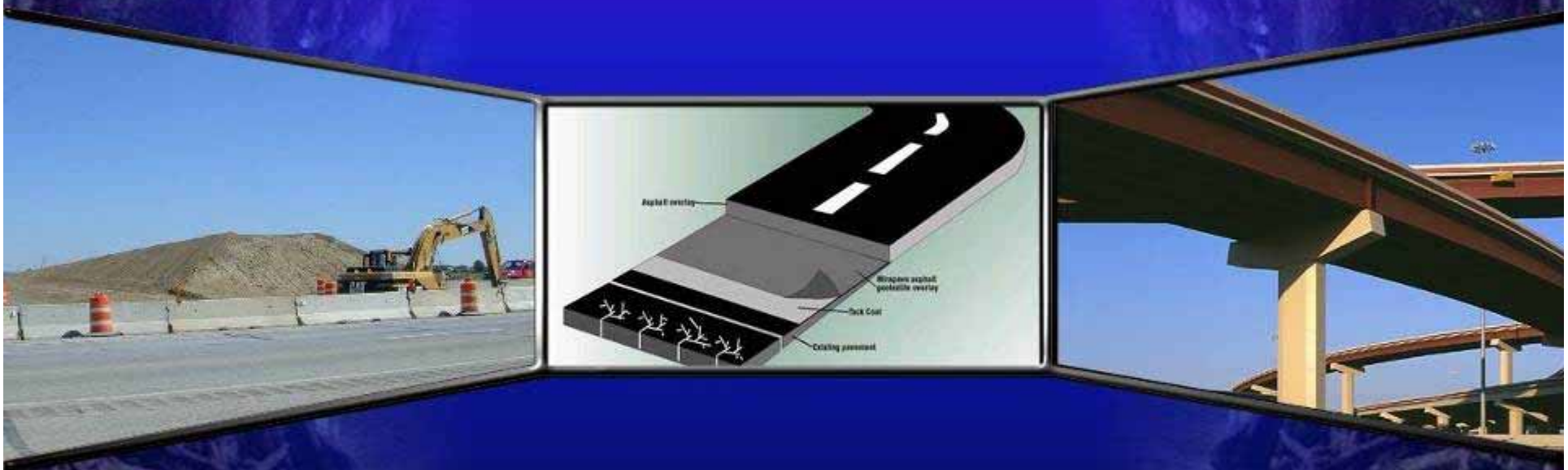
Opening the Portal to Effective Pavement Management



Said Ismail, P.E.
Louisiana Department of Transportation
and Development

Introduction

Background

Increased Importance of Pavement Management Systems

Data Integration – Benefits and Obstacles

Launch of New PMS Web Application

Background

Background

- Pavement management is a planning and programming tool for state-level network analysis
- LADOTD has maintained a PMS since 1991
- Districts were initially skeptical of PMS
- Accessibility to PMS data is vital to LADOTD staff

Brief History of PMS Data Delivery

Year	Method of delivery
1992	VHS tapes (1600 mile pilot study)
1994	S-VHS tapes
1997-98	S-VHS tapes
2000	DVD
2003	Hard drives to DOTD, SNAP servers to districts
2005	Hard drives to DOTD, SNAP servers to districts
2007	Hi-Def images on hard drives, SNAP servers to districts

Response to Data Delivery Methods

Delivery Method	Description	Response
VHS	Cumbersome to search through	Poor
DVD	Easier searches for road sections	Better
Servers	Allowed more users access to data	Good
Dot NET Webpage	Easy data access and limited queries	Very Good
VisiWeb	All users allowed image access through web	Excellent
Web page / GIS Interface	Users can query PMS database and display results on map	TBD

Additional Data Items Collected

- Vertical Clearance Measurements
- Signs (Traffic and Advertising)
- Geometric Data (Cross-Slope, Horizontal and Vertical Curves, Edge Drop-Offs)
- Right of Way Images on all Ramps

Increased Importance of Pavement Management Systems

Increased Importance of PMS

- Increased costs and decreased funding
- Shifting focus from expansion to preservation
- Significant investment in pavement management data

- PMS data is valuable to all LA DOTD engineers and support staff

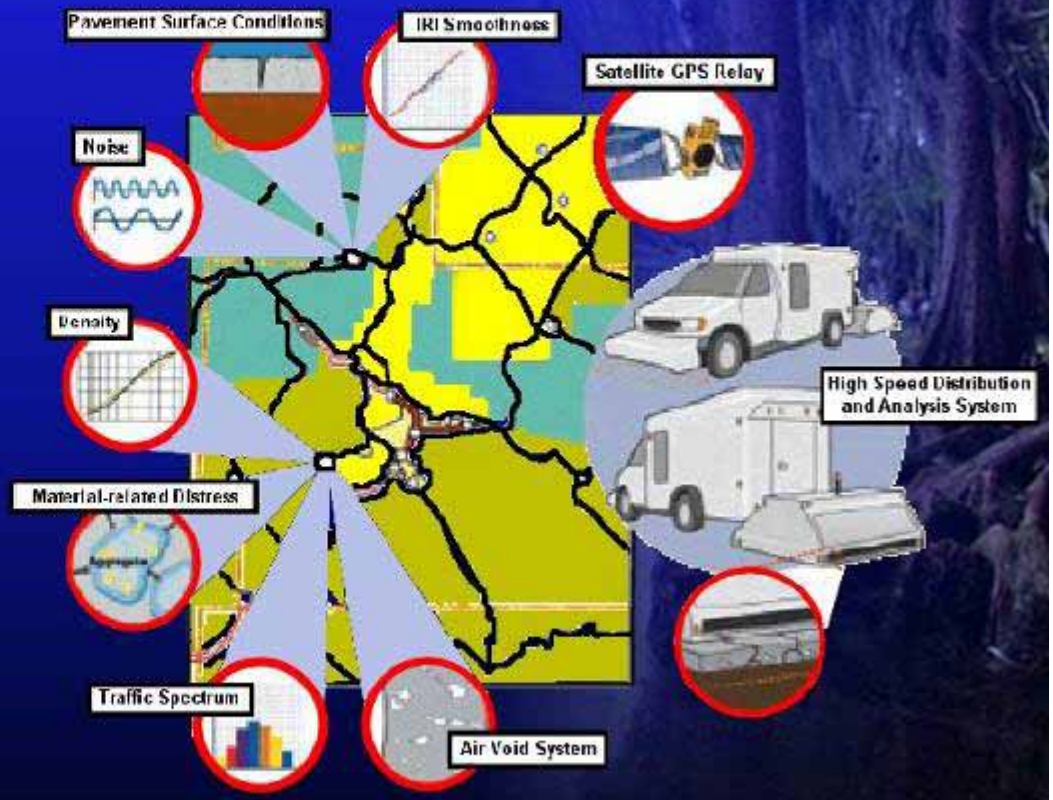
Strategy

- Depart from "Worst First"
- Empower Principles of Life Cycle Analysis
- Proceed toward Preservation First

Integrating Data – Benefits and Obstacles

Benefits of Integrating Data

- Reduction in research and reporting times
- More comprehensive inventory, condition, and event data
- Flexibility to incorporate new assets or events
- Data is accessed directly from source
- Intuitive map-based user interface



Data Integration – LRS Obstacles

- Location Reference System (LRS)
  - Various location reference systems are used throughout LA DOTD:
    - » Control Section Logmile
    - » Route Logmile
    - » Route Milepost
    - » GPS Latitude/Longitude
    - » Project Station Number
- Some data is still not integrated due to the differences in LRS

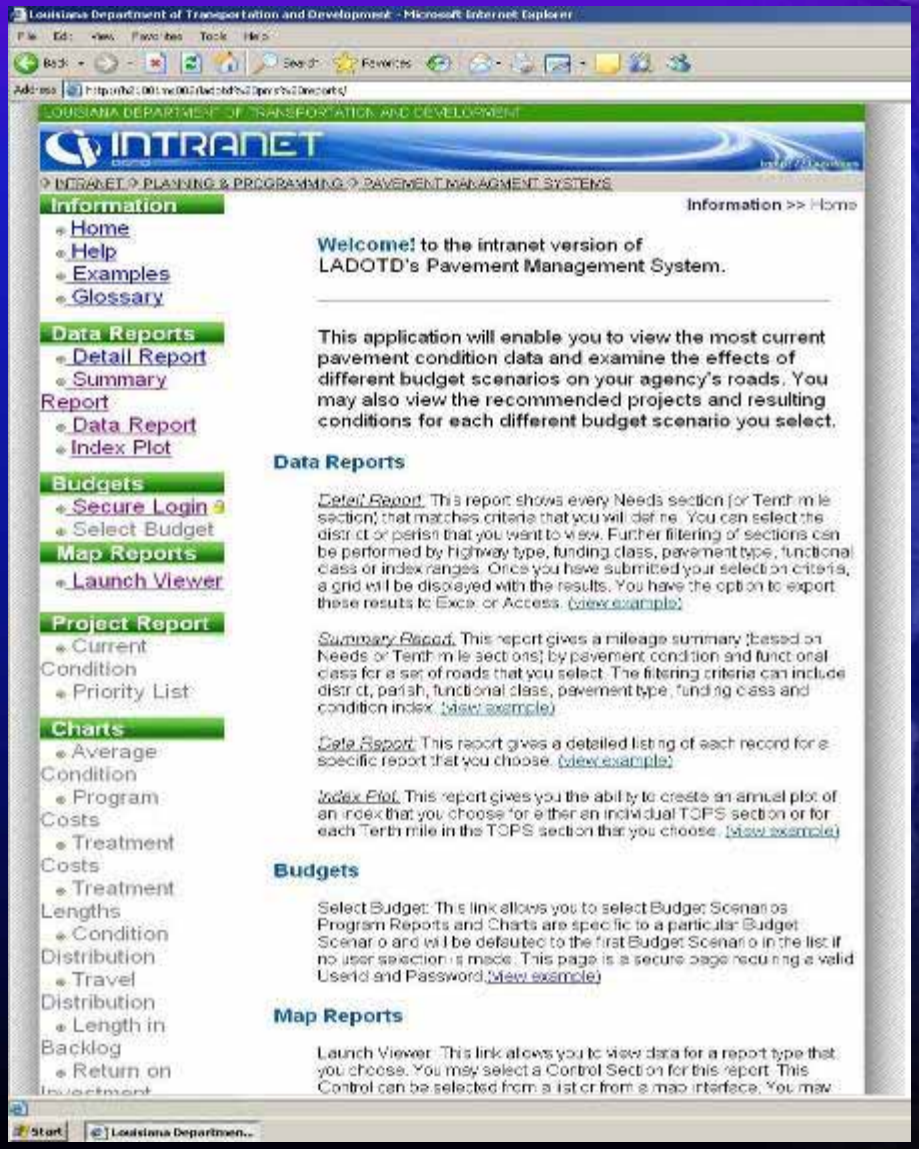
PMS Web Application with GIS Interface

The Tools Available

Databases
Condition and Program Recommendations
Traffic Volumes
Highway Inventory
Project Tracking
Traffic Accidents
GIS
ESRI ArcIMS
Enterprise Data Hub
Deighton™ dTIMS CT Enterprise

PMS Web Application

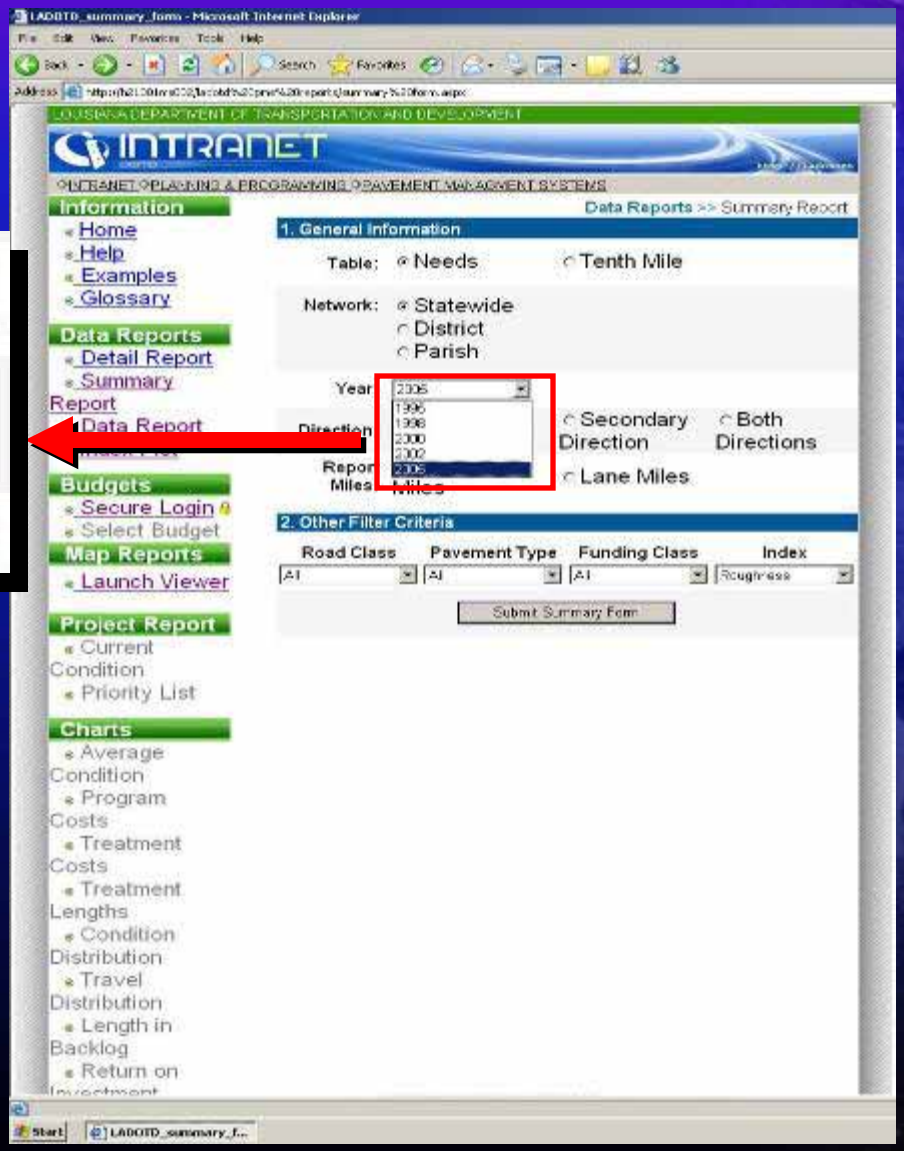
Home Page



PMS Web Application

Summary Report

PMS Web Application



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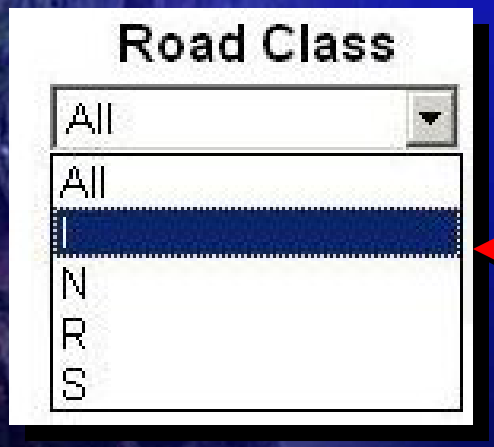

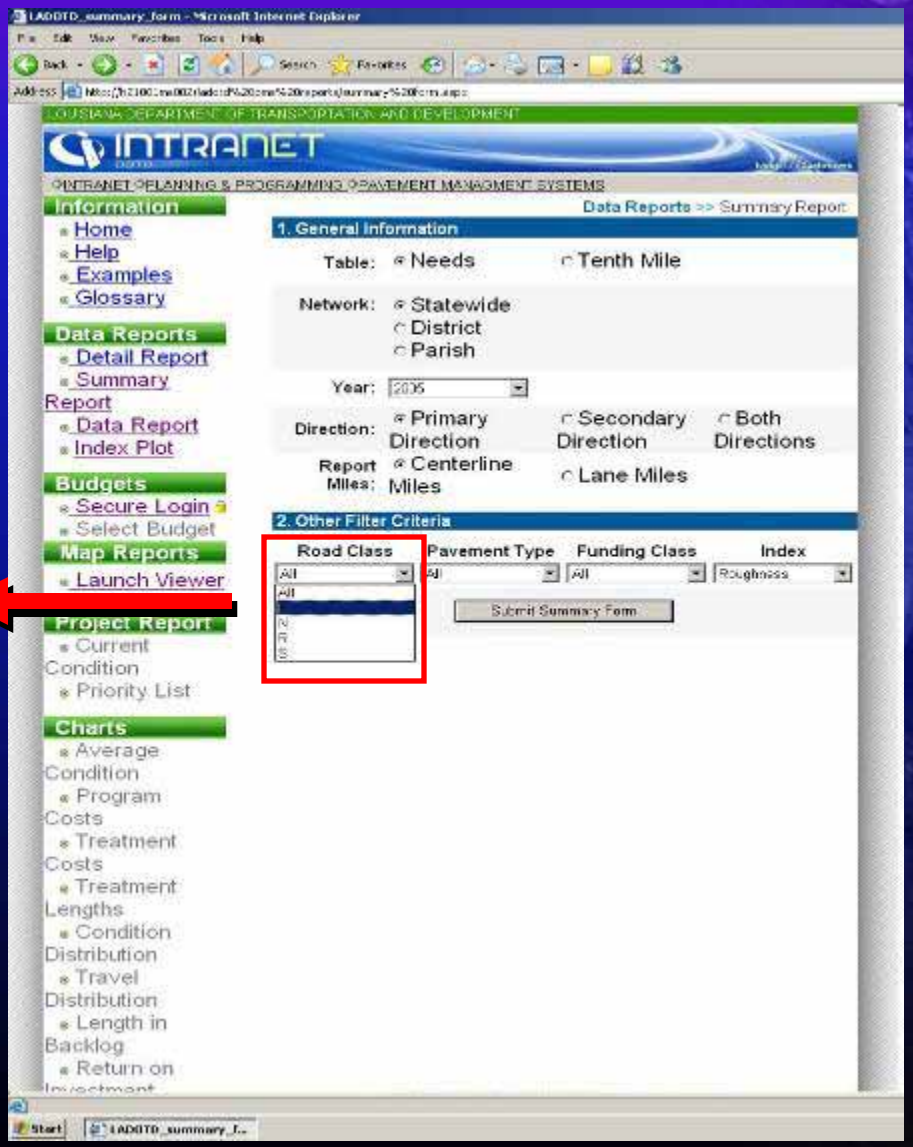

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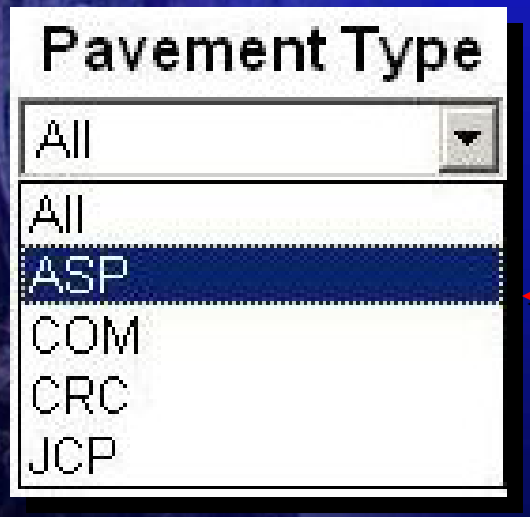

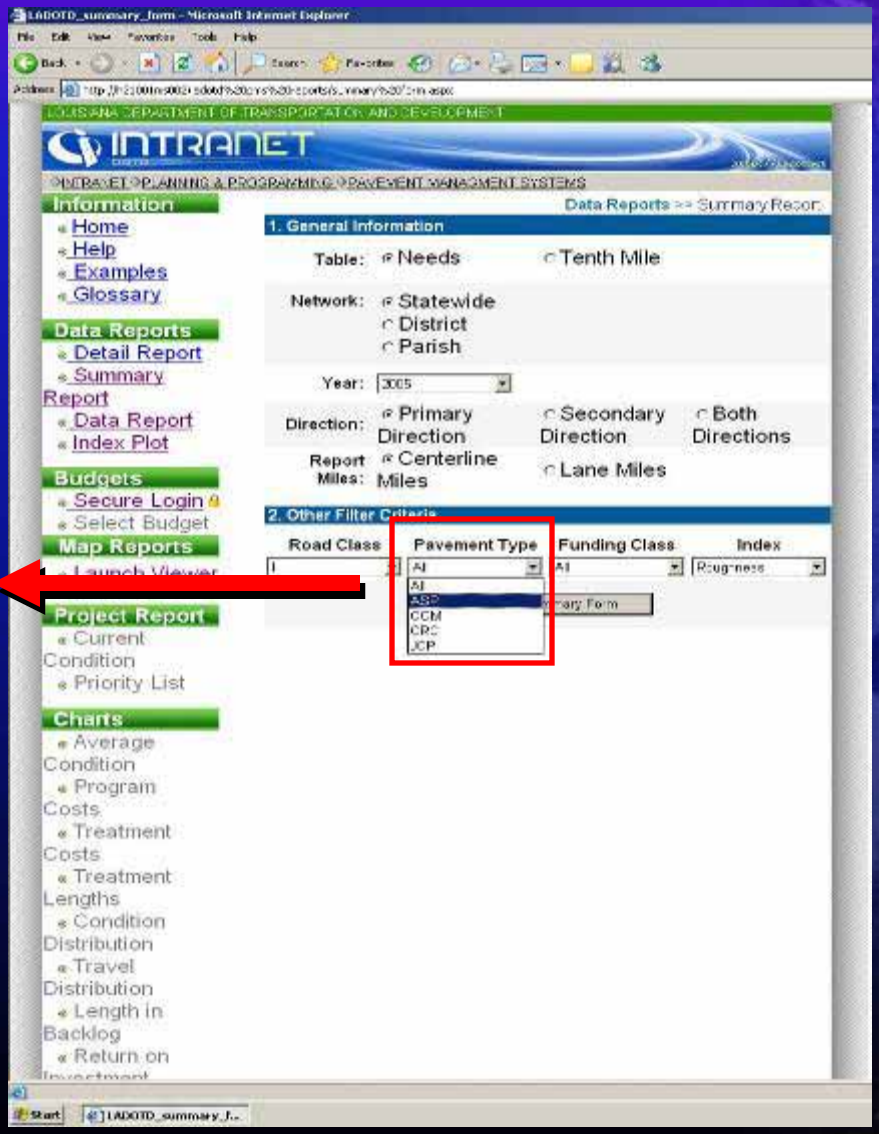

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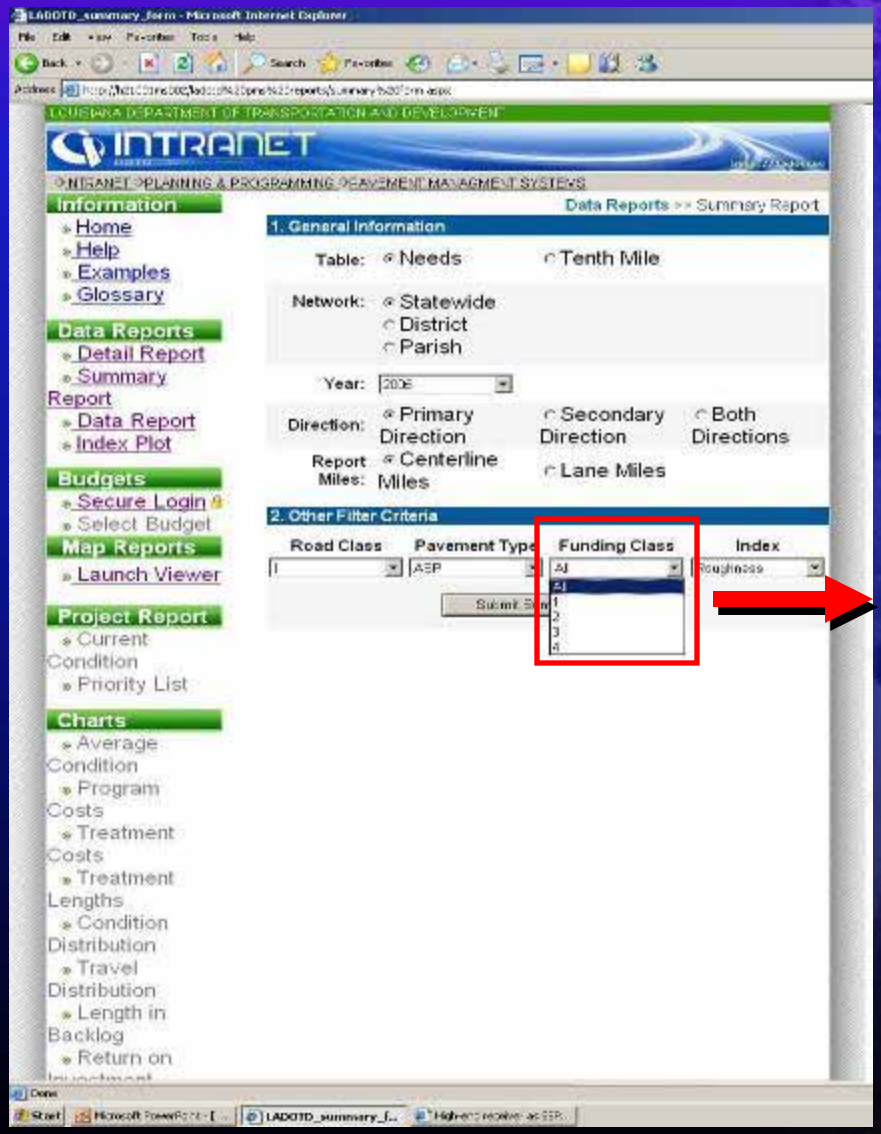

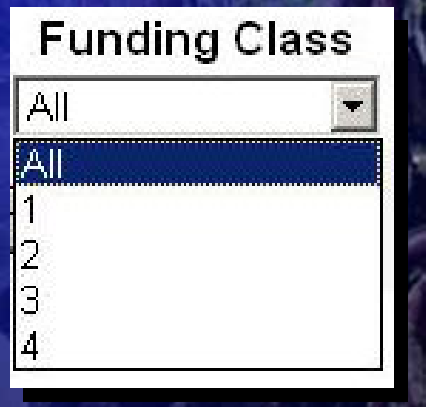

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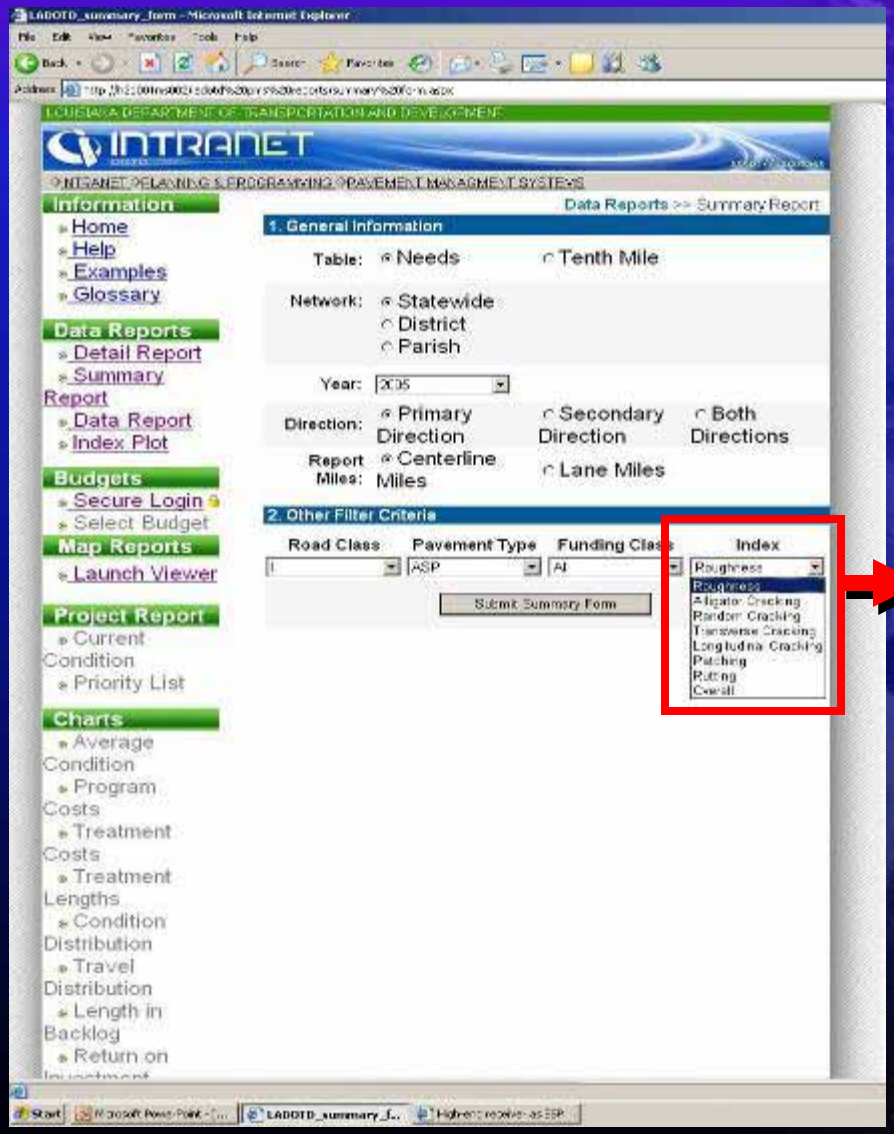

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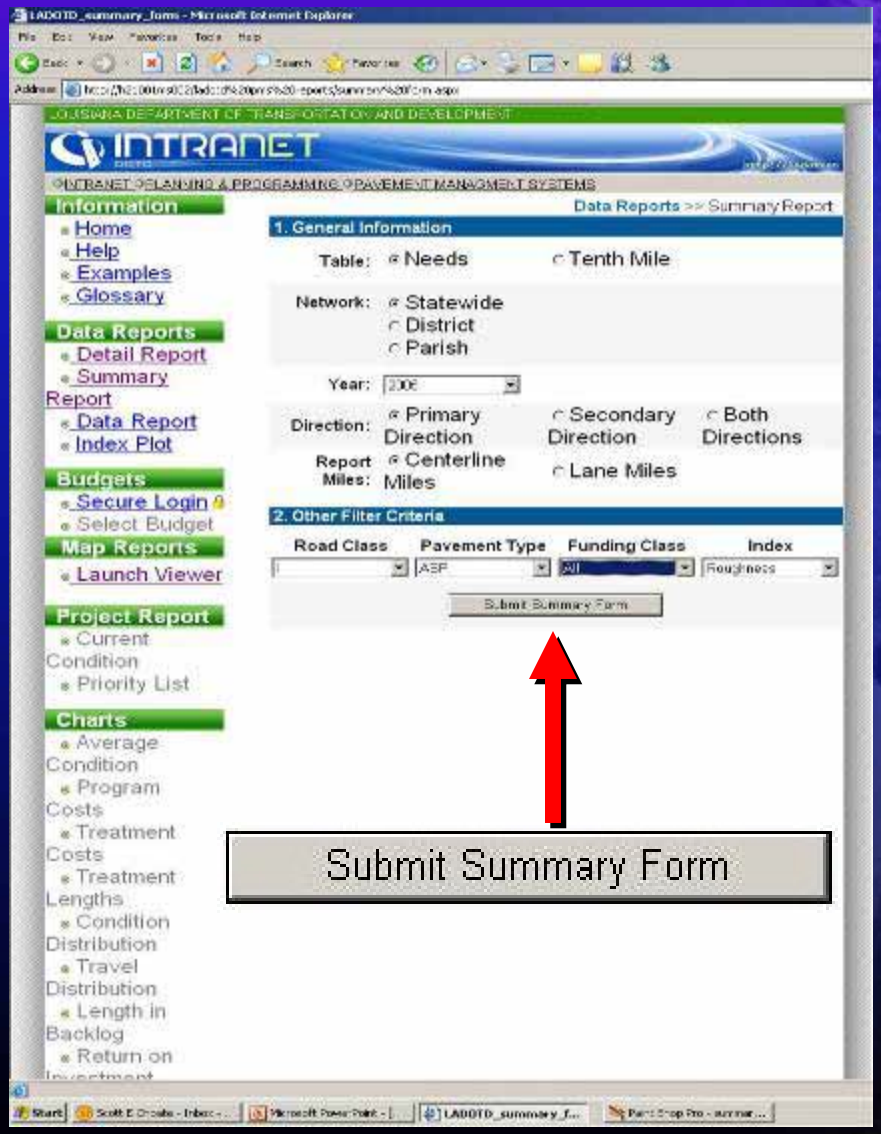

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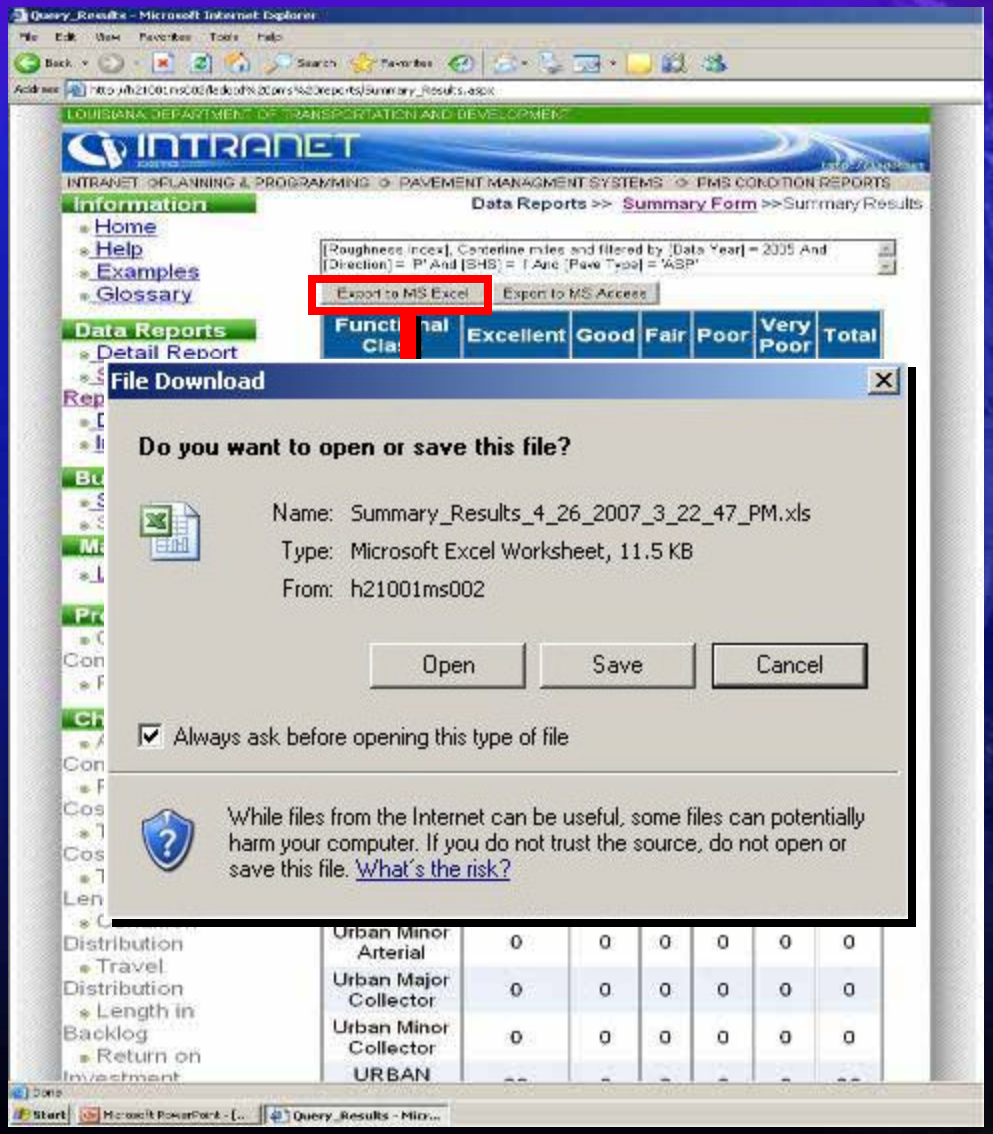

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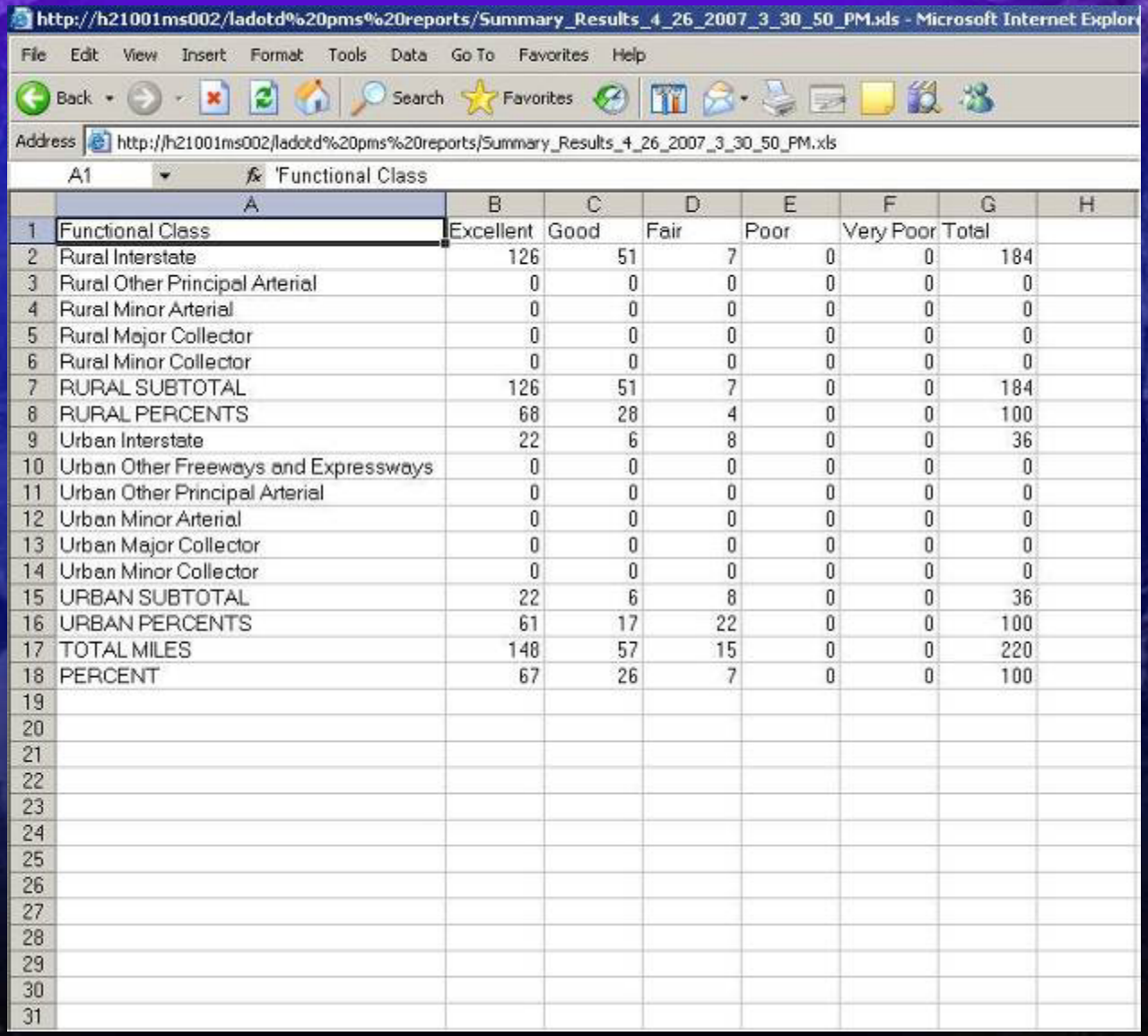

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1	Functional Class	Excellent	Good	Fair	Poor	Very Poor	Total	
2	Rural Interstate	126	51	7	0	0	184	
3	Rural Other Principal Arterial	0	0	0	0	0	0	
4	Rural Minor Arterial	0	0	0	0	0	0	
5	Rural Major Collector	0	0	0	0	0	0	
6	Rural Minor Collector	0	0	0	0	0	0	
7	RURAL SUBTOTAL	126	51	7	0	0	184	
8	RURAL PERCENTS	68	28	4	0	0	100	
9	Urban Interstate	22	6	8	0	0	36	
10	Urban Other Freeways and Expressways	0	0	0	0	0	0	
11	Urban Other Principal Arterial	0	0	0	0	0	0	
12	Urban Minor Arterial	0	0	0	0	0	0	
13	Urban Major Collector	0	0	0	0	0	0	
14	Urban Minor Collector	0	0	0	0	0	0	
15	URBAN SUBTOTAL	22	6	8	0	0	36	
16	URBAN PERCENTS	61	17	22	0	0	100	
17	TOTAL MILES	148	57	15	0	0	220	
18	PERCENT	67	26	7	0	0	100	
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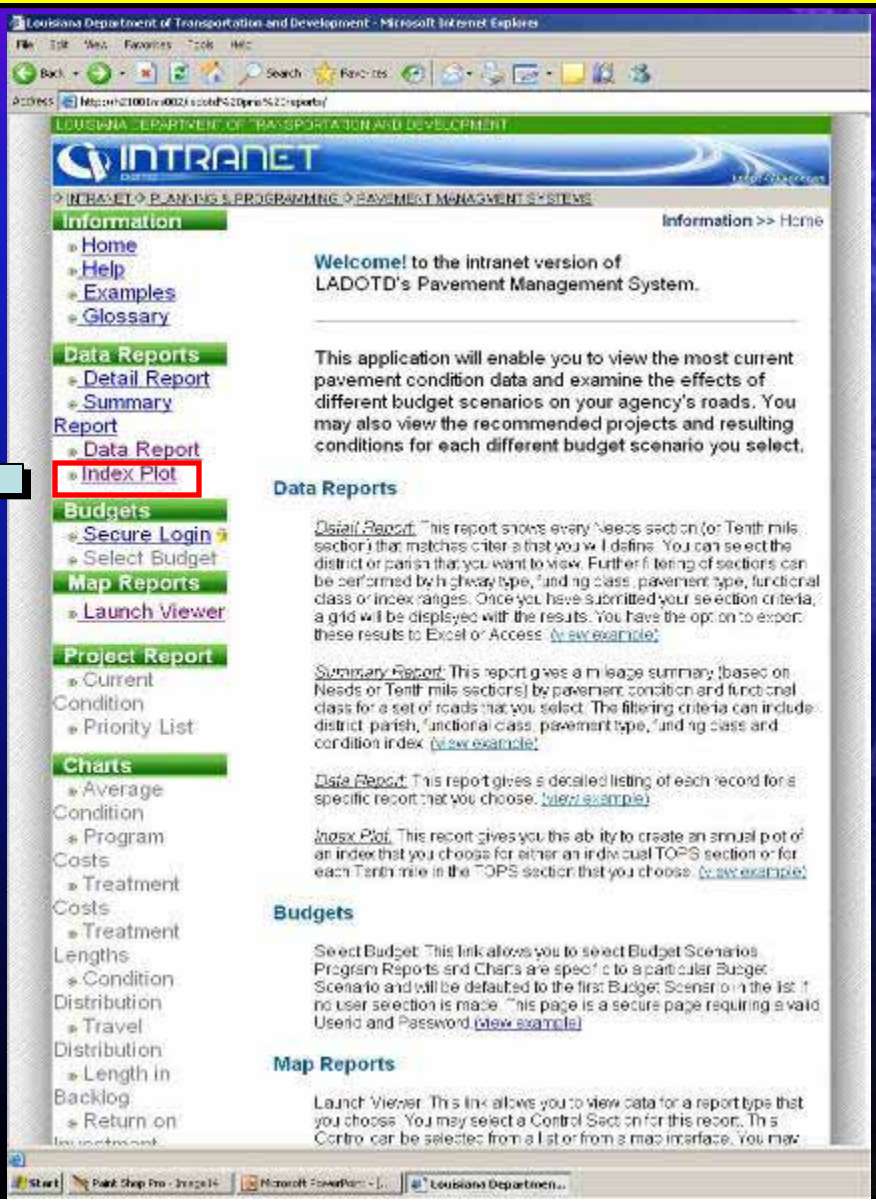
PMS Web Application

- Index Plot



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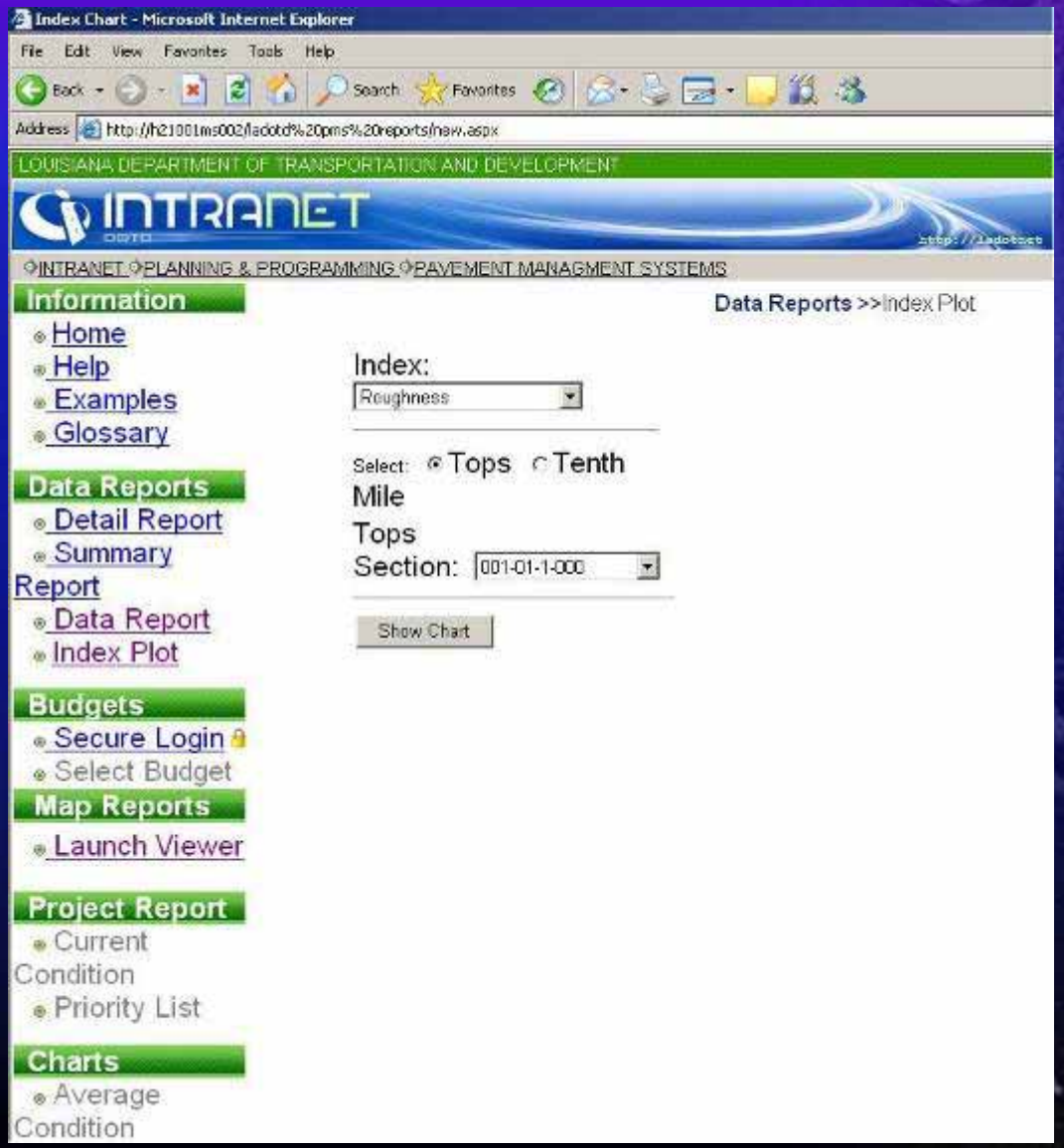

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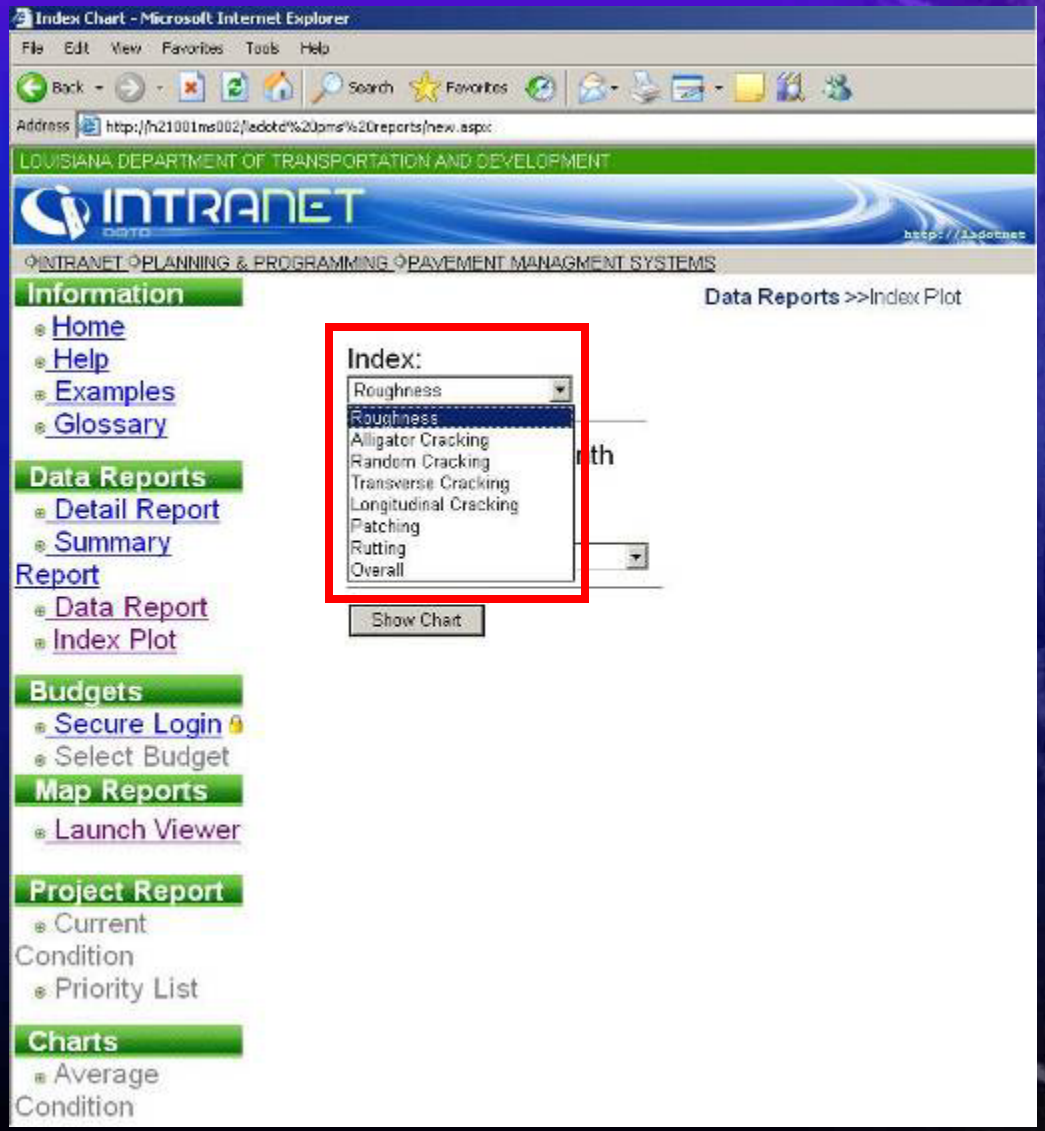

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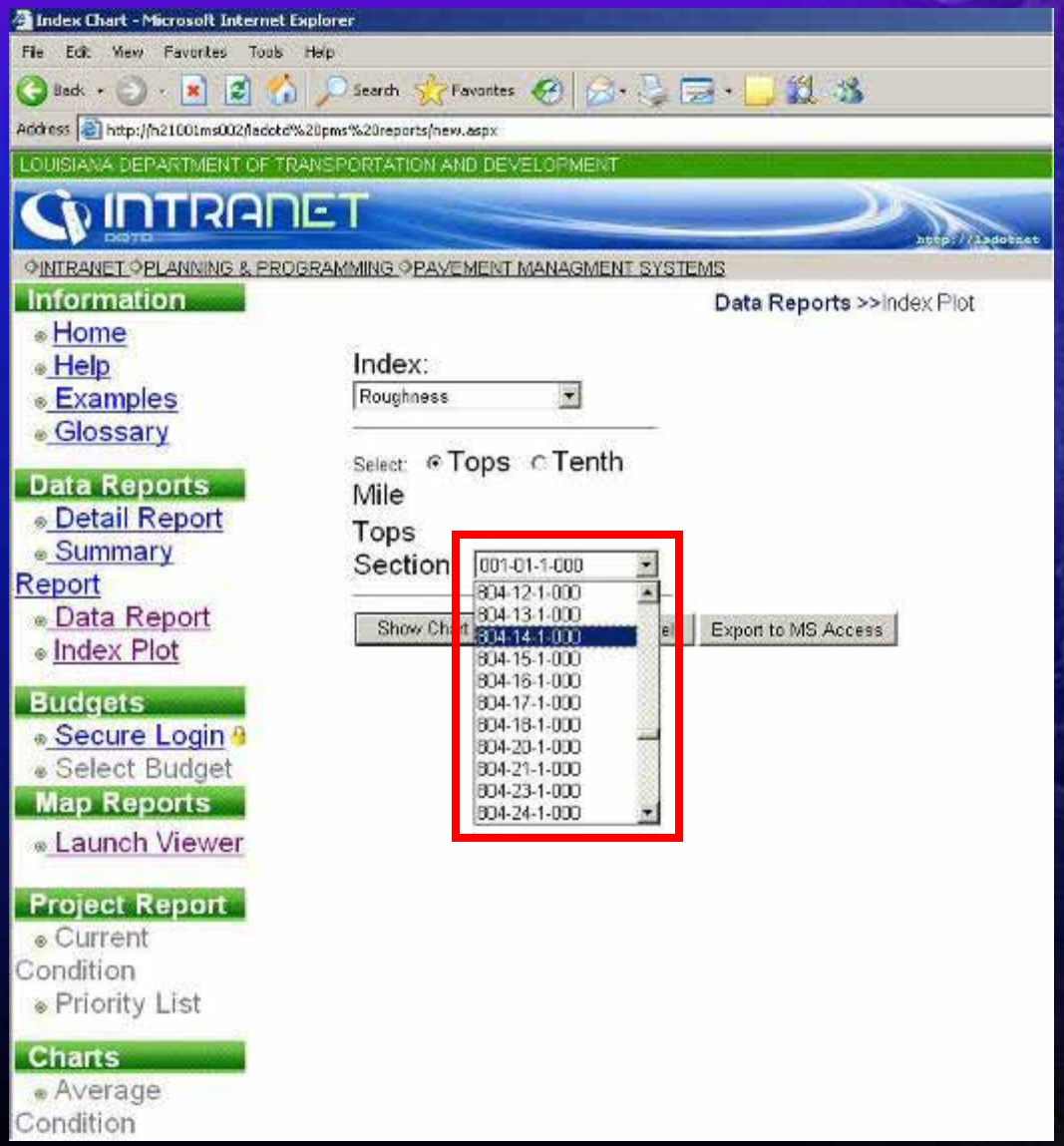

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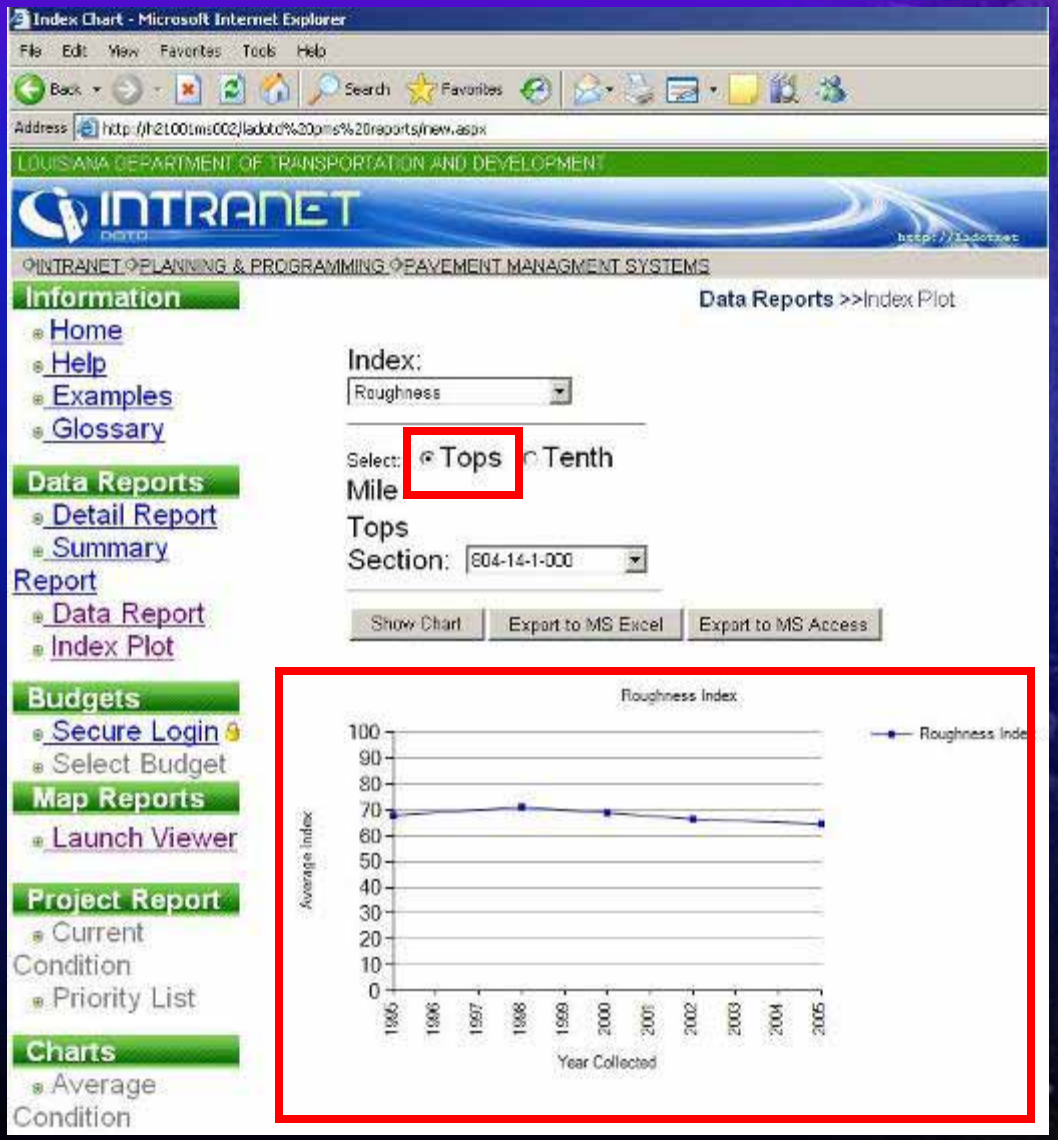

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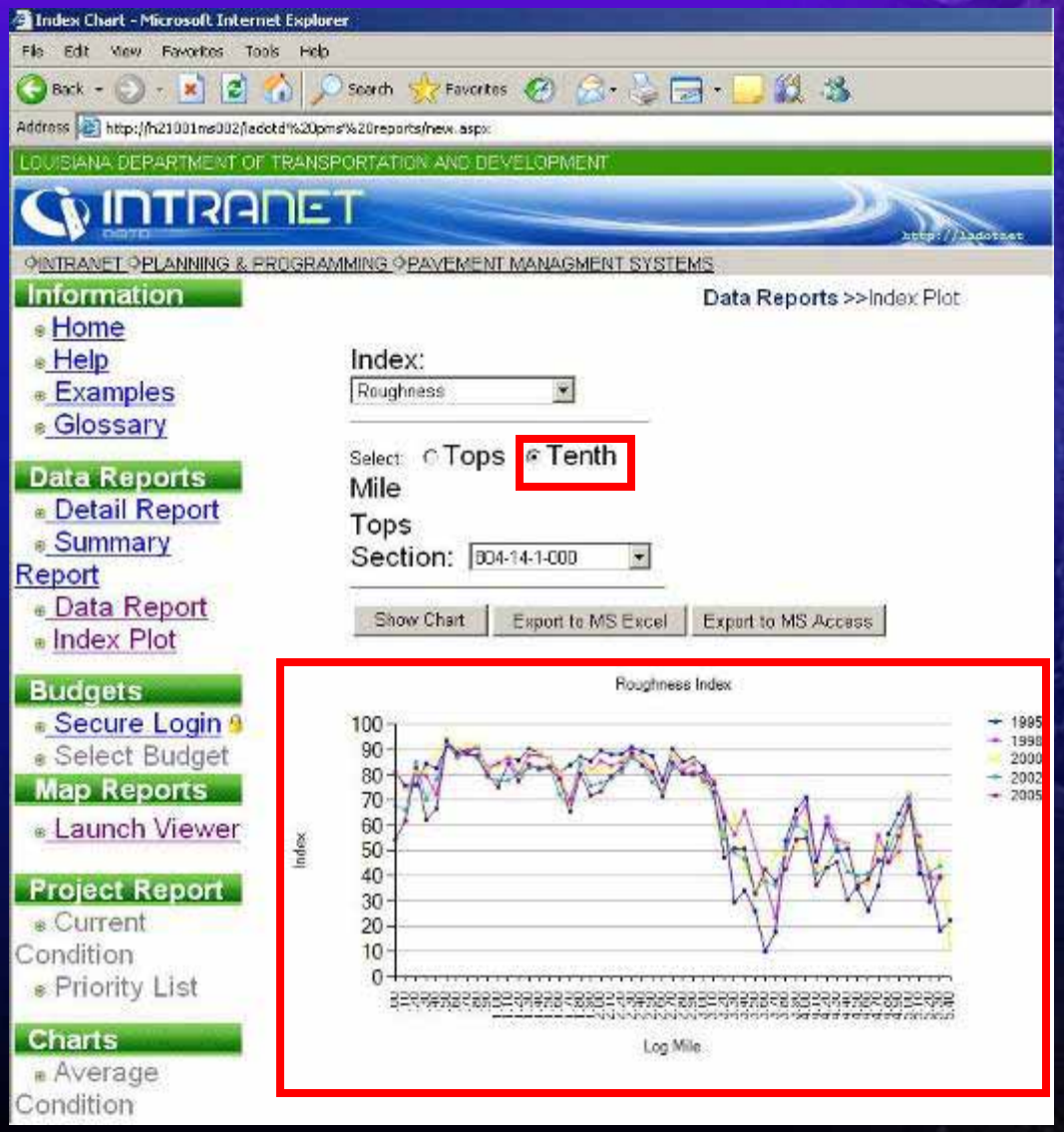
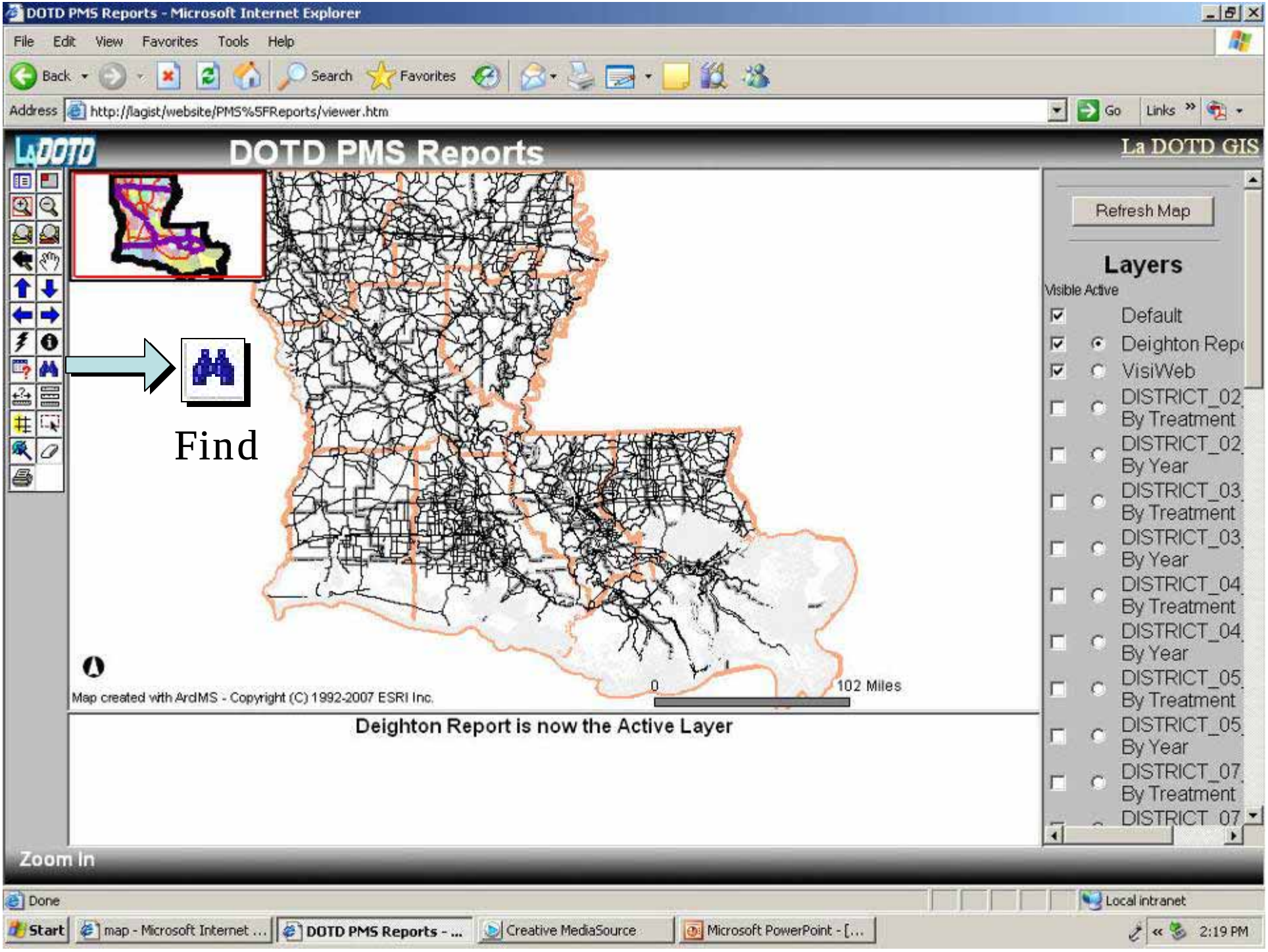


PMS Web Application – GIS Interface

- Easy to use, visual data
- Find available data on any road section
- Query results are displayed on a GIS map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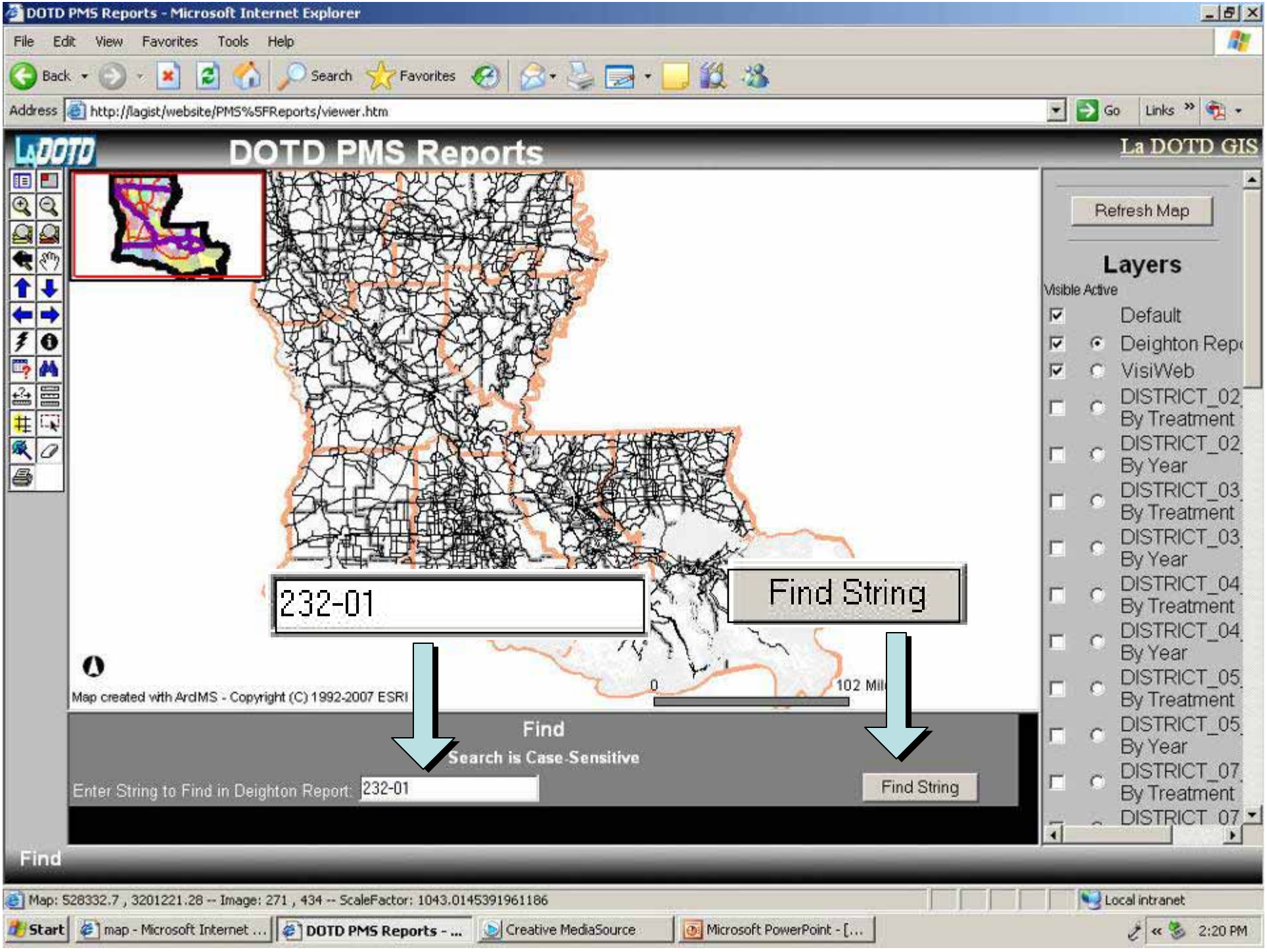
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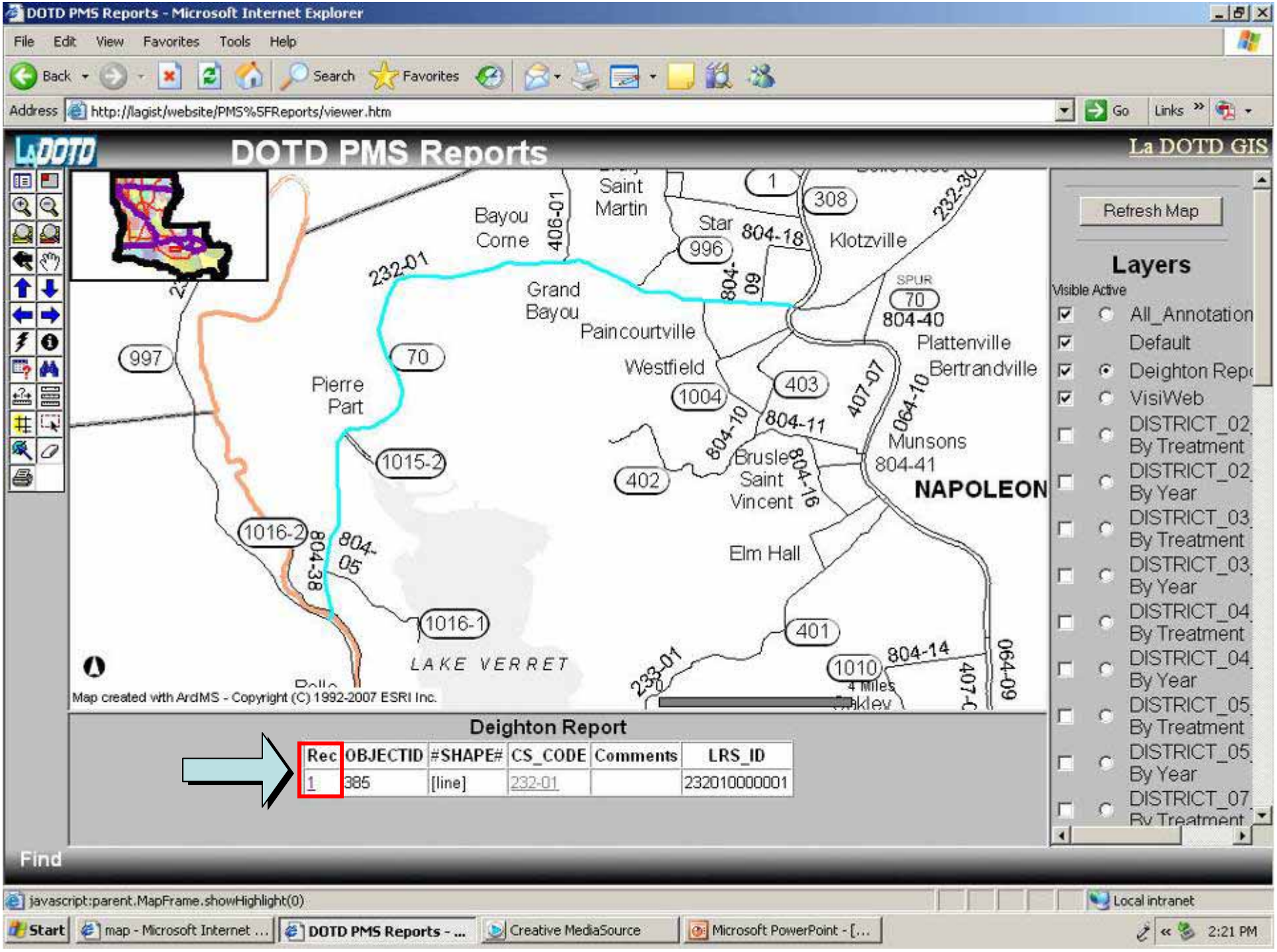
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Brusle Saint Vincent
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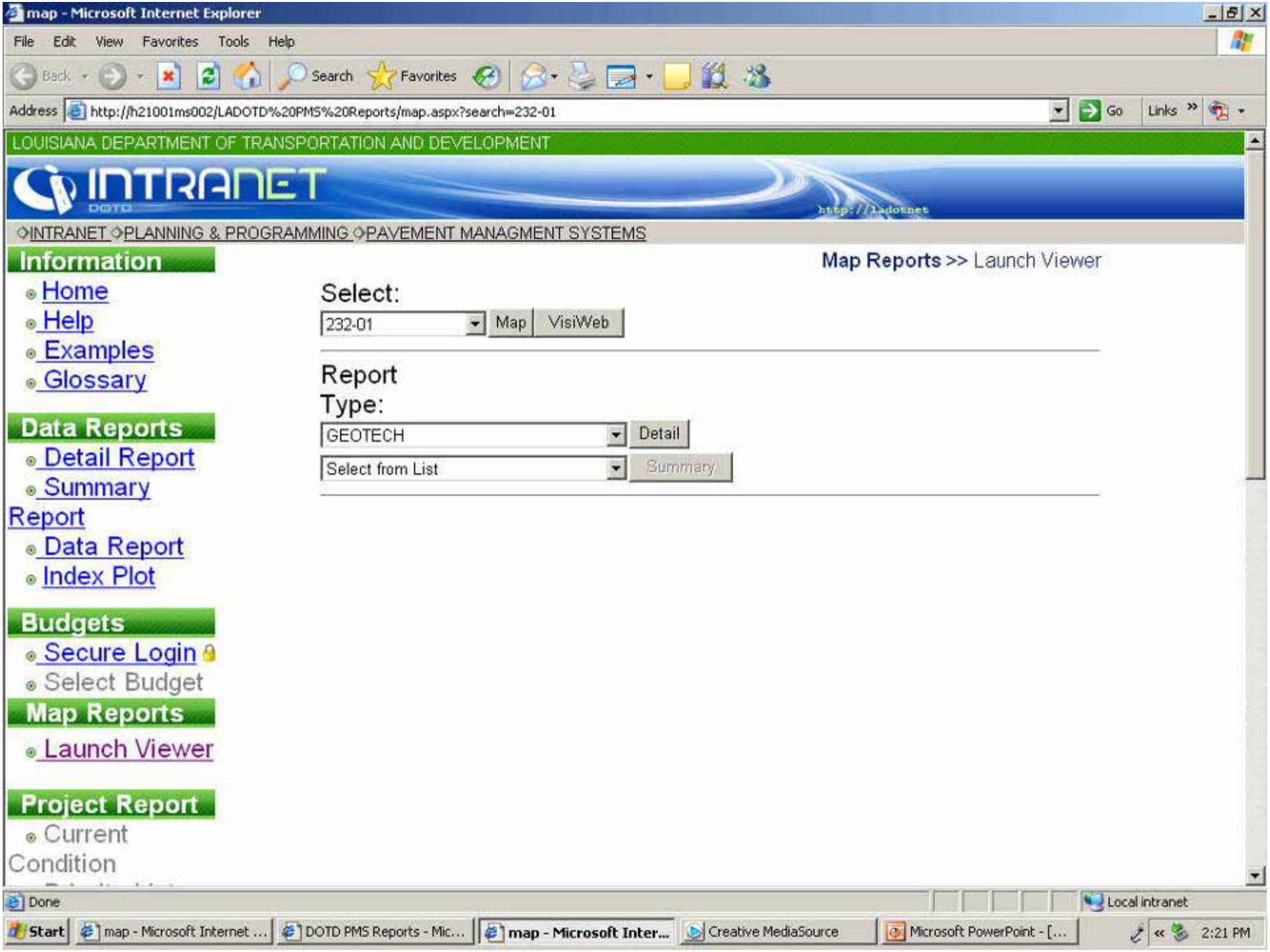
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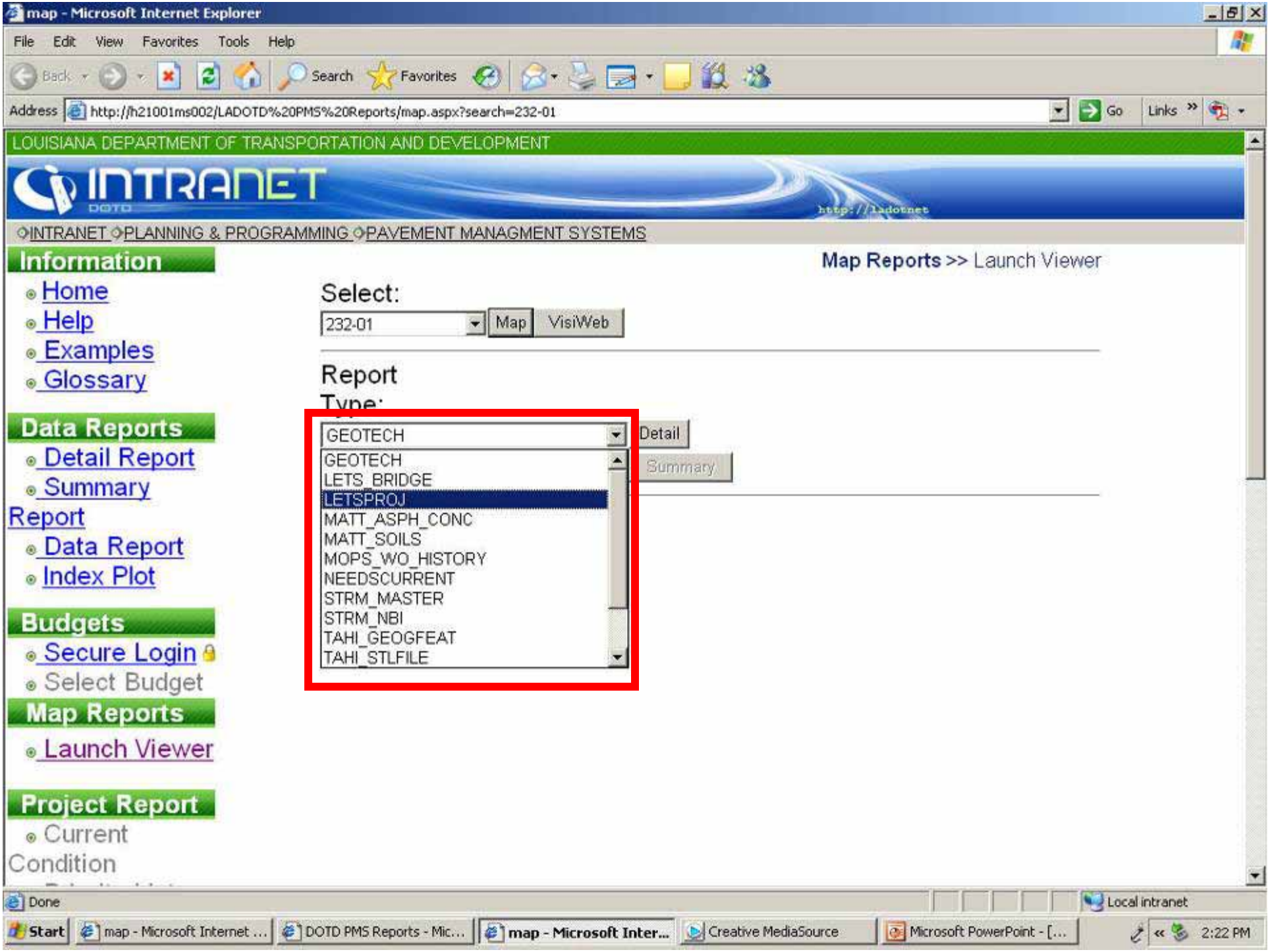
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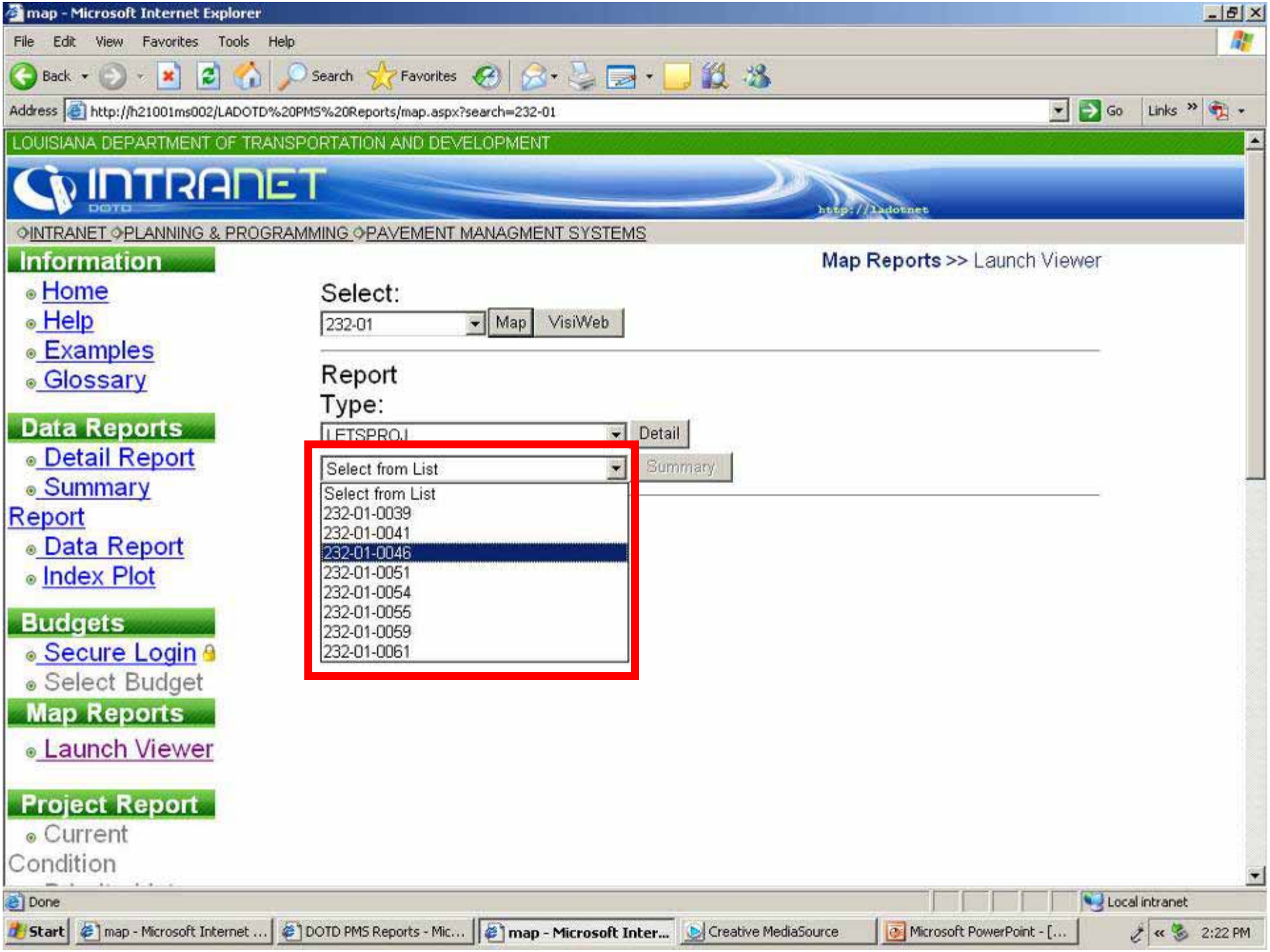
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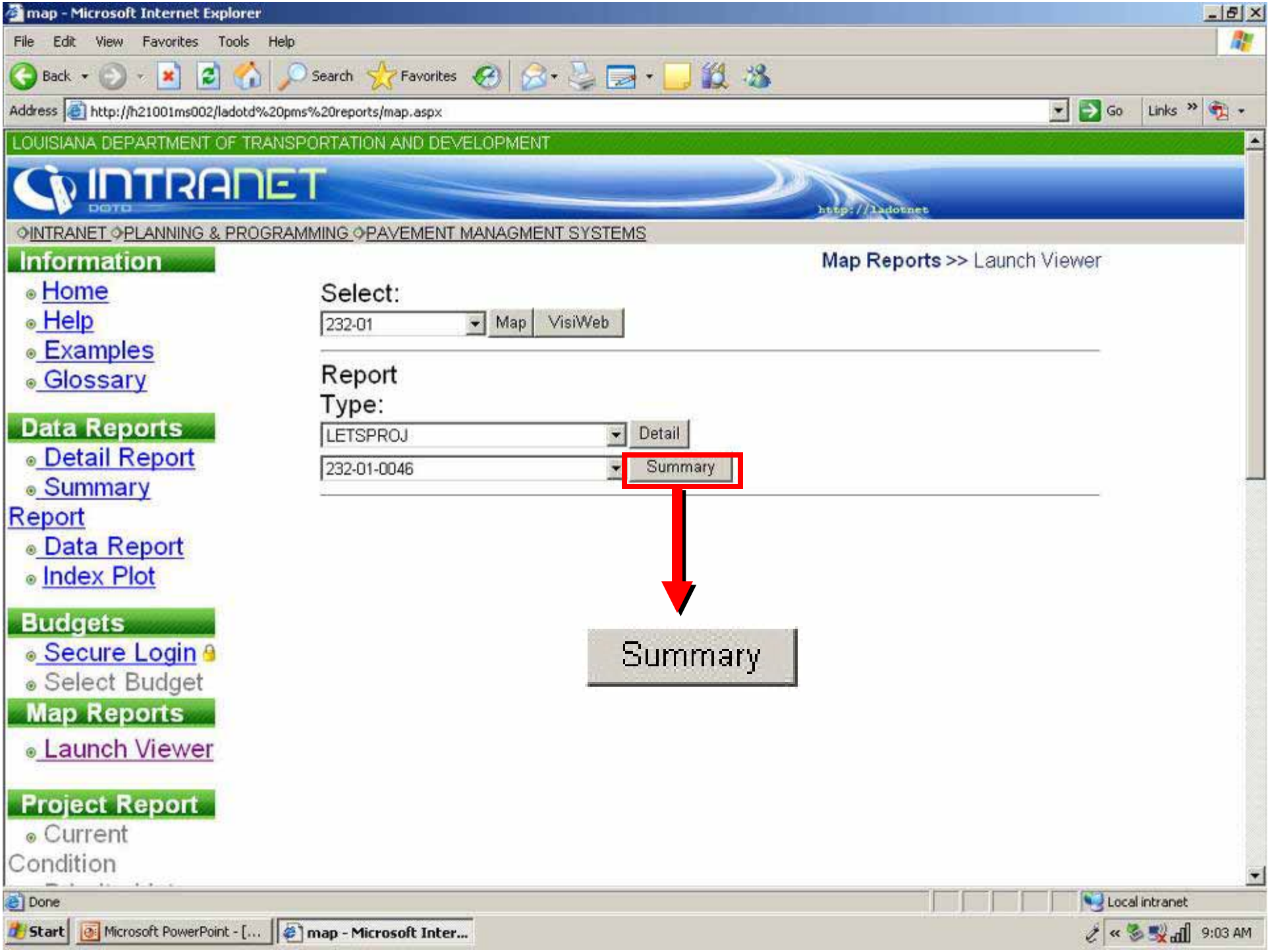
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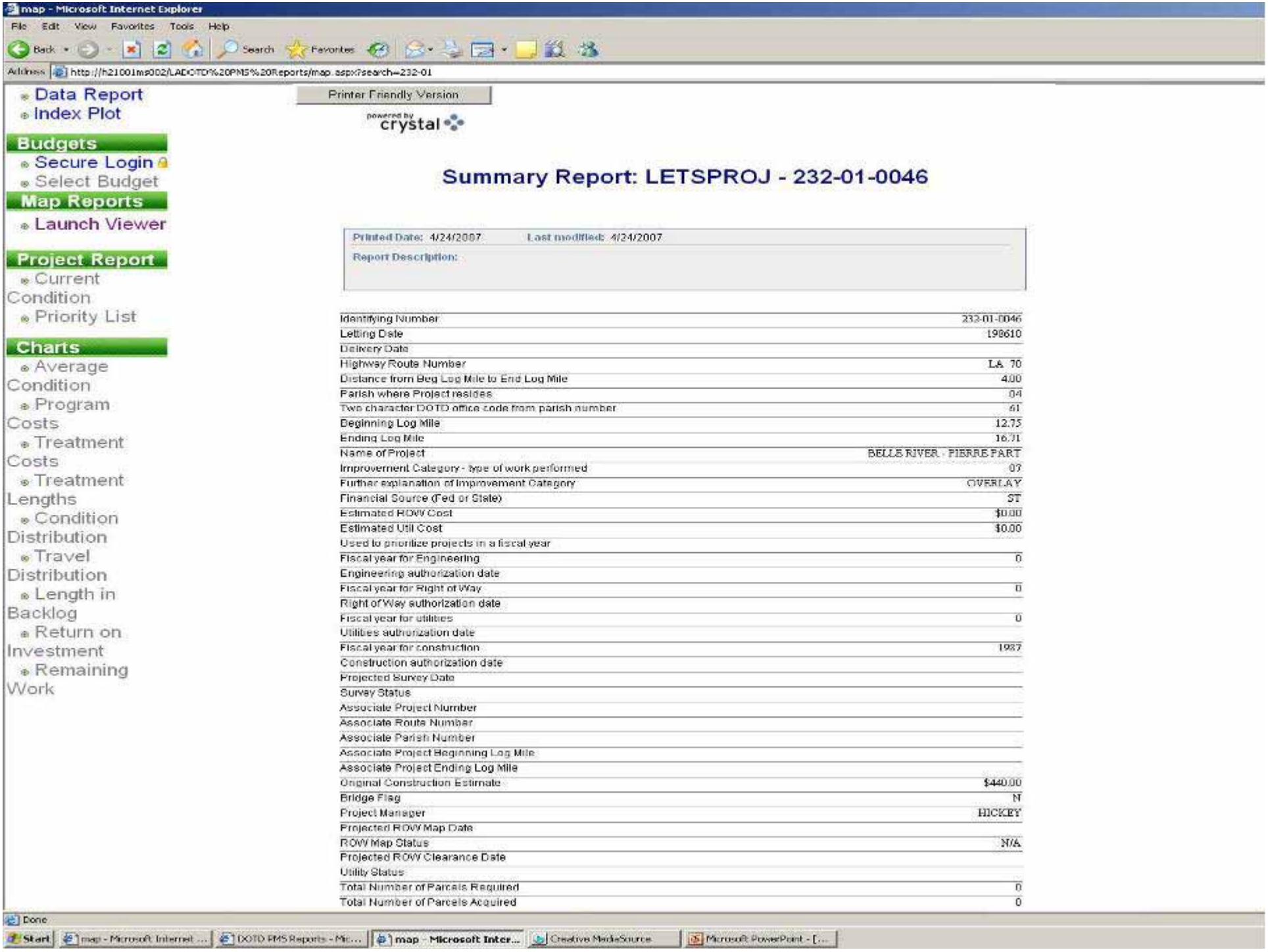
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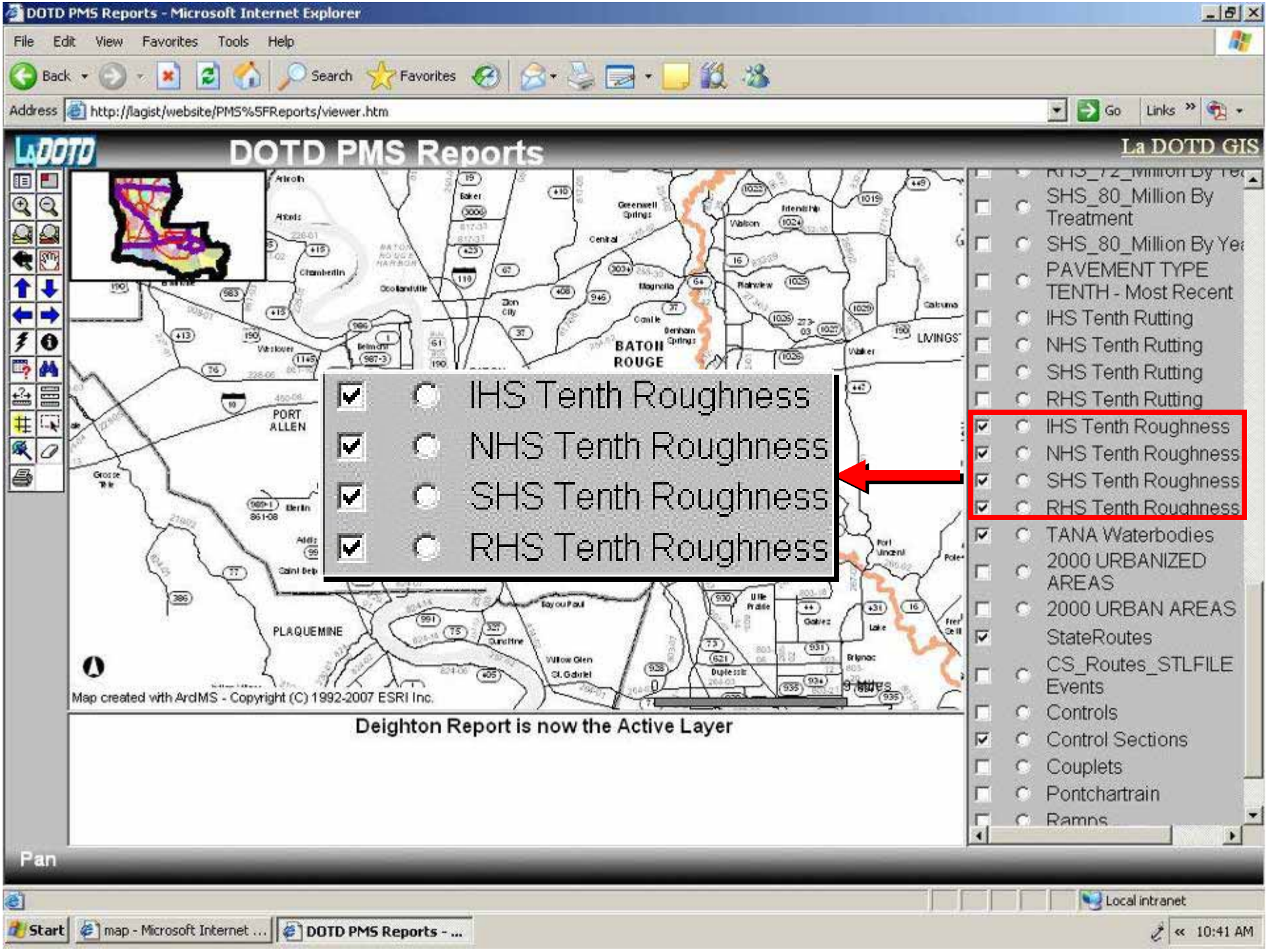
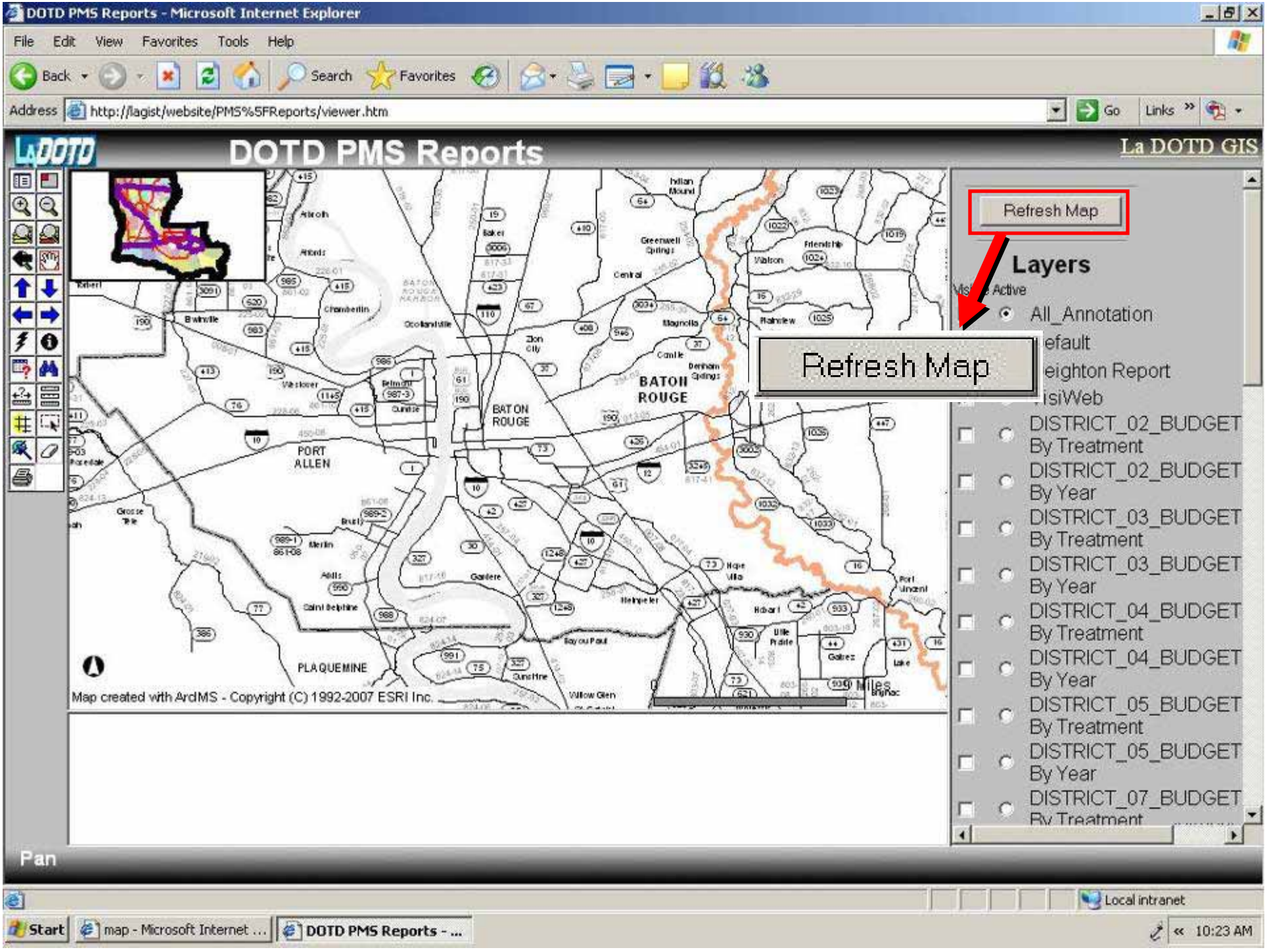
Priority List
Charts
Average Condition
Program Costs
Treatment Costs
Treatment Lengths
Condition Distribution
Travel Distribution
Length in Backlog
Return on Investment
Remaining Work
Printer Friendly Version
powered by crystal
Summary Report: LETSPROJ - 232-01-0046
Printed Date: 4/24/2007 Last modified: 4/24/2007
Report Description:
Identifying Number 232-01-0046
Letting Date 198610
Delivery Date
Highway Route Number LA 70
Distance from Beg Log Mile to End Log Mile 4.00
Parish where Project resides 04
Two character DOTD office code from parish number 61
Beginning Log Mile 12.75
Ending Log Mile 16.71
Name of Project BELLE RIVER - PIERRE PART
Improvement Category - type of work performed 07
Further explanation of Improvement Category OVERLAY
Financial Source (Fed or State) ST
Estimated ROW Cost $0.00
Estimated Util Cost $0.00
Used to prioritize projects in a fiscal year
Fiscal year for Engineering 0
Engineering authorization date
Fiscal year for Right of Way 0
Right of Way authorization date
Fiscal year for utilities 0
Utilities authorization date
Fiscal year for construction 1987
Construction authorization date
Projected Survey Date
Survey Status
Associate Project Number
Associate Route Number
Associate Parish Number
Associate Project Beginning Log Mile
Associate Project Ending Log Mile
Original Construction Estimate $440.00
Bridge Flag N
Project Manager HICKEY
Projected ROW Map Date
ROW Map Status N/A
Projected ROW Clearance Date
Utility Status
Total Number of Parcels Required 0
Total Number of Parcels Acquired 0
Done
Start map - Microsoft Internet ... DOTD PMS Reports - Mic... map - Microsoft Inter... Creative MediaSource Microsoft PowerPoint - [...

Mapping Pavement Roughness


DOTD PMS Reports - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://lagist/website/PMS%5FReports/viewer.htm
Go Links
DOTD PMS Reports
La DOTD GIS
IHS Tenth Roughness
NHS Tenth Roughness
SHS Tenth Roughness
RHS Tenth Roughness
SHS_80_Million By Treatment
PAVEMENT TYPE TENTH - Most Recent
IHS Tenth Rutting
NHS Tenth Rutting
SHS Tenth Rutting
RHS Tenth Rutting
IHS Tenth Roughness
NHS Tenth Roughness
SHS Tenth Roughness
RHS Tenth Roughness
TANA Waterbodies
2000 URBANIZED AREAS
2000 URBAN AREAS
StateRoutes
CS_Routes_STLFILE Events
Controls
Control Sections
Couplets
Pontchartrain
Ramps
BATON ROUGE
PORT ALLEN
PLAQUEMINE
Map created with ArcIMS - Copyright (C) 1992-2007 ESRI Inc.
Deighton Report is now the Active Layer
Pan
Local intranet
Start
map - Microsoft Internet ...
DOTD PMS Reports - ...
10:41 AM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Go Links
DOTD PMS Reports
La DOTD GIS
Refresh Map
Layers
Active
All_Annotation
efault
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isiWeb
DISTRICT_02_BUDGET By Treatment
DISTRICT_02_BUDGET By Year
DISTRICT_03_BUDGET By Treatment
DISTRICT_03_BUDGET By Year
DISTRICT_04_BUDGET By Treatment
DISTRICT_04_BUDGET By Year
DISTRICT_05_BUDGET By Treatment
DISTRICT_05_BUDGET By Year
DISTRICT_07_BUDGET
Refresh Map
BATON ROUGE
PORT ALLEN
PLAQUEMINE
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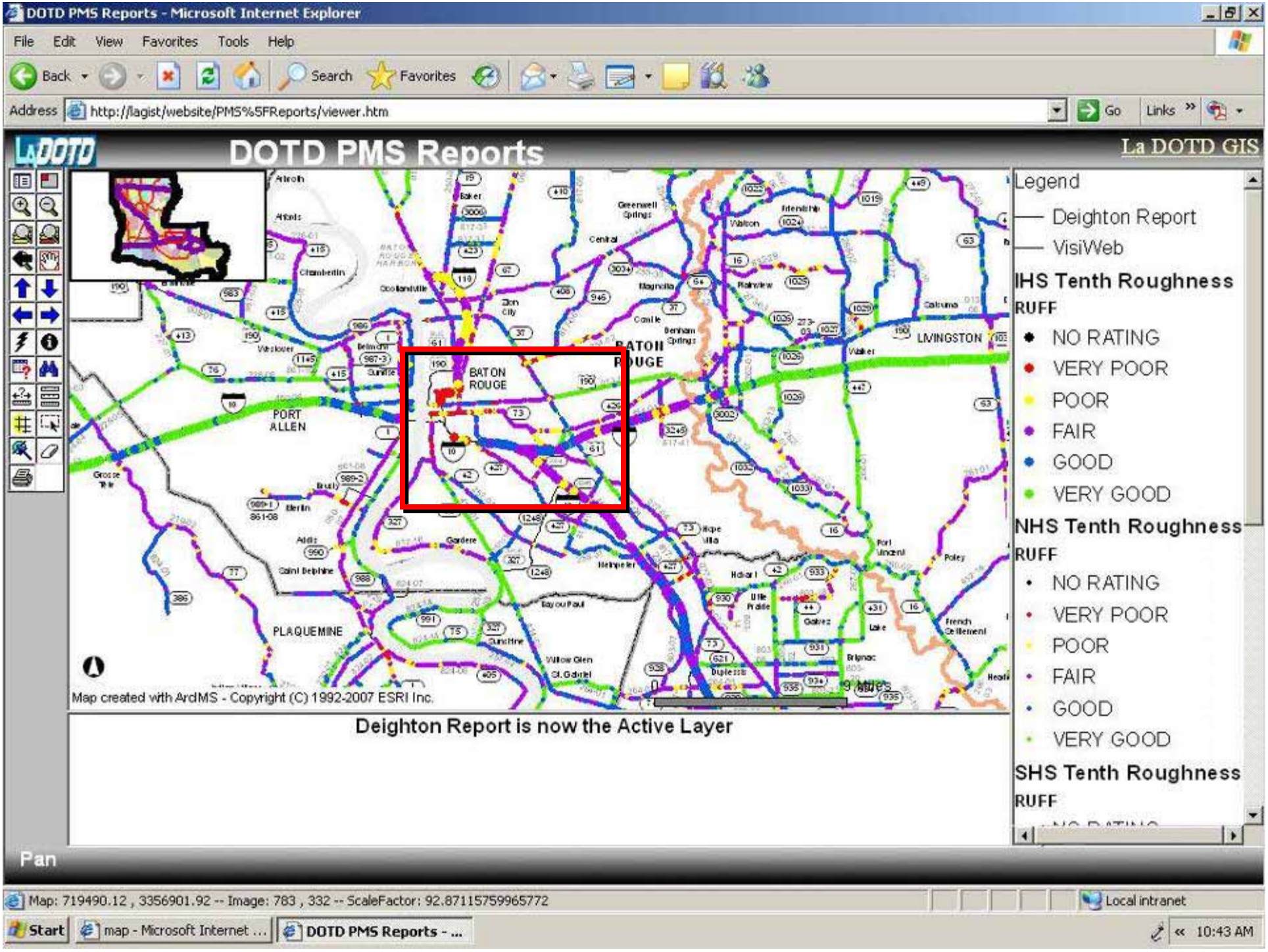
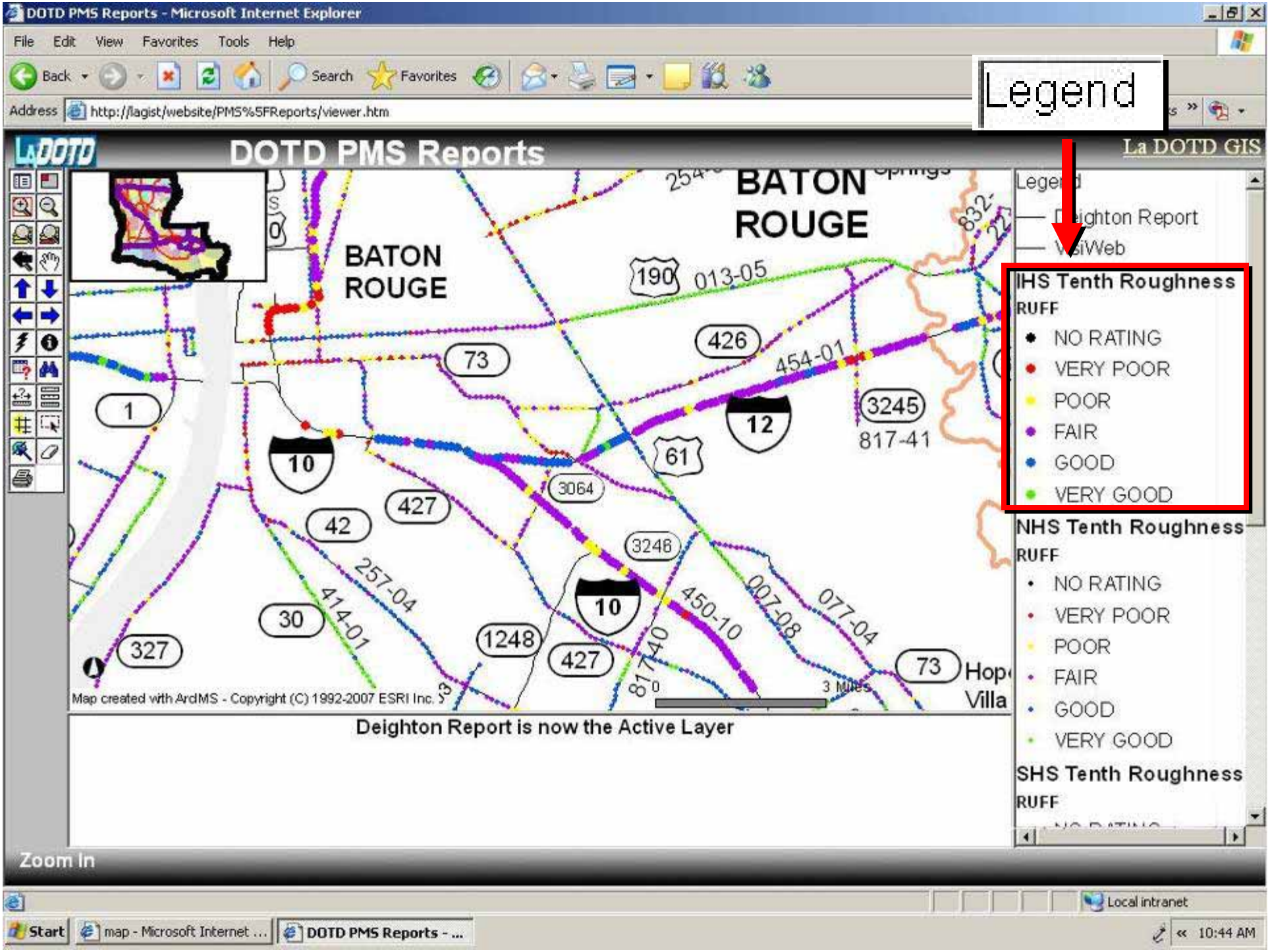
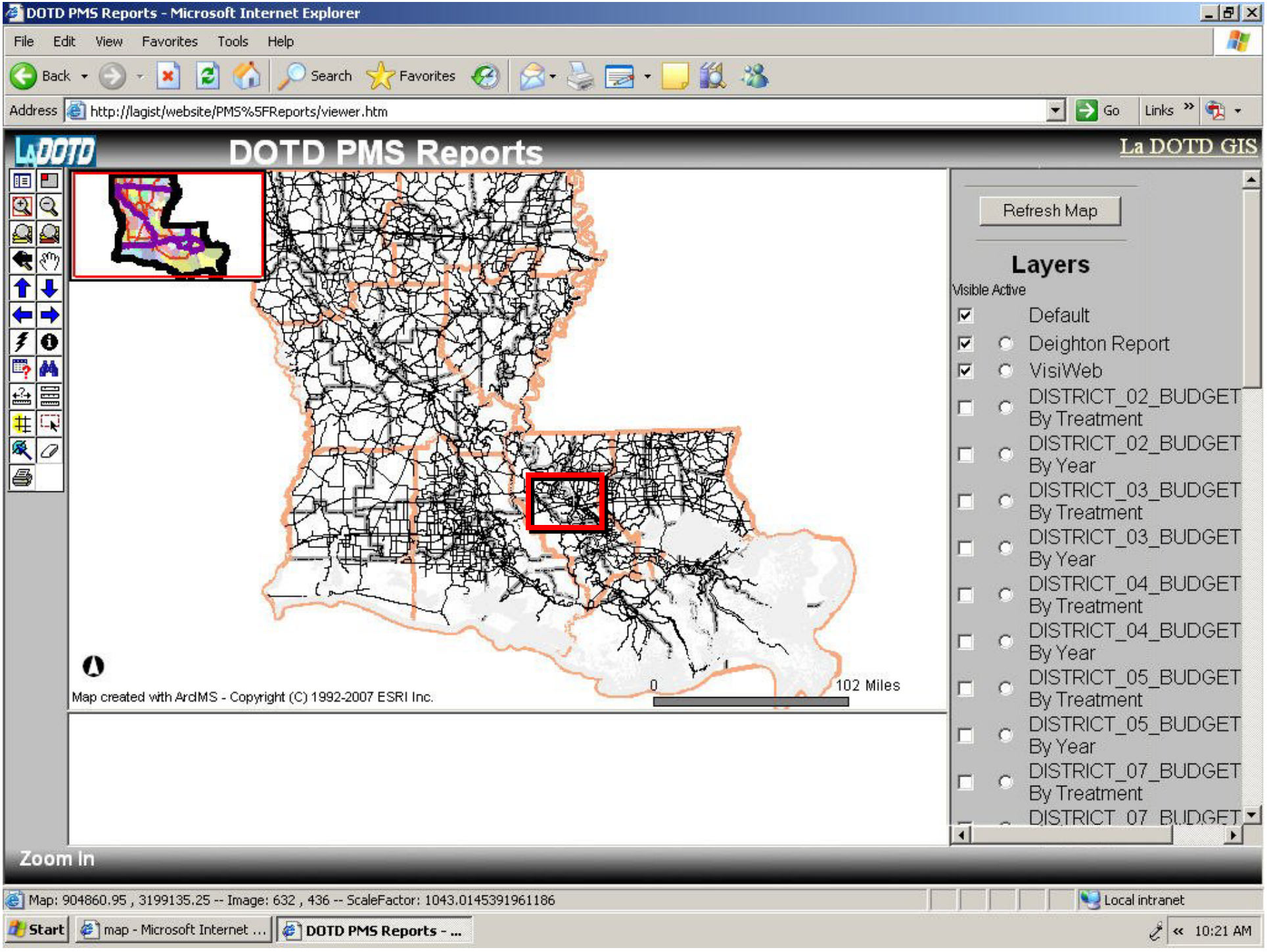
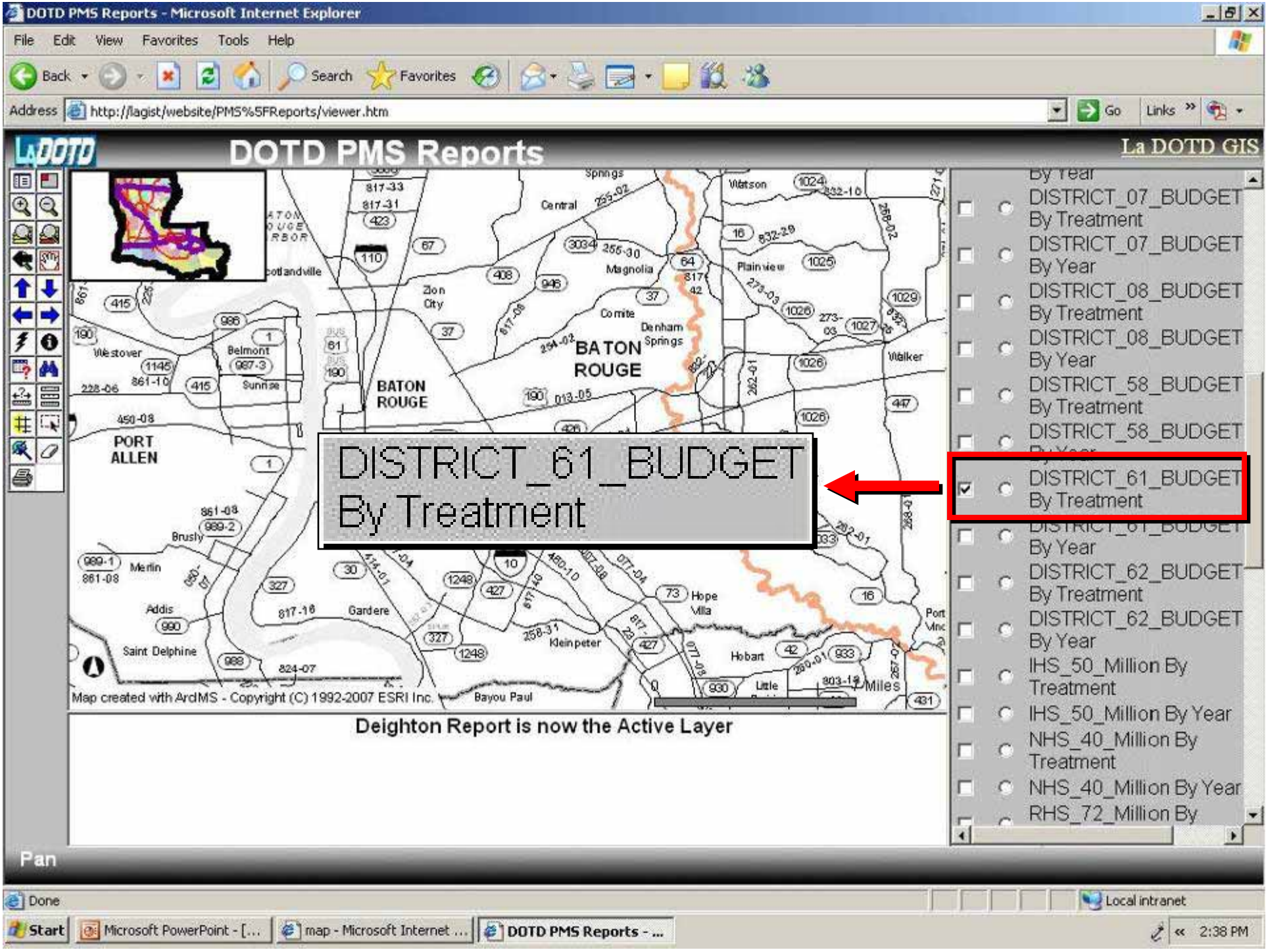
Pan
Local intranet
Start
map - Microsoft Internet ...
DOTD PMS Reports - ...
10:23 AM

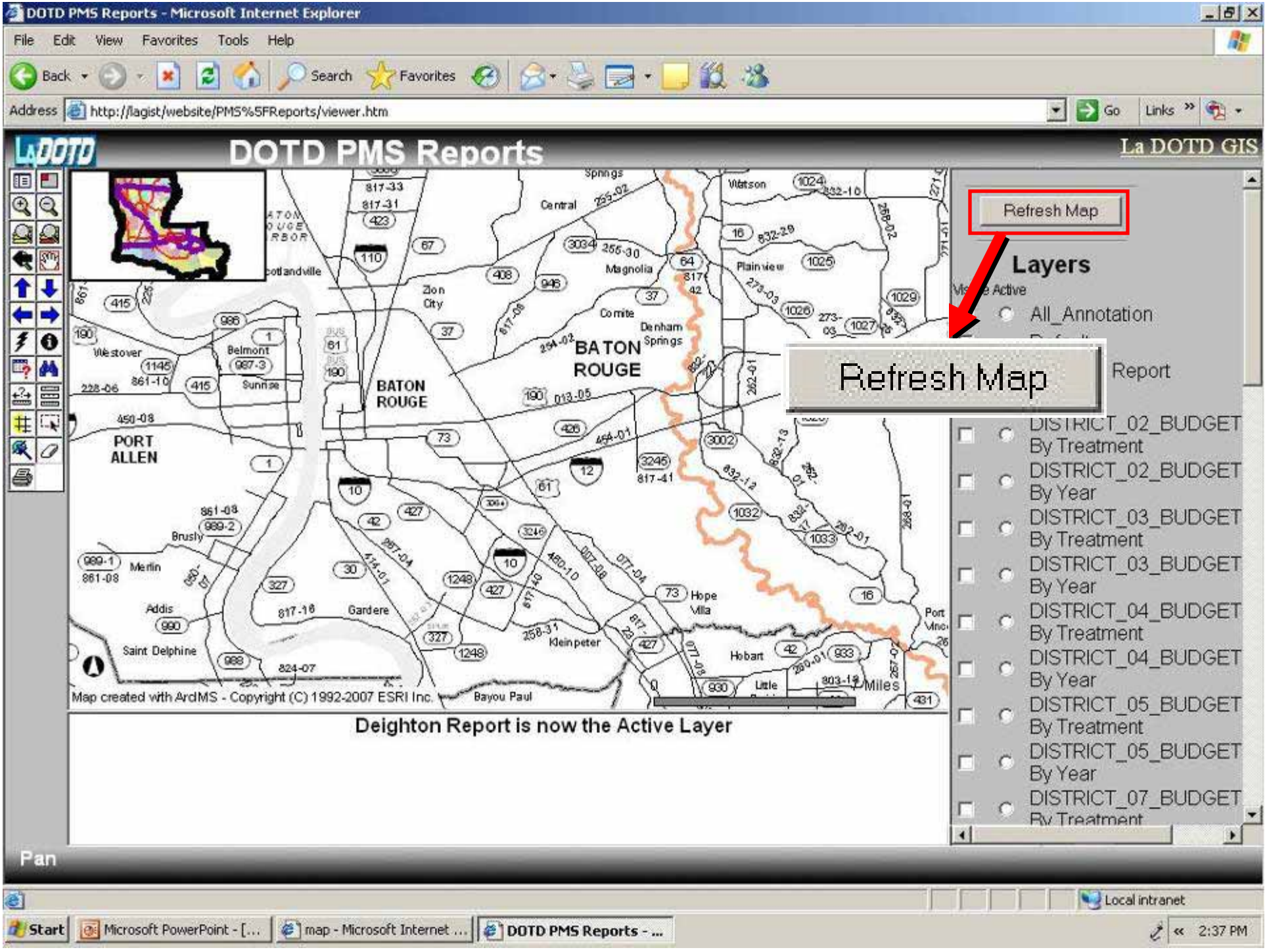

DOTD PMS Reports - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://lagist/website/PMS%5FReports/viewer.htm
Go Links
DOTD PMS Reports
La DOTD GIS
BATON ROUGE
PORT ALLEN
PLAQUEMINE
LIVINGSTON
Map created with ArcIMS - Copyright (C) 1992-2007 ESRI Inc.
Deighton Report is now the Active Layer
Legend
Deighton Report
VisiWeb
IHS Tenth Roughness
RUFF
NO RATING
VERY POOR
POOR
FAIR
GOOD
VERY GOOD
NHS Tenth Roughness
RUFF
NO RATING
VERY POOR
POOR
FAIR
GOOD
VERY GOOD
SHS Tenth Roughness
RUFF
Pan
Map: 719490.12 , 3356901.92 -- Image: 783 , 332 -- ScaleFactor: 92.87115759965772
Local intranet
Start
map - Microsoft Internet ...
DOTD PMS Reports - ...
10:43 AM


DOTD PMS Reports - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://lagist/website/PMS%5FReports/viewer.htm
Legend
DOTD PMS Reports
La DOTD GIS
BATON ROUGE
BATON ROUGE
190
013-05
426
454-01
73
1
10
12
3245
817-41
61
3064
427
42
3246
257-04
414-01
30
327
1248
427
10
450-10
007-08
077-04
817-40
73
Map created with ArcIMS - Copyright (C) 1992-2007 ESRI Inc.
3 Miles
Deighton Report is now the Active Layer
Legend
Deighton Report
VisiWeb
IHS Tenth Roughness
RUFF
NO RATING
VERY POOR
POOR
FAIR
GOOD
VERY GOOD
NHS Tenth Roughness
RUFF
NO RATING
VERY POOR
POOR
FAIR
GOOD
VERY GOOD
SHS Tenth Roughness
RUFF
Zoom In
Local intranet
Start
map - Microsoft Internet ...
DOTD PMS Reports - ...
10:44 AM

Mapping PMS Recommended Treatments


DOTD PMS Reports - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://lagist/website/PMS%5FReports/viewer.htm
Go Links
DOTD PMS Reports
La DOTD GIS
Refresh Map
Layers
Visible Active
Default
Deighton Report
VisiWeb
DISTRICT_02_BUDGET By Treatment
DISTRICT_02_BUDGET By Year
DISTRICT_03_BUDGET By Treatment
DISTRICT_03_BUDGET By Year
DISTRICT_04_BUDGET By Treatment
DISTRICT_04_BUDGET By Year
DISTRICT_05_BUDGET By Treatment
DISTRICT_05_BUDGET By Year
DISTRICT_07_BUDGET By Treatment
DISTRICT_07_BUDGET
0
102 Miles
Map created with ArcIMS - Copyright (C) 1992-2007 ESRI Inc.
Zoom In
Map: 904860.95 , 3199135.25 -- Image: 632 , 436 -- ScaleFactor: 1043.0145391961186
Local intranet
Start
map - Microsoft Internet ...
DOTD PMS Reports - ...
10:21 AM


DOTD PMS Reports - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://lagist/website/PMS%5FReports/viewer.htm
Go Links
DOTD PMS Reports
La DOTD GIS
DISTRICT_61_BUDGET
By Treatment
DISTRICT_07_BUDGET By Treatment
DISTRICT_07_BUDGET By Year
DISTRICT_08_BUDGET By Treatment
DISTRICT_08_BUDGET By Year
DISTRICT_58_BUDGET By Treatment
DISTRICT_58_BUDGET
DISTRICT_61_BUDGET By Treatment
By Year
DISTRICT_62_BUDGET By Treatment
DISTRICT_62_BUDGET By Year
IHS_50_Million By Treatment
IHS_50_Million By Year
NHS_40_Million By Treatment
NHS_40_Million By Year
RHS_72_Million By
BATON ROUGE
PORT ALLEN
Map created with ArcIMS - Copyright (C) 1992-2007 ESRI Inc.
Deighton Report is now the Active Layer
Pan
Done
Local intranet
Start
Microsoft PowerPoint - [...
map - Microsoft Internet ...
DOTD PMS Reports - ...
2:38 PM


DOTD PMS Reports - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://lagist/website/PMS%5FReports/viewer.htm
Go Links
DOTD PMS Reports
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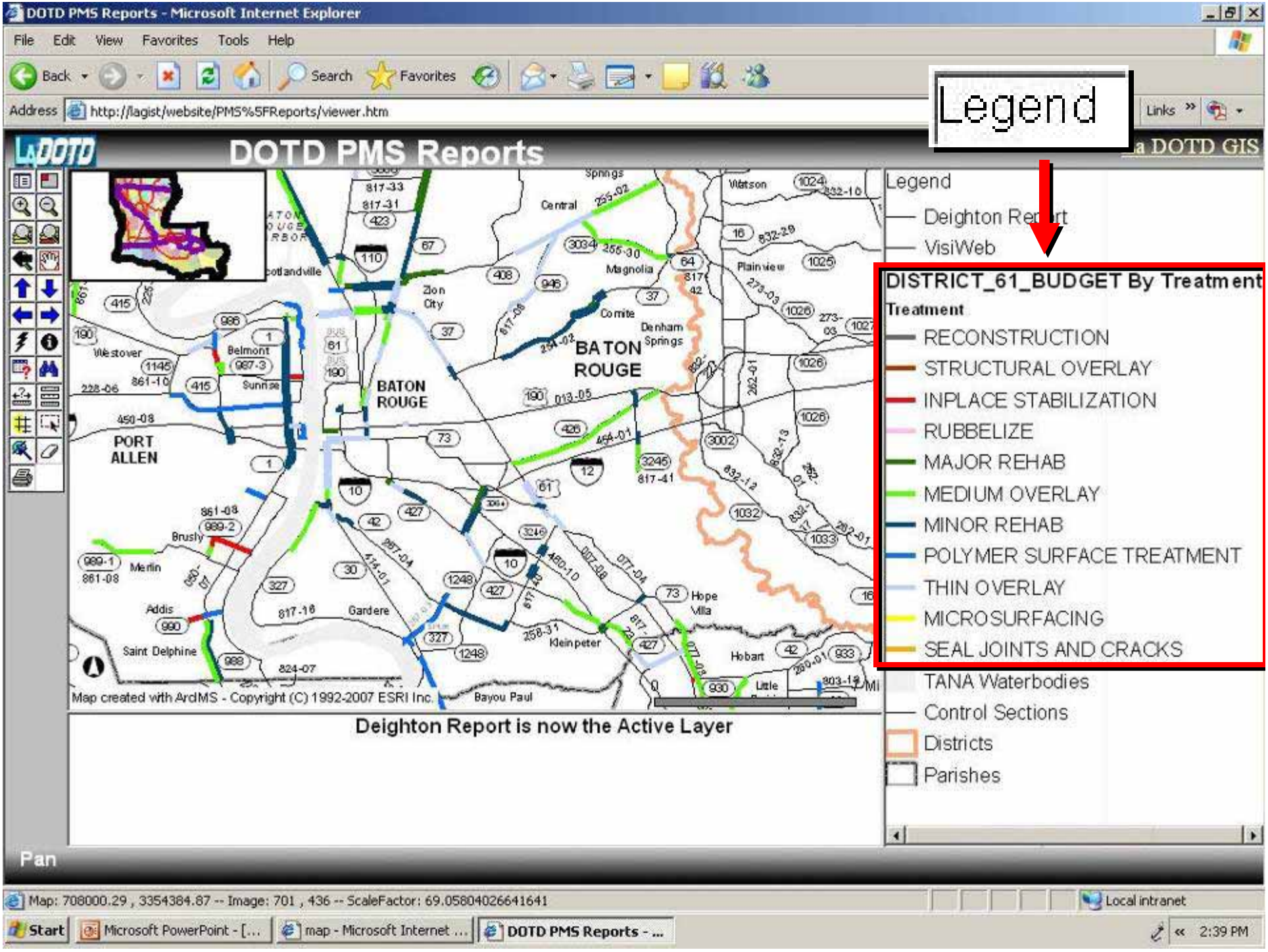
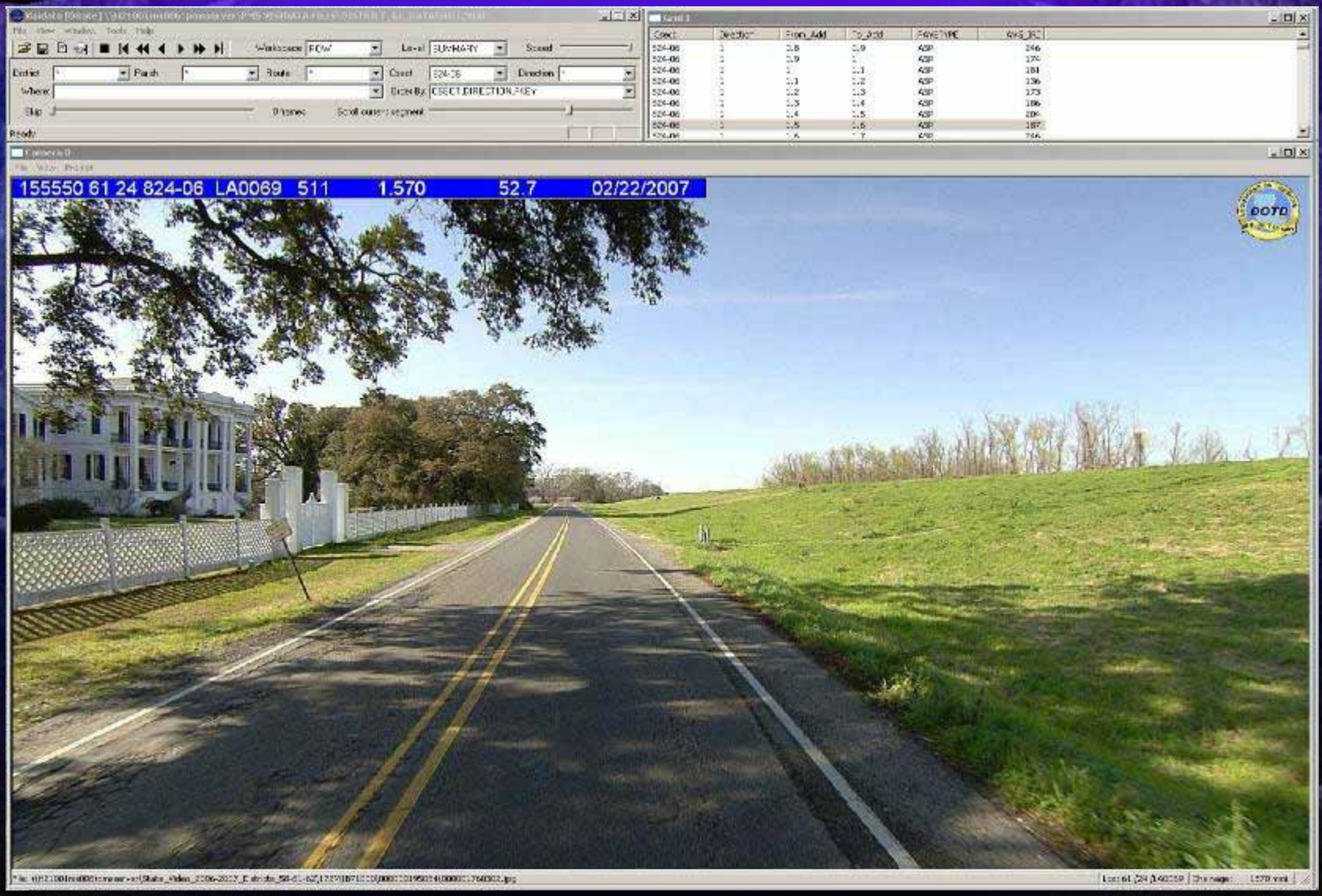
Refresh Map
Layers
All_Annotation
Refresh Map
Report
DISTRICT_02_BUDGET By Treatment
DISTRICT_02_BUDGET By Year
DISTRICT_03_BUDGET By Treatment
DISTRICT_03_BUDGET By Year
DISTRICT_04_BUDGET By Treatment
DISTRICT_04_BUDGET By Year
DISTRICT_05_BUDGET By Treatment
DISTRICT_05_BUDGET By Year
DISTRICT_07_BUDGET By Treatment
BATON ROUGE
PORT ALLEN
Map created with ArcIMS - Copyright (C) 1992-2007 ESRI Inc.
Deighton Report is now the Active Layer
Pan
Local intranet
Start
Microsoft PowerPoint - [...
map - Microsoft Internet ...
DOTD PMS Reports - ...
2:37 PM


DOTD PMS Reports - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://lagist/website/PMS%5FReports/viewer.htm
Links
DOTD PMS Reports
a DOTD GIS
Legend
Legend
Deighton Report
VisiWeb
DISTRICT_61_BUDGET By Treatment
Treatment
RECONSTRUCTION
STRUCTURAL OVERLAY
INPLACE STABILIZATION
RUBBELIZE
MAJOR REHAB
MEDIUM OVERLAY
MINOR REHAB
POLYMER SURFACE TREATMENT
THIN OVERLAY
MICROSURFACING
SEAL JOINTS AND CRACKS
TANA Waterbodies
Control Sections
Districts
Parishes
BATON ROUGE
PORT ALLEN
Zion City
Central
Magnolia
Comite
Denham Springs
Plainview
Watson
Springs
Belmont
Sunrise
Westover
Brusly
Merlin
Addis
Saint Delphine
Gardere
Kleinpeter
Hope Villa
Hobart
Bayou Paul
Map created with ArcIMS - Copyright (C) 1992-2007 ESRI Inc.
Deighton Report is now the Active Layer
Pan
Map: 708000.29 , 3354384.87 -- Image: 701 , 436 -- ScaleFactor: 69.05804026641641
Local intranet
Start
Microsoft PowerPoint - [...
map - Microsoft Internet ...
DOTD PMS Reports - ...
2:39 PM

Roadware VisiData© - 2007



Thank You