



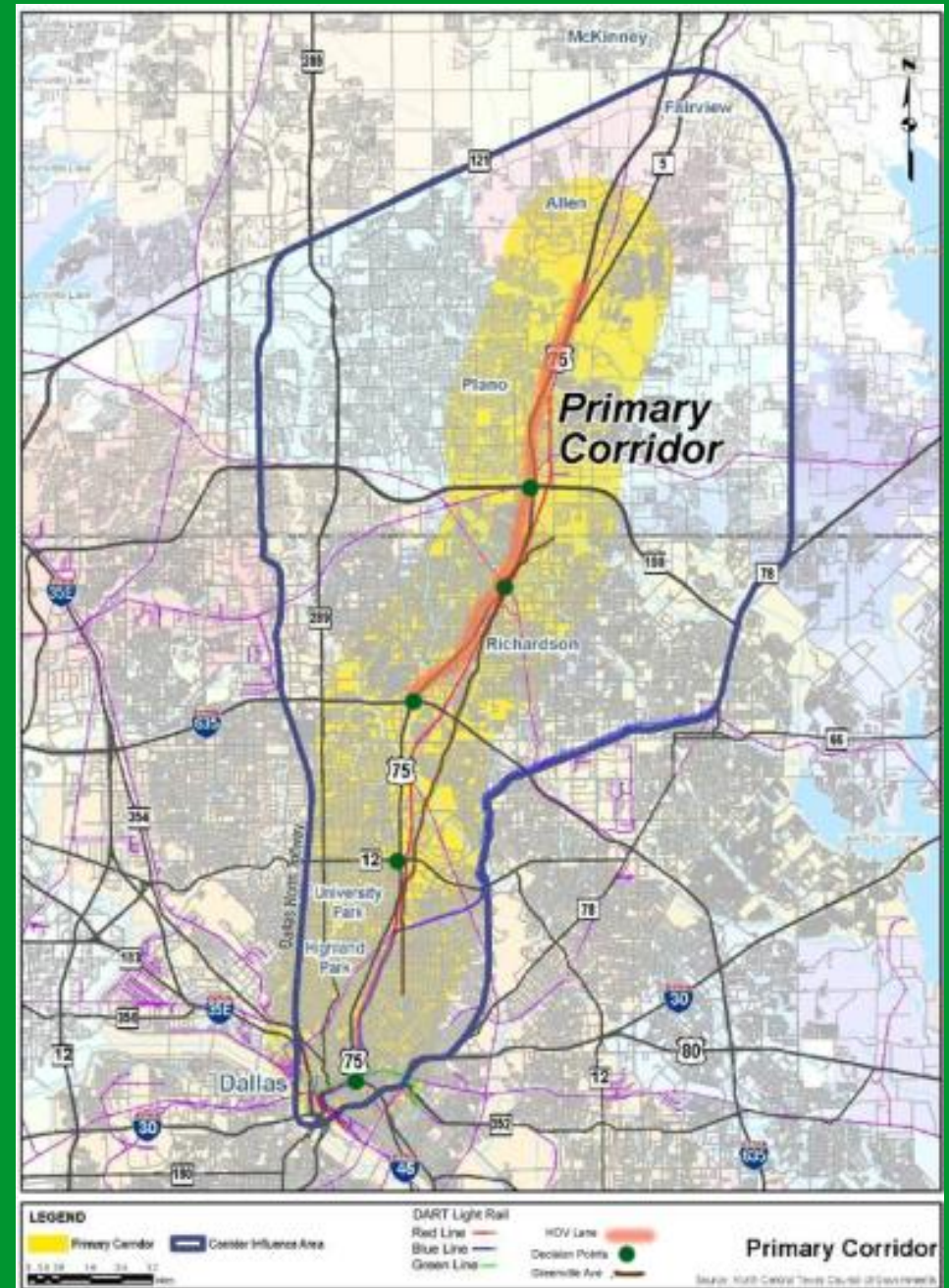
# Dallas Integrated Corridor Management

August 26, 2014

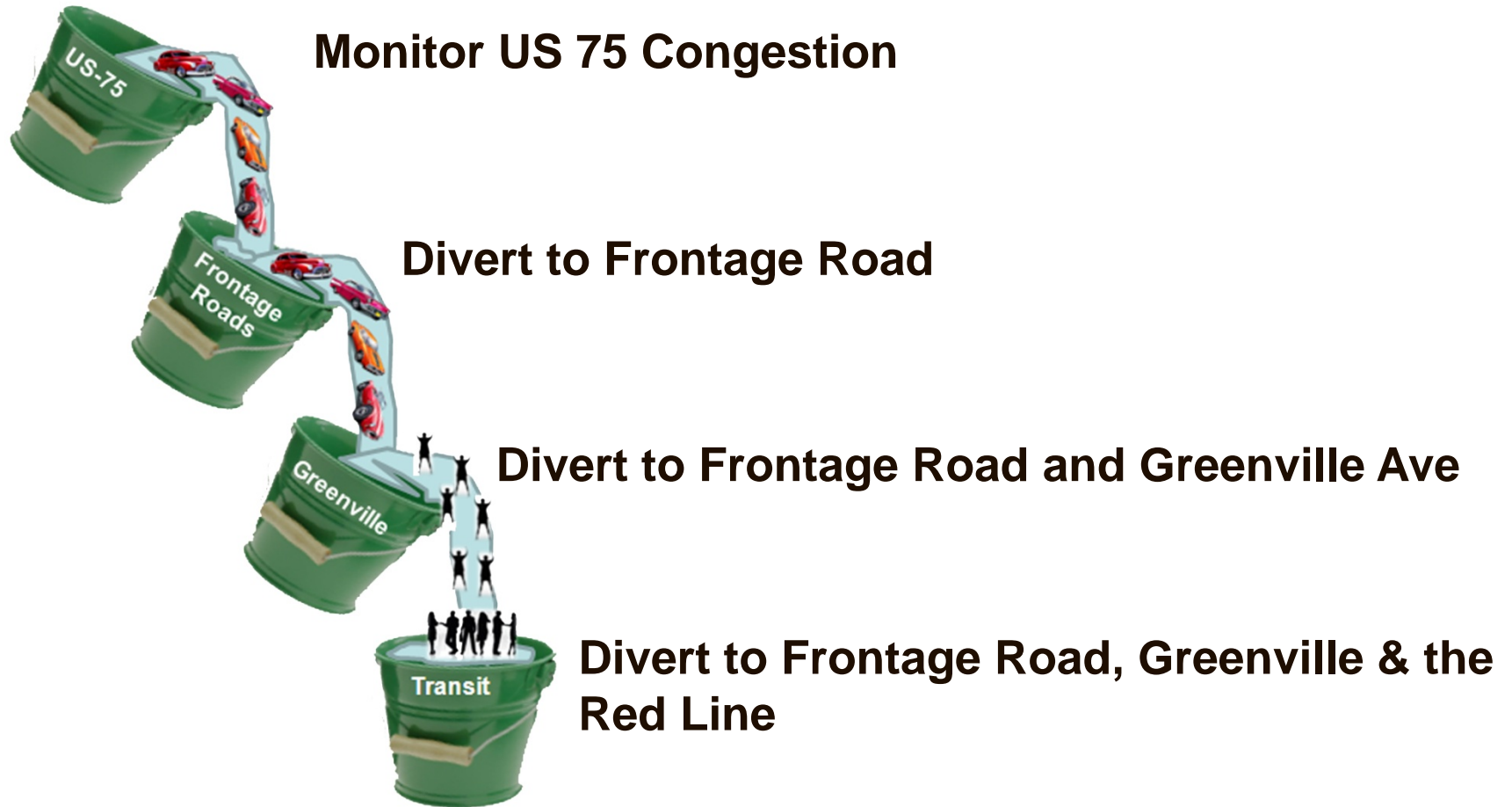
Ahmad Sadegh, Ph.D.  
Schneider Electric

# 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
- 900 Signals
- Multiple TMCs
- Regional ATIS

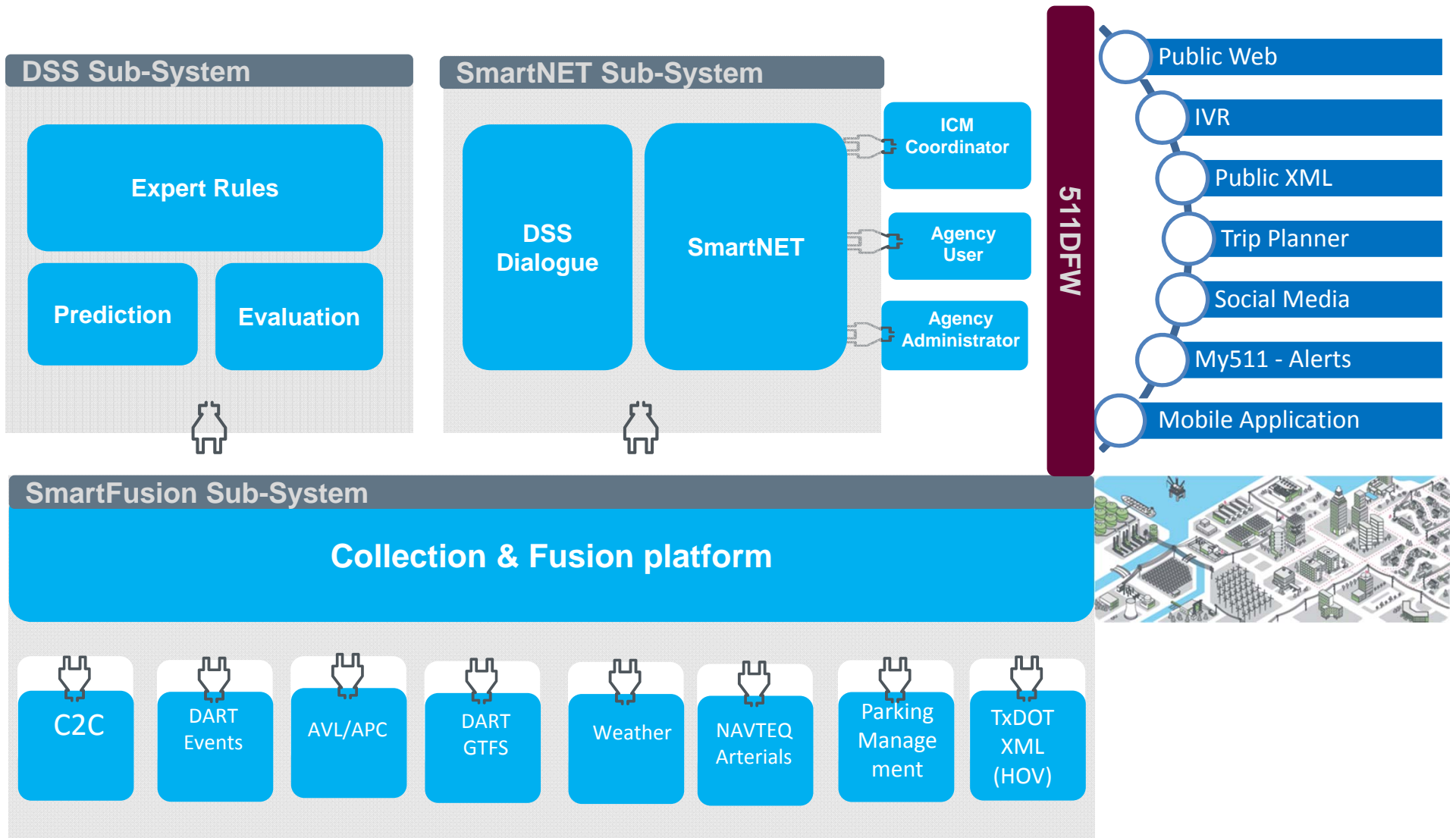


# ICM Concept

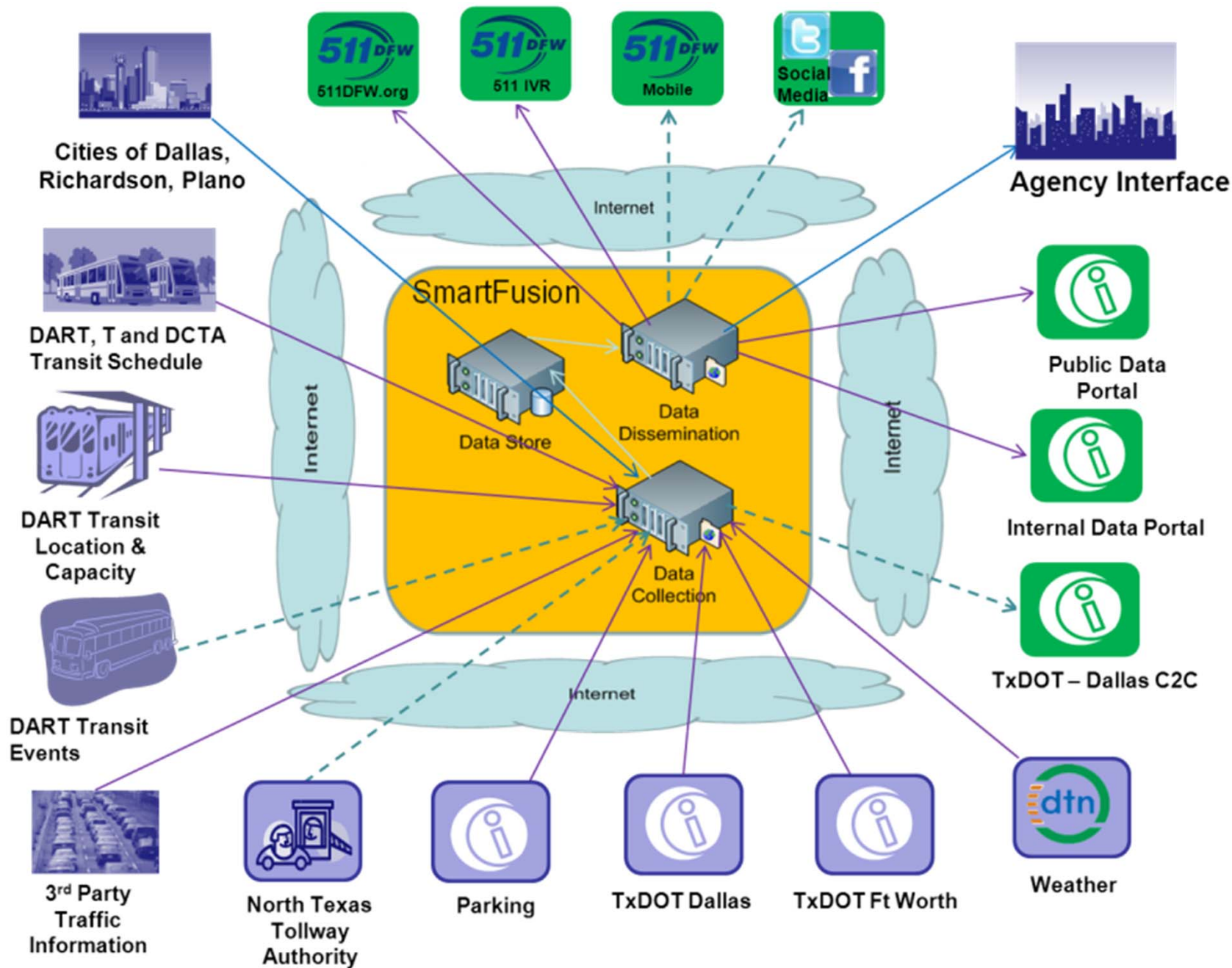




# Dallas ICMS Architecture



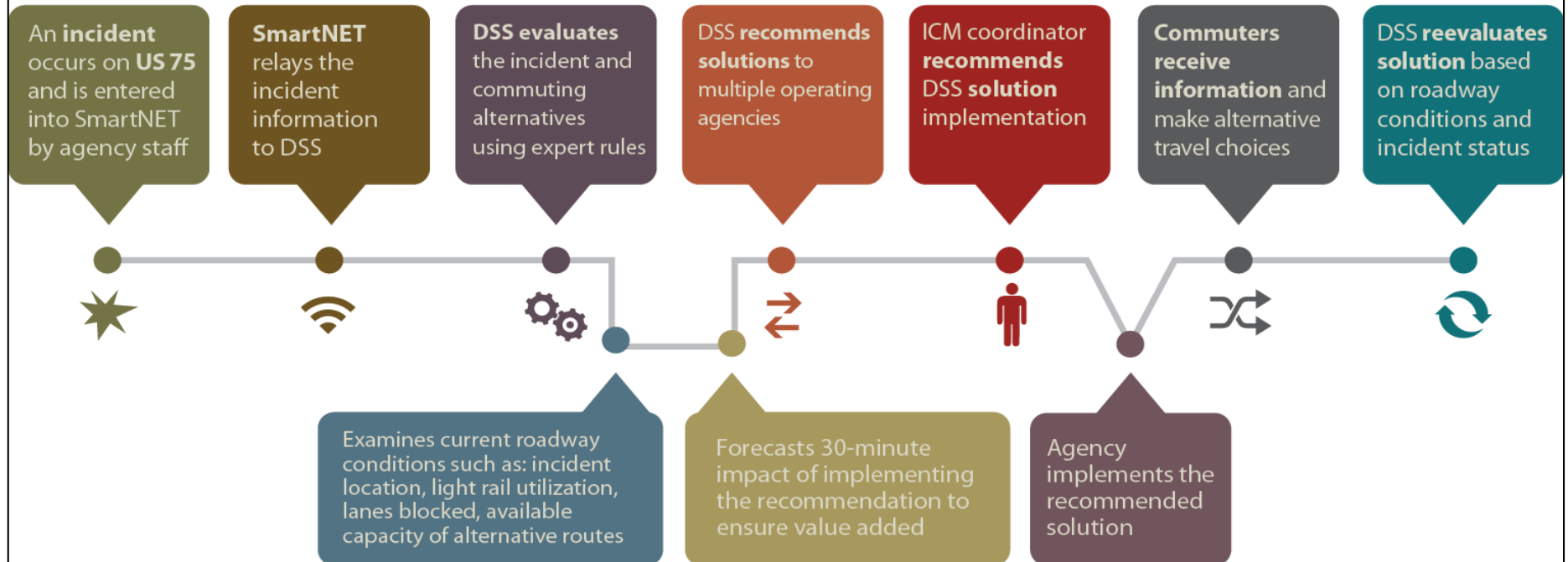




# Integrated Corridor Management (ICM) Decision Support System (DSS)

Alternatives for Agencies, Options for Commuters When Incidents Occur on US 75

## THE PROCESS



## THE BENEFITS



**Improved travel time reliability for commuters**



**Enhanced decision making support for operating agencies**



**Achieves a 20:1 return (\$278.8 million) on the project's cost over 10 years**



**Less pollution from idling vehicles in congested traffic**



# DSS Rules Evaluation for Response Plan Generation operations



## Strategies

	No. Affected Lanes (GP & HOV)	Main Lanes		Speed FR (on Diversion Route) [mph]	Speed GV (on Diversion Route) [mph]	Park-n-Ride Utilization	Red LRT Utilization	Prediction MOEs	Weather
		Speed [mph]	Queue Length Derived from Avg. speed [mi]						
<b>Minor Incident : Short Diversion to FR .</b>	$\geq 1$	$< 30$	$0.5 < Q < 1$	$> 20$	N/A	N/A	N/A		
<b>Major Incident: Long Diversion to FR .</b>	$\geq 1$	$< 30$	$Q \geq 1$	$> 20$	N/A	N/A	N/A		
<b>Major Incident: Diversion to FR. &amp; GV.</b>	$\geq 2$	$< 30$	$Q \geq 1$	$< 20$	$> 20$	N/A	N/A		
<b>Major Incident: Diversion to FR. &amp; GV., Transit</b>	$\geq 2$	$< 30$	$Q > 4$	$< 20$	$< 20$	$< 85\%$	$< 85\%$		

FR = Frontage Rd. GV = Greenville



## Response Plans

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- 400+ Response Plans
- Multi-jurisdictional
- Time-of-Day dependent
- Actions: DMS, traffic signal timing, rail and parking occupancy, and 511
- DSS Committee reviews response plans recommendations every month



National Cooperative Highway Research  
Program  
Project 20-68A: US Domestic Scan  
Program

Domestic Scan 12-02: Advances in  
Strategies for Implementing Integrated  
Corridor Management (ICM)



## Scan Team Members

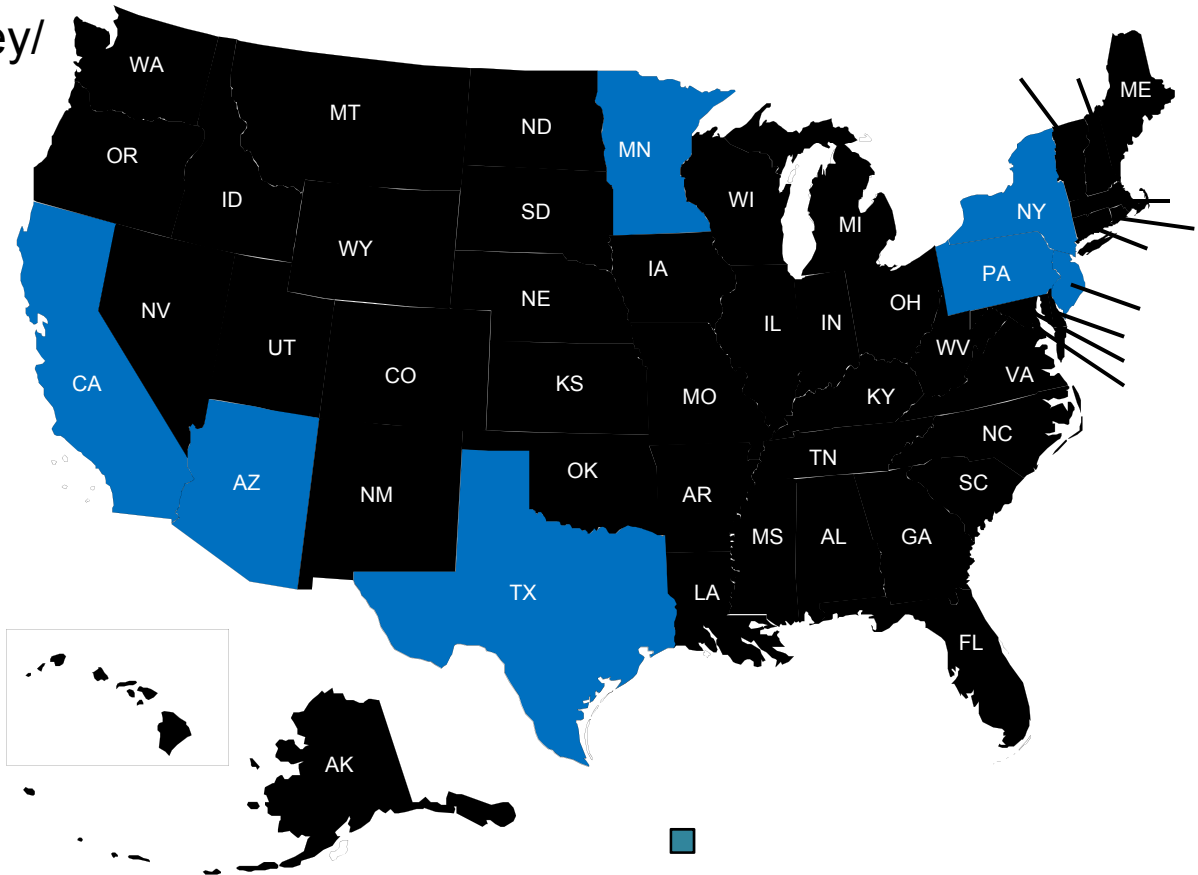
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# Scan Locations

- Week 1:
  - New York/New Jersey/  
Pennsylvania
  - Dallas, TX
- Week 2:
  - Minneapolis, MN
  - Phoenix, AZ
  - San Diego, CA



# LESSONS LEARNED

Dallas ICM &  
NCHRP 20-68A, Scan 12-02



- What is “ICM”?
- What is “DSS”?
- 30/70, Technology vs. Others





# Plan Big, Start Small

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- ICM must be in your regional ITS strategic plan
- Plan for future ICM expansion
  - Geographic
  - Systems
  - Agencies
  - Applications
- Deal with Institutional Issues from beginning
- Everyone must win for the program to succeed
- Everyone must be committed
- Data sharing is a good start for ICM systems

# Proceed with O&M in Mind

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- Envision ultimate working system
  - Determine who is in charge up front
  - Determine resources needed honestly
  - Define roles and responsibilities
  - Identify funding sources
  - Identify regional agreements and policies in advance
- Invest on the ConOps
- It is all about commitments

# Be Flexible

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- Plans are plans
- Expect unexpected
- You either don't have it or don't know it
- It is OK to go back to basics

# Data



- It is all about data
- Whose Data, map, naming, etc.?
- MPO's Regional data or DOT's facility data?
- Why not Google, Microsoft, others?
- Regional Standards (ESRI, Google, Microsoft, etc.)?
- Events data should drive the map data selection.
- Is probe based travel time data good enough?
- Translation of nodes and links are huge
- Individual system static data updates has to be coordinated.
- Open data policy

# Final Thoughts.....



- Once the ICMS is deployed, test, update and validate the strategies.
- Train on real system
- This is a work in progress.



# Final Thoughts.....



- ICM is a name, a concept, a tool as apart of the much bigger concept of cooperation among regional agencies to better operate a corridor, a city, a region and more.
- ICM has to become an integral part of any future local, regional and statewide ITS strategic plans.
- Proper planning will assure the essential political buy-in of the concepts and funding.



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