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 Librio, 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

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