Integrated Corridor Management

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Integrated Corridor Management (ICM)

The **integrated** and **proactive** management of existing infrastructure along major corridors

**Coordination of:**
- Transportation Assets
- Stakeholders engaged in Corridor Mobility

**Primary Goals:**
- Give travelers as much info as possible, as early as possible
- Ensure that all stakeholders have the same data at the same time
- Respond faster to incidents with predetermined response plans
- Dynamically manage the network based on demand
1. Incident occurs & congestion builds

2. Congestion grows... PD arrives

3. ... PD diverts traffic (viable detour route? Maybe...) – **SOME RELIEF**

4. ... TMC learns of incident... Deploys IMAP (SSP), Travel Info, and DMS – **SOME RELIEF**

5. ... TMC plans viable detour... Directions along detour often unavailable – **SOME RELIEF**

6. ... Rotation Wrecker arrives... Paid by the hour so removal time is lengthy

7. ... Municipal Staff reactively adjusts timing to some signals – **SOME RELIEF**
1. Incident occurs & congestion builds
2. Congestion grows... PD arrives & notifies TMC
3. TMC deploys Travel Info & IMAP – SOME RELIEF
4. TMC notifies Contract Wrecker & Municipal Staff
5. TMC/Municipal execute planned detour, alternates & signal timing plan – MORE RELIEF
6. Contract Wrecker arrives... $ Incentive to remove vehicles quickly

Primary Improvements:
- Rapid stakeholder notification
- Coordinated, proactive response
- Efficient use of network
- Focus on quick clearance
Where is ICM a Good Strategy?

Locations with Reoccurring Congestion:
- Vehicle Crashes
- Special Events
- Commuter Routes
- Seasonal Fluctuations
- Construction Projects

Locations Sensitive to Reduced Capacity:
- Routes currently operating at or near capacity
- Major commuter routes
- Major routes to tourist destinations
ICM Efforts Underway in NC

- Interstate/US Route
- I-40 & I-26 Asheville
- I-85 Gaston County
- Business 40 Project
- I-40 “Fortify” Project

City Locations:
- Asheville
- Greensboro
- Raleigh
- Charlotte
- Wilmington
ICM Focus: I-85 Gaston County

- **I-85 ICM Corridor**: between US 74 (Exit 10) and Little Rock Rd (Exit 32)
- **Future Widening on I-85**: between US 321 (Exit 17) and NC 273 (Exit 27)
  - Construction scheduled to start in 2021
Selecting I-85 in Gaston Co. for ICM

Locations with Reoccurring Congestion:
• Vehicle Crashes ✓
• Special Events ✓
• Commuter Routes ✓
• Seasonal Fluctuations ✓
• Construction Projects ✓

1069 crashes between Exits 26 and 29 (2010-2015)

Locations Sensitive to Reduced Capacity:
• Routes currently operating at or near capacity ✓
• Major commuter routes ✓
• Major routes to tourist destinations ✓

Major Widening Project set to begin in 2021

I-85 Ranks in “Top 10 Bottlenecks” (2017)

I-85 is primary route to/from Charlotte + high volume use of US 74 as alternate
Initial Challenges with I-85 ICM

Multiple Groups Involved:
• NO clear delineation of roles/responsibilities
• NO policy to coordinate

CCTV & DMS Coverage:
• NOT adequate to support ICM strategies

Signal Systems:
• NOT timed efficiently to support US 74 as detour for I-85
• NOT accessible remotely (i.e. by TMC)
ICM Solutions: Stakeholders & MOUs

Stakeholder Engagement:
- **NCDOT** (Div. 10 & 12 staff + IMAP; local & statewide TMCs)
- **NC Highway Patrol**
- **Local Police/Responders** (Belmont, Gastonia, Lowell, etc.)
- **Municipal Transportation Agencies** (City of Gastonia, etc.)
- **FHWA**

MOUs:
- **Agreement to Coordinate Response**
  - Roles/Responsibilities
  - Communication Plan, etc.
- **Tag & Remove Abandoned Vehicles**
- **Quick Clearance**
  - Immediate removal for non-injury/fatal incidents
  - Removes liability for responders
  - Focus on quick lane clearance
ICM Solutions: CMAQ Funding

Upgrade Signal Equipment:
  • Efficient Timing Plans
  • Signal System Access

ITS Design & Construction:
  • New DMSs for I-85
  • Static Trailblazing Signs for US 74
  • Dynamic Trailblazing Signs for US 74
  • CCTVs for City of Gastonia
  • New CCTVs for I-85
ICM Resources

Signals & Timing Plans:
• 94 signals on US 74 and I-85 ramps
• Timing Plans for normal conditions and when US 74 is used as detour for I-85

DMS & Signs:
• DMS – warn motorists + advise of detours and alternate routes
• Trailblazing Signs – provide directions along detour
• “Fender-Bender” Signs – advise motorists to move non-injury crashes to the shoulder

CCTV:
• Detect & monitor incidents
• Shared video feeds between stakeholders
ICM Solutions: Response Plans

RPs Specifically Describe:
- Who responds & how
- Who to notify & when
- What detour and alternates to use
- Which signs to use & what messages to display on them
- What signal timing plan to use

12 Response Plans created for I-85 in Gaston Co.
6 for each direction on I-85
Next Steps for ICM in NC

• Stakeholder Meetings
• SOPs & Training Modules
• ITS Design & Construction
• ICM Implementation (Early 2019)
QUESTIONS?

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