

Iowa DOT TSMO



## TRANSPORTATION AND SYSTEMS MANAGEMENT AND OPERATIONS (TSMO) PLANING AND INTEGRATION

NOCOE Peer Exchange  
April 10-11, 2017

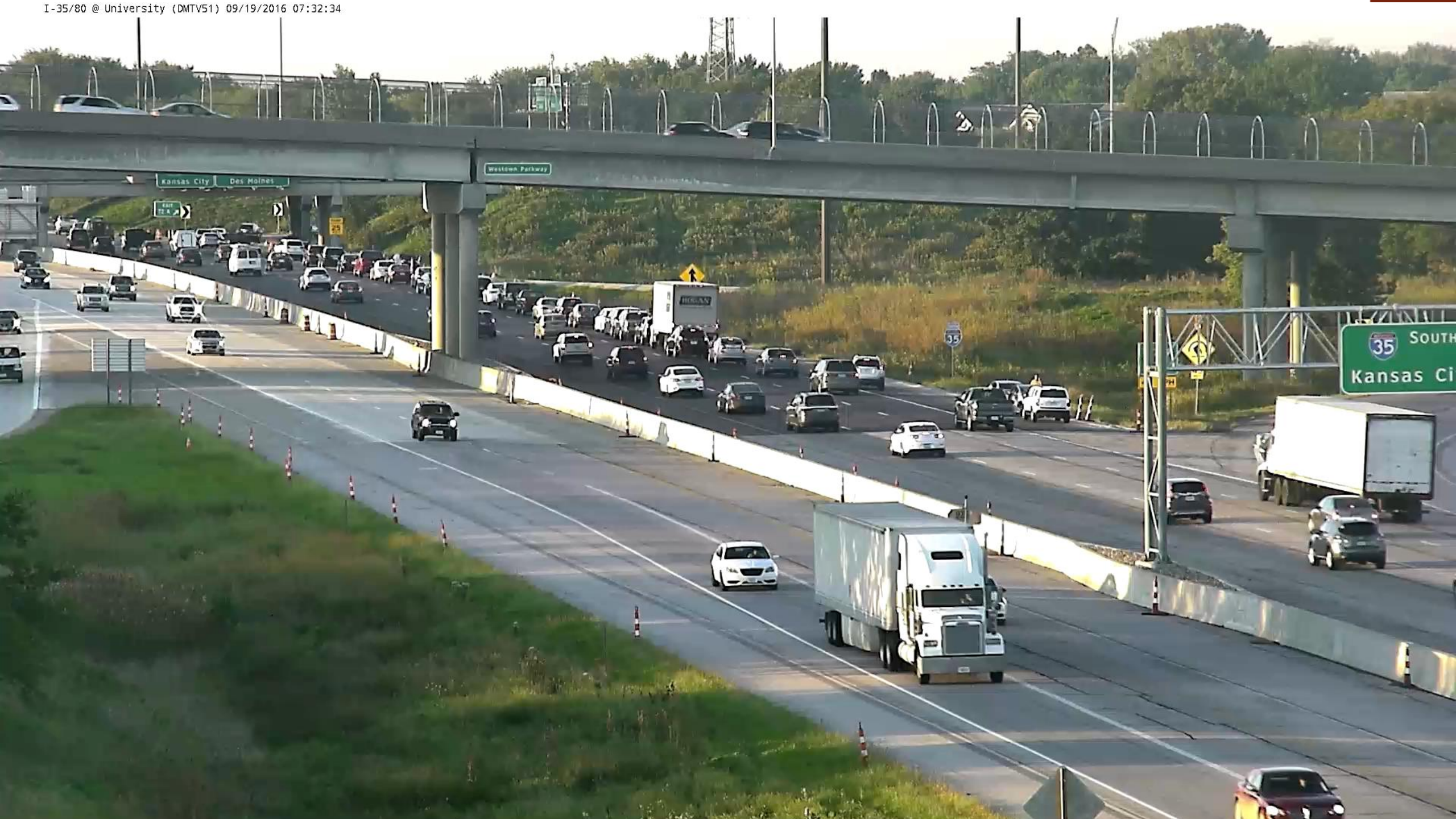














**do we need to change  
our focus from**

**Building & Maintaining  
to**

**Effective Operation  
of the System**



# BY THE NUMBERS

~40,000

U.S. FATALITIES  
IN 2016

FATALITIES IN IOWA IN 2016

404

24,931

INCIDENTS IN 2016

LANE BLOCKING  
INCIDENTS

2,500

53

AVG MINUTES LANES  
BLOCKED

PER MINUTE LIKELIHOOD OF A  
SECONDARY CRASH

2.8%







**People are  
safer  
when we  
keep traffic moving**





# \$2 Billion

**Extra spent annually on  
unanticipated transportation costs**

**Truck volumes in Iowa are predicted to  
grow 43% in next 30 years**





**Our economy  
thrives and grows  
when we  
keep traffic moving**

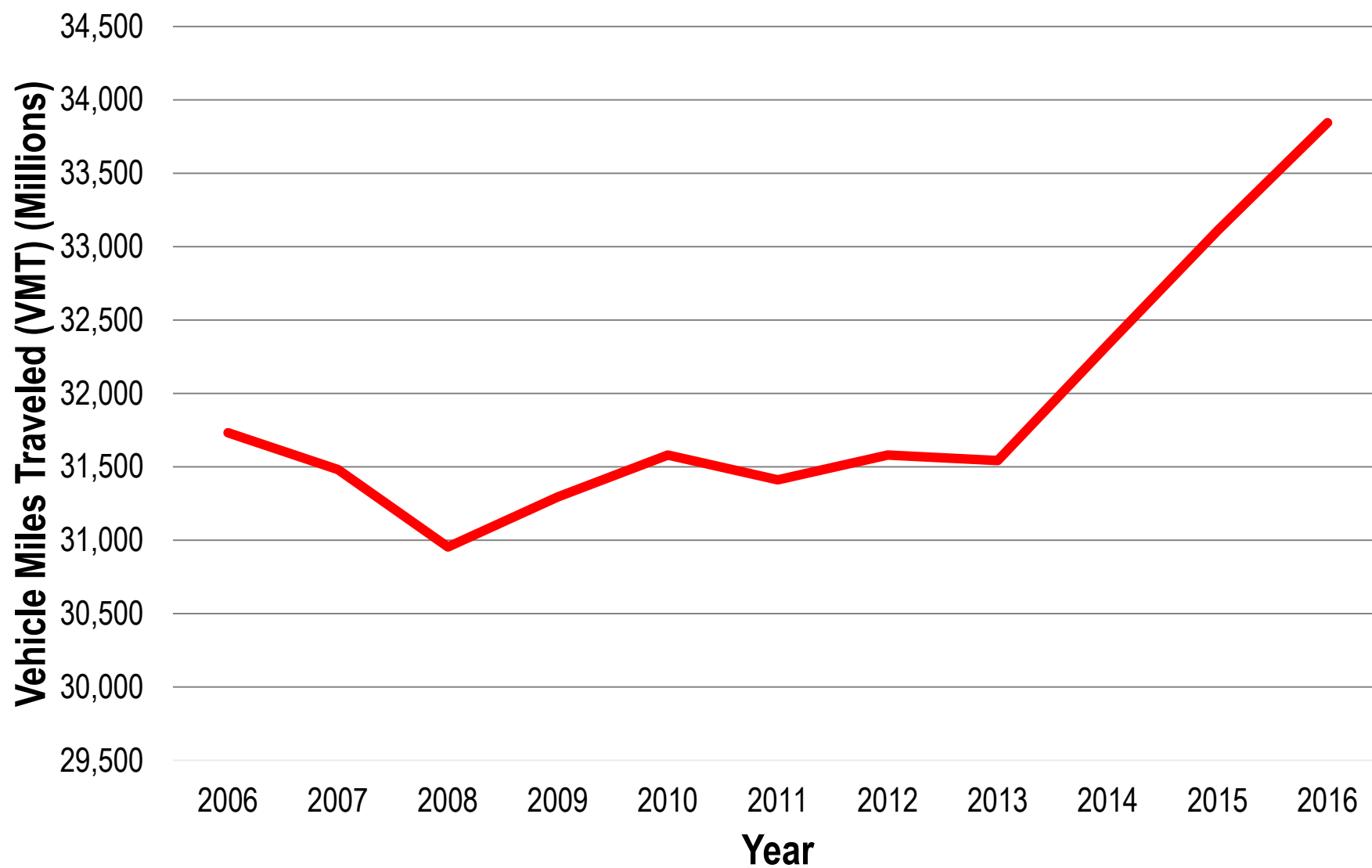


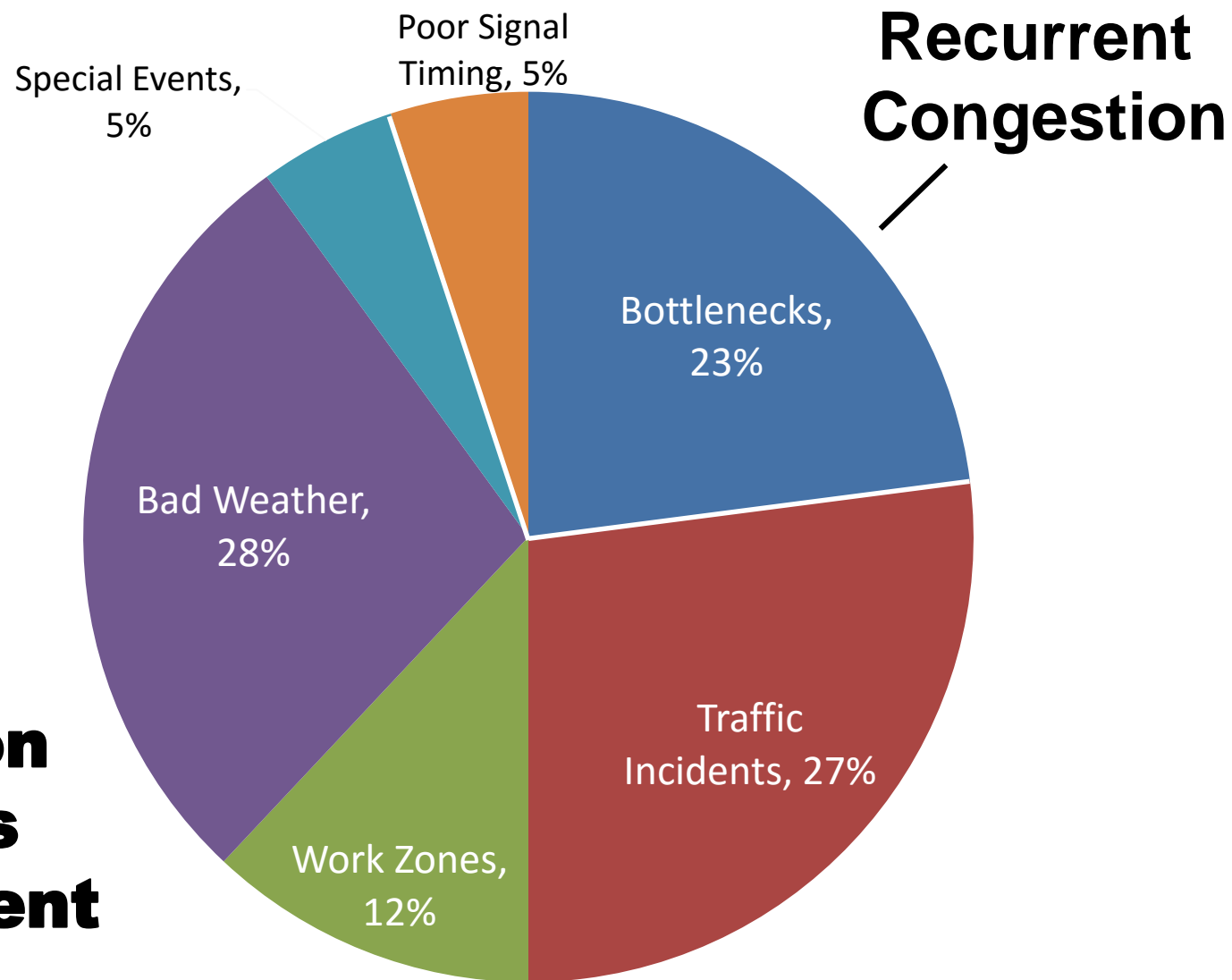
**Problem** continues  
to **GROW**





## Vehicle Miles Traveled (VMT) in Iowa 2006-2016





**77% of  
Congestion  
in Iowa is  
Non-recurrent**





**How** did  
we start  
on the path to  
**change?**



# Realizations –

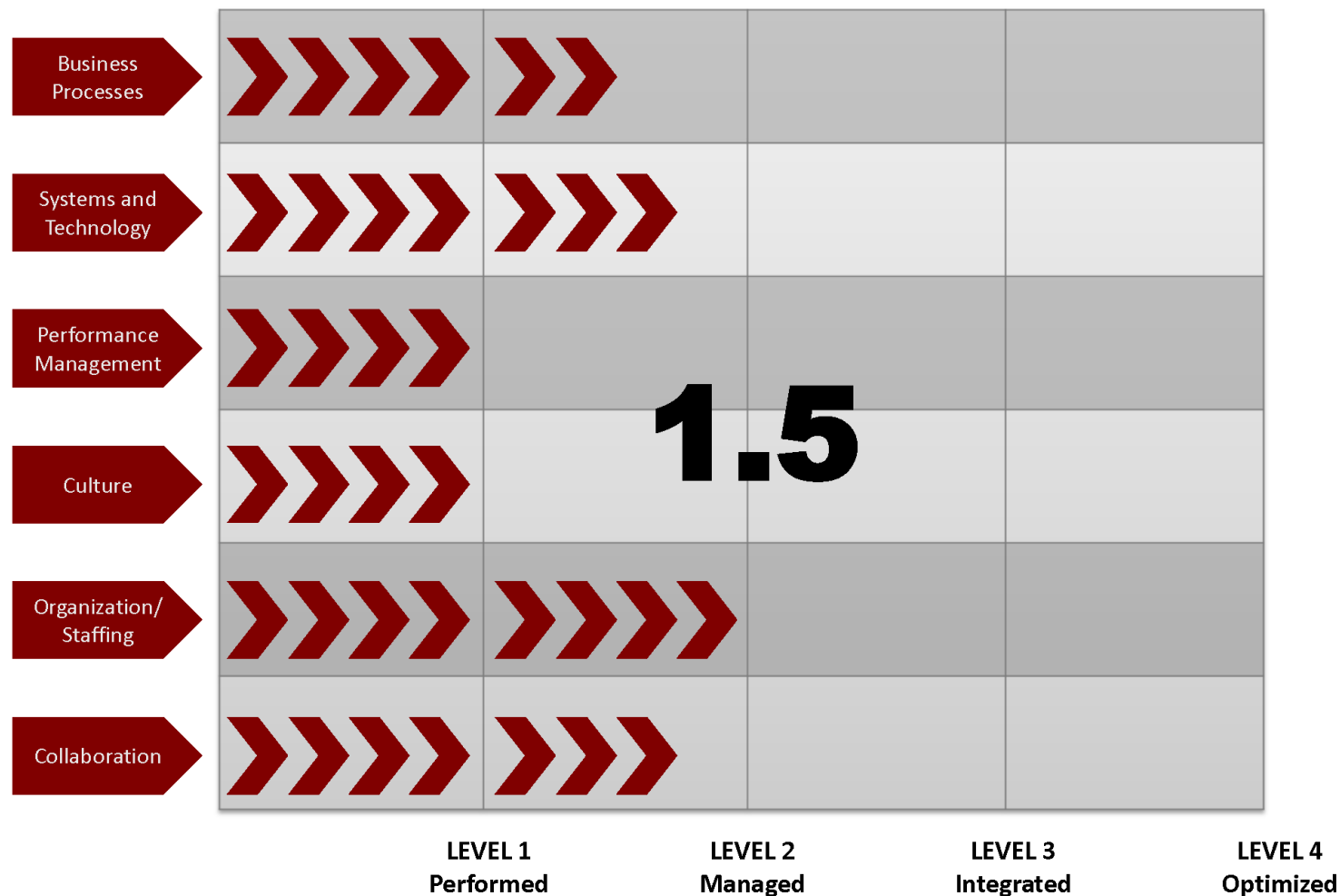
- Can't only be carried by champions
- Every part of agency has to understand concept
- Must become a part of how we do business



# Pushed awareness throughout agency

- 2 Capability Maturity Workshops

## TSMO Capability Maturity



# Set Maturity Goal





# Pushed awareness throughout agency

- 2 Capability Maturity Workshops
- 14 One-on-One Internal Interviews

## INTERNAL INTERVIEWS

- |   |  |
|---|--|
| <ul style="list-style-type: none"><li>• Office of Traffic Operations</li><li>• Office of Traffic and Safety</li><li>• Office of Strategic Communications</li><li>• Office of Maintenance</li><li>• Office of Construction and Materials</li></ul> | <ul style="list-style-type: none"><li>• Office of Systems Planning</li><li>• Organizational Improvement</li><li>• Districts 1,2,3,4,5, and 6</li><li>• Office of Motor Vehicle Enforcement</li></ul> |
|---|--|



# Pushed awareness throughout agency

- 2 Capability Maturity Workshops
- 14 One-on-One Internal Interviews
- 2 Internal TSMO Workshops

## INTERNAL INTERVIEWS

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|---|--|



# Engaged Externally

- 2 Operations-Focused Sustainability Workshops with External Stakeholders
- 1 External Partner and 1 External Stakeholder Focus Group

## EXTERNAL FOCUS GROUPS

- |   |   |
|---|---|
| <ul style="list-style-type: none"><li>• ABATE of Iowa</li><li>• Associated General Contractors (AGC) of Iowa</li><li>• Agribusiness Association of Iowa</li><li>• Iowa Association of Business and Industry (ABI)</li><li>• Petroleum Marketers &amp; Convenience Stores of Iowa (PMCI)</li><li>• Iowa Tourism Office, Iowa Economic Development Authority</li><li>• International Traders of Iowa (ITI)</li><li>• Des Moines West Side Chamber of Commerce</li></ul> | <ul style="list-style-type: none"><li>• Iowa Emergency Management Association</li><li>• Corridor MPO – Cedar Rapids area</li><li>• Iowa Chapter of the American Traffic Safety Services Association (ATSSA)</li><li>• Iowa EMS Association</li><li>• Iowa Northland Regional Council of Governments (INRCOG) – Waterloo/Cedar Falls MPO</li><li>• City of Ames and Ames Area MPO</li><li>• Des Moines Area Metropolitan Planning Organization (DMAMPO)</li><li>• Highway 61 Coalition</li></ul> |
|---|---|



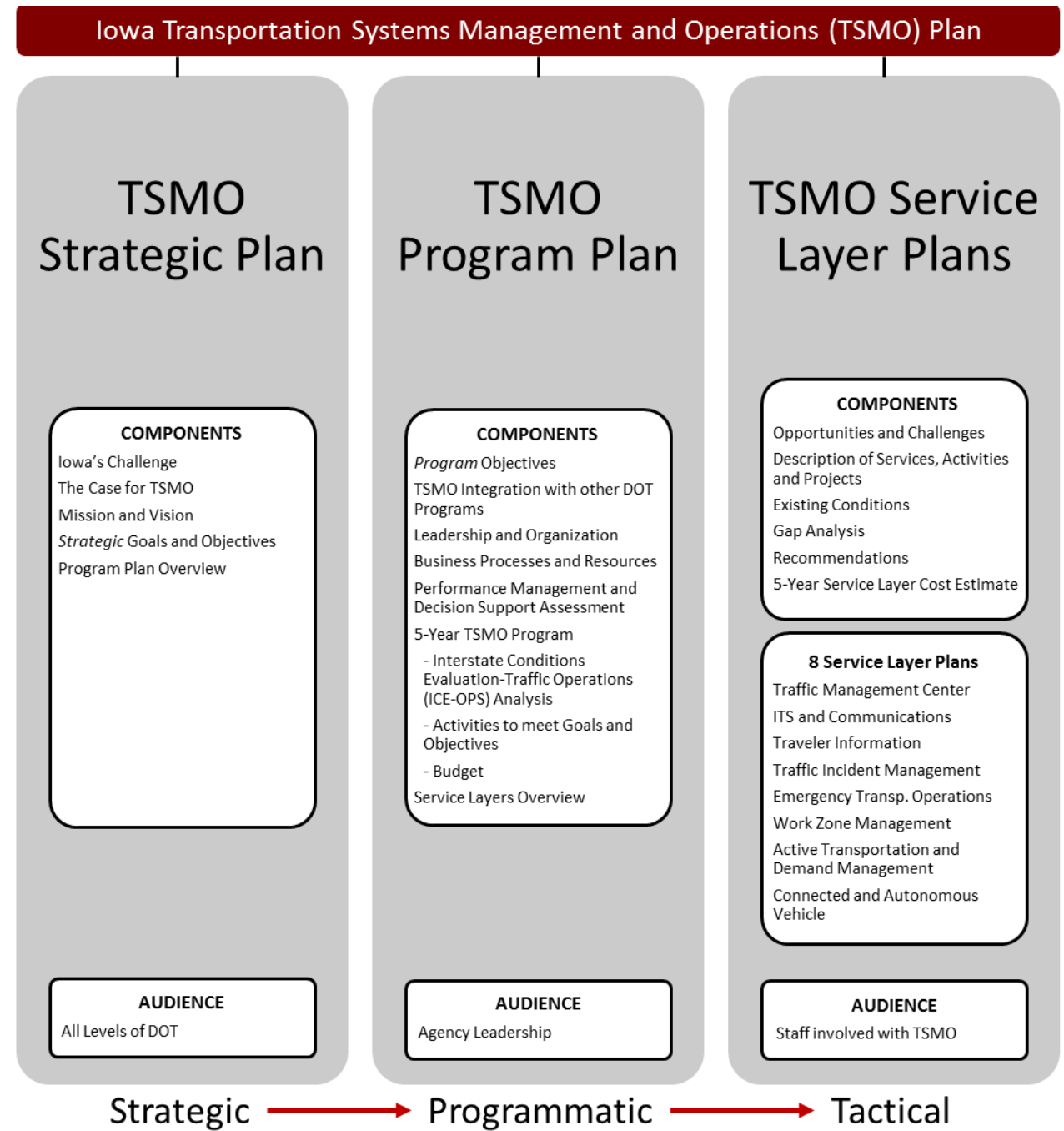


# Initial outreach focused on:







- TSMO Overview
  - The **“What”** and **“Why”**
- How do we coordinate and support each other?
  - The **“Who”**
- How do we implement, identify/remove barriers, and support each other?
  - The **“How”**



# We created a **Plan** (or three)



# TSMO Strategic Goals & Objectives

Strategic Goal		Strategic Objective
	1. <i>Safety</i>	Reduce crash frequency and severity
	2. <i>Reliability</i>	Improve transportation system reliability, increase system resiliency, and add highway capacity in critical corridors
	3. <i>Efficiency</i>	Minimize traffic delay and maximize transportation system efficiency to keep traffic moving
	4. <i>Convenience</i>	Provide ease of access and mobility choices to customers
	5. <i>Coordination</i>	Engage all DOT disciplines, and external agencies and jurisdictions to proactively manage and operate the transportation system
	6. <i>Integration</i>	Incorporate TSMO strategies throughout DOT's transportation planning, design, construction, maintenance, and operations activities





# TSMO Program Schedule

Plan Description	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
TSMO Strategic and Program Plans											
Accomplishment Year Plan											
5-Year Annual Budget Forecast w/ ICE-OPS											
INVEST Sustainability Assessment											
CMM Self-Assessment											
SL1. Traffic Management Center											
SL2. ITS and Communications											
SL3. Traveler Information											
SL4. Traffic Incident Management											
SL5. Emergency Transportation Operations											
SL6. Work Zone Management											
SL7. Active Transportation and Demand Management											
SL8. Connected and Autonomous Vehicle											



# Plan Schman, **What about implementation?**

We still lived in a culture of silos



# Initial silo busting

- Created an Office of Traffic Operations
  - Absorbed highly TSMO related positions (ITS, emergency opps, etc.)
- Created a website to house plans and updates
- Video that very simply explained TSMO Concepts





# Initial silo busting

- Created an Office of Traffic Operations
  - Absorbed highly TSMO related positions (ITS, emergency opps, etc.)
- Created a website to house plans and updates
- Video that very simply explained TSMO Concepts
- Held internal launch workshop
  - Hosted jointly by FHWA and Iowa DOT for added credibility
  - Involved 100 individuals throughout agency





# Active involvement

Engage staff throughout agency in each service layer working group

## TSMO Service Layers

**Traffic Management Center**



**ITS and Communications**



**Traveler Information**



**Traffic Incident Management**



**Emergency Transportation Operations**



**Work Zone Management**



**Active Transp. and Demand Management**



**Connected and Autonomous Vehicle**



# Ongoing initiatives

- Working to condense National Operations Academy (2 weeks) to create Iowa Operations Academy (2-3 days)
- Distribute monthly performance reports (incidents, clearance time, secondary incidents)
- Traffic Management Center dashboard for executive management





**3 Active Bottlenecks**

Roadway	At Mile	Time Active	Speed
1   I 35 S	66.5 to 62.6	36 min	22%
2   I 80; US 6 W	151.1	6 min	34%
3   I 29 S	62.1	30 min	38%



**2 Active Crashes**

Location	Event	Time Active
1   I-35 SB @ PAST EXIT 65	RIGHT LANE BLOCKED	39 min
2   I-80 WB @ PAST EXIT 149	2 VEHICLE CRASH	22 min

**Incidents by Type**

Type	Count
STALLED VEHICLE	15
RIGHT LANE BLOCKED	1
2 VEHICLE CRASH	1



**Road Conditions**

Condition	Percentage
Seasonal	100%
Partially Covered	0%
Completely Covered	0%
Travel Not Advised	0%
Impassable	0%

**District 1 Bar Chart**

District	Seasonal	Partially Covered	Completely Covered	Travel Not Advised	Impassable
1	100%	0%	0%	0%	0%
2	100%	0%	0%	0%	0%
3	100%	0%	0%	0%	0%
4	100%	0%	0%	0%	0%
5	100%	0%	0%	0%	0%
6	100%	0%	0%	0%	0%



# Communicating to public

- Common sense
  - Why haven't you been doing this all along?
- Difficult to understand
  - Budget constraints make sense until it has personal impact



# Communicating to public

- Weave TSMO concepts and resources (traveler info) into press releases regarding programming, construction, seasonal traffic impacts
- Use social media







## Iowa Department of Transportation

Published by TJ Bramble [?] · April 7 at 2:26pm ·



## New technologies make Iowa roads safer

Last year, 13 people died in crashes in Iowa roadways. In every crash, there is usually more than one specific cause. 94 percent of all fatal crashes can be attributed to actions taken by the driver.

To reduce the number of work zone crashes and further improve traffic flow, four years ago the Iowa Department of Transportation began a Traffic Critical Projects ...

See More



## Iowa Department of Transportation

Published by Sprout Social [?] · March 27 at 11:07am ·

We're working hard to keep you moving! Our Traffic Management Center in Ankeny dealt with nearly 25,000 incidents last year. These range from crashes to disabled vehicles to debris on the road and more. The TMC helps coordinate response and keep you informed by putting information on Iowa's 511 system.

### 2016 Traffic Management Center Performance.

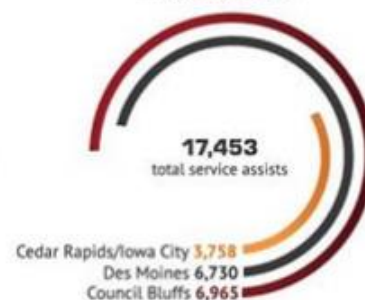
Supported  
**24,931**  
Traffic Incidents



#### Average Clearance Times



#### Highway Helper



## Iowa Department of Transportation

Published by Sprout Social [?] · March 31 at 10:44am ·

on for road conditions has all the info on how your travels <https://hb.511ia.org>

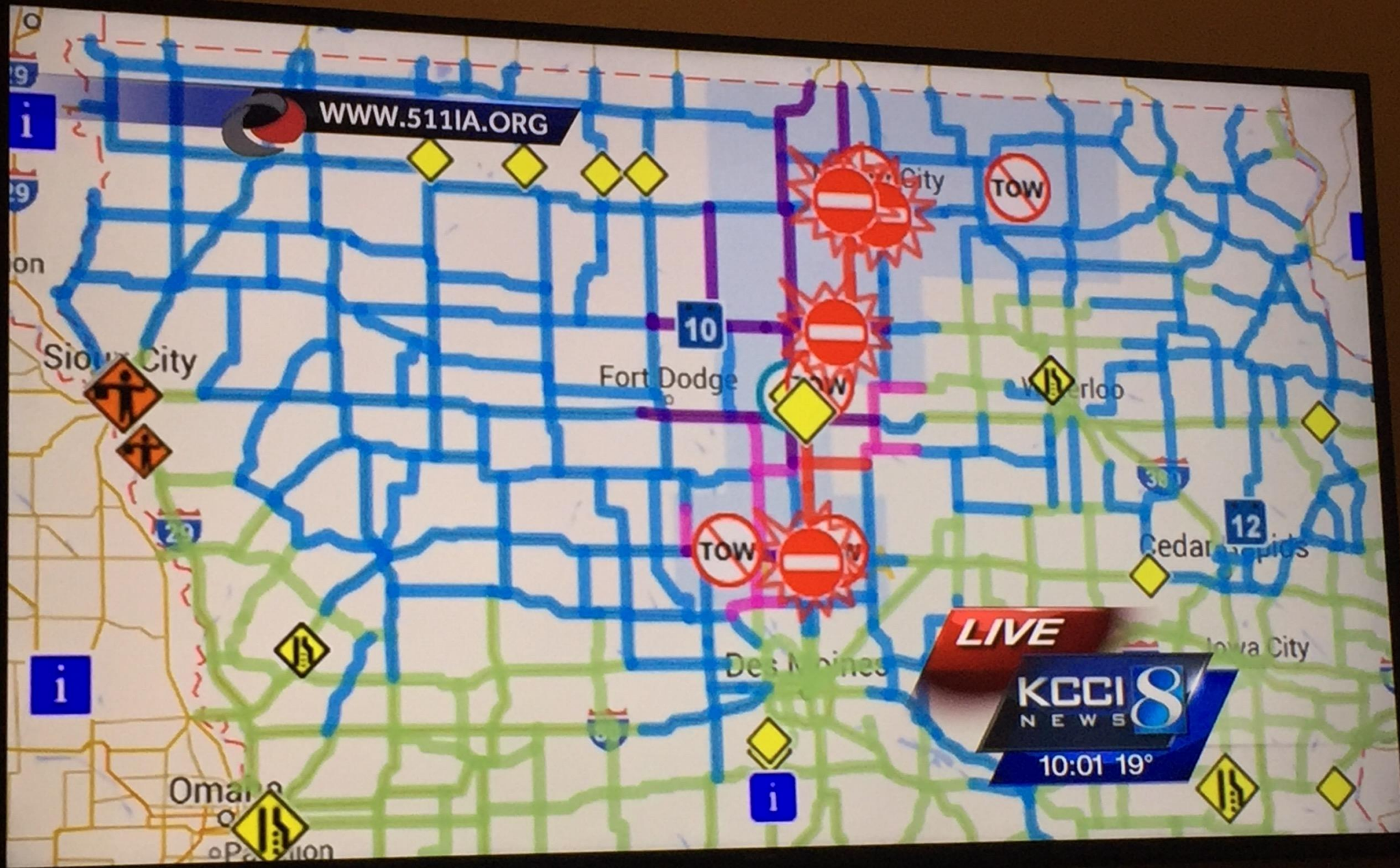


# Communicating to public

- Weave TSMO concepts and resources (including new resources) into press releases regarding programming, construction, seasonal traffic impacts
- Use social media
- Work with communication partners to share information consistently







# Lessons learned

- Continual outreach internally and externally
  - Ask stakeholders for feedback
- If we set up groups make sure they have the authority to implement not just direct or set policy
- Can't do it all, must define our role
  - How can we engage third parties
  - Can they do it better, cheaper, faster?
- Make sure everything we does relates to vision and mission



# TSMO VISION

*Iowa's transportation system is safe, efficient and reliable, supporting the state's environmental and economic health as a result of TSMO*

# TSMO MISSION

*To get you there safely and reliably by proactively managing the transportation system*