

Memorandum



CITY OF DALLAS

DATE March 22, 2013

TO Members of the Transportation and Environment Committee:
Linda L. Koop (Chair), Sheffie Kadane (Vice Chair), Sandy Greyson,
Delia Jasso, Vonciel Jones Hill, Pauline Medrano

SUBJECT **DART's Integrated Corridor Management (ICM) and New 511 Website**

On Monday, March 25, 2013, the Transportation and Environment Council Committee will be briefed on DART's Integrated Corridor Management (ICM) and New 511 Website. The material is attached for your review.

Please feel free to contact me if you need additional information.



Jill A. Jordan, P.E.
Assistant City Manager

C: The Honorable Mayor and Members of the City Council
Mary K. Suhm, City Manager
Thomas P. Perkins, Jr. City Attorney
Rosa Rios, City Secretary
Craig Kinton, City Auditor
Daniel F. Solis, Administrative Judge
A.C. Gonzalez, First Assistant City Manager
Ryan S. Evans, Assistant City Manager
Forest Turner, Assistant City Manager
Joey Zapata, Assistant City Manager
Jeanne Chipperfield, Chief Financial Officer
Edward Scott, Director, Controller's Office
Frank Libro, Public Information Office
Rick Galceran, Director, Public Works and Transportation
Theresa O'Donnell, Director, Sustainable Development and Construction
Stephanie Cooper, Assistant to the City Manager – Council Office

DART's Integrated Corridor Management (ICM) and New 511 Website



City of Dallas

Council Transportation and Environment Committee

March 25, 2013

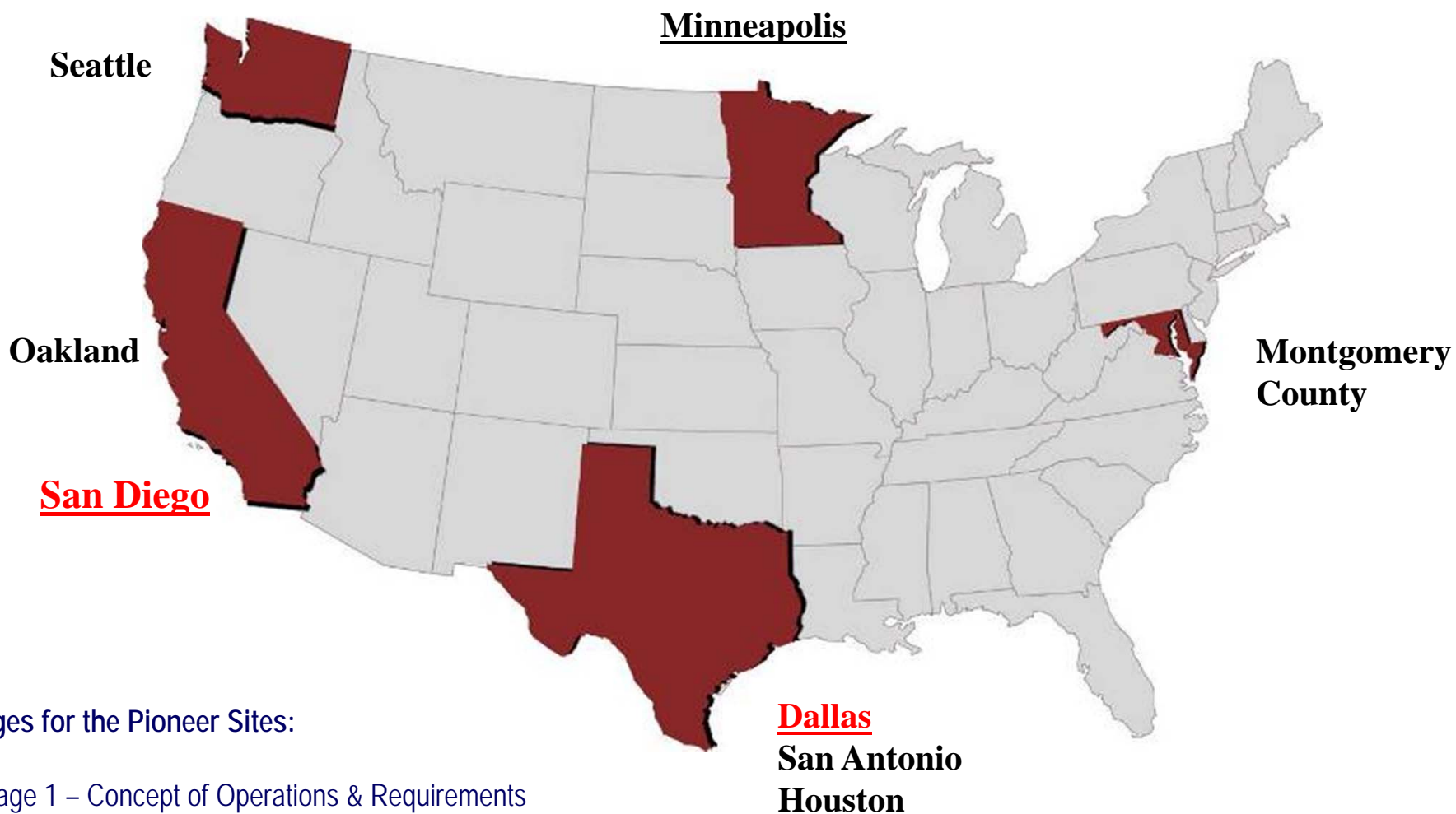


What is ICM?



- The integrated management of freeway, arterial, transit, and parking systems within a corridor
- Management of the corridor as a system, rather than the more traditional approach of managing individual assets

US DOT ICM Pioneer Sites



Stages for the Pioneer Sites:

- Stage 1 – Concept of Operations & Requirements
- Stage 2 – Analysis, Modeling and Simulation
- Stage 3 – Demonstration & Evaluation

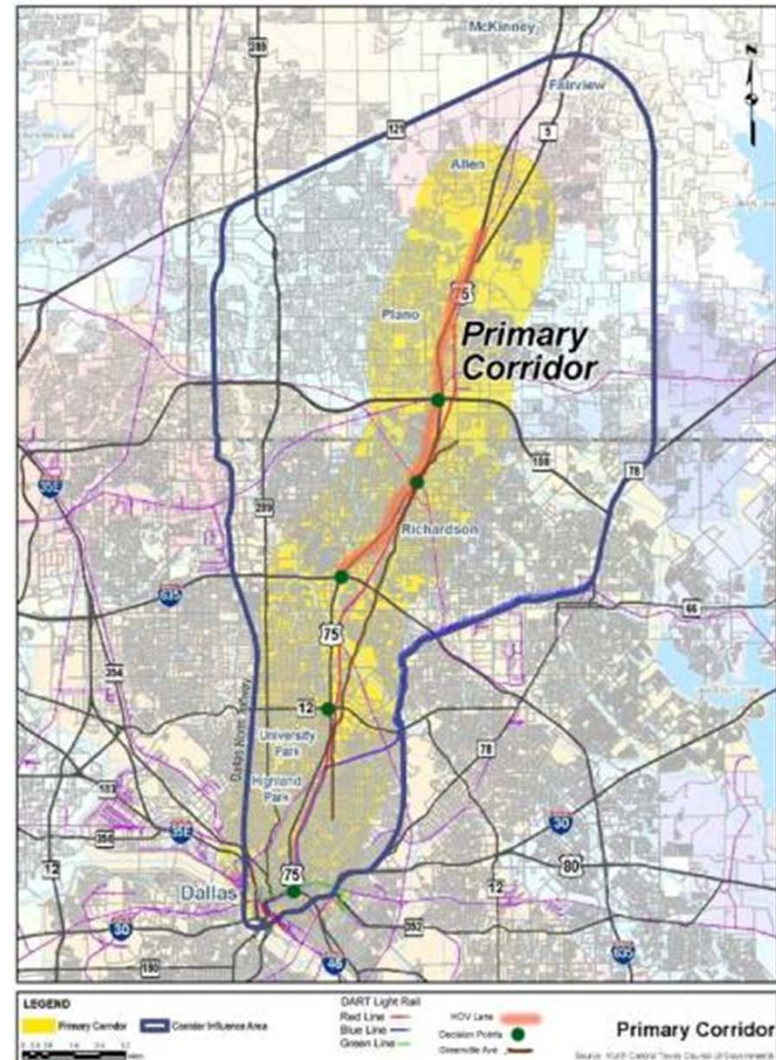
Why ICM for US 75 ?

- DFW is the 5th most congested region in US
- #1 worst region for growth in congestion
- Population is over 6 million, adding 1 million every 7-8 years
- US 75 is a critical regional corridor
- Travel demand and congestion continues to grow
- No ability to expand freeway, arterials, or alternate routes
- Other freeways are scheduled for construction
- Significant employers in corridor
- Numerous special events throughout year
- Showcase for ITS integration in the region



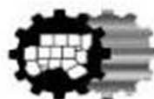
US 75 Corridor Networks

- Freeway with continuous Frontage Roads
- Managed HOV lanes
- Dallas North Tollway
- 167 Miles of Arterials
- DART Bus Network
- DART Light Rail
- Approx 900 Signals
- Multiple TMCs
- Regional ATIS



US 75 ICM Vision

Operate the US 75 Corridor in a true multimodal, integrated, efficient, and safe fashion where the focus is on the transportation customer



Summary Results

	San Diego	Dallas	Minneapolis
Annual Travel Time Savings (Person-Hours)	246,000	740,000	132,000
Improvement in Travel Time Reliability (Reduction in Travel Time Variance)	10.6%	3%	4.4%
Gallons of Fuel Saved Annually	323,000	981,000	17,600
Tons of Mobile Emissions Saved Annually	3,100	9,400	175
10-Year Net Benefit	\$104M	\$264M	\$82M
10-Year Cost	\$12M	\$14M	\$4M
Benefit-Cost Ratio	10:1	20:1	22:1



Benefit - Cost

- **\$16.5 M in Benefits for \$1.62M Cost per year**
- **\$278.8 M Benefits for \$13.6M Cost over 10 years**
- **Estimated B/C over the 10-year life-cycle of the project is 20.4 : 1**

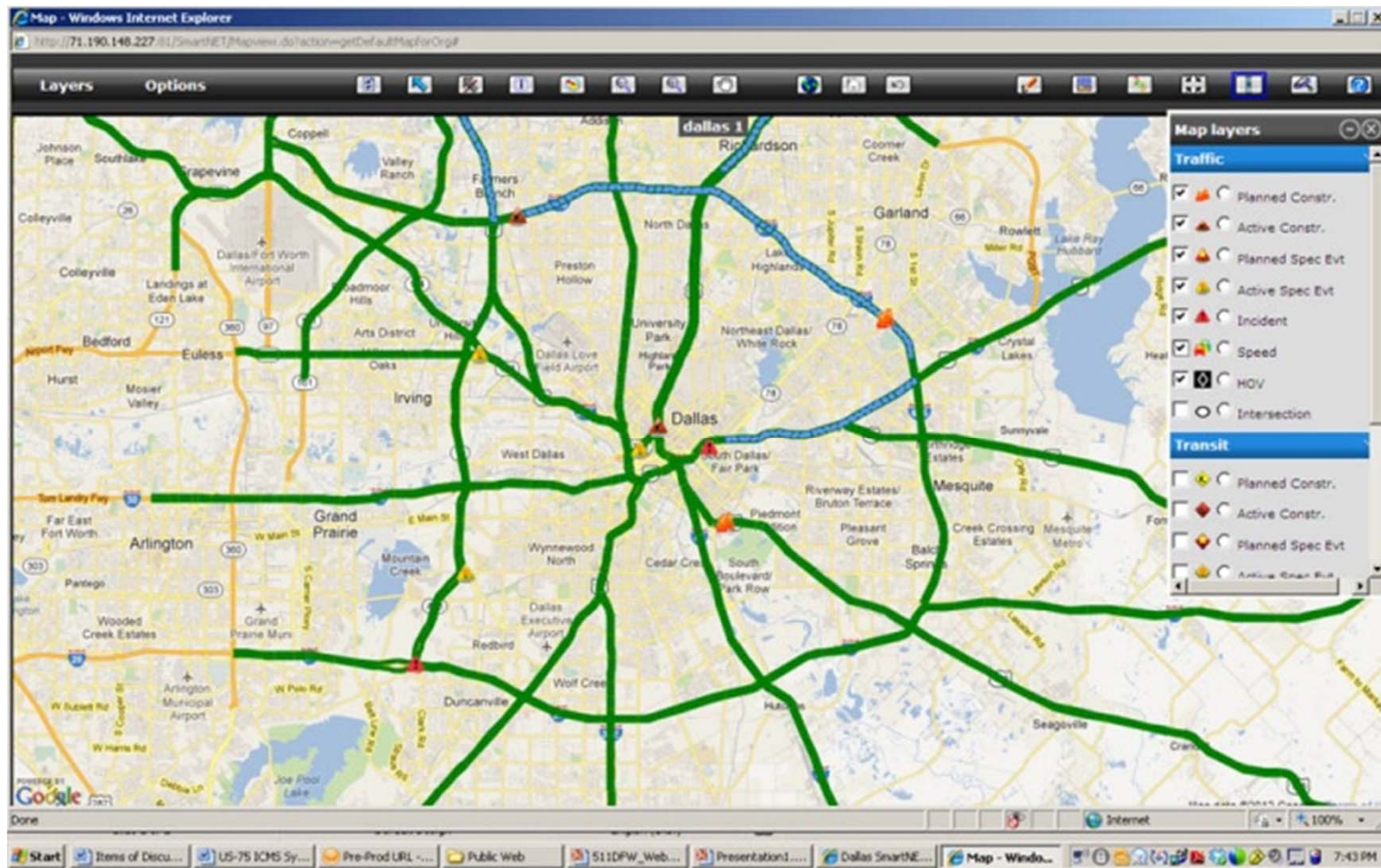


ICM Applications

- ✓ SmartNET
- ✓ Freeway Management
- ✓ HOV Lane Management
- ✓ Arterial Street Monitoring System
- ✓ Weather
- ✓ Responsive Traffic Signal System
- ✓ Real-Time Transit Vehicle Information
- ✓ Parking Management
- ✓ Decision Support System (DSS)
- ✓ 511



SmartNET: Map Interface



Freeway Management

Diversion Plan:

Minor Incidents

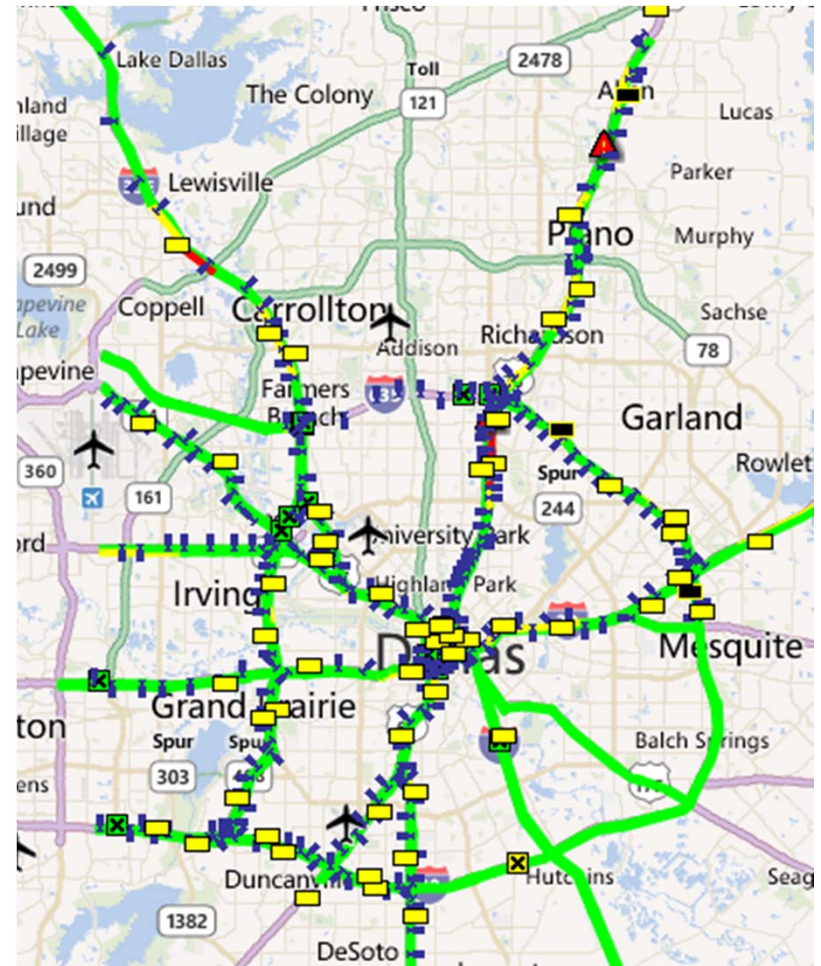
1- lane & shoulder blocked, <2-mile queue:

- Divert US 75 traffic to Frontage Rd

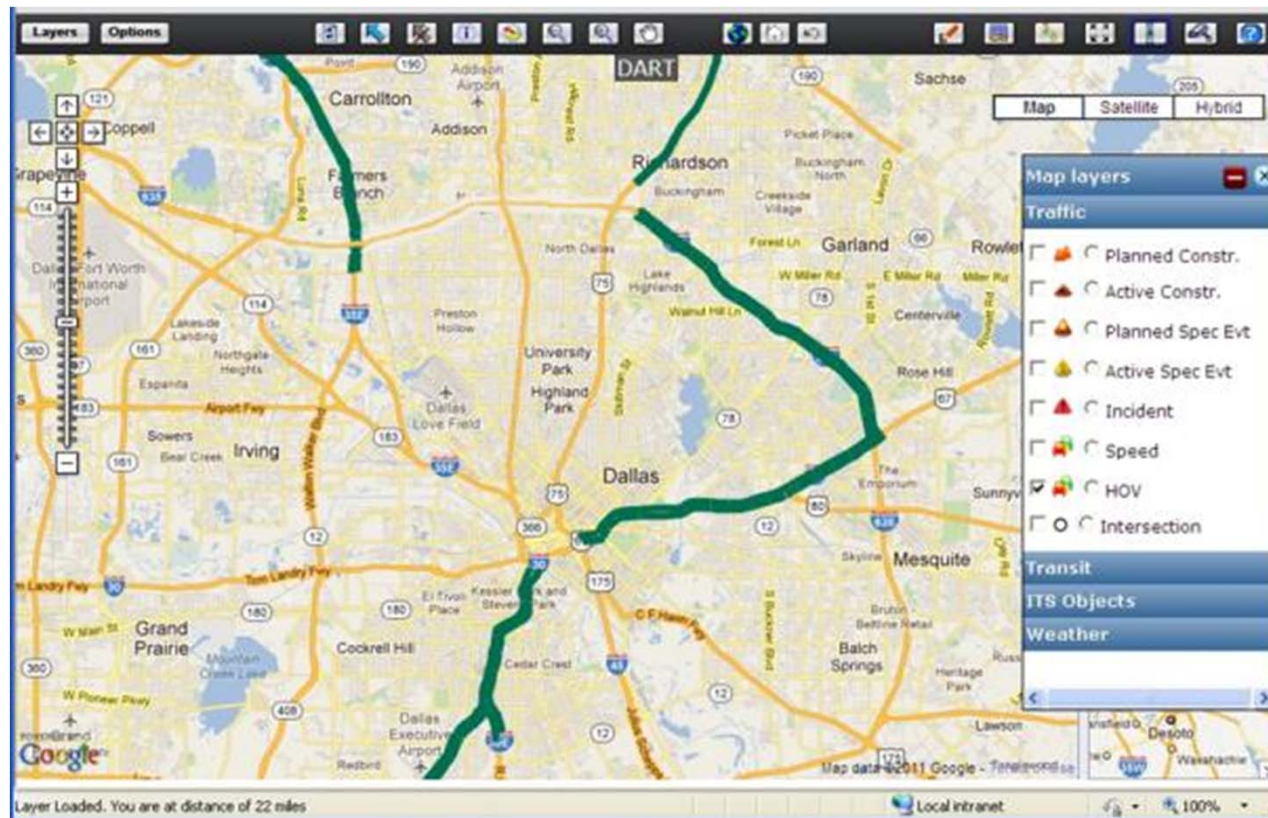
Major Incidents

2- lanes or more blocked, 2 - 4 mile queue:

- Divert US 75 traffic to (any or all):
Frontage Road
- Greenville Ave
- Red Line LRT

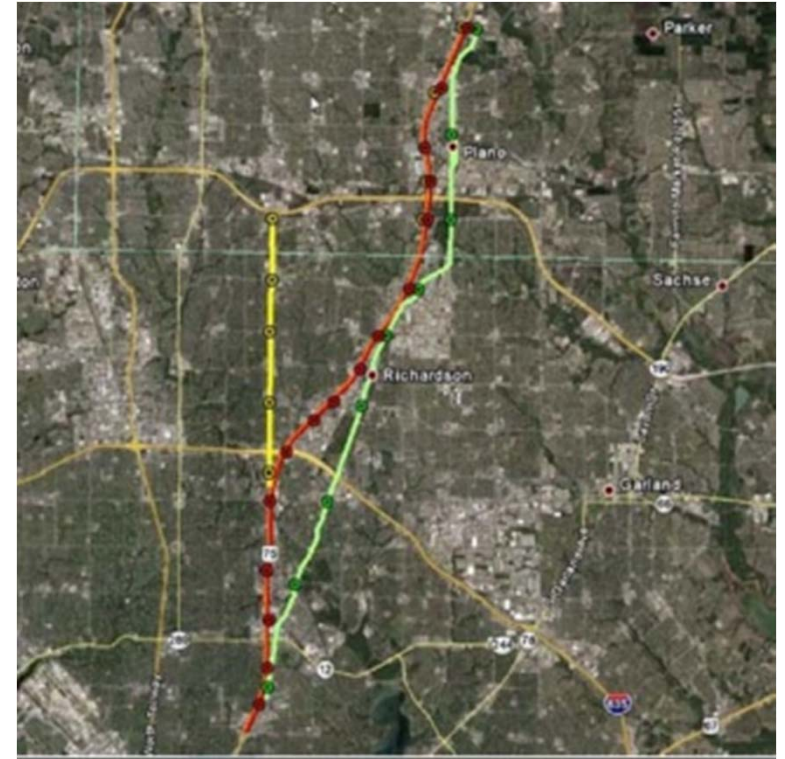


HOV Lane Management System

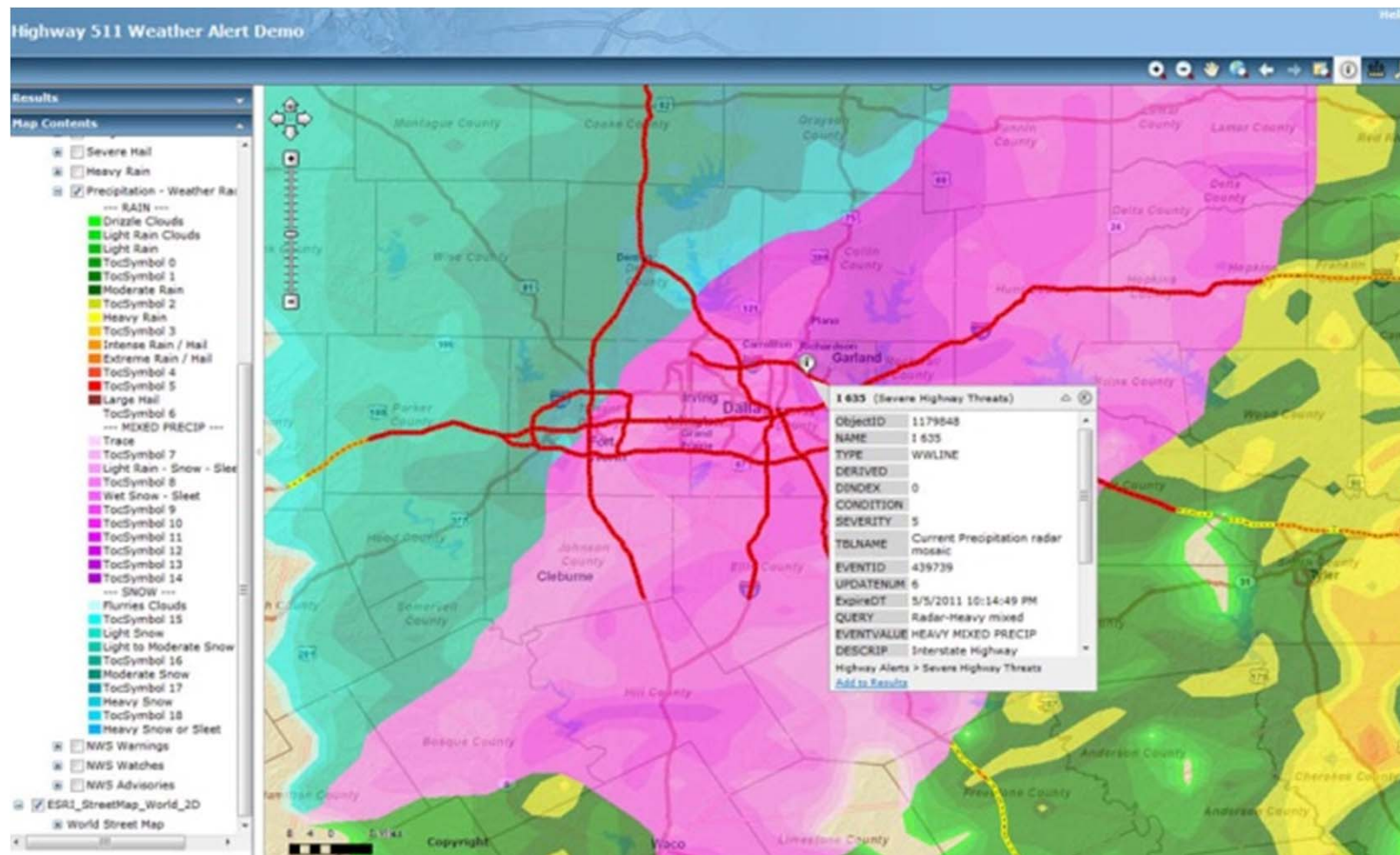


ICM Arterial Street Monitoring

- Proven Bluetooth Technology
- Have deployed about 40 detectors along diversion routes
- DSS will use Travel Time and Speeds on diversion routes to select recommended plan
- External Data Sources

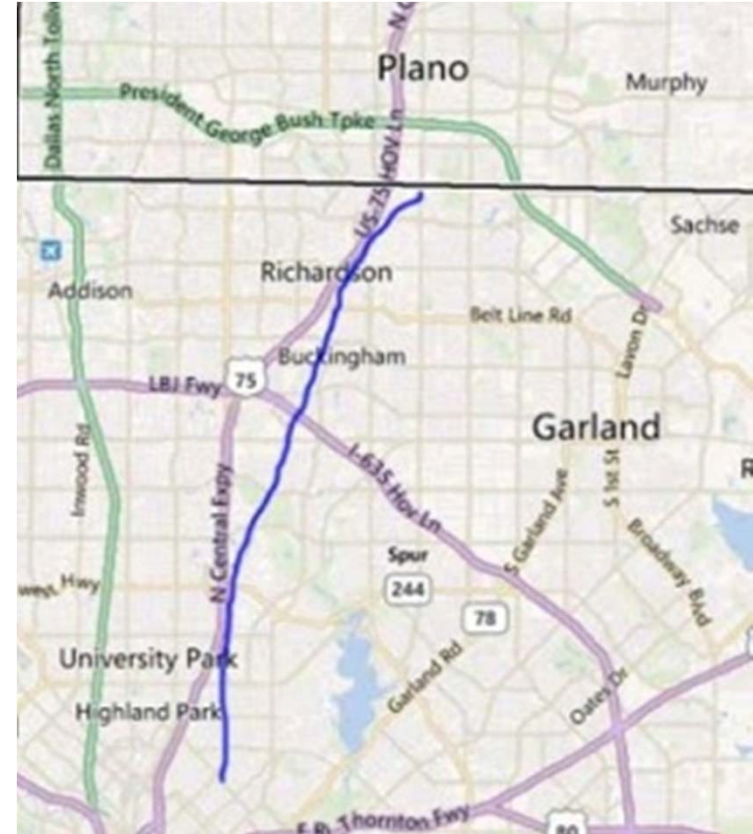


Weather: Dallas Ice Storm



Responsive Traffic Signal

- Develop new Traffic Signal Timing Plans for Greenville Ave
- Develop Event Specific Timing Plans
- DSS will recommend plans for specific events



Real Time Transit Vehicle Information

Vehicle location

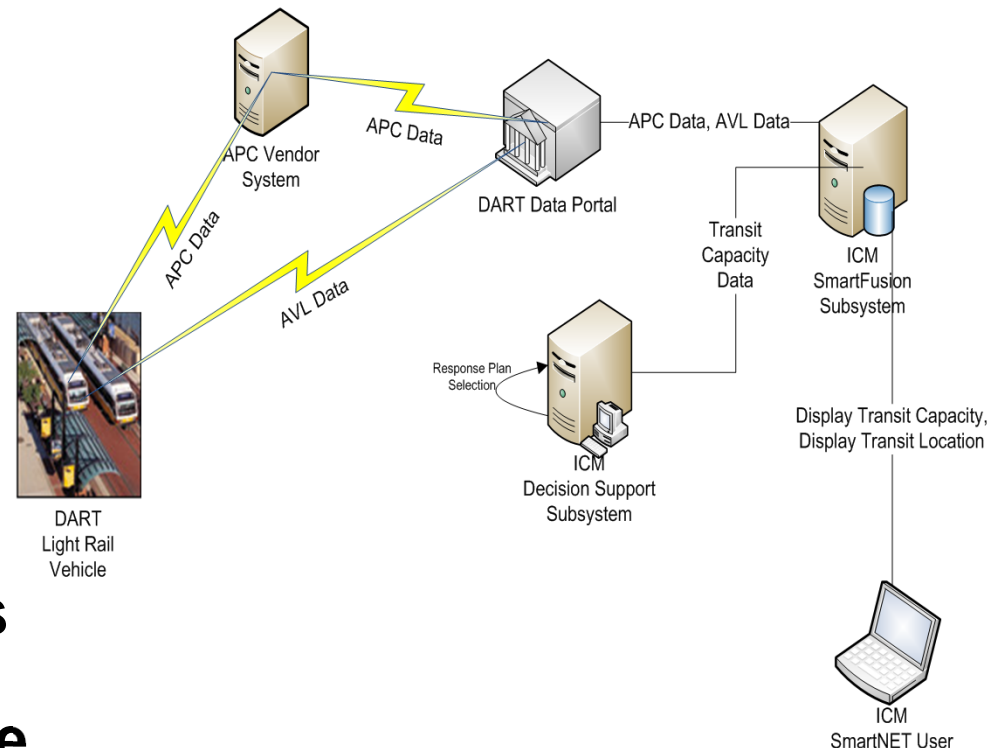
Time to arrive at next stop

Transit schedule

Available capacity

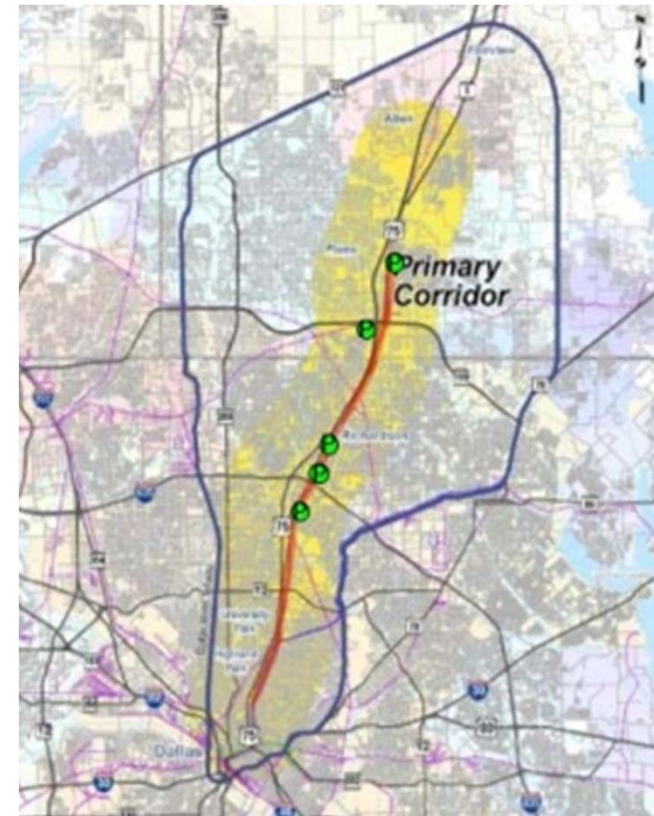
Install APC on Red Line cars

Transmit & integrate real time
AVL & APC data to ICM System



Parking Management

- 5 Park & Ride lots along LRT Red Line
- Monitor availability at each Park & Ride lot
- Publish to DSS and 511 System
- Publish to TxDOT DMS



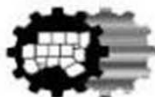
DSS Concept

Monitor US 75 Congestion

Divert to Frontage Road

Divert to Frontage Road and Greenville Ave

Divert to Frontage Road, Greenville Ave & DART Red Line



511DFW Public Website

The screenshot shows the 511DFW Public Website homepage. At the top left is the 511DFW logo with the tagline "BEGIN YOUR TRIP HERE." To the right are links for "ABOUT | CONTACT | FAQ | FEEDBACK" and social media icons for Facebook, Twitter, and YouTube. Below these is a user greeting "Hi, John" with a dropdown arrow. A navigation bar contains buttons for "Select Your Region", "MY511", "Traffic & Transit Conditions", and "Travel Links", followed by a search bar. Below the navigation bar is an "ALERTS" section with a red header and the text "Accident on US 75 at Belt Line Road, all lanes closed". The main content area features a large background image of a city street at night with light trails. Overlaid on this is a white box with the heading "WELCOME TO 511DFW" and the text: "511DFW is Dallas and Fort Worth region's official traffic and travel info source. Whether you drive or take public transit, 511DFW will help you reach your destination in the most efficient manner. Wherever you're going, 511DFW will get you there from here. To learn more about 511DFW, see our [Frequently Asked Questions \(FAQs\)](#)". Below the main content area is a horizontal carousel of six buttons: "SELECT YOUR REGION" (with a city skyline icon), "MY511" (with a couple icon), "TRAFFIC & TRANSIT" (with a bridge icon), "TRAVEL LINKS" (with a city skyline icon), "WHAT'S NEW" (with a city skyline icon), and "MOBILE WEB" (with a smartphone icon). The last button is "TRANSIT TRIP PLANNER" (with a transit map icon). At the bottom right, it says "511DFW is a free service of DART" with the DART logo.

511DFW
BEGIN YOUR TRIP HERE.

ABOUT | CONTACT | FAQ | FEEDBACK

Hi, John

Select Your Region MY511 Traffic & Transit Conditions Travel Links

ALERTS: Accident on US 75 at Belt Line Road, all lanes closed

WELCOME TO 511DFW

511DFW is Dallas and Fort Worth region's official traffic and travel info source. Whether you drive or take public transit, 511DFW will help you reach your destination in the most efficient manner. Wherever you're going, 511DFW will get you there from here.

To learn more about 511DFW, see our [Frequently Asked Questions \(FAQs\)](#)

SELECT YOUR REGION MY511 TRAFFIC & TRANSIT TRAVEL LINKS WHAT'S NEW MOBILE WEB TRANSIT TRIP PLANNER

511DFW is a free service of **DART**

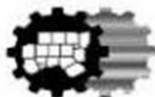
Cost

- **Funded by the US DOT: \$5.31M**
- **Local Share by project partners: over \$3M**
- **Total project value: \$8.38M**
- **Additional federal funds: \$0.9M**



Next Steps

- **System Acceptance Test: March 2013**
- **Soft Roll - Out: April 2013**



Committees & Lead Agencies

• Operations / DSS	TxDOT
• Policy & Programming	NCTCOG
• Signal Systems	Richardson
• Transit Applications	DART
• Outreach & Marketing	DART
• SmartNet /SmartFusion	DART
• Parking Management	Plano
• Arterial Street Monitoring	Dallas
• Video Sharing	NCTCOG
• 511 System	DART
• C2C	NCTCOG
• AMS / Evaluation	DART



For More Information

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