Michigan DOT
Highway Operations Performance Management with User Delay Cost

AASHTO Subcommittee on Maintenance
Burlington, VT - July 22-25, 2013
Overview

- Performance Management vs. Performance Measures/Metrics
- User Delay Cost (UDC)
- Performance Management Process – 4DX
- Outcomes
User Delay Cost

- Traditional project level taken to system operations level
  - Calculation based on travel volumes, speeds
  - Sensor and probe vehicle data (Navteq)
- Performance measurement tool evolution
  - “Red Images” 2011 & 2012
  - Regional Integrated Transportation Information System (RITIS) in 2013
Data Collection & Use
Focus on the Wildly Important Act on the Lead Measure
Keep a Compelling Scoreboard
Create a Cadence of Accountability

User Delay Cost
Performance Measures
Congestion Scan
Bottleneck Ranking

Third Party Data Provider

Transportation Operations Center

MiDrive

RITIS

UDC

Good Government in Action

The 4 Disciplines of Execution™

Michigan Department of Transportation

WWW.MICHIGAN.GOV/MDOT
RITIS – Congestion Scan

Speed on I-94 between ROTUNDA DR/EXIT 209 and I-75/CHRYSLER FWY/EXIT 216

Data shown is averaged on Nov 29, 2012 at 10 minute intervals.
80% of activities produce 20% of results

20% of activities produce 80% of results
Managing UDC with 4DX

WIG: Limit 2013 User Delay Cost to $304.4 Million by 12/31/13

Winter Weather Lag:
Regain Time < 2 hours
80% of time

Lead 1:
Perform After Storm Huddles 80% of the time

Lead 2:
Compliance with Salting Policies 80% of the time

TIM Lag:
Limit 1+ Lane Closure
2+ hour Incidents to 203

Lead 1:
Perform Post Incident Reviews 50% of the time

Lead 1:
Perform WZ Reviews 80% of the time

Work Zone Lag:
Limit Non-Recurring Construction UDC to $80.3M

Lead 2:
Compare Predicted vs. Actual UDC

Lead 2:
Compare Predicted vs. Actual UDC
# Cadence of Accountability

<table>
<thead>
<tr>
<th></th>
<th>Account</th>
<th>Report on last week’s commitments.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Review the Scoreboard</td>
<td>Learn from successes and failures.</td>
</tr>
<tr>
<td>3.</td>
<td>Plan</td>
<td>Clear the path and make new commitments.</td>
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</table>
Director: Grand Champion
Owner of MDOT’s WIG
Hosts Monthly Review Sessions

COO and CAO: Chief Champions
Co-owner of MDOT’s WIG
Host Monthly Accountability Sessions

Bureau/Region/Office Leaders: Champions
Owner of area WIG; Host Weekly Accountability Sessions

Managers - Owner of area Sub-WIG; Train/Host
Weekly Accountability Sessions;
Coaches assist managers

Work Areas: Own and act on lead measures; Use Scoreboards and report weekly

MDOT’s GGiA Roles and Accountability Structure
Michigan’s Implementation

- 2011: I-94 Southwest Region
- 2012: I-94 Corridor-wide
  - 3 regions, 8 TSCs, and Central Office Operations Field Services office
- 2013: Statewide, multiple routes
  - Part of a larger adoption of 4DX/GGiA to drive higher Customer Satisfaction
  - Mostly freeway, all 7 regions
Limit the number of traffic incidents closing one or more lanes lasting longer than two hours to 203.

Green
Regain normal speeds in two hours or less, 80 percent of the time for winter weather events.
Limit the 2013 user delay cost to $304.4 million, between 1/1/13 and 12/31/13.

Red
Outcomes

• Active Response & Proactive Management of Work Zones, Traffic Incidents, Weather Events
• Broad Front Line Staff Engagement
• Rapid Adoption of Best Practices & Collaboration, esp. TIM
• Better Transparency into Day to Day System Operations
Summary

• Performance Measures should be those that:
  – Facilitate Performance Management
  – Drive Performance Improvement

• Desired Outcomes:
  – Improving Travel Reliability & Traffic Flow
  – Driving Cultural and Behavior Changes to Actively & Proactively Operate the System Better
Continue to Improve

- Previous goal – Regain normal speeds in two hours or less, 80% of the time for winter weather events
- Proposed goal – During a winter event, maintain an average speed of traffic within 10 mph of normal speeds, 80% of time.

<table>
<thead>
<tr>
<th>Location</th>
<th>% Speeds within 10 mph</th>
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<tbody>
<tr>
<td></td>
<td>All Day</td>
</tr>
<tr>
<td>Grand Region</td>
<td>74%</td>
</tr>
<tr>
<td>US-127(Isabella Co.)</td>
<td>91%</td>
</tr>
<tr>
<td>I-94(Jackson TSC)</td>
<td>79%</td>
</tr>
<tr>
<td>I-94(Taylor TSC)</td>
<td>51%</td>
</tr>
<tr>
<td>I-94(Marshall TSC)</td>
<td>68%</td>
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Questions?

MDOT wants to deliver outstanding customer service. Please tell us: