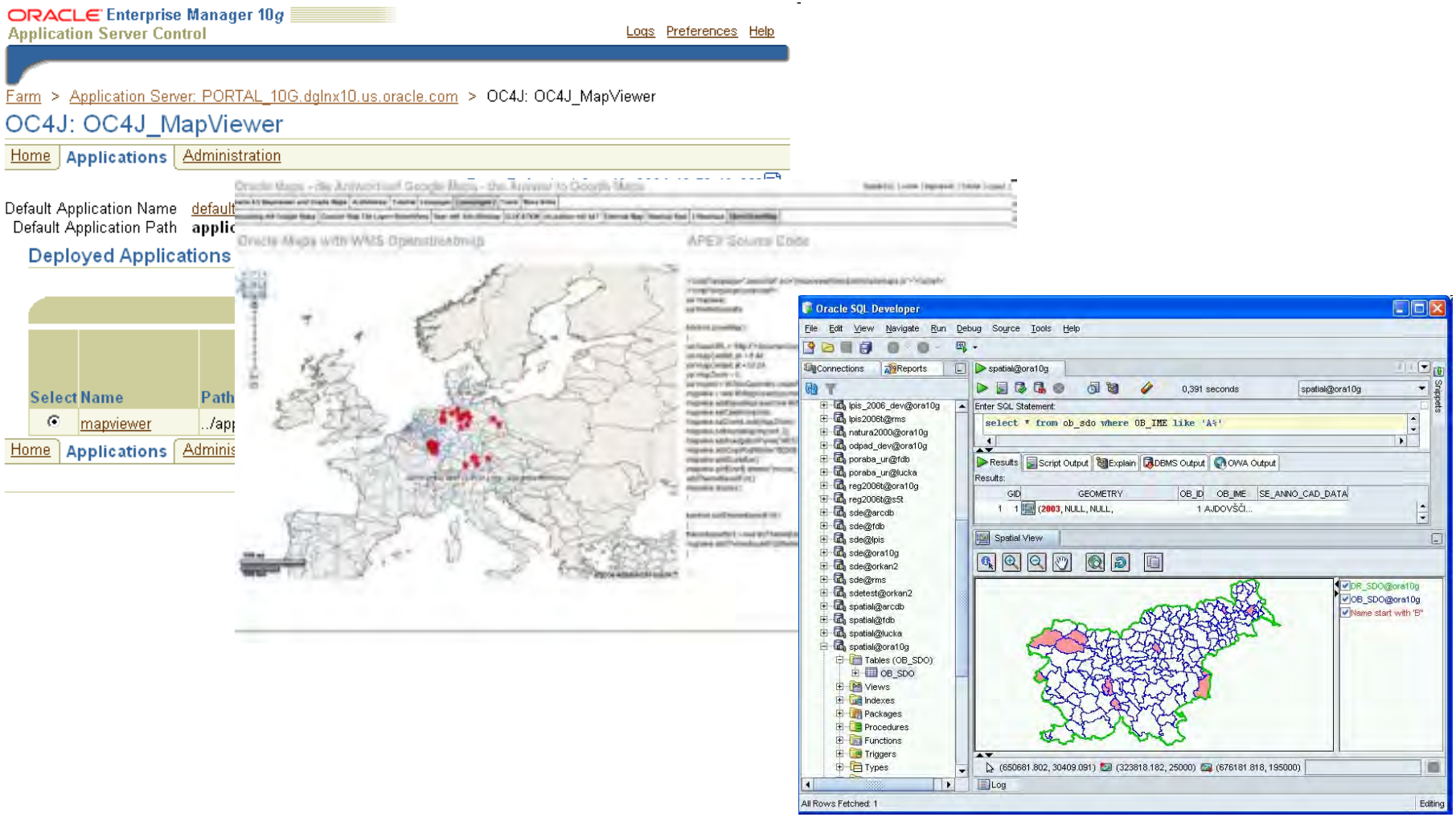
What does the SQL look like?

Find all competitors within 2 miles of Northport Branch

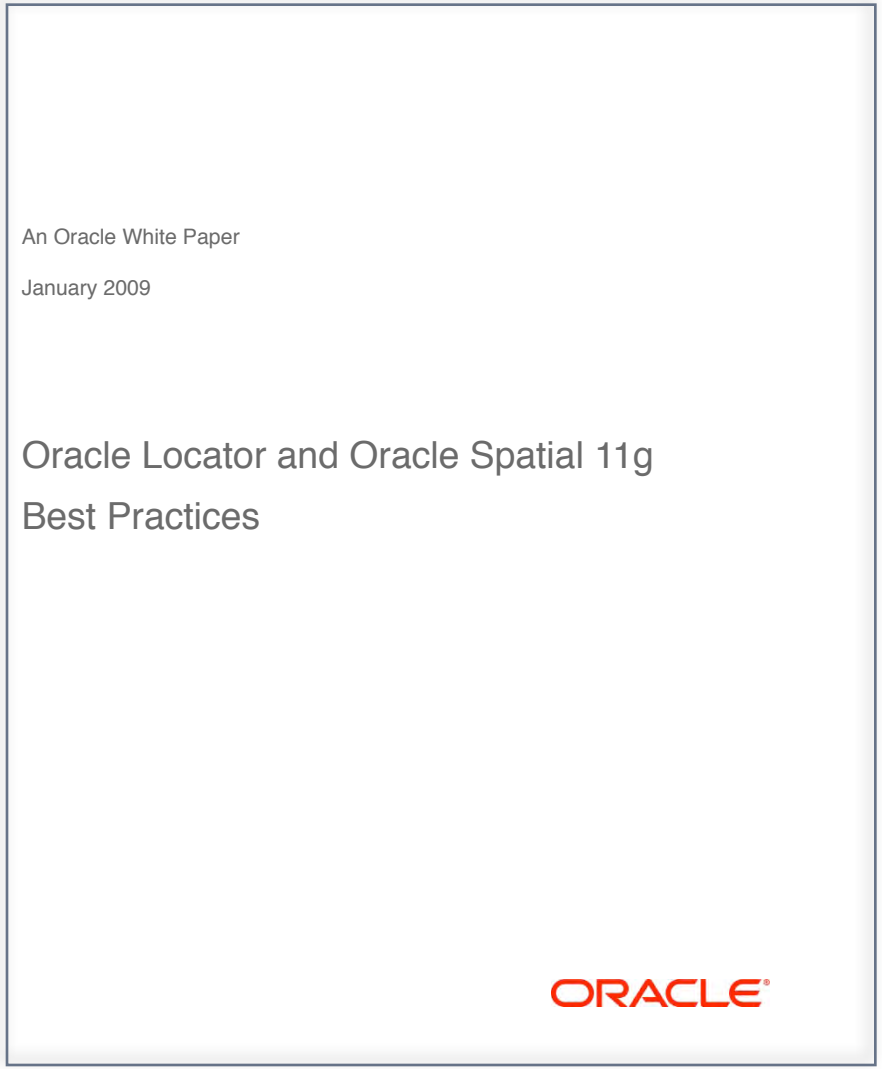
```
SELECT c.holding_company, c.location
  FROM competitor c,
       bank b
 WHERE b.site_id = 1604
   AND SDO_WITHIN_DISTANCE(c.location,
                           b.location,
       'distance=2 unit=mile') = 'TRUE'
```



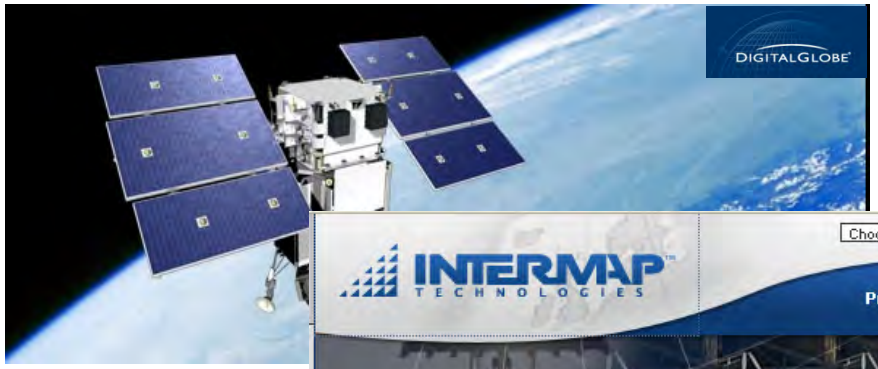
Can I use OEM, APEX, SQL Developer and Data Modeler?

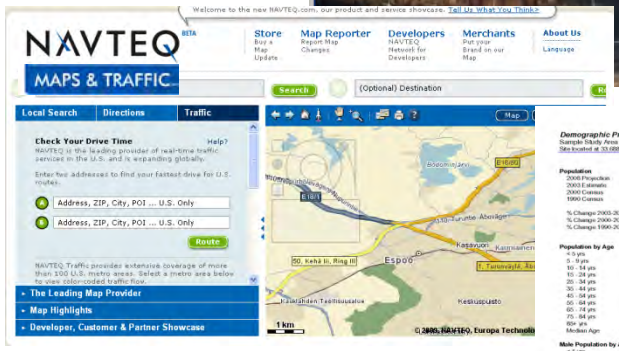


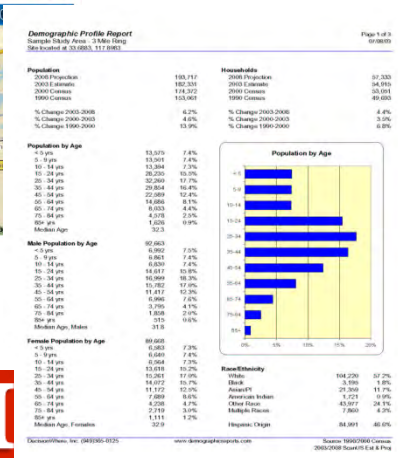
How do you tune this?



Where does the data come from?







Just another database capability

Where do the maps come from?

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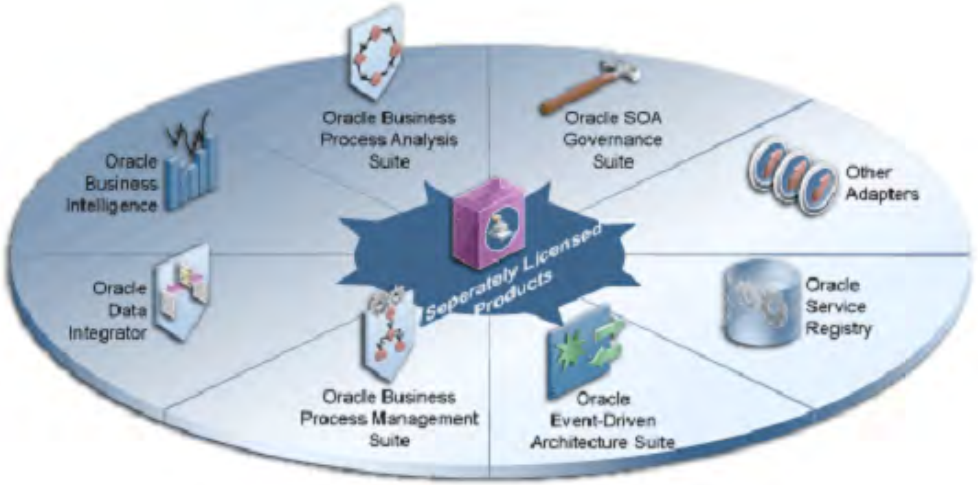
Oracle Fusion Middleware MapViewer

How does MapViewer work with other FMW components?

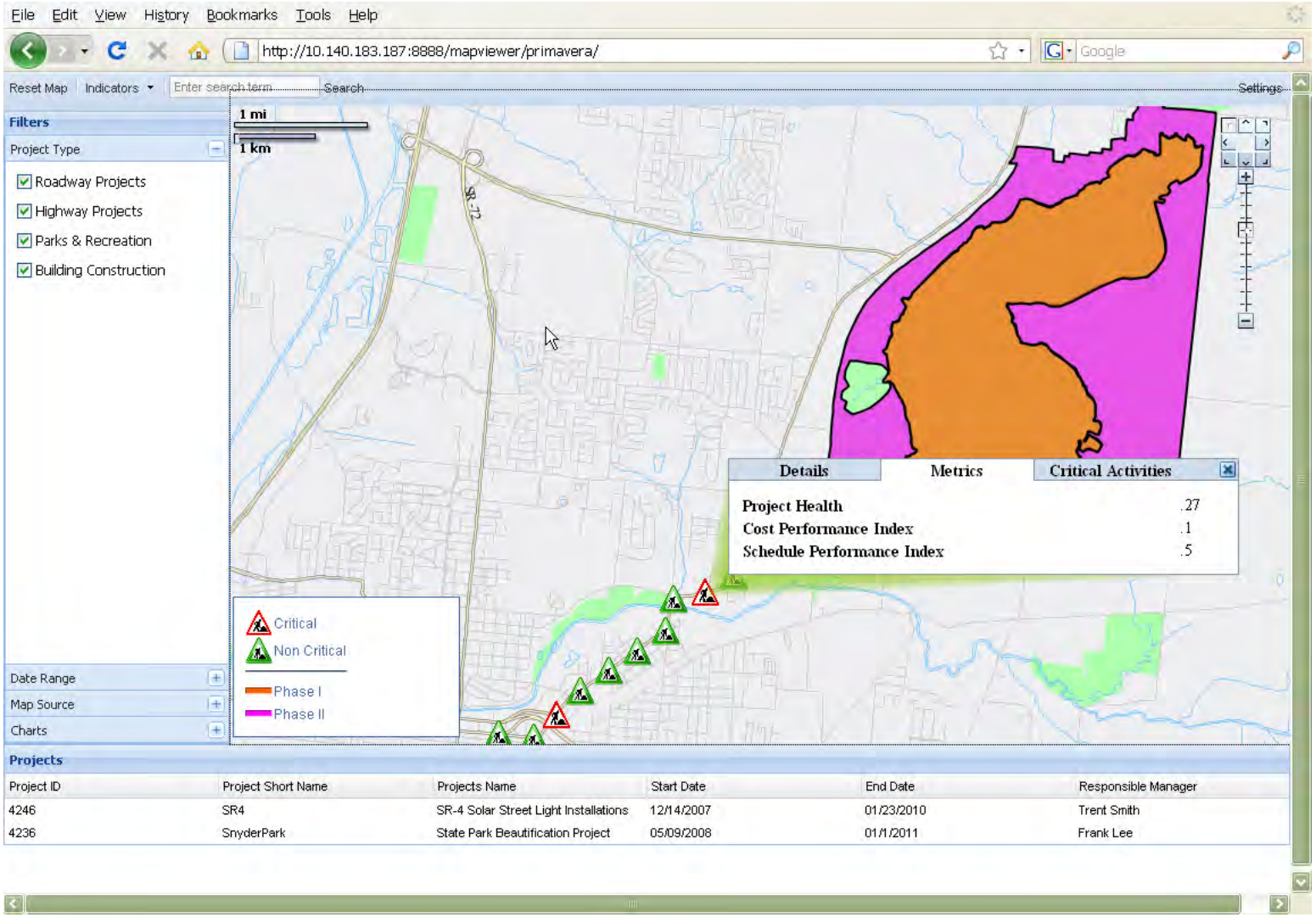


How do I develop apps with MapViewer?

Java™

Microsoft
.net

Primavera P6



What if I want to use…

Powerful mapping capabilities for Fusion Middleware

MapViewer Maps

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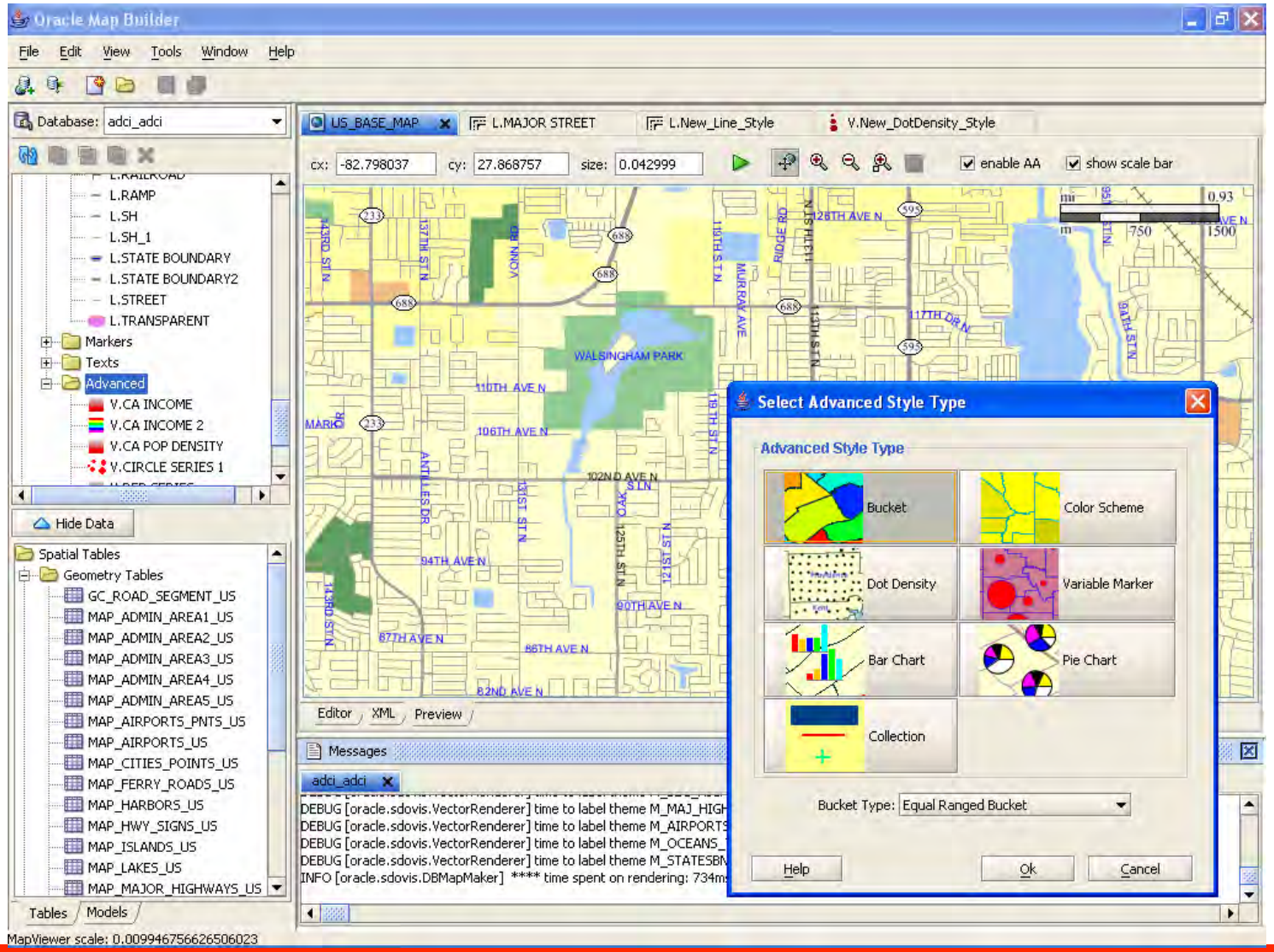
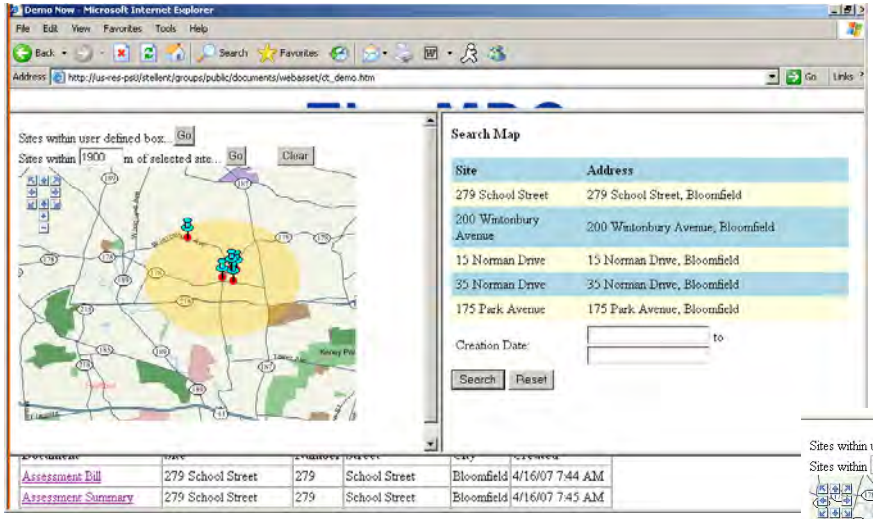
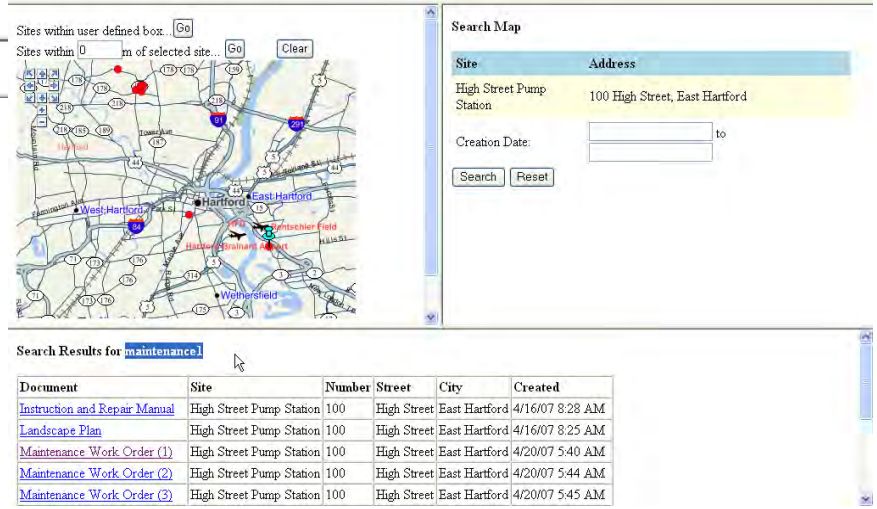
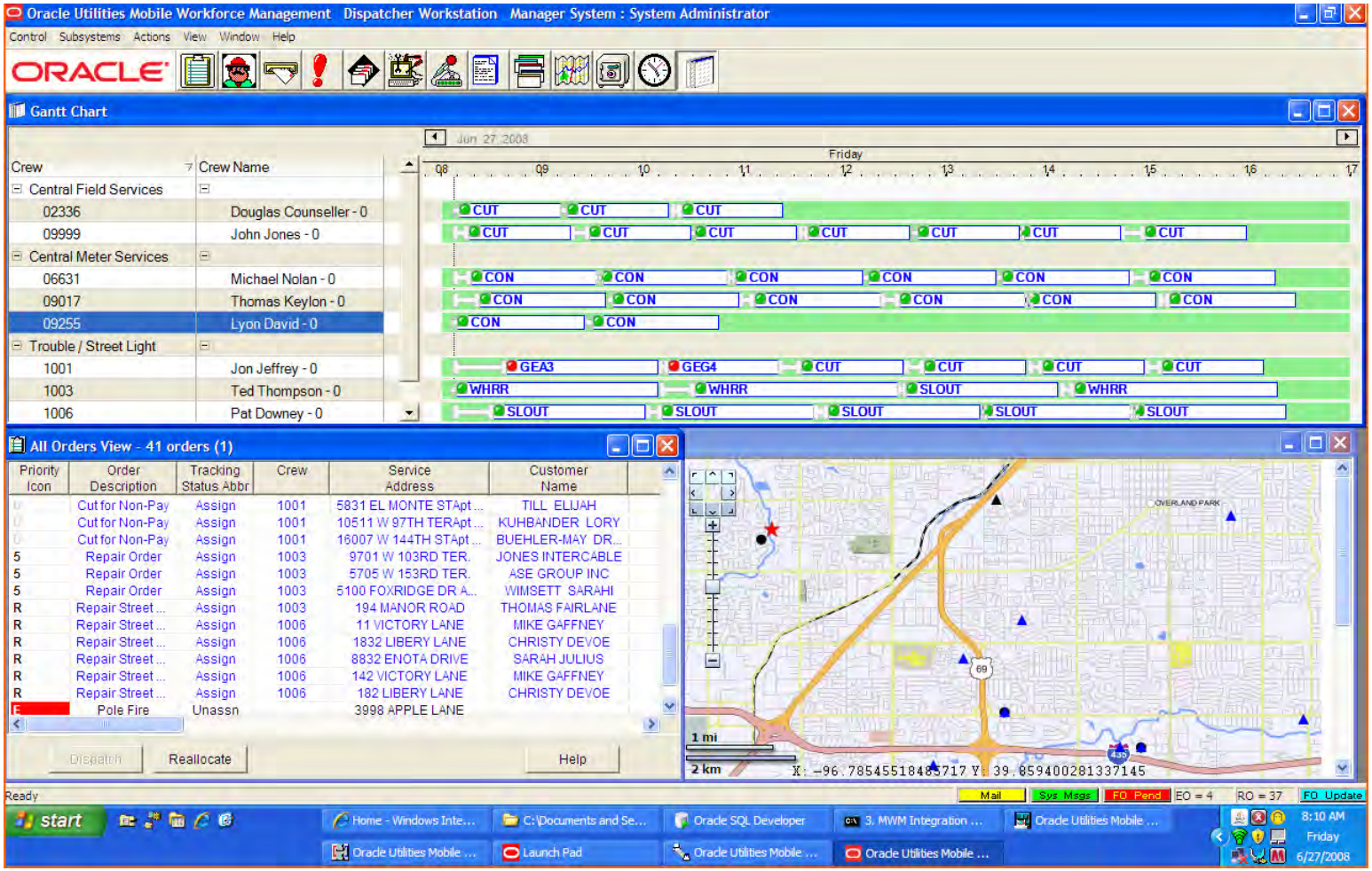

Oracle Map Builder
File Edit View Tools Window Help
Database: adci_adci
L.RAMP
L.SH
L.SH_1
L.STATE BOUNDARY
L.STATE BOUNDARY2
L.STREET
L.TRANSPARENT
Markers
Texts
Advanced
V.CA INCOME
V.CA INCOME 2
V.CA POP DENSITY
V.CIRCLE SERIES 1
Hide Data
Spatial Tables
Geometry Tables
GC_ROAD_SEGMENT_US
MAP_ADMIN_AREA1_US
MAP_ADMIN_AREA2_US
MAP_ADMIN_AREA3_US
MAP_ADMIN_AREA4_US
MAP_ADMIN_AREA5_US
MAP_AIRPORTS_PNTS_US
MAP_AIRPORTS_US
MAP_CITIES_POINTS_US
MAP_FERRY_ROADS_US
MAP_HARBORS_US
MAP_HWY_SIGNS_US
MAP_ISLANDS_US
MAP_LAKES_US
MAP_MAJOR_HIGHWAYS_US
Tables Models
US_BASE_MAP
L.MAJOR STREET
L.New_Line_Style
V.New_DotDensity_Style
cx: -82.798037
cy: 27.868757
size: 0.042999
enable AA
show scale bar
WALSINGHAM PARK
110TH AVE N
106TH AVE N
102ND AVE N
94TH AVE N
90TH AVE N
86TH AVE N
82ND AVE N
Editor XML Preview
Messages
adci_adci
DEBUG [oracle.sdovis.VectorRenderer] time to label theme M_MAJ_HIGH
DEBUG [oracle.sdovis.VectorRenderer] time to label theme M_AIRPORTS
DEBUG [oracle.sdovis.VectorRenderer] time to label theme M_OCEANS_
DEBUG [oracle.sdovis.VectorRenderer] time to label theme M_STATESBN
INFO [oracle.sdovis.DBMapMaker] **** time spent on rendering: 734ms
MapViewer scale: 0.009946756626506023
Select Advanced Style Type
Advanced Style Type
Bucket
Color Scheme
Dot Density
Variable Marker
Bar Chart
Pie Chart
Collection
Bucket Type: Equal Ranged Bucket
Help
Ok
Cancel

MapViewer with UCM





Oracle Utilities



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MapViewer

Location, Location, Location

Area Selection Tool

Draw a rectangular selection area on the map

☐ Off

Zoom Level Selection

Select one or more levels to perform tile operation

Level 0
Level 1
Level 2
Level 3
Level 4

Tile Operations

Prefetch Tiles
Clear Tiles
Refresh Tiles

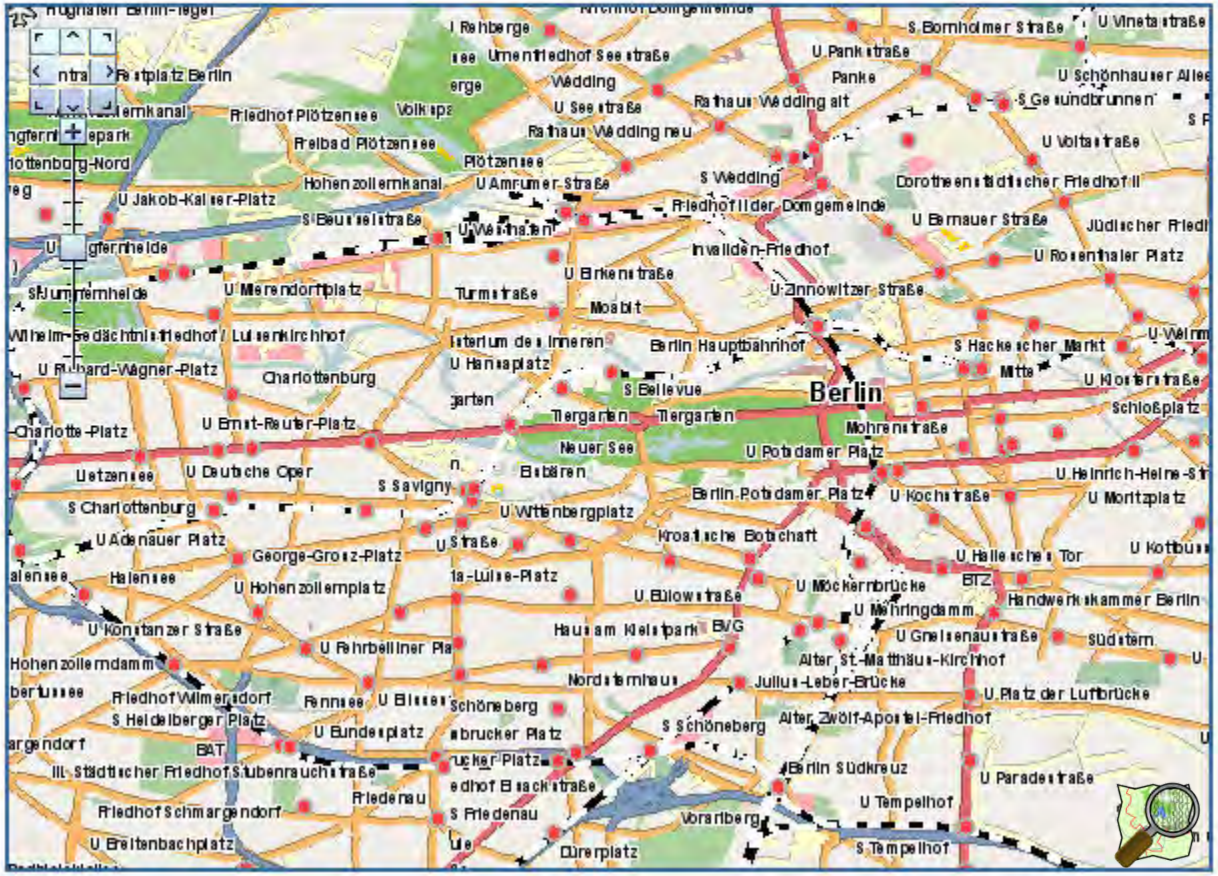
Operation Status

Refresh

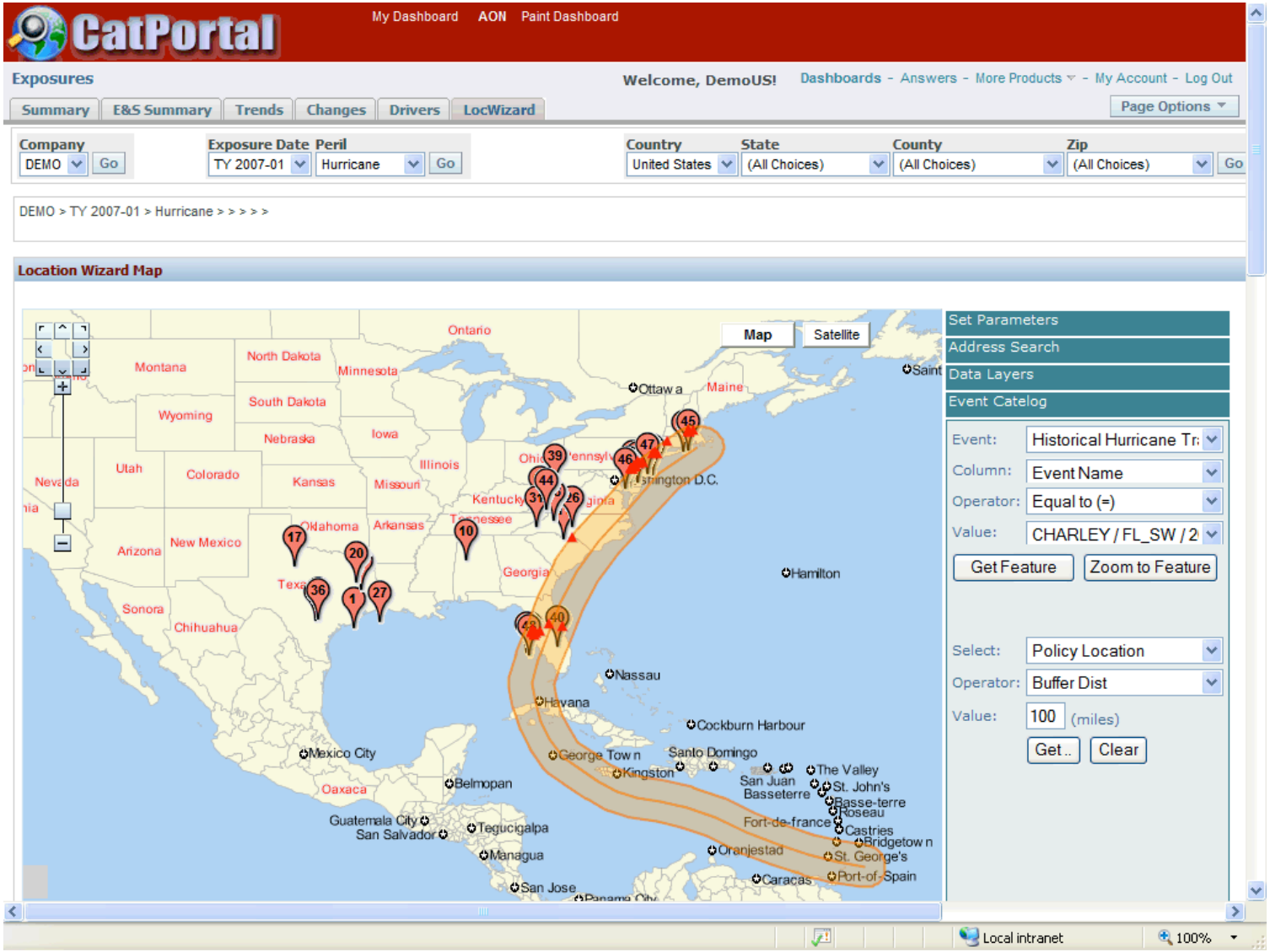
Status:

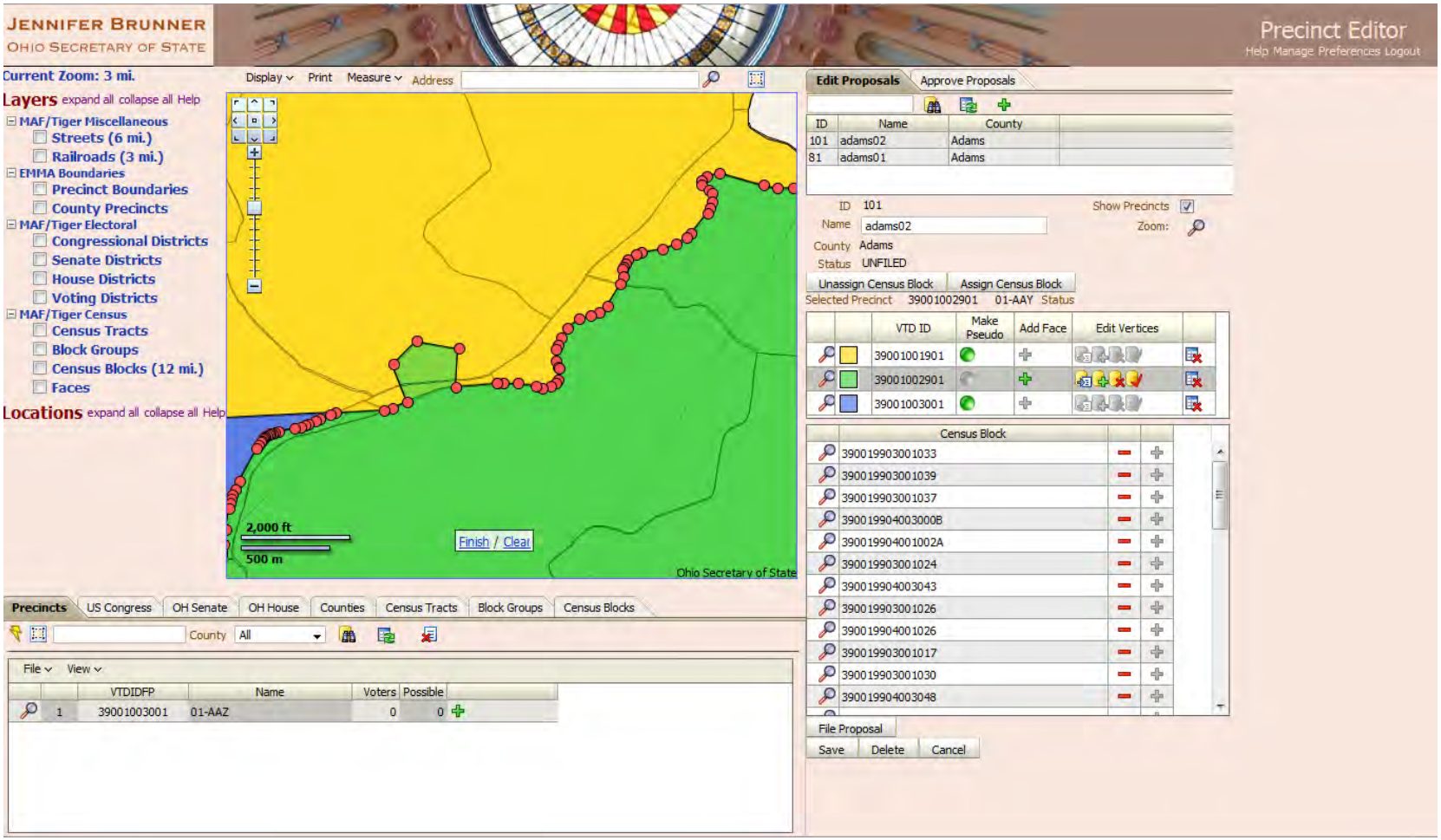
Return

Center X 13.3472474 Center Y 52.5128031 SRID 4326 Zoom Level 5 Show Map



OpenStreetMap


CatPortal
My Dashboard
AON
Paint Dashboard
Exposures
Welcome, DemoUS!
Dashboards - Answers - More Products - My Account - Log Out
Summary
E&S Summary
Trends
Changes
Drivers
LocWizard
Page Options
Company
DEMO
Go
Exposure Date
TY 2007-01
Peril
Hurricane
Go
Country
United States
State
(All Choices)
County
(All Choices)
Zip
(All Choices)
Go
DEMO > TY 2007-01 > Hurricane > > > > >
Location Wizard Map
Map
Satellite
Set Parameters
Address Search
Data Layers
Event Catelog
Event:
Historical Hurricane Tr
Column:
Event Name
Operator:
Equal to (=)
Value:
CHARLEY / FL_SW / 2
Get Feature
Zoom to Feature
Select:
Policy Location
Operator:
Buffer Dist
Value:
100
(miles)
Get ..
Clear
Ontario
Montana
North Dakota
Minnesota
Maine
Wyoming
South Dakota
Nebraska
Iowa
Illinois
Utah
Colorado
Kansas
Missouri
Nevada
Oklahoma
Arkansas
Arizona
New Mexico
Georgia
Sonora
Chihuahua
Ottawa
Washington D.C.
Hamilton
Nassau
Havana
Cockburn Harbour
George Town
Santo Domingo
Kingston
Mexico City
Oaxaca
Belmopan
Guatemala City
San Salvador
Tegucigalpa
Managua
San Jose
Oranjestad
Caracas
San Juan
Basseterre
The Valley
St. John's
Basse-terre
Roseau
Fort-de-france
Castries
Bridgetown
St. George's
Port-of-Spain
Local intranet
100%



WOOLPERT

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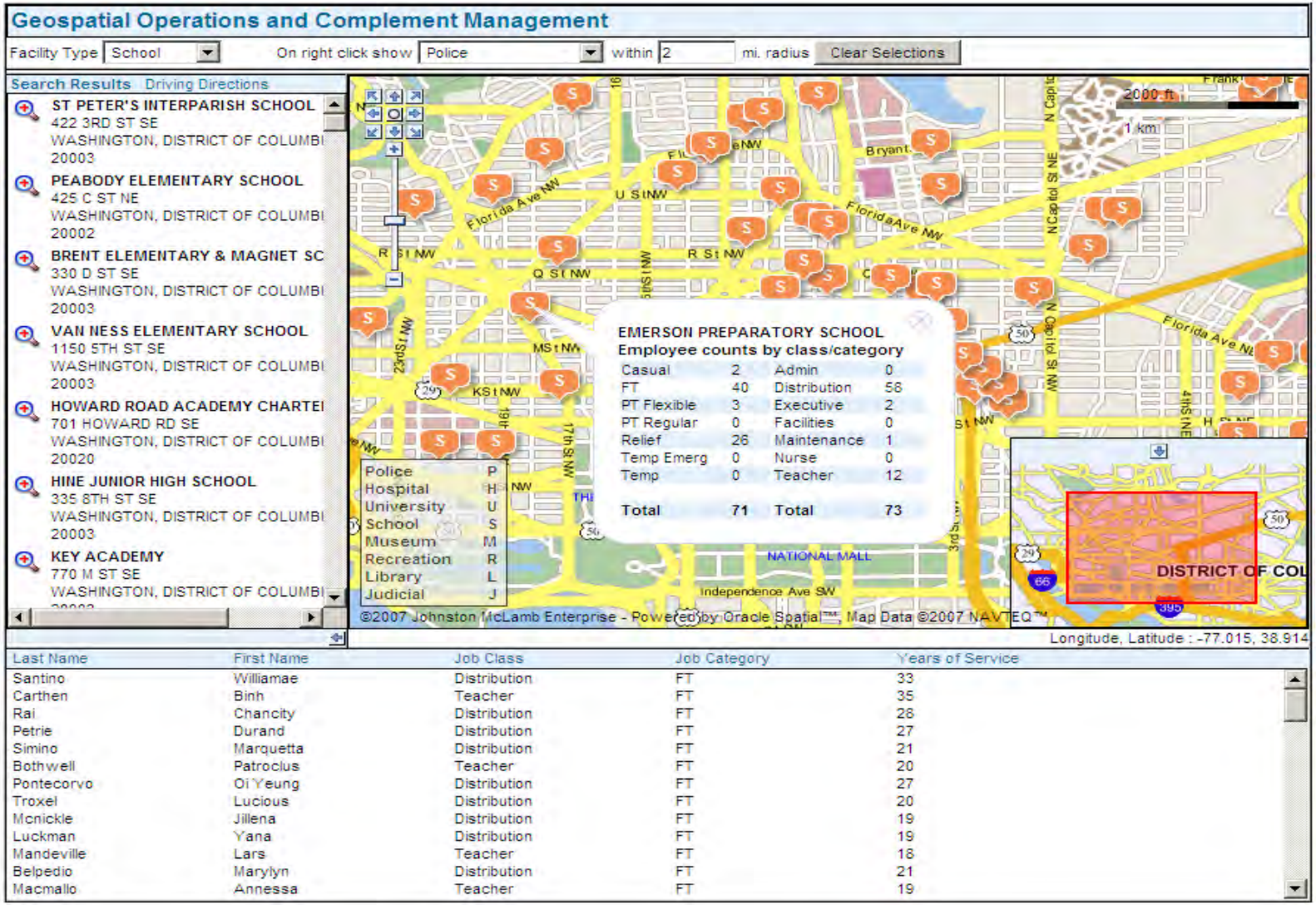
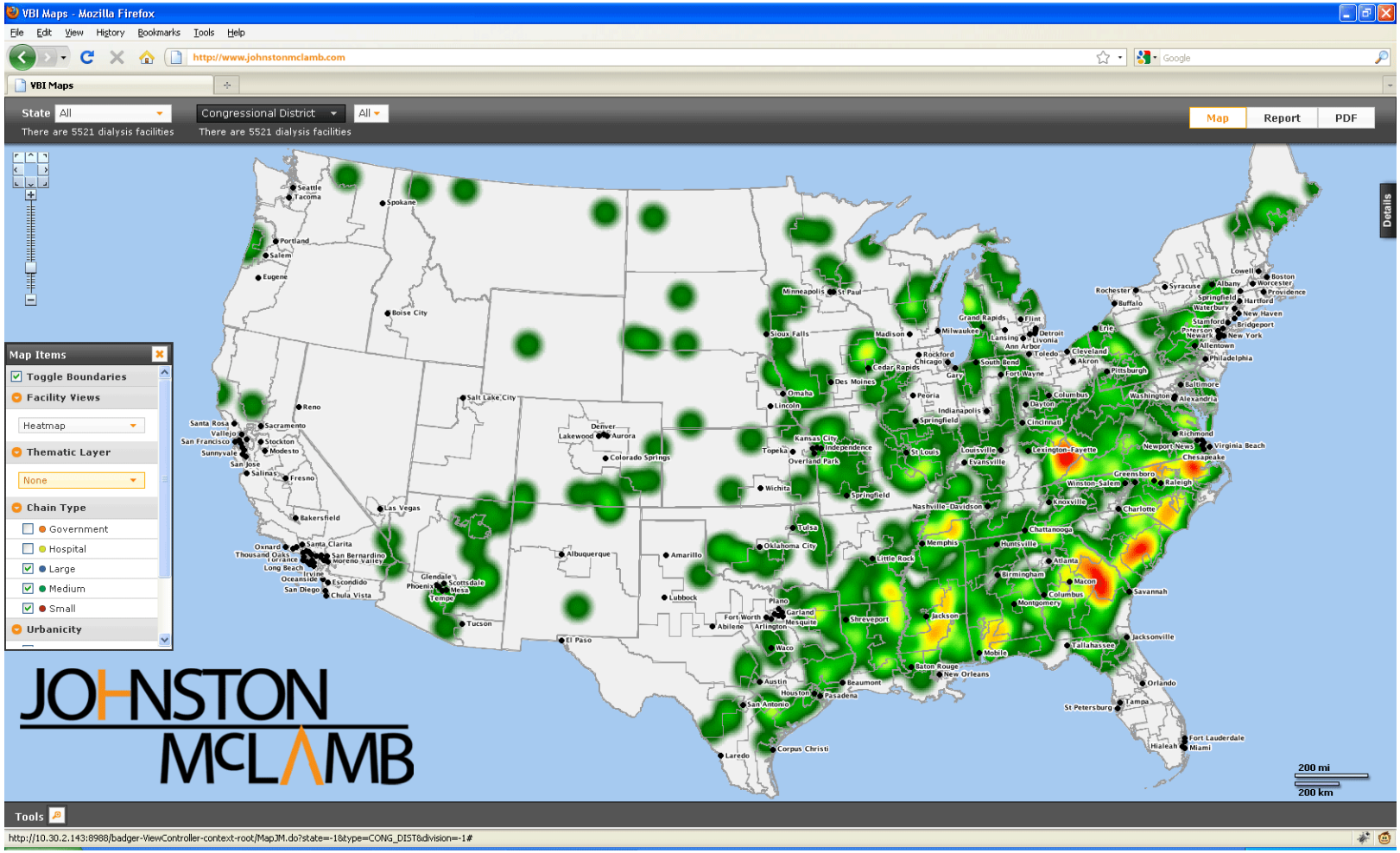
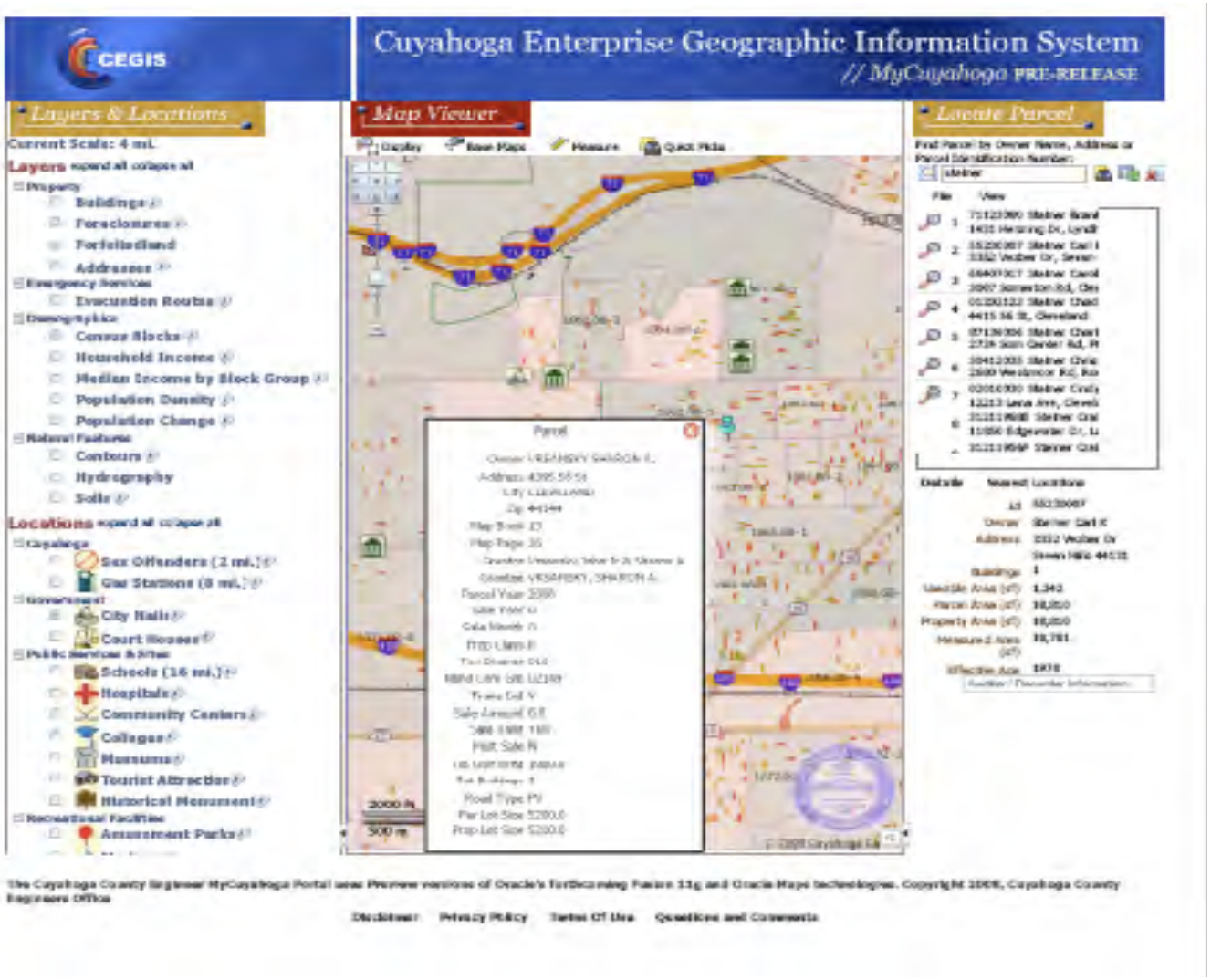
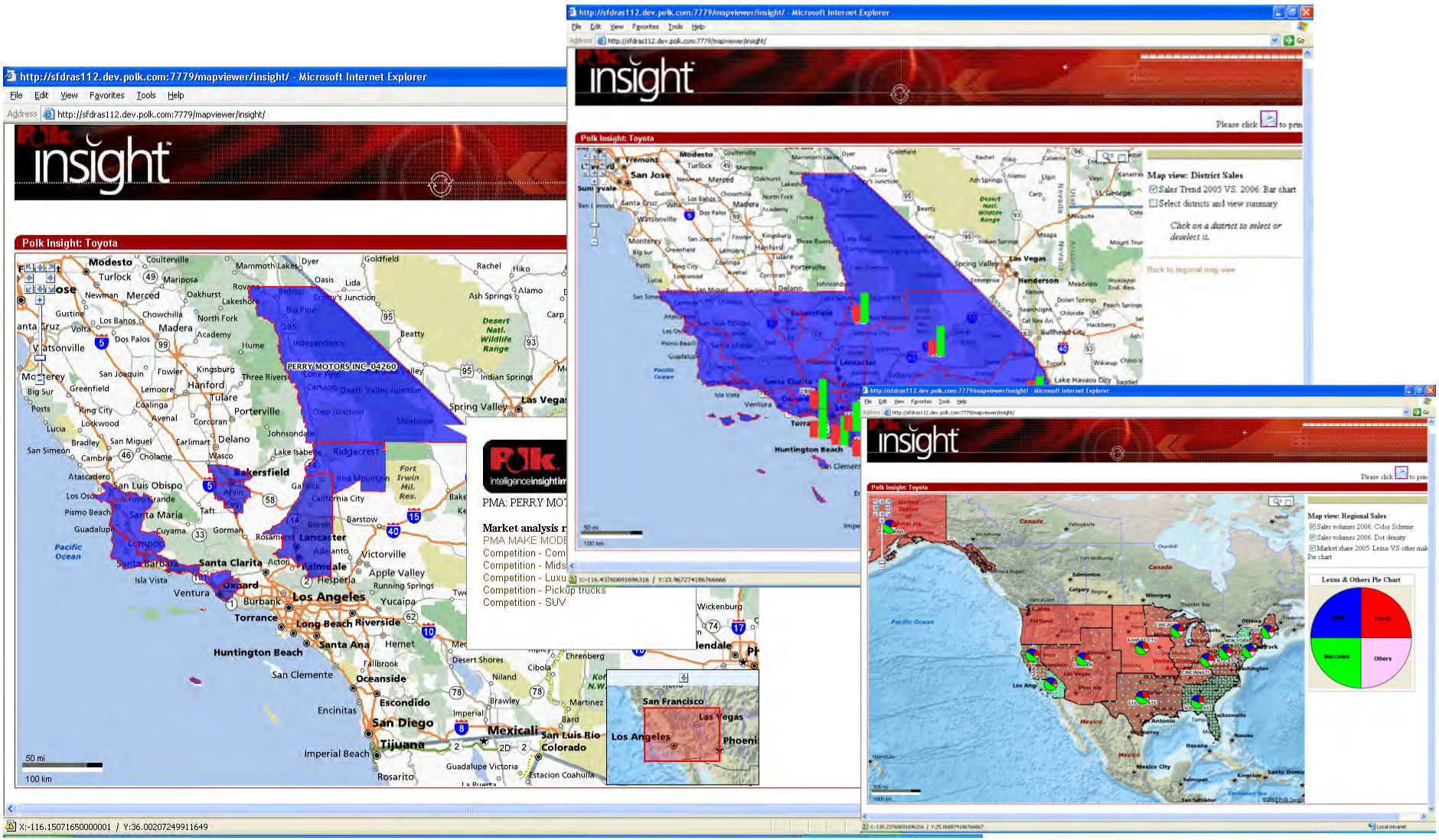

Geospatial Operations and Complement Management
Facility Type School
On right click show Police
within 2
mi. radius
Clear Selections
Search Results
Driving Directions
ST PETER'S INTERPARISH SCHOOL
422 3RD ST SE
WASHINGTON, DISTRICT OF COLUMBI
20003
PEABODY ELEMENTARY SCHOOL
425 C ST NE
WASHINGTON, DISTRICT OF COLUMBI
20002
BRENT ELEMENTARY & MAGNET SC
330 D ST SE
WASHINGTON, DISTRICT OF COLUMBI
20003
VAN NESS ELEMENTARY SCHOOL
1150 5TH ST SE
WASHINGTON, DISTRICT OF COLUMBI
20003
HOWARD ROAD ACADEMY CHARTEI
701 HOWARD RD SE
WASHINGTON, DISTRICT OF COLUMBI
20020
HINE JUNIOR HIGH SCHOOL
335 8TH ST SE
WASHINGTON, DISTRICT OF COLUMBI
20003
KEY ACADEMY
770 M ST SE
WASHINGTON, DISTRICT OF COLUMBI
EMERSON PREPARATORY SCHOOL
Employee counts by class/category
Casual 2 Admin 0
FT 40 Distribution 56
PT Flexible 3 Executive 2
PT Regular 0 Facilities 0
Relief 26 Maintenance 1
Temp Emerg 0 Nurse 0
Temp 0 Teacher 12
Total 71 Total 73
Police P
Hospital H
University U
School S
Museum M
Recreation R
Library L
Judicial J
NATIONAL MALL
Independence Ave SW
Florida Ave NW
Bryant
2000 ft
1 km
DISTRICT OF COL
©2007 Johnston McLamb Enterprise - Powered by Oracle Spatial™, Map Data ©2007 NAVTEQ™
Longitude, Latitude : -77.015, 38.914
Last Name First Name Job Class Job Category Years of Service
Santino Williamae Distribution FT 33
Carthen Binh Teacher FT 35
Rai Chancity Distribution FT 28
Petrie Durand Distribution FT 27
Simino Marquetta Distribution FT 21
Bothwell Patroclus Teacher FT 20
Pontecorvo Oi Yeung Distribution FT 27
Troxel Lucious Distribution FT 20
Mcnickle Jillena Distribution FT 19
Luckman Yana Distribution FT 19
Mandeville Lars Teacher FT 18
Belpedio Marylyn Distribution FT 21
Macmallo Annessa Teacher FT 19


VBI Maps - Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://www.johnstonmclamb.com
VBI Maps
State All
There are 5521 dialysis facilities
Congressional District All
There are 5521 dialysis facilities
Map Report PDF
Details
Map Items
Toggle Boundaries
Facility Views
Heatmap
Thematic Layer
None
Chain Type
Government
Hospital
Large
Medium
Small
Urbanicity
JOHNSTON McLAMB
200 mi
200 km
Tools
http://10.30.2.143:8988/badger-ViewController-context-root/MapJM.do?state=-1&type=CONG_DIST&division=-1#

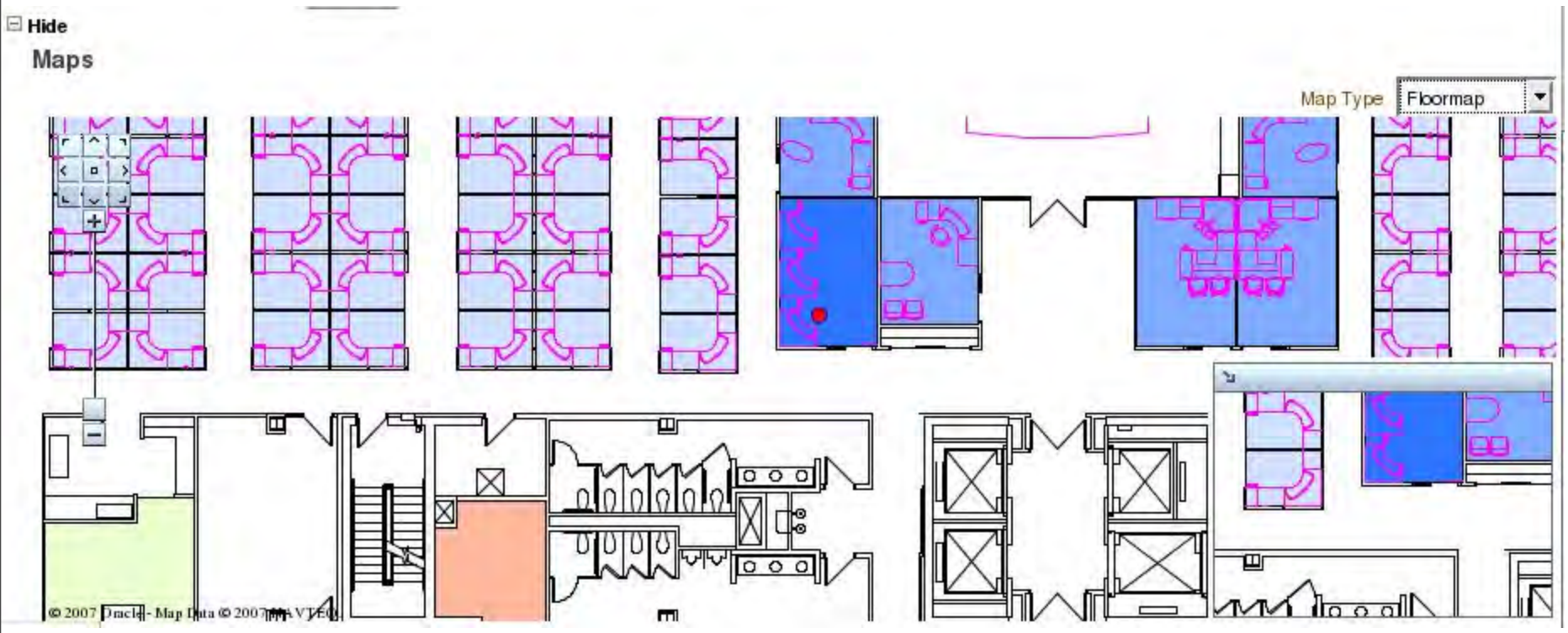


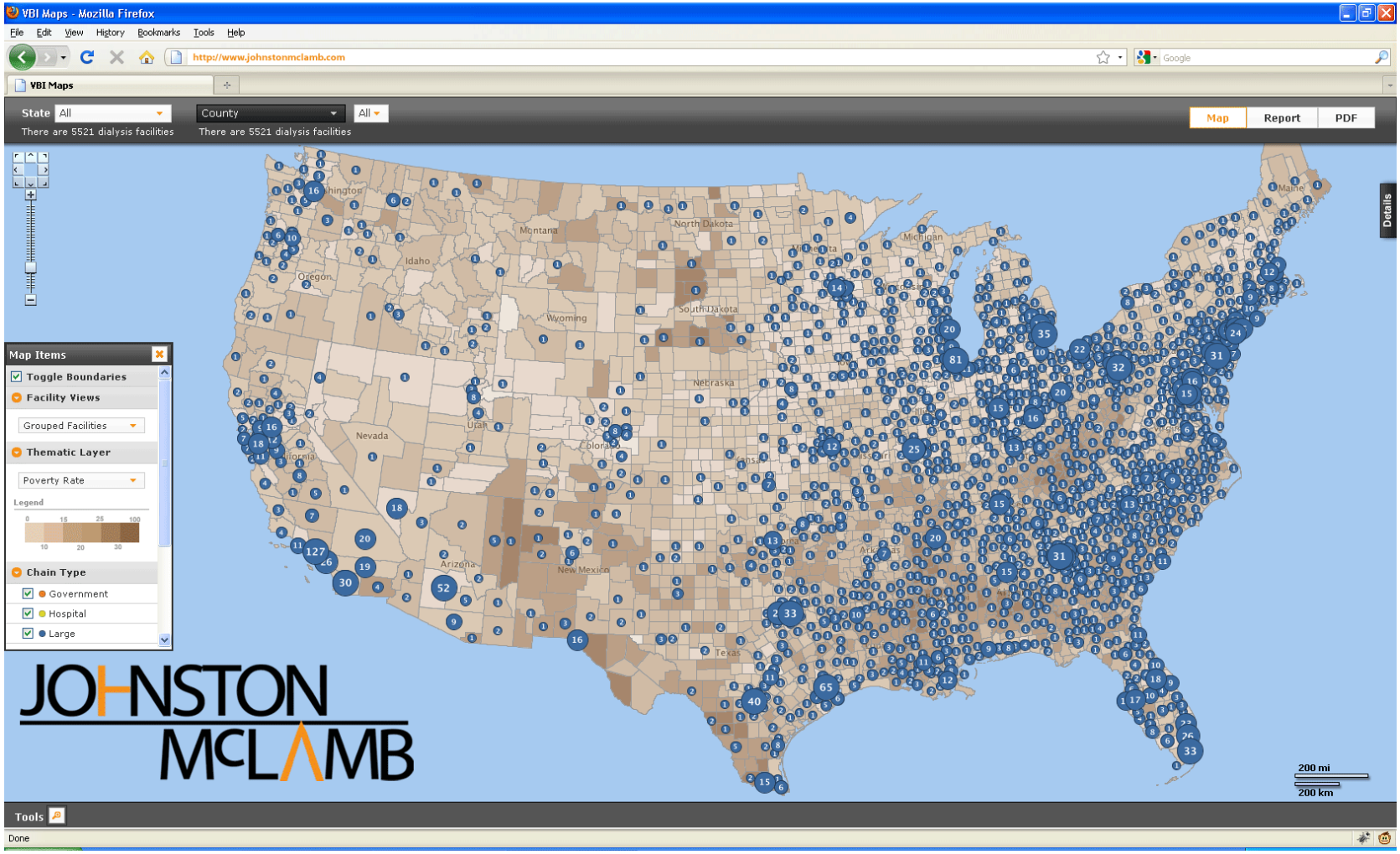
The Cuyahoga County Engineer MyCuyahoga Portal uses Preview versions of Oracle's forthcoming Fusion 11g and Oracle Maps technologies. Copyright 2008, Cuyahoga County Engineers Office

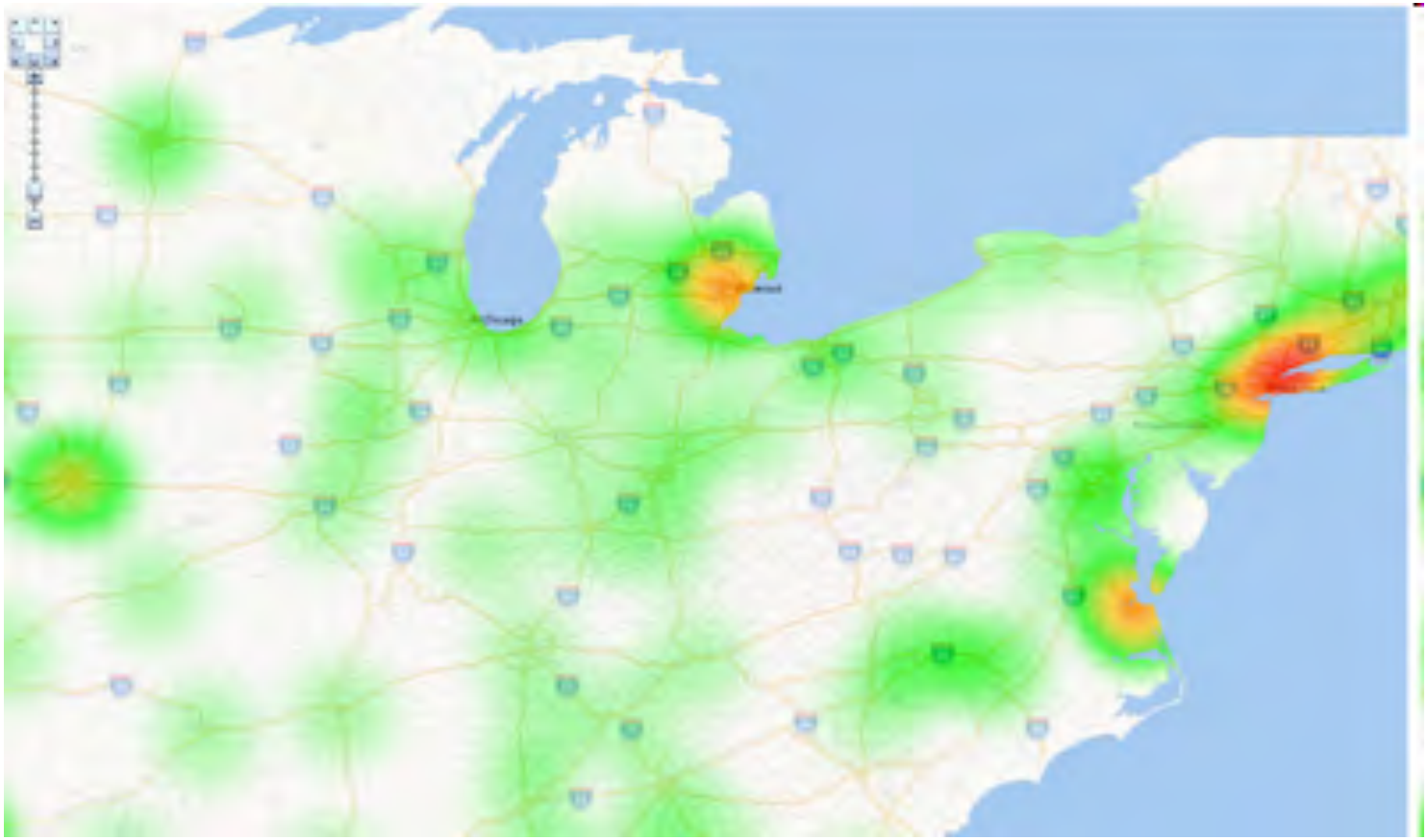
Disclaimer Privacy Policy Terms Of Use Questions and Comments


http://sfdras112.dev.polk.com:7779/mapviewer/insight/ - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://sfdras112.dev.polk.com:7779/mapviewer/insight/
insight
Polk Insight: Toyota
PERRY MOTORS INC-04260
PMA: PERRY MOT
Market analysis r
PMA MAKE MODE
Competition - Com
Competition - Mids
Competition - Luxu
Competition - Pickup trucks
Competition - SUV
Map view: District Sales
Sales Trend 2005 VS. 2006: Bar chart
Select districts and view summary
Click on a district to select or deselect it.
Back to regional map view
Map view: Regional Sales
Sales volumes 2006: Color Scheme
Sales volumes 2006: Dot density
Market share 2005: Lexus VS other mak
Pie chart
Lexus & Others Pie Chart
Lexus
Mercedes
Others
50 mi
100 km
X:-116.15071650000001 / Y:36.00207249911649

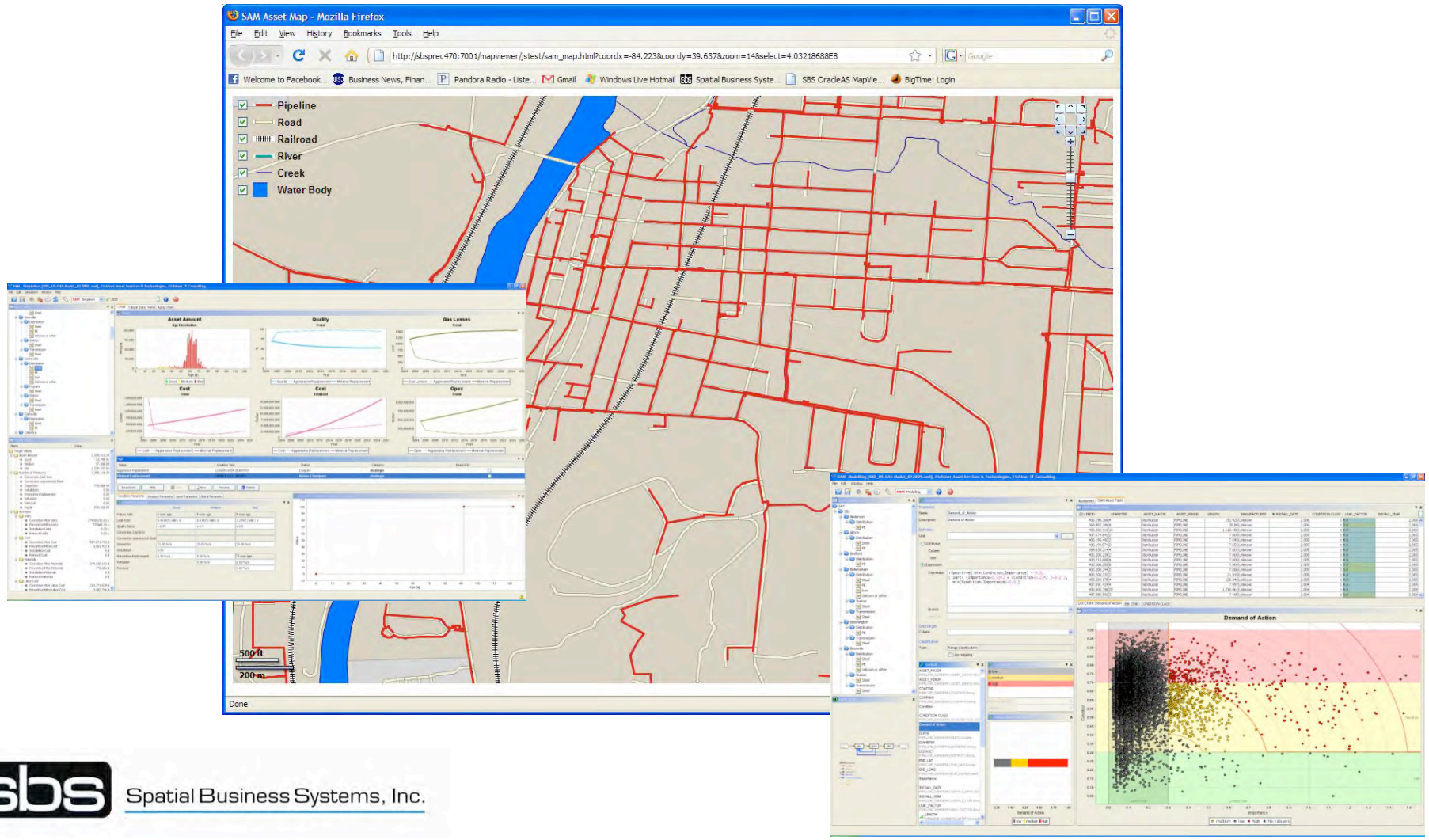
GeoMap + MapViewer




VBI Maps - Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://www.johnstonmclamb.com
VBI Maps
State All
There are 5521 dialysis facilities
County
All
There are 5521 dialysis facilities
Map
Report
PDF
Details
Map Items
Toggle Boundaries
Facility Views
Grouped Facilities
Thematic Layer
Poverty Rate
Legend
0 15 25 100
10 20 30
Chain Type
Government
Hospital
Large
Montana
North Dakota
Idaho
Oregon
Wyoming
South Dakota
Nebraska
Nevada
Utah
Colorado
Arizona
New Mexico
Texas
Michigan
Maine
JOHNSTON
McLAMB
200 mi
200 km
Tools
Done



Strategic Asset Management



Spatial Business Systems, Inc.

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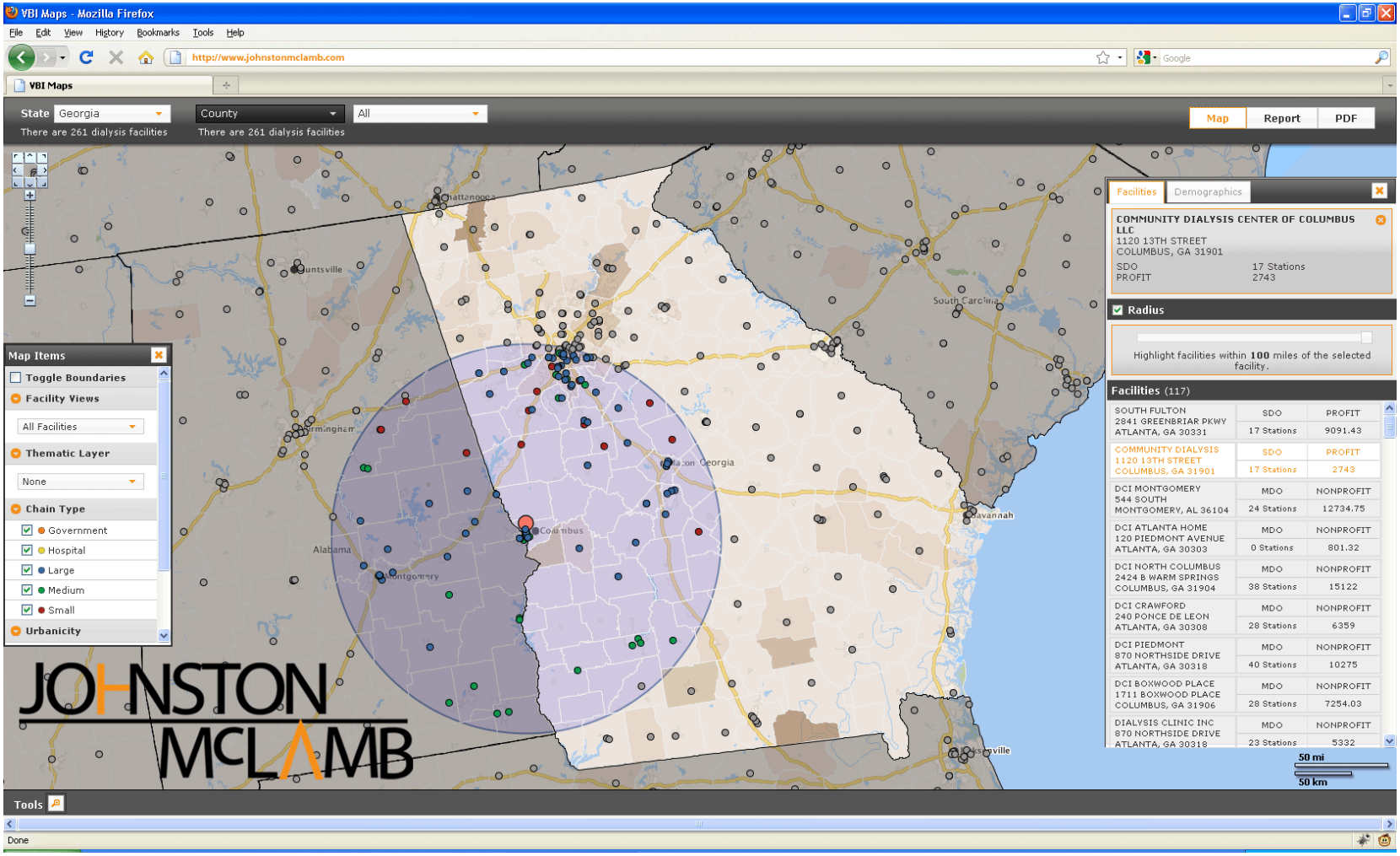
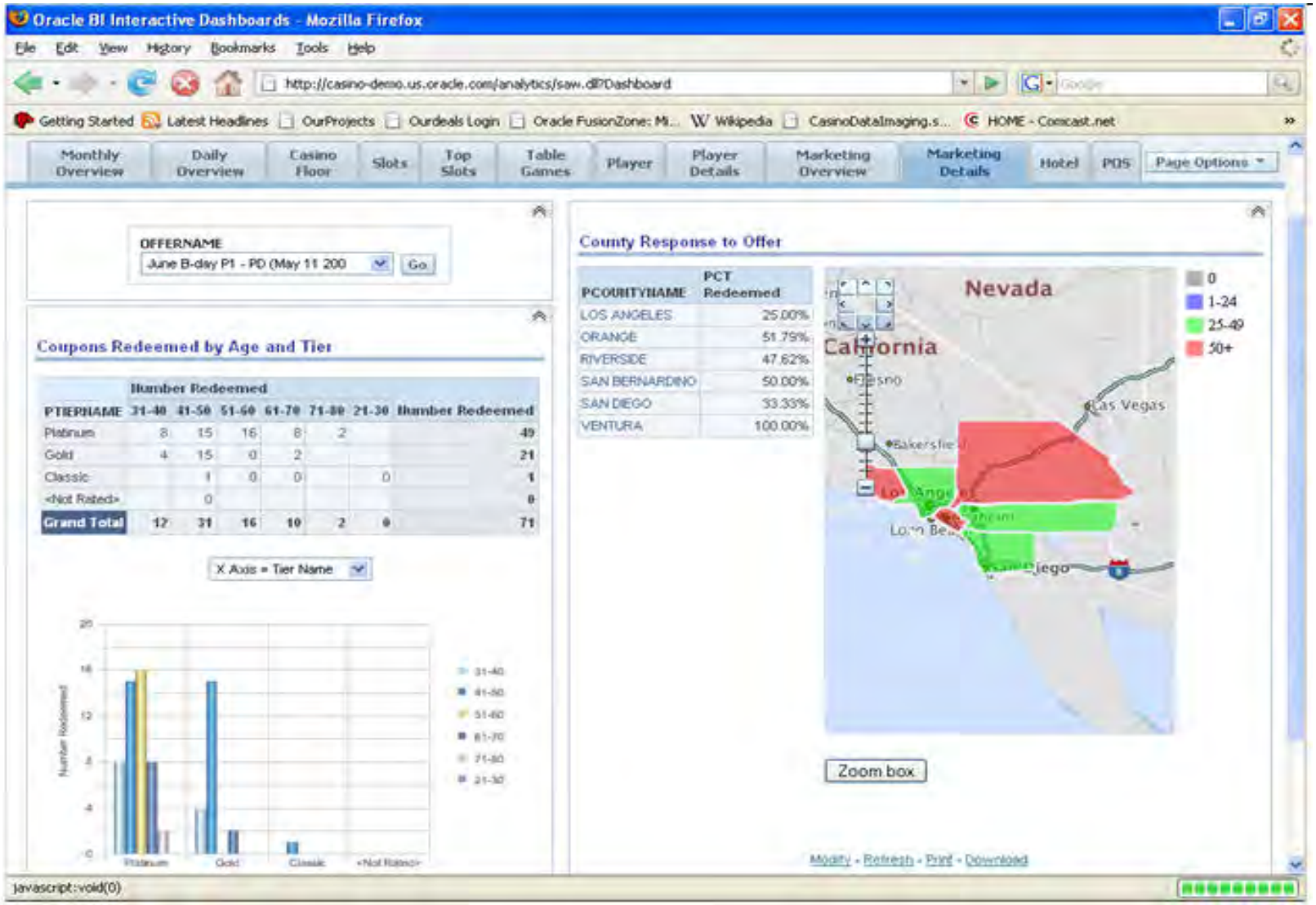
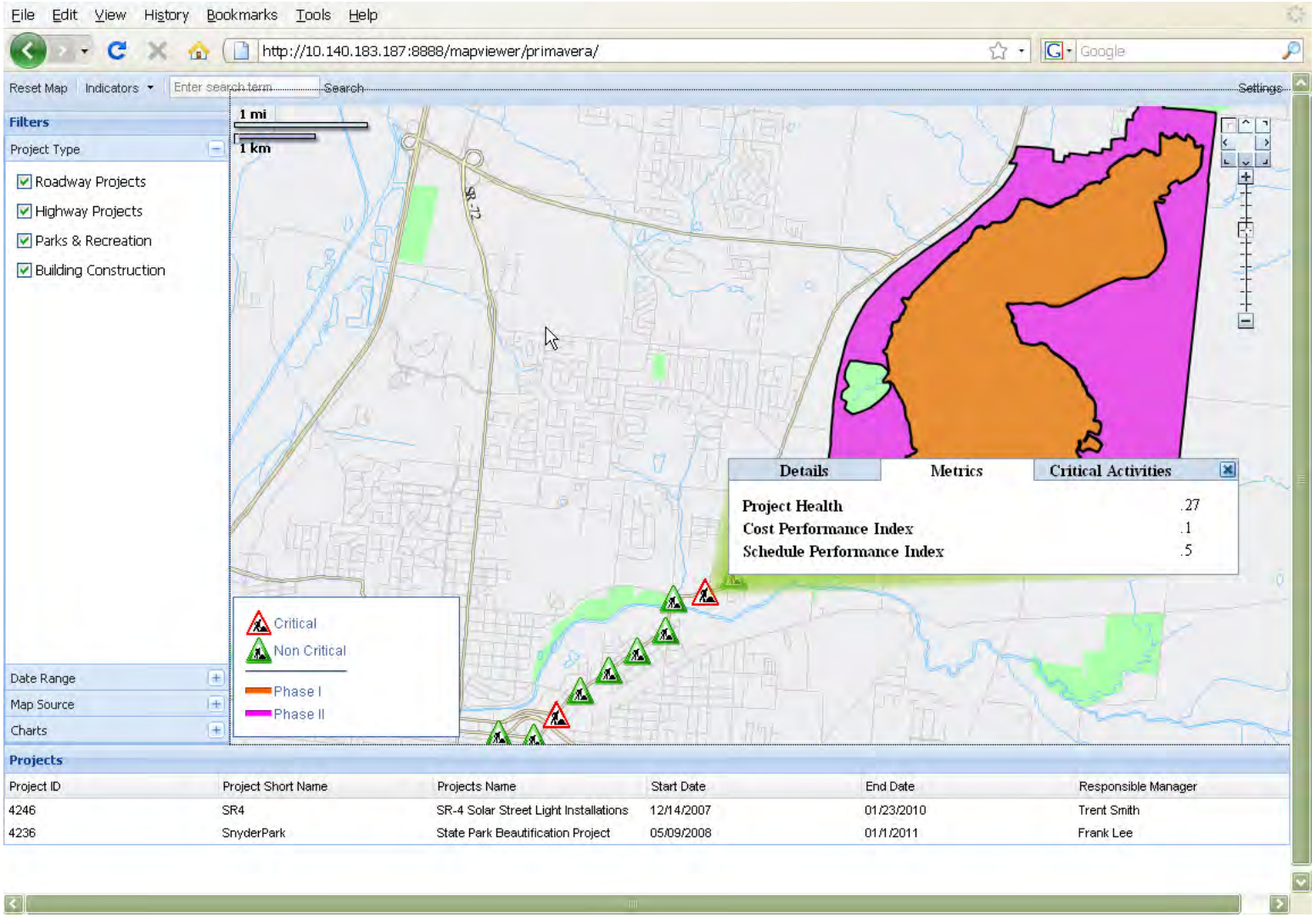
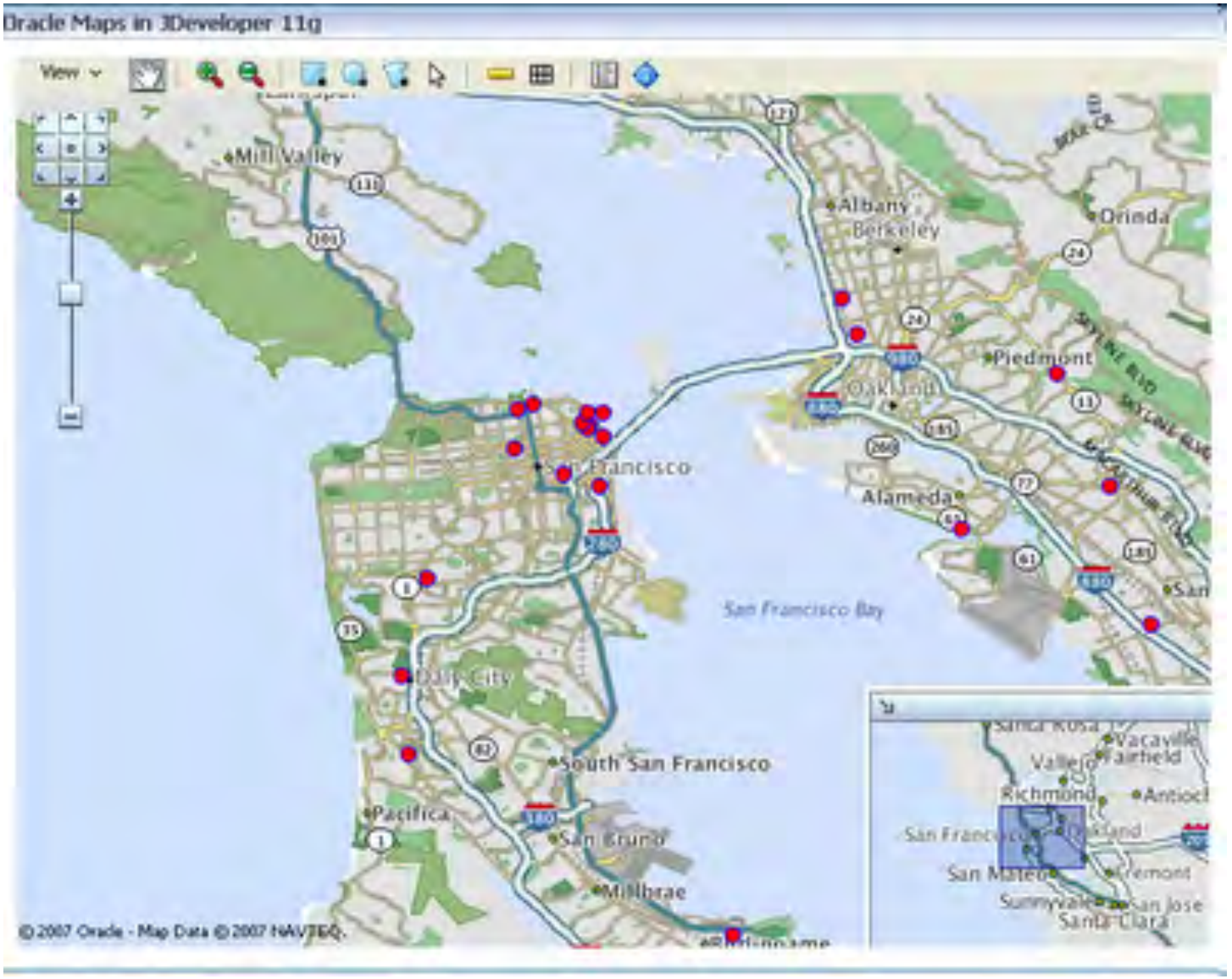
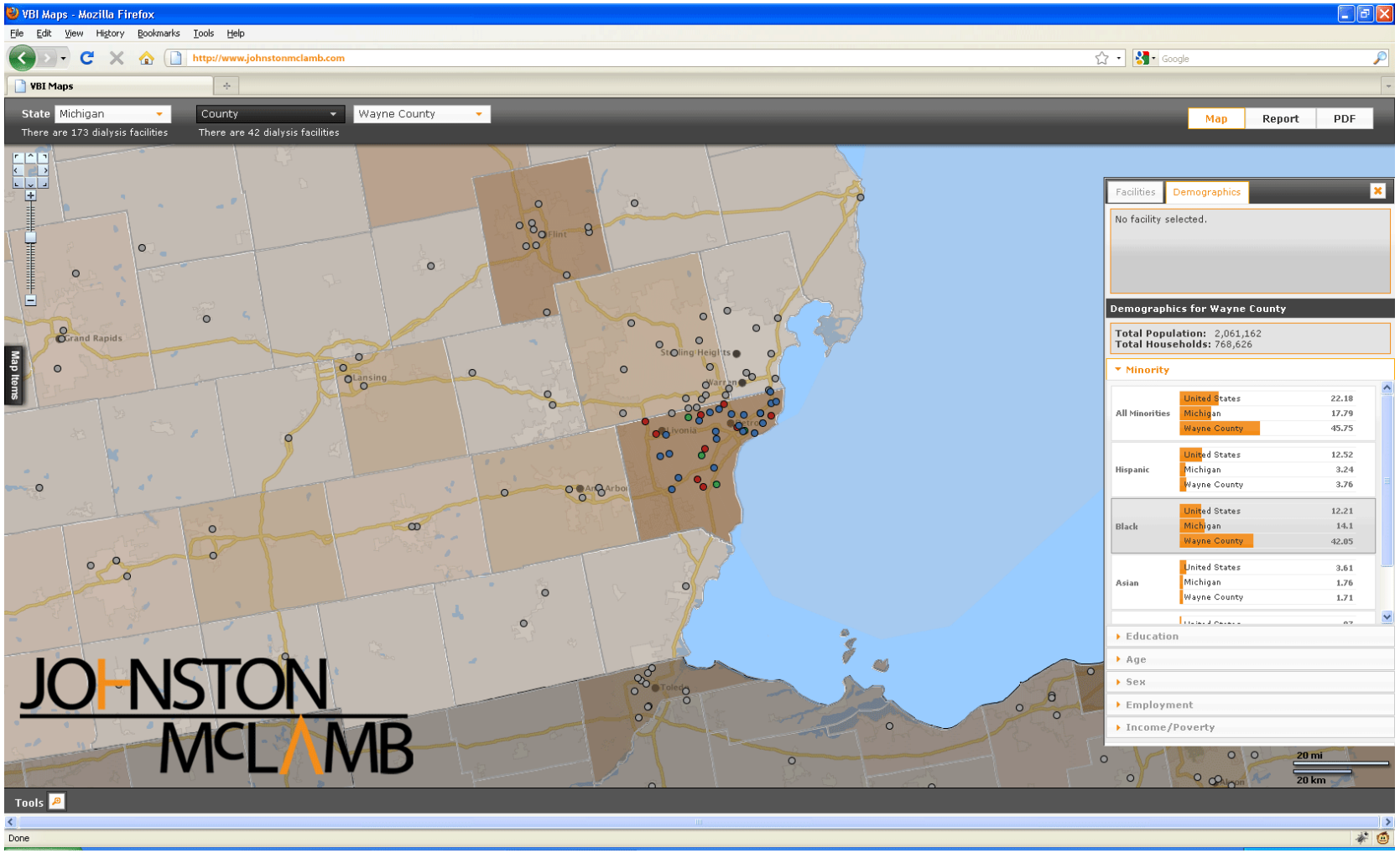

VBI Maps - Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://www.johnstonmclamb.com
VBI Maps
State Georgia
There are 261 dialysis facilities
County
There are 261 dialysis facilities
All
Map
Report
PDF
Facilities
Demographics
COMMUNITY DIALYSIS CENTER OF COLUMBUS LLC
1120 13TH STREET
COLUMBUS, GA 31901
SDO 17 Stations
PROFIT 2743
Radius
Highlight facilities within 100 miles of the selected facility.
Facilities (117)
SOUTH FULTON
2841 GREENBRIAR PKWY
ATLANTA, GA 30331
SDO 17 Stations
PROFIT 9091.43
COMMUNITY DIALYSIS
1120 13TH STREET
COLUMBUS, GA 31901
SDO 17 Stations
PROFIT 2743
DCI MONTGOMERY
544 SOUTH
MONTGOMERY, AL 36104
MDO 24 Stations
NONPROFIT 12734.75
DCI ATLANTA HOME
120 PIEDMONT AVENUE
ATLANTA, GA 30303
MDO 0 Stations
NONPROFIT 801.32
DCI NORTH COLUMBUS
2424 B WARM SPRINGS
COLUMBUS, GA 31904
MDO 38 Stations
NONPROFIT 15122
DCI CRAWFORD
240 PONCE DE LEON
ATLANTA, GA 30308
MDO 28 Stations
NONPROFIT 6359
DCI PIEDMONT
870 NORTHSIDE DRIVE
ATLANTA, GA 30318
MDO 40 Stations
NONPROFIT 10275
DCI BOXWOOD PLACE
1711 BOXWOOD PLACE
COLUMBUS, GA 31906
MDO 28 Stations
NONPROFIT 7254.03
DIALYSIS CLINIC INC
870 NORTHSIDE DRIVE
ATLANTA, GA 30318
MDO 23 Stations
NONPROFIT 5332
Map Items
Toggle Boundaries
Facility Views
All Facilities
Thematic Layer
None
Chain Type
Government
Hospital
Large
Medium
Small
Urbanicity
JOHNSTON MCLAMB
Tools
50 mi
50 km
Done



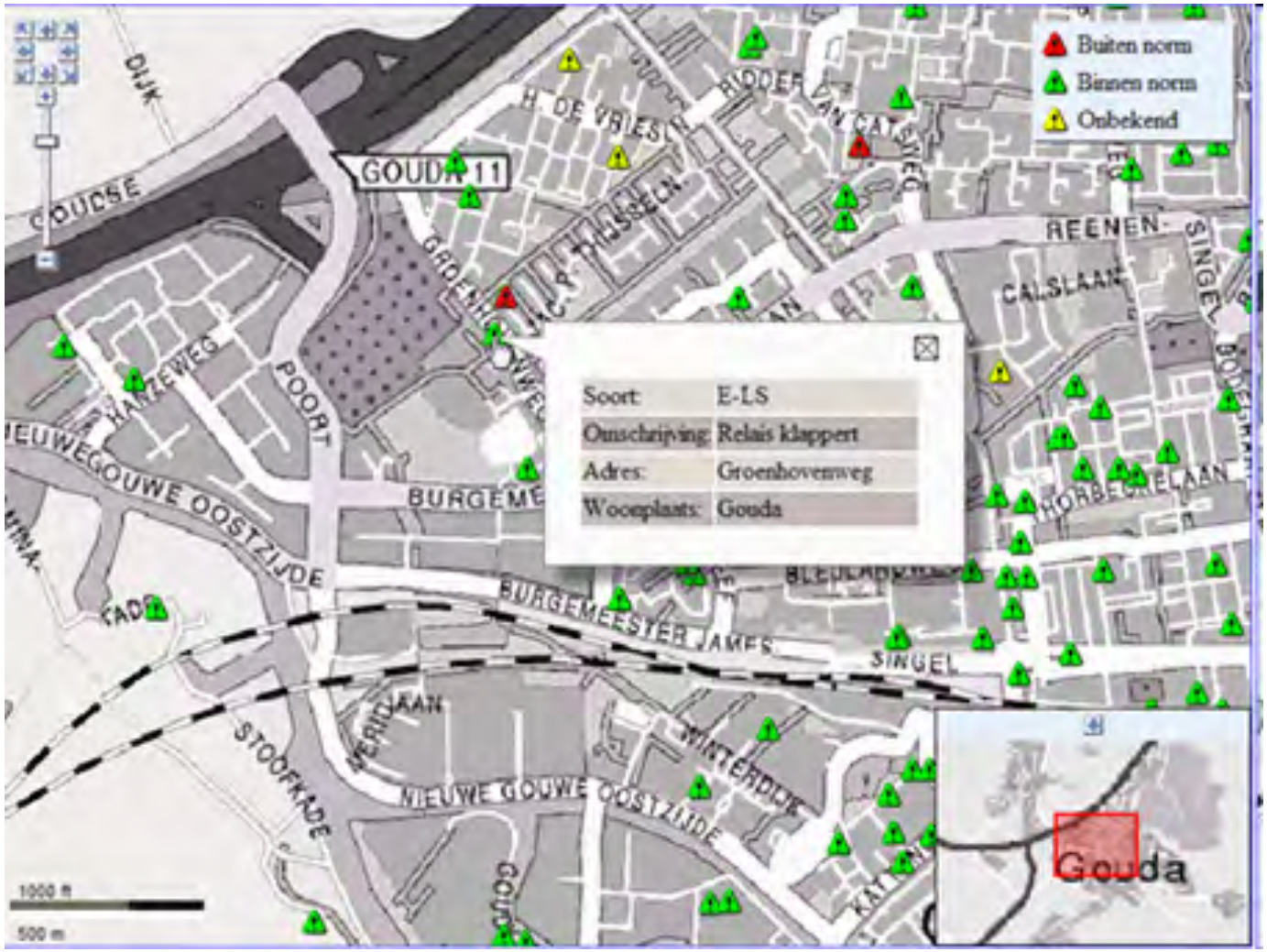
County Level Marketing Analysis

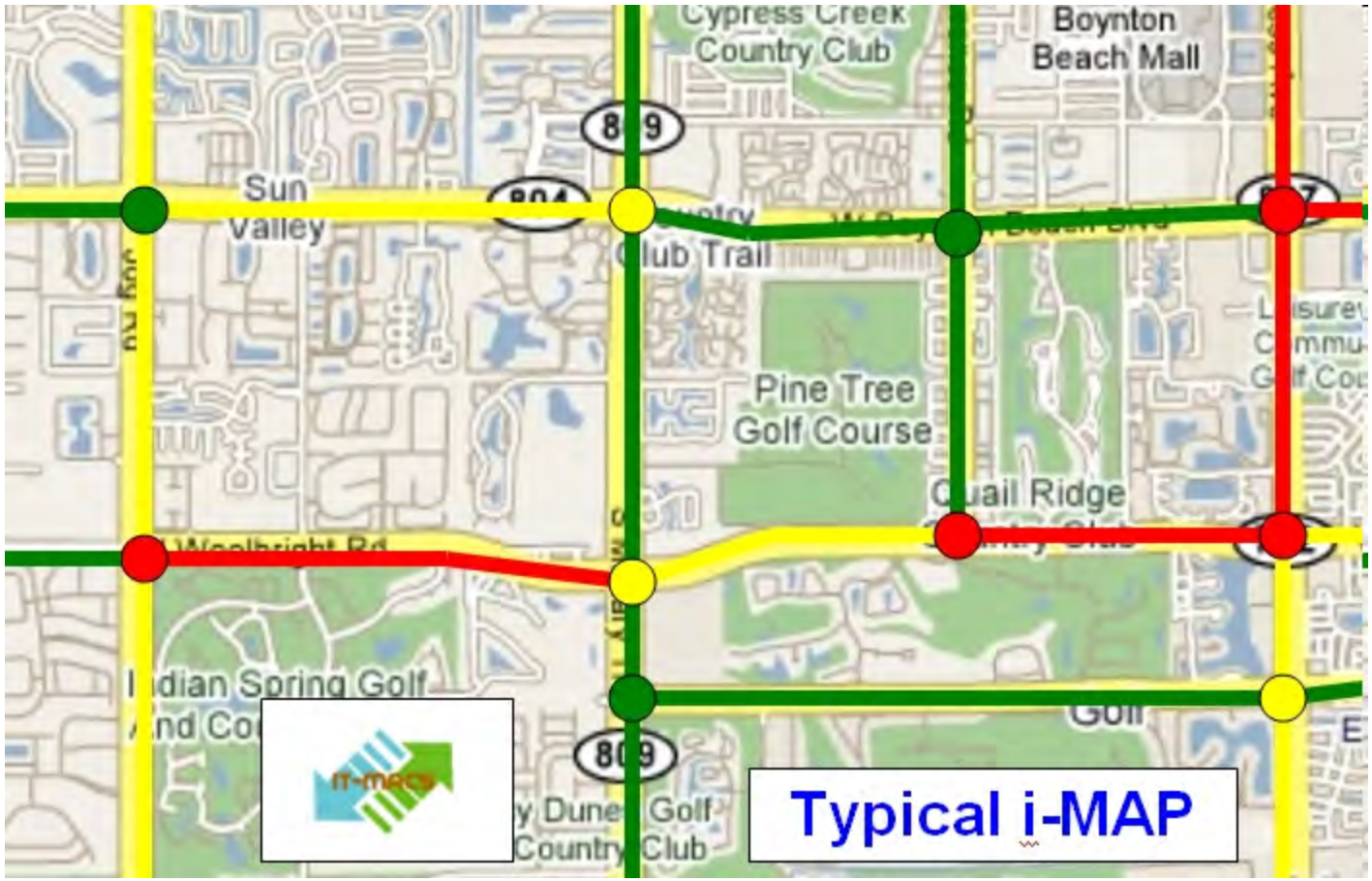

File Edit View History Bookmarks Tools Help
http://10.140.183.187:8888/mapviewer/primavera/
Reset Map
Indicators
Enter search term
Search
Settings
Filters
Project Type
Roadway Projects
Highway Projects
Parks & Recreation
Building Construction
1 mi
1 km
SR-72
Details
Metrics
Critical Activities
Project Health .27
Cost Performance Index .1
Schedule Performance Index .5
Critical
Non Critical
Phase I
Phase II
Date Range
Map Source
Charts
Projects
Project ID | Project Short Name | Projects Name | Start Date | End Date | Responsible Manager
4246 | SR4 | SR-4 Solar Street Light Installations | 12/14/2007 | 01/23/2010 | Trent Smith
4236 | SnyderPark | State Park Beautification Project | 05/09/2008 | 01/1/2011 | Frank Lee

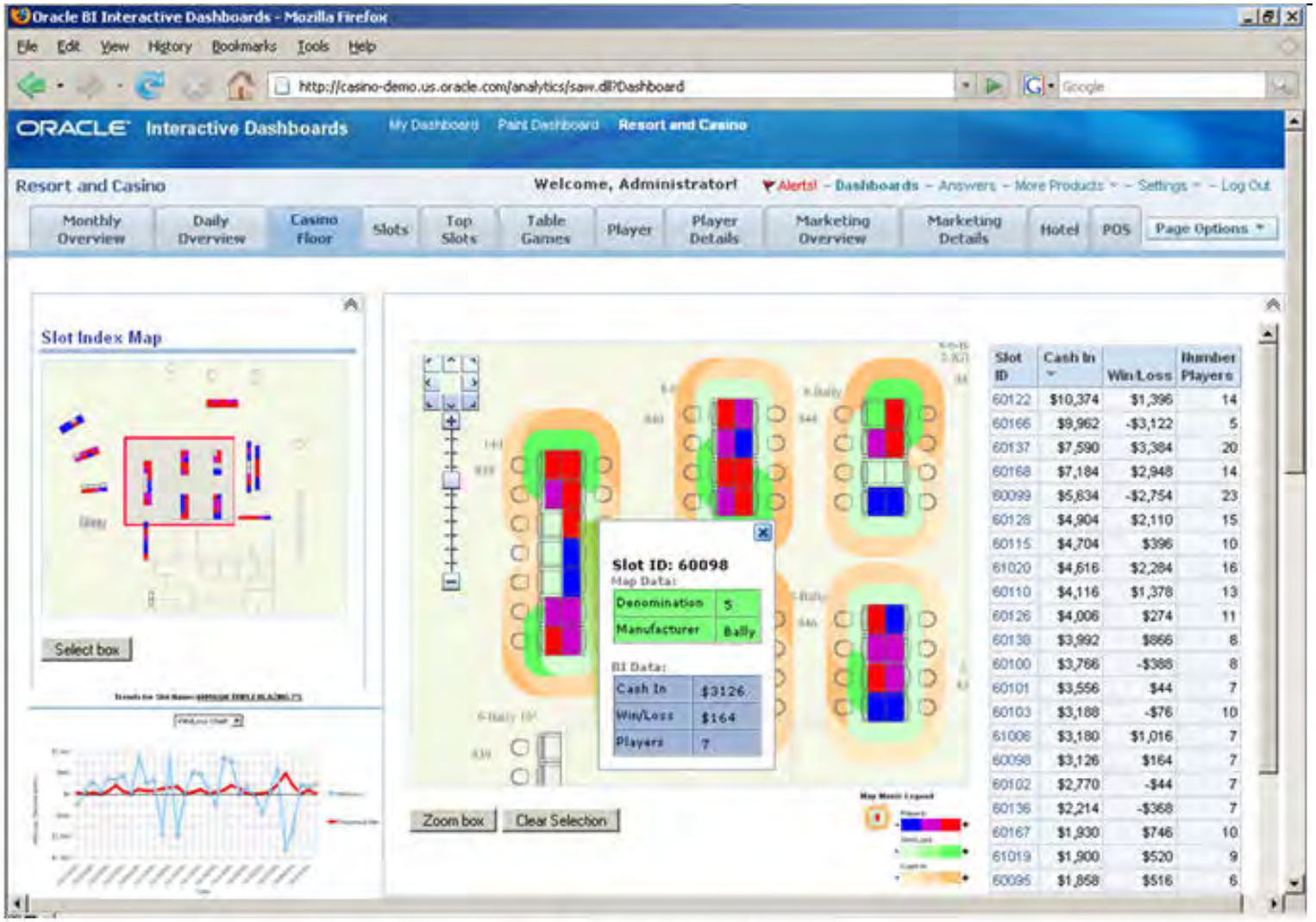

Oracle Maps in JDeveloper 11g
View
Mill Valley
Albany
Berkeley
Orinda
Piedmont
Oakland
Alameda
San Francisco
San Francisco Bay
Daly City
South San Francisco
Pacifica
San Bruno
Millbrae
Vallejo
Fairfield
Richmond
San Mateo
Sunnyvale
San Jose
Santa Clara
© 2007 Oracle - Map Data © 2007 NAVTEQ


VBI Maps - Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://www.johnstonmclamb.com
VBI Maps
State Michigan
There are 173 dialysis facilities
County
There are 42 dialysis facilities
Wayne County
Map
Report
PDF
Map Items
Facilities
Demographics
No facility selected.
Demographics for Wayne County
Total Population: 2,061,162
Total Households: 768,626
Minority
All Minorities
United States 22.18
Michigan 17.79
Wayne County 45.75
Hispanic
United States 12.52
Michigan 3.24
Wayne County 3.76
Black
United States 12.21
Michigan 14.1
Wayne County 42.05
Asian
United States 3.61
Michigan 1.76
Wayne County 1.71
Education
Age
Sex
Employment
Income/Poverty
Flint
Grand Rapids
Lansing
Sterling Heights
Warren
Livonia
Ann Arbor
Toledo
JOHNSTON
MCLAMB
20 mi
20 km
Tools
Done

□□□□□□□□□□□[□□□□□□] - Mozilla Firefox
http://www.apamanshop.com/map_search/RstMap.asp
道央部
北区
手稲区
東区
西区
白石区
中央区
厚別区
豊平区
清田区
南区
札幌市
幌加内町
道北部
沼田町
秩父別町
北竜町
深川市
雨竜町
妹背牛町
滝川市
新十津川町
赤平市
砂川市
歌志内市
石狩市
浦臼町
上砂川町
奈井江町
月形町
美唄市
芦別市
当別町
積丹町
三笠市
新篠津村
古平町
神恵内村
余市町
小樽市
岩見沢市
泊村
仁木町
江別市
赤井川村
南幌町
栗山町
夕張市
共和町
札幌市
長沼町
岩内町
北広島市
由仁町
倶知安町
京極町
恵庭市
蘭越町
寿都町
千歳市
二セコ町
真狩村
喜茂別町
留寿都村
島牧村
黒松内町
道南部
道南部
Done
start
2 Firefox
2 Mozilla Th...
MyOracle - Mi...
3 Microsoft ...
2 Oracle Cal...
Spatial Presen...
1:30 PM


Buiten norm
Binnen norm
Onbekend
GOUDA 11
Soort: E-LS
Omschrijving: Relais klappert
Adres: Groenhovenweg
Woonplaats: Gouda
Gouda
1000 ft
500 m


Cypress Creek
Country Club
Boynton
Beach Mall
Sun
Valley
Club Trail
Pine Tree
Golf Course
Quail Ridge
Golf
Typical i-MAP

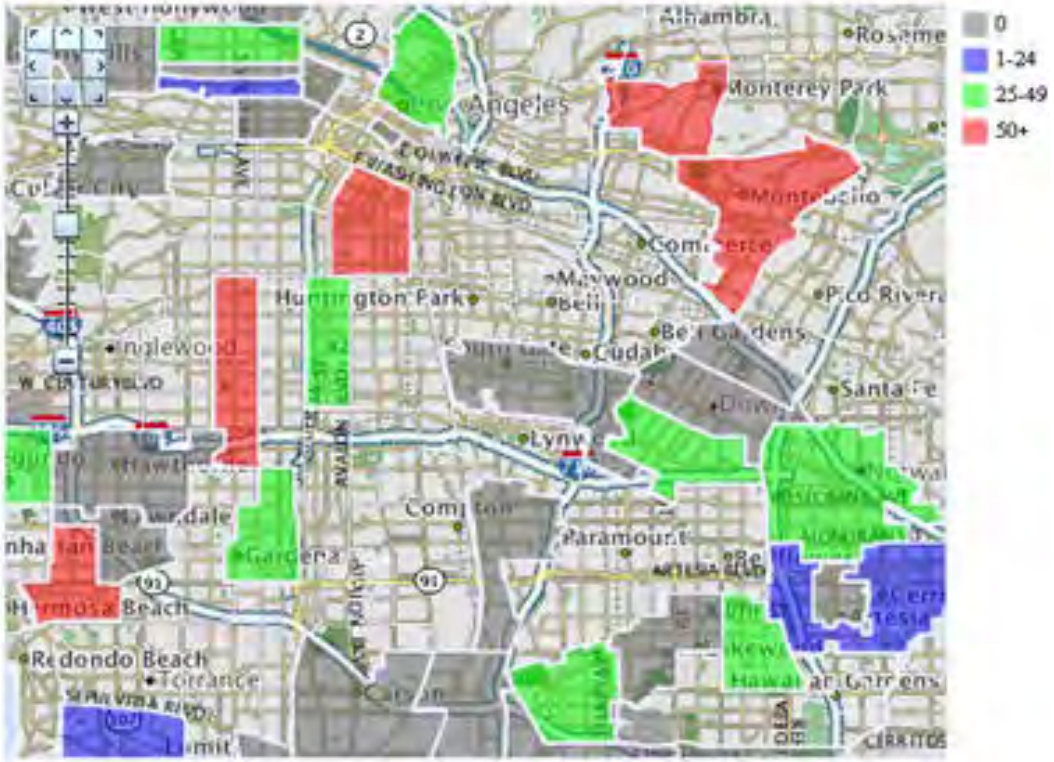


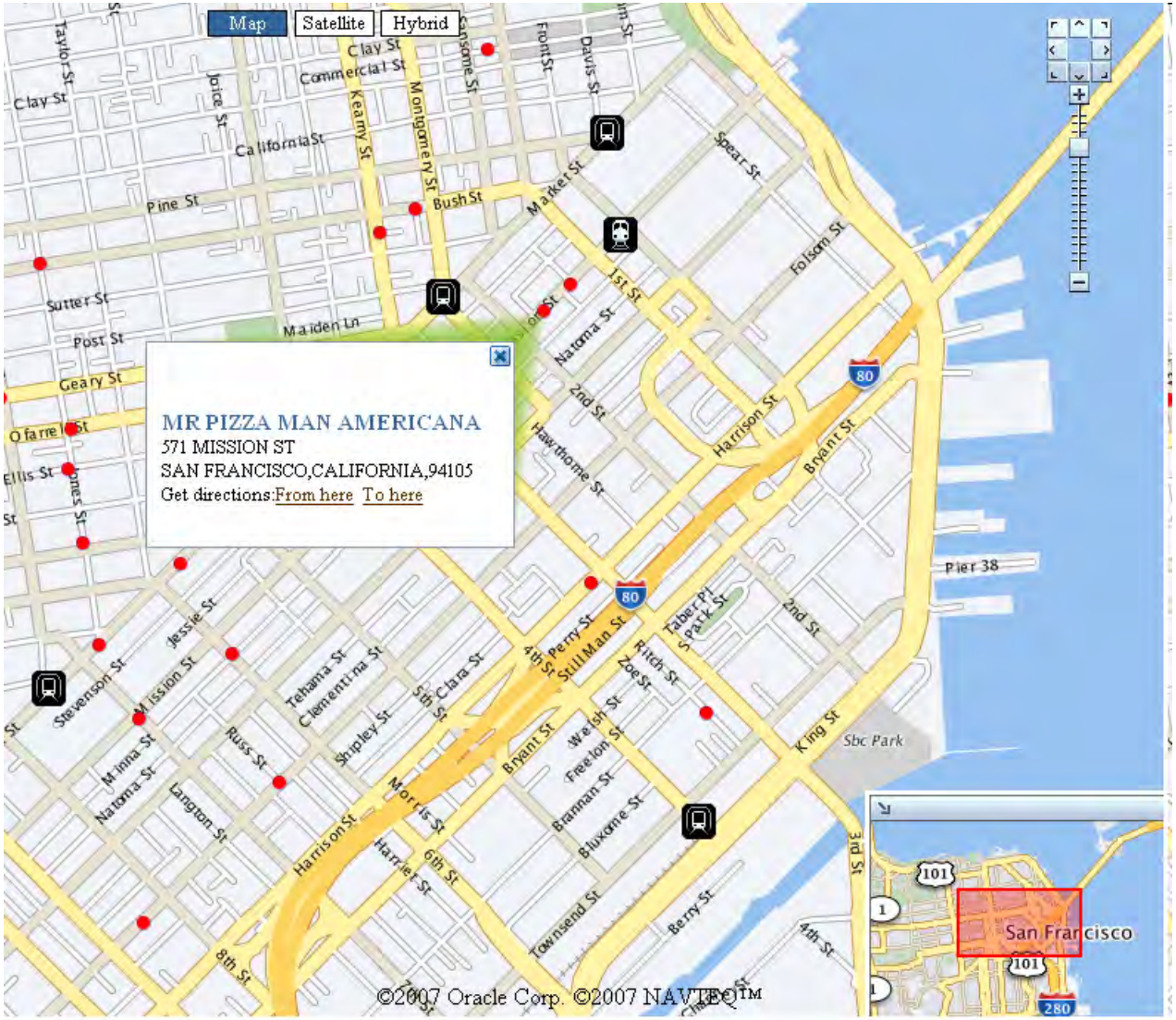
Oracle Corporation

Slot Machine Performance Analysis

Zipcode Response to Offer

PZIPNAME	PCT Redeemed
91606	100.00%
91768	100.00%
90047	75.00%
91791	75.00%
93536	75.00%
91042	50.00%
91214	50.00%
90640	50.00%
90278	50.00%
91750	50.00%
91754	50.00%
93535	50.00%
90011	50.00%
90713	41.67%
90004	37.50%
91423	37.50%
90274	37.50%
90638	25.00%
90247	25.00%
90650	25.00%
90807	25.00%
91344	25.00%




Map
Satellite
Hybrid
MR PIZZA MAN AMERICANA
571 MISSION ST
SAN FRANCISCO,CALIFORNIA,94105
Get directions:From here To here
Clay St
Commercial St
Kearny St
Montgomery St
Sansome St
Front St
Davis St
Spear St
California St
Pine St
Bush St
Market St
Sutter St
Post St
Maiden Ln
Geary St
O'farrell St
Ellis St
Jones St
1st St
Natoma St
2nd St
Folsom St
Harrison St
Bryant St
Hawthorne St
80
Pier 38
Taber Pl
Park St
Perry St
4th St
Stillman St
Ritch St
Zoe St
Welsh St
Freelon St
Brannan St
Bluxome St
King St
Sbc Park
Jessie St
Stevenson St
Mission St
Minna St
Natoma St
Russ St
Langton St
Tehama St
Clementina St
Shipley St
5th St
Clara St
Morris St
Harrison St
Harriet St
6th St
8th St
Townsend St
Berry St
4th St
3rd St
San Francisco
101
280
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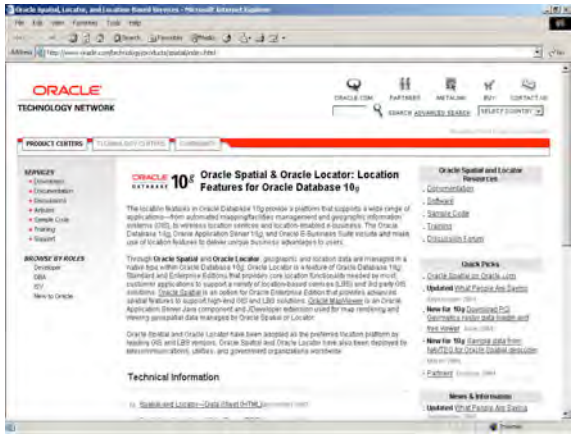
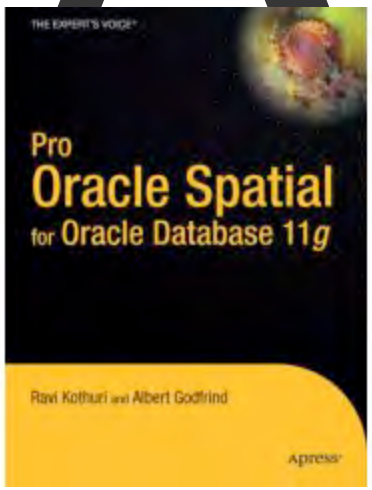
Find out more...

oracle.com/database/spatial.html

oracle.com/technology/products/spatial





oracle.com/technology/products/spatial/htdocs/pro_oracle_spatial.html

Spatial at OOW 2009 - Sessions

Date/Time	Title	Location
Thursday, Oct. 15		
9:00 a.m.	Oracle Utilities Business Intelligence Road Map: Where the Product is Going	Palace Hotel Presidio
12:00 p.m.	Where, Why, and How: Business Application Using Oracle Spatial Technologies	Moscone South Room 301
1:30 p.m.	Oracle Fusion Middleware 11g's MapViewer Feature: Deconstructing a Simple BI Application	Moscone West L3 Room 3014

- DEMOgrounds
  - Oracle Spatial 11g Technologies - *Moscone West, W-020*
  - Location and Map-Enabled Applications and Tools - *Moscone West, W-019*

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