STAGE 3

US-75 INTEGRATED CORRIDOR MANAGEMENT:
DECISION SUPPORT SYSTEM

US 75 in Dallas, Texas.

The Integrated Corridor Management (ICM) Project fundamentally changes how transportation agencies in the US-75 corridor collaborate to move more people and vehicles through the corridor, respond to incidents, and provide better travel information to travelers, who can make better decisions about how and when to travel the corridor. A key component of the ICM is a Decision Support System (DSS) that uses expert knowledge and predicted traffic conditions to recommend multiagency, multimodal coordinated responses to incidents.

Concept

For incidents on US 75, the ICM DSS assists the operating agencies in more effectively using frontage-road capacity, alternate arterial street capacity, and transit capacity. The DSS recommends solutions to congestion caused by incidents for operating agencies that include information for commuters so that they can make alternative travel choices.

Public agencies may elect to participate in implementation of the suggested responses based upon their staff's assessment of the agency's readiness to implement. Acting on behalf of the ICM agencies, an ICM coordinator staff member makes the final decision whether to implement based on the readiness of the operating agencies. The ICM DSS does not suggest responses to normal, recurring congestion for which agencies have existing optimized operating procedures.

How It Works

When an incident is identified and entered into the SmartNet system an alert is automatically provided to the ICM DSS. Using a set of expert rules, the DSS evaluates the incident and the availability of alternate routes, transit capacity, park-and-ride lot capacity and response alternatives. A candidate response plan from a pre-agreed-upon list of plans is recommended by the expert rules.

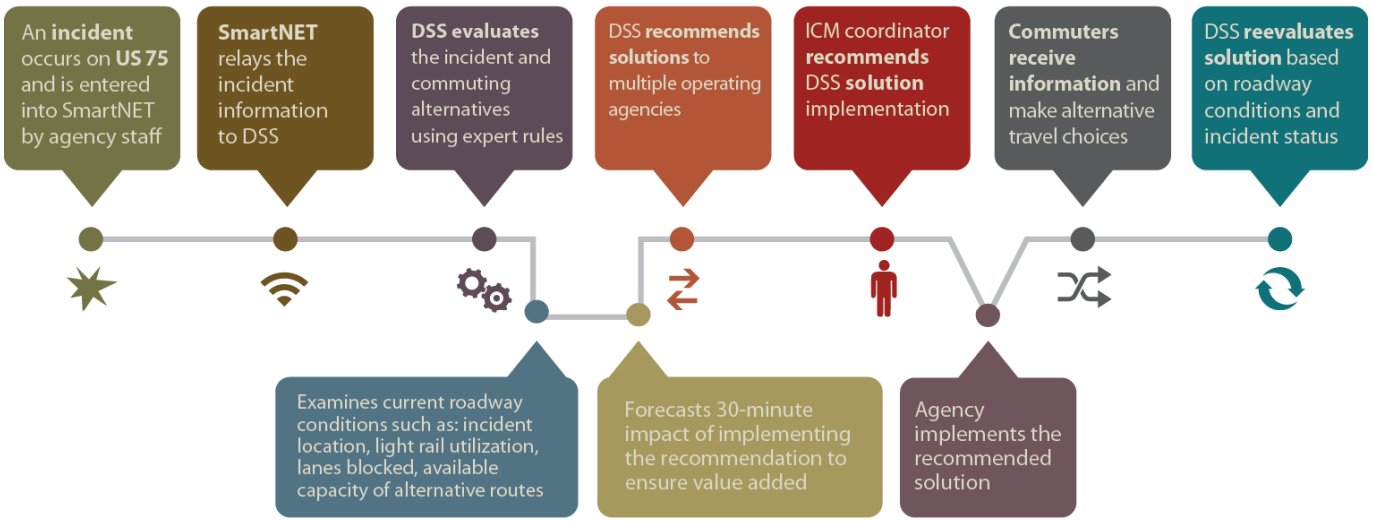
The DSS includes multiple operators in the decision and implementation path. Each operating agency has an operator who identifies that agency's readiness to implement the recommended travel solution.

The expert rules include parameters such as the location of the incident, the direction of travel, the length of the queue, available capacity on adjacent arterials and frontage roads, an assessment of the current

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: By the Numbers

- 130 response plans
- 5 ICM operating agencies are using the DSS (DART, TxDOT, Richardson, Dallas, Plano)
- 45 directional miles of alternative arterials are in the network (Greenville only, between Stacy Road and Mockingbird Ave)
- 50 directional miles of continuous frontage roads are in the network (between Stacy Road and Woodall Rogers/Spur 366)
- 12 DMS signs are in the corridor

state of the network based upon a model of the corridor that incorporates real-time traffic conditions, a 30-minute future forecast of the network using the model, and transit readiness based on the passenger capacity of the parallel rail facility and on the rail station parking lot capacity.

If the involved agencies choose to implement the recommended travel solution, commuters will then receive information via a 511 system, various websites, dynamic message signs, and media outlets. Meanwhile, in real time, the DSS continues to evaluate the solution it sent to the involved agencies based on changing roadway conditions and the status of the original incident, making subsequent recommendations for changing or normalizing travel options to the operating agencies.

Implementation Benefits

The primary benefit of the system is that it optimizes transportation system capacity in the event of an incident that severely restricts normal traffic flow. A recent study by Cambridge Systematics estimates a 20:1 return ($278.8 million) on the project's cost over the next 10 years. Other benefits include enhanced decision-making support for operating agencies, improved travel-time reliability for commuters, and less pollution in local communities caused by idling vehicles in congested traffic.

FOR MORE INFORMATION

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