# The Next Era of Traveler Information

# Outline

- **Introduction**
- Current Practices: Agencies
- Current Practices: Travelers
- Peer Exchange
- Questions





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# Introduction

- What is a transportation pooled fund?
  - Allows federal, state, and local agencies and other organizations to combine resources to support transportation needs
  - Federal, state, regional or local transportation agencies may initiate pooled fund studies
    - Private companies, foundations, and colleges/universities may partner with any or all of the sponsoring agencies to conduct pooled fund projects
  - Approved by FHWA

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# Introduction

- ENTERPRISE Goals
  - Facilitate rapid progress in the development and deployment of (creative) ITS technologies
  - Accelerate the systematic advancement of selected ITS projects
    - Members carry out ITS projects and activities including fundamental research, technology development, demonstration, standardization and deployment
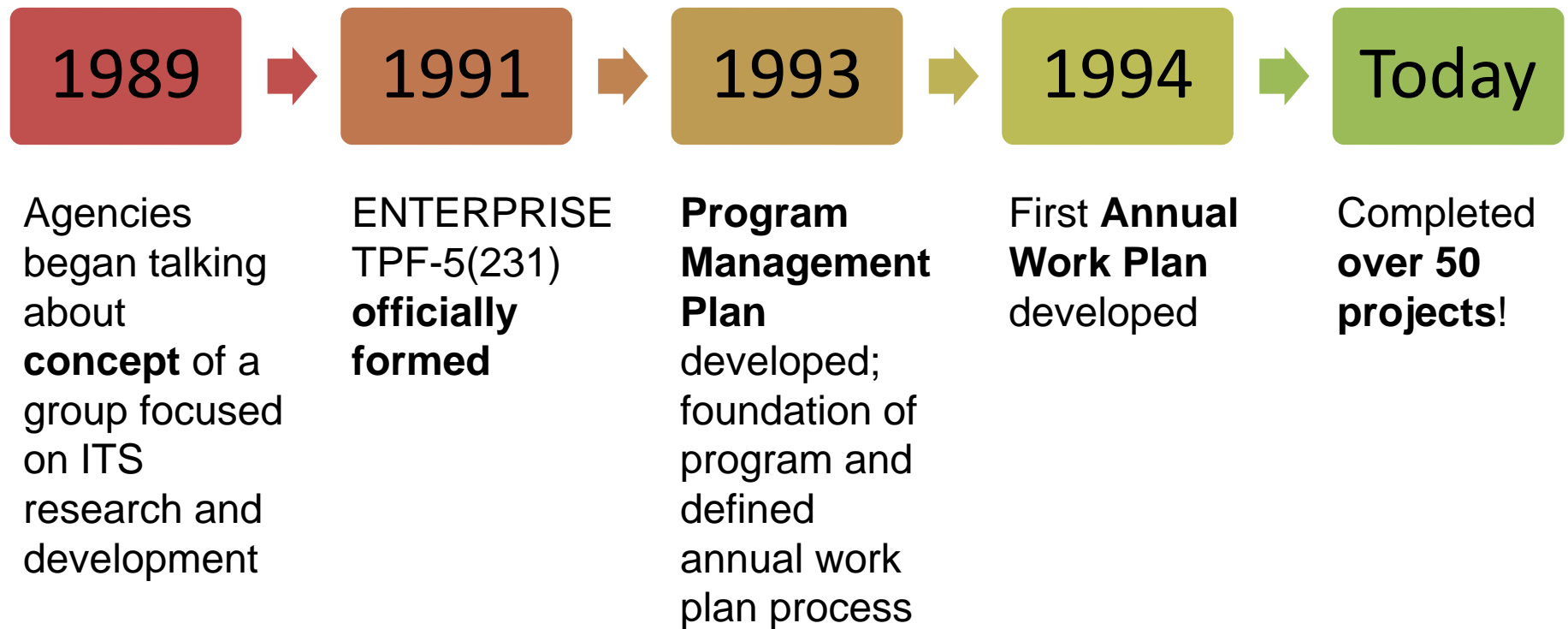
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# Introduction

## ENTERPRISE Members

- Arizona DOT
- Georgia DOT
- Idaho Transportation Department
- Illinois DOT
- Iowa DOT
- Kansas DOT
- Maricopa County, Arizona
- **Michigan DOT*****
- Minnesota DOT
- Mississippi DOT
- Oklahoma DOT
- Texas DOT
- Virginia DOT
- Washington State DOT
- Ontario Ministry of Transport
- Transport Canada
- Rijkswaterstaat (Dutch Ministry of Transport)
- FHWA

*Michigan administers program and is a founding member*

# Introduction

## ENTERPRISE Milestones

| 1989 | 1991 | 1993 | 1994 | Today |
|------|------|------|------|-------|
| Agencies began talking about **concept** of a group focused on ITS research and development | ENTERPRISE TPF-5(231) **officially formed** | **Program Management Plan** developed; foundation of program and defined annual work plan process | First **Annual Work Plan** developed | Completed **over 50 projects**! |

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# Introduction

## ENTERPRISE Management Structure

| | |
|---|---|
| **Chair (Elected)** | **Board of Directors** |
| **Project Champions** | **Program Administration** |

**Program Support (Consultant)**
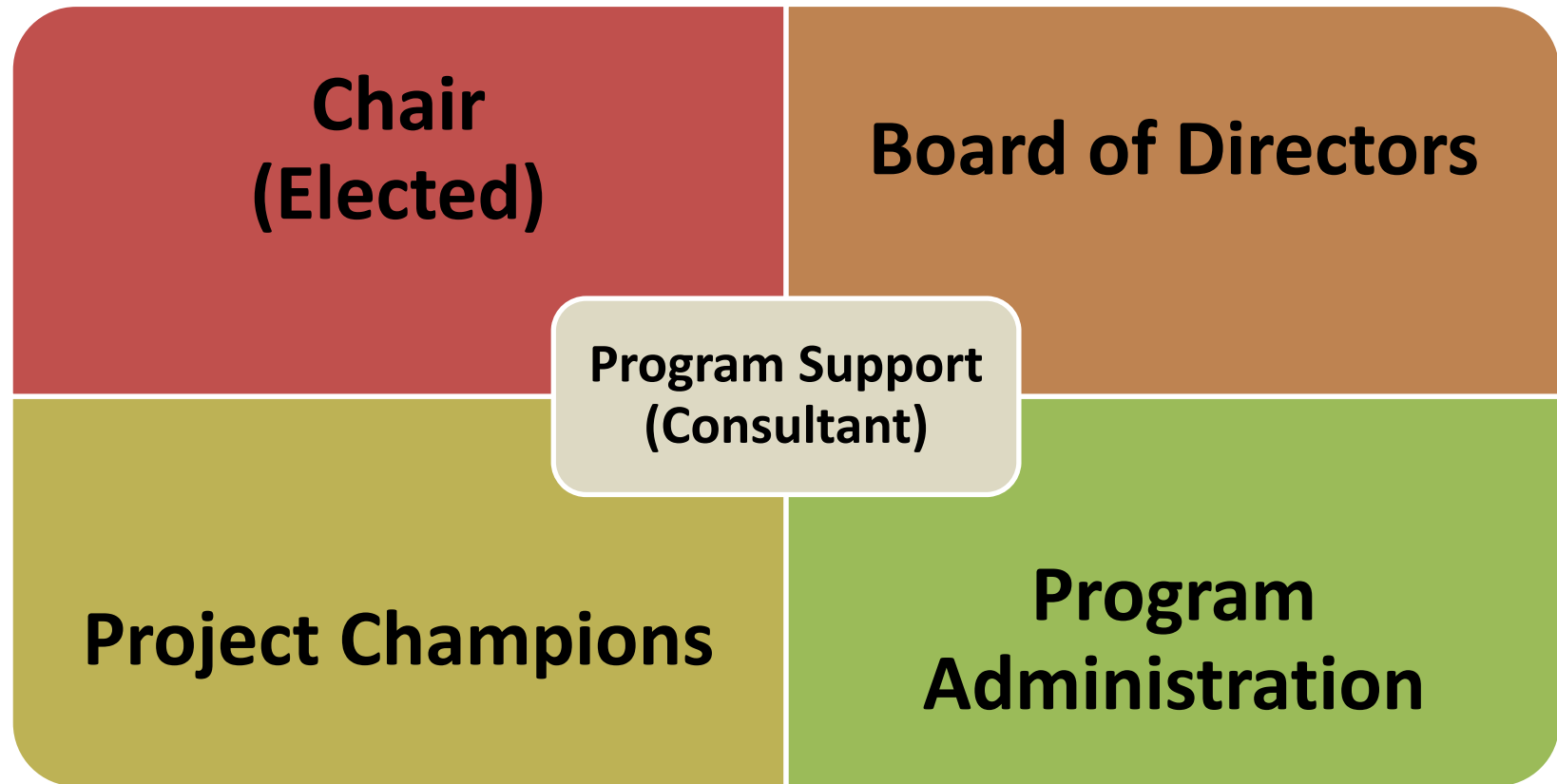
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# Introduction

- ENTERPRISE Benefits
  - Has allowed investigation of higher risk projects with less commitment
  - Has facilitated a collaborative peer-based environment for information sharing
  - Has helped leverage and share a deep pool of ITS and operations experience
  - Has helped implement cross-agency sharing and coordination

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# Introduction

- Recent ENTERPRISE Projects
  - Developing Consistency in ITS Safety Solutions – Intersection Conflict Warning Systems
  - Warrants for ITS Devices
  - Intelligent Work Zones – Synthesis of Best Practices
  - Understanding Utilization of Third Party Travel Data and Information
  - *Impacts of Travel Information on the Overall Network*
  - *Next Era of Traveler Information*

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# Introduction

- Impetus for projects
  - Anticipating Real-Time Management Information Program (23 CFR 511 or Section 1201) requirements
  - Budget constraints continue
  - Things evolve rapidly
  - ENTERPRISE members want to understand
    - New dissemination options and customer needs for them
    - Ways to minimize operating costs
    - Sources of data available
    - Performance targets and measurement
    - Travelers' response to traveler information

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# Outline

- Introduction
- **Current Practices: Agencies**
- Current Practices: Travelers
- Peer Exchange
- Questions

# Current Practice: Agencies

- ENTERPRISE surveyed states in spring 2012 to better understand agencies' current practice
  - 511 Coalition contacts and ENTERPRISE updates
  - 26 states, 1 metropolitan region responded
  - Administered via SurveyMonkey
- Questions grouped into three categories
  - Dissemination
  - Data
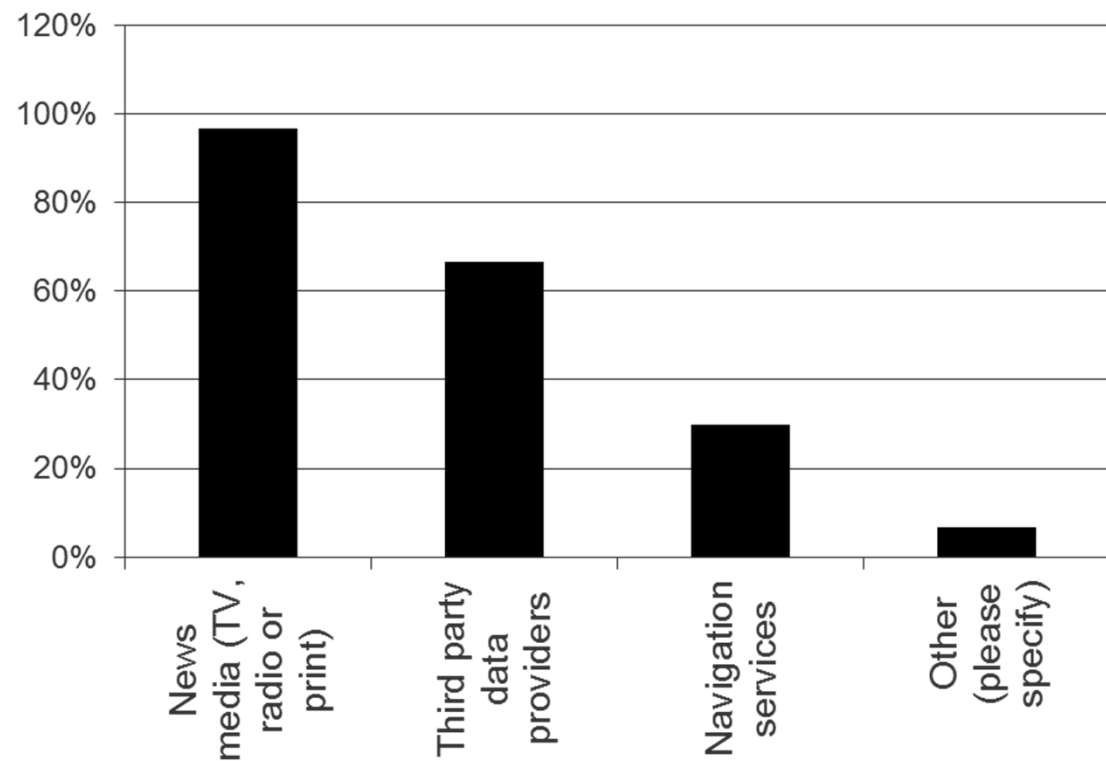  - Operational Practices

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# Current Practice: Agencies



Dissemination Tools Being Used by Agencies
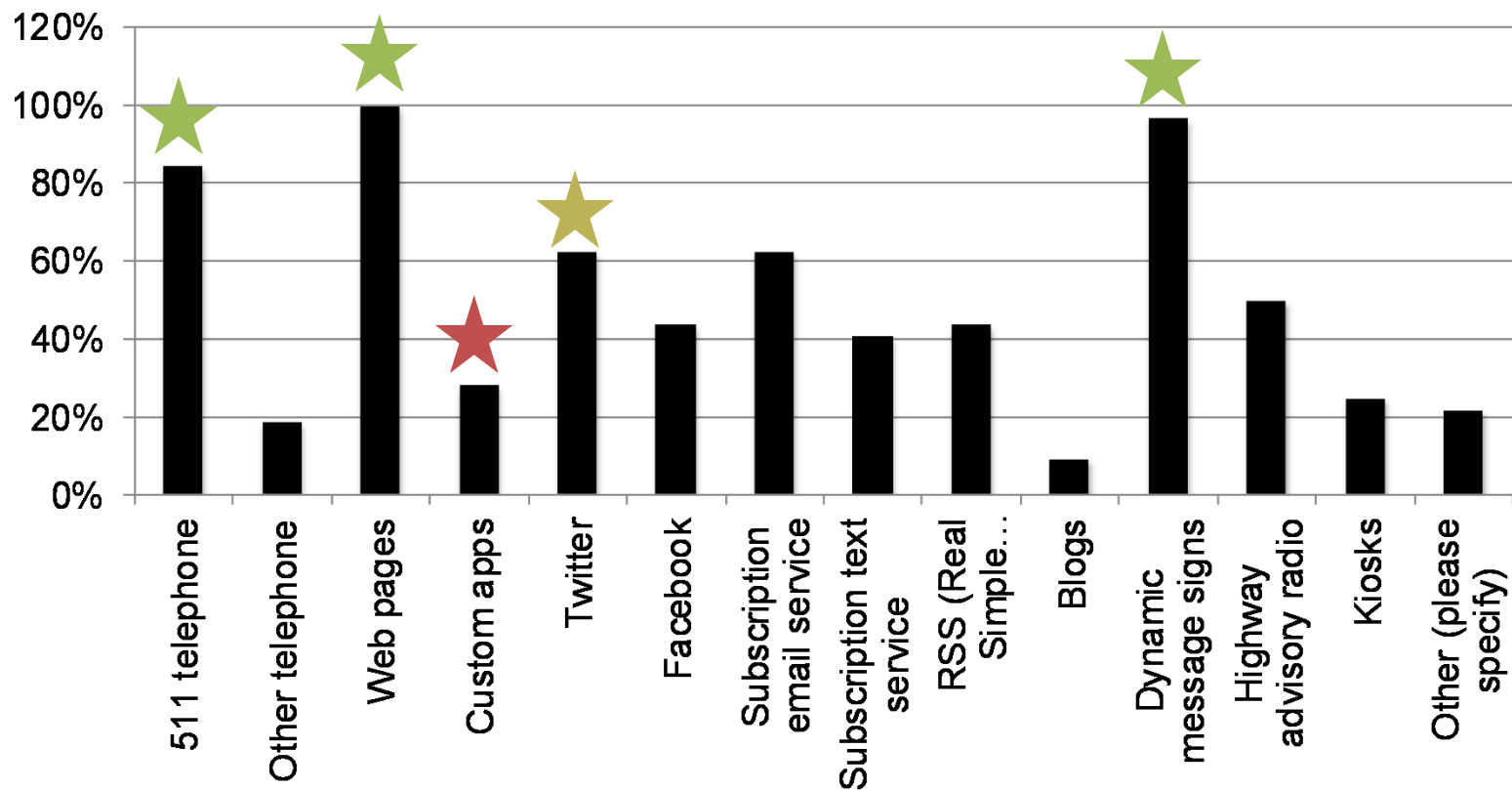
# Current Practice: Agencies

- Most also disseminate data to other sources for distribution to travelers

  – Typically via web using XML data feeds
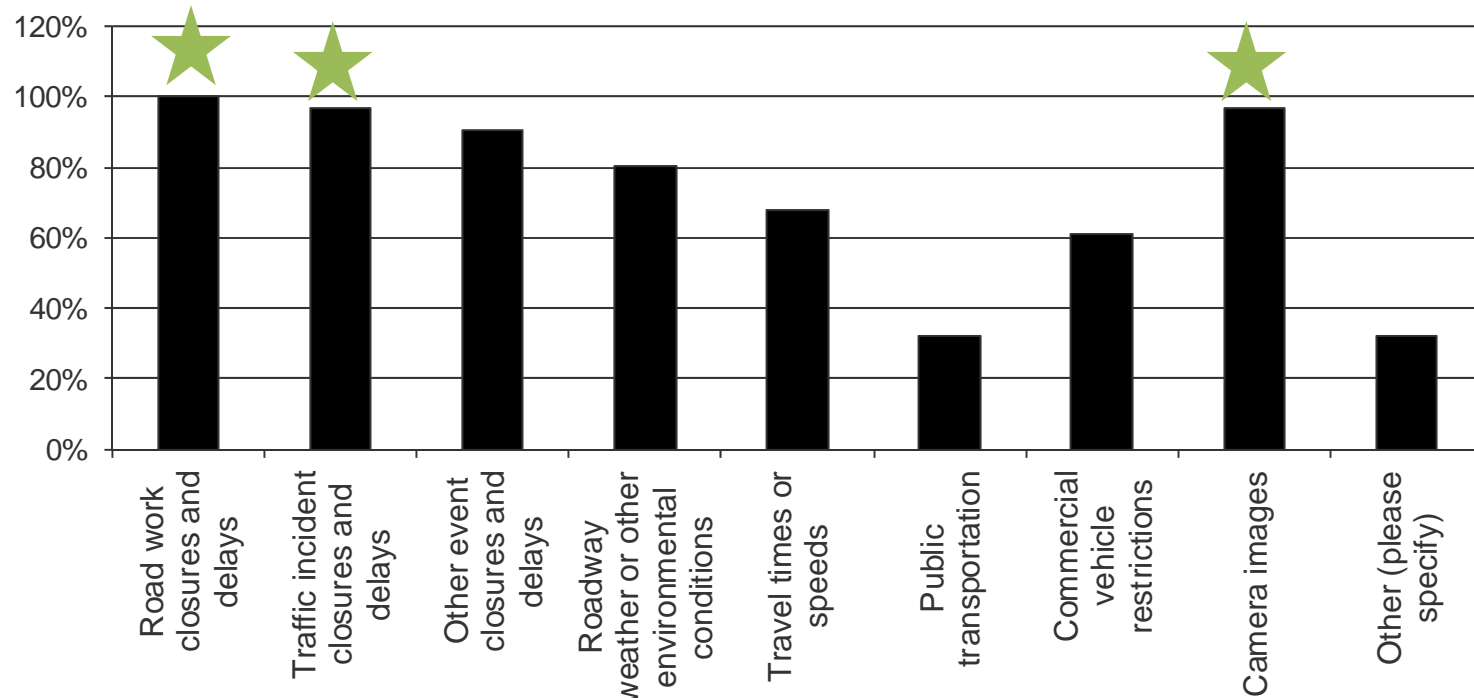
**Data Disseminated to Other Sources**



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# Current Practice: Agencies

- Data
  - Getting close to meeting 23 CFR 511/1201

### Types of Data Disseminated

# Current Practice: Agencies
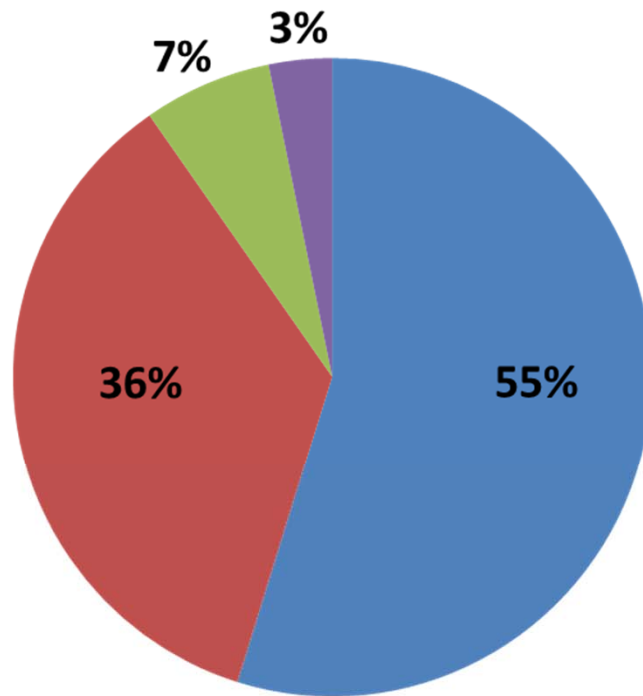
- Data

  - How is data being gathered?
    - Transportation staff (94%)
    - Network detection (81%)
    - Purchased third party (26%)
    - Traveler reports (19%)
    - Others included weather services, other agencies, toll tag readers

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# Current Practice: Agencies

- Operational Practices

**Agency Vision**



Pie chart: 55%, 36%, 7%, 3%

- Premiere provider of real-time traveler information
- Basic provider of real-time traveler information
- Basic provider of data for other organizations to disseminate real-time traveler information
- Premiere provider of data for other organizations to disseminate real-time traveler information

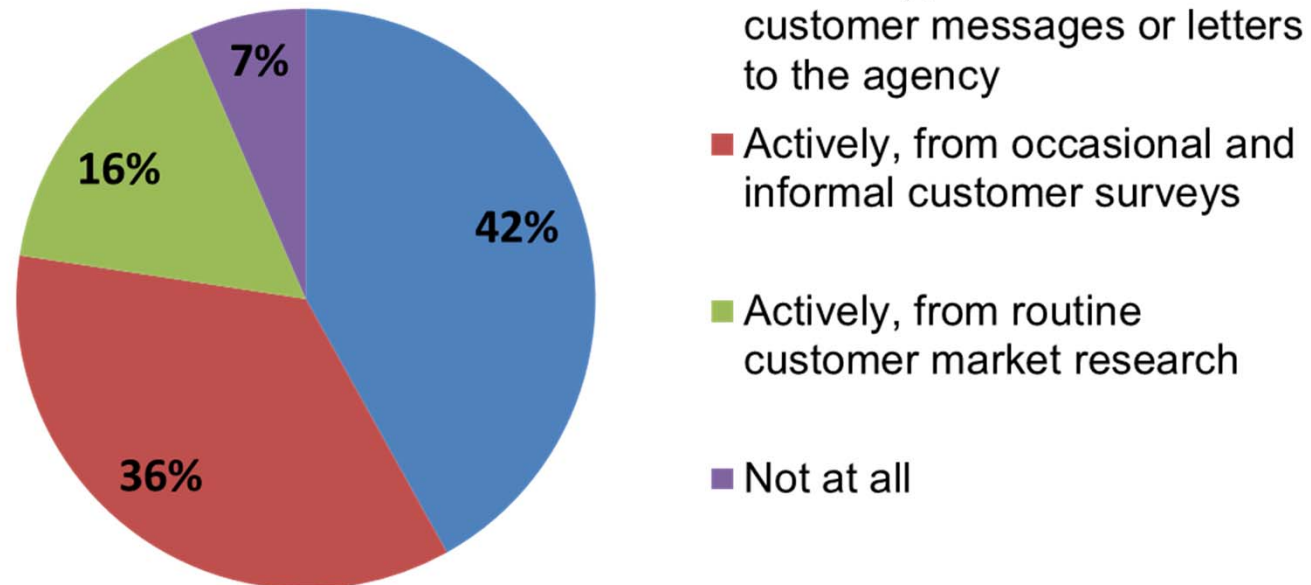ENTER PRISE

# Current Practice: Agencies

- Operational Practices
  - Over half have established program goals (55%)
    - Meeting 23 CFR 511/1201 was most common
    - Some focused on releasing updated versions of services
  - Fewer have performance targets and measures (39%)
    - Additional references to 23 CFR 511/1201
    - Others referenced minimizing downtime, increasing awareness and improving traffic operations
    - MAP-21 will influence

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# Current Practice: Agencies

- Operational Practices

**Seeking Customer Feedback**



- **Passively, from random customer messages or letters to the agency** — 42%
- **Actively, from occasional and informal customer surveys** — 36%
- **Actively, from routine customer market research** — 16%
- **Not at all** — 7%

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# Current Practice: Agencies

- ## Operational Practices
  - Some agencies partner with others to generate revenue in support of program (23%)
    - One entire program has been turned into an "ad-supported venture"
    - Others are just beginning their partnerships

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# Current Practice: Agencies

- **Operational Practices**
  - Thoughts on traveler information in 10 years...
    - Continued technology evolution
    - Agencies collect data only and others disseminate information
    - Integration with Connected Vehicles
    - Connected Vehicle replaces infrastructure and lowers agency costs
    - Face of the agency

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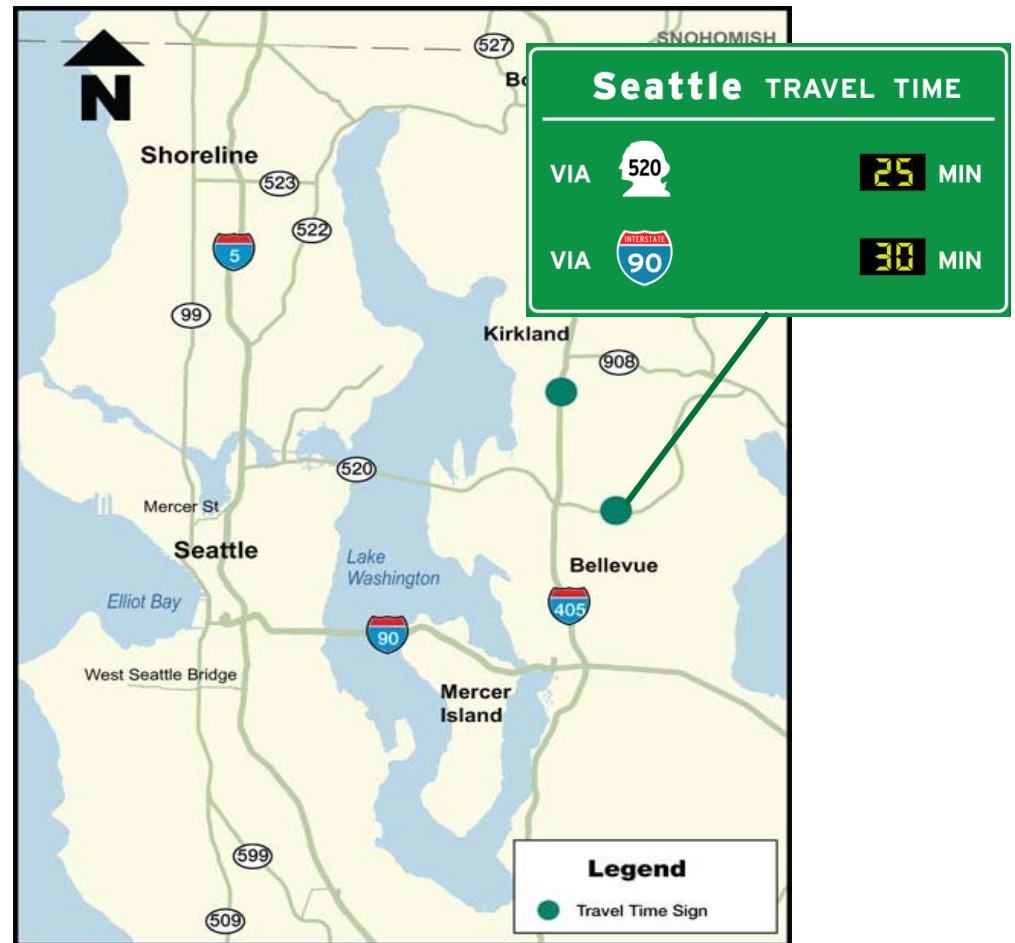
# Current Practice: Travelers

- **Understand how travelers' response to information impacts the network**
  - Data Comparisons
    - Travel times posted – volume along alternate routes
    - Minneapolis/St. Paul and Seattle data
      - Both archive travel time messages and roadway volumes
  - Survey of Travelers
    - How do they use travel time displays?
    - How often do they divert? Can they explain when?

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## Minnesota Data Comparison

- Analysis of travel times and diversions
  - Travel times **5-10 minutes longer** than typical
    - Most likely cause a diversion
    - **7-12%** change in diversion percentage
  - Travel times **greater than 10 minutes longer** than typical
    - Almost definitely cause a diversion
    - **12-20%** change in diversion percentage
  - If traffic is very slow or stopped, travel times
    - Better educate travelers
    - Cause more diversions when very slow; less diversions when faster than 5 MPH

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# Current Practice: Travelers

## Minnesota Data Comparison
### Traffic Diversion from Mean*

| Speed (MPH) | No Travel Times on DMS | Travel Times on DMS >10 Minutes |
|:---:|:---:|:---:|
| < 5 | 14% | 24% |
| 5 – 7.5 | 14% | 18% |
| 7.5 – 10 | 11% | 12% |
| 10 – 15 | 16% | 12% |

\* Comparison between I-35W and Hiawatha (Hwy 55)

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# Current Practice: Travelers

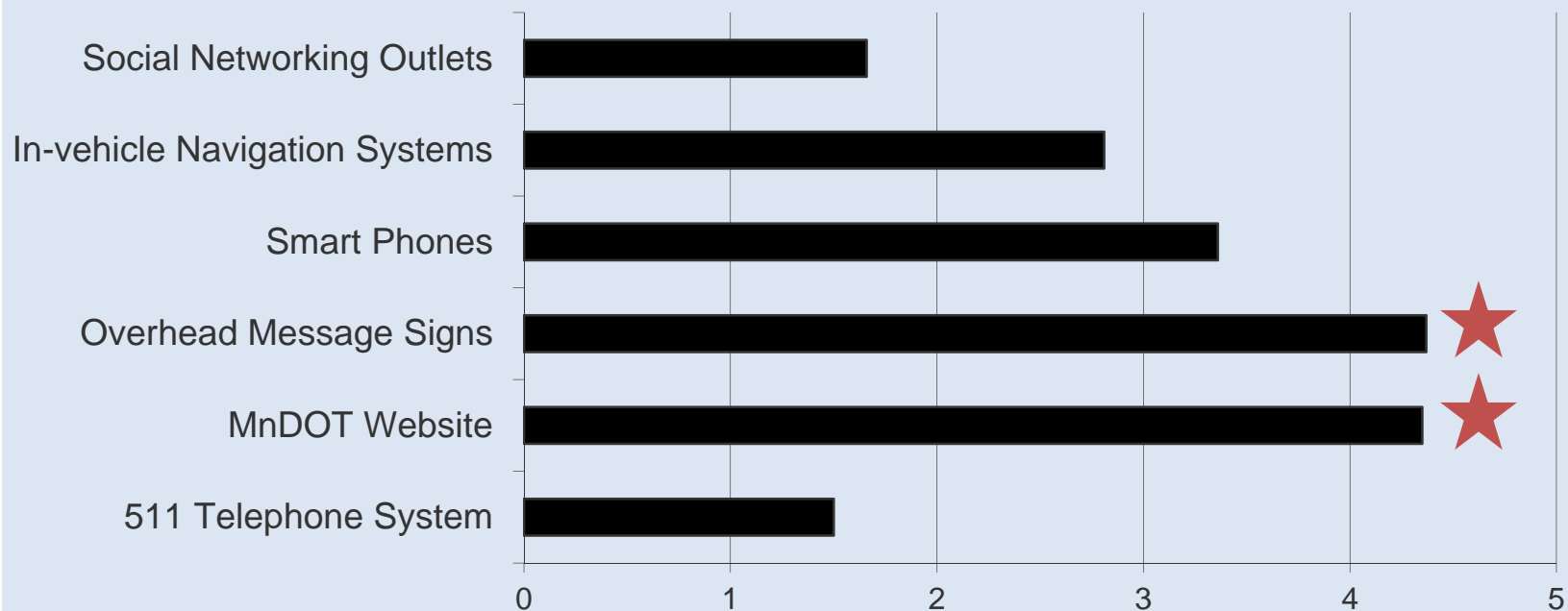## Washington Data Comparison

- Travelers on arterials (520, 522):
  - Elastic demand change when freeway alternate route travel times are longer (stay on arterial)
  - Inelastic demand change when freeway alternate routes are shorter (tend NOT to divert to freeway)
- Travelers on freeways (405, 5):
  - When they must choose 1 of 2 alternate routes, there is some diversion when travel time is roughly 10 minutes different
  - When on main route, travelers tend NOT to divert

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# Current Practice: Travelers

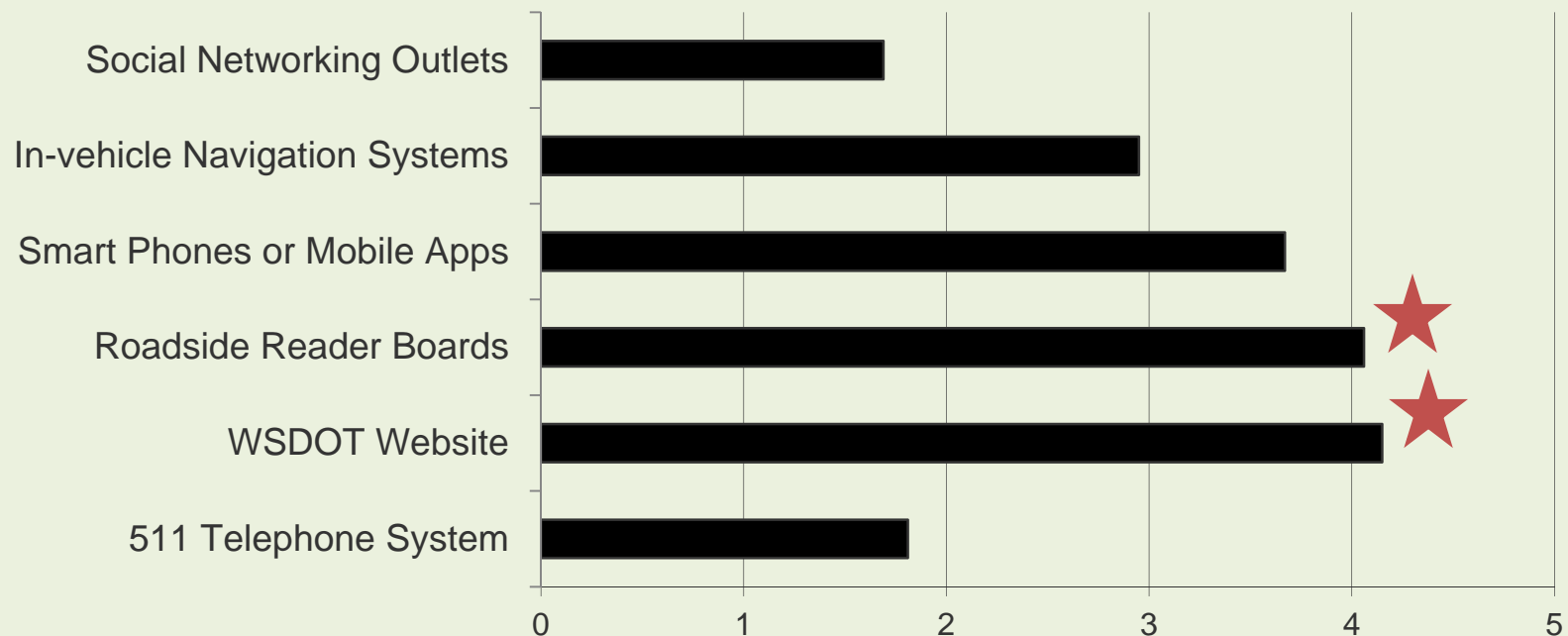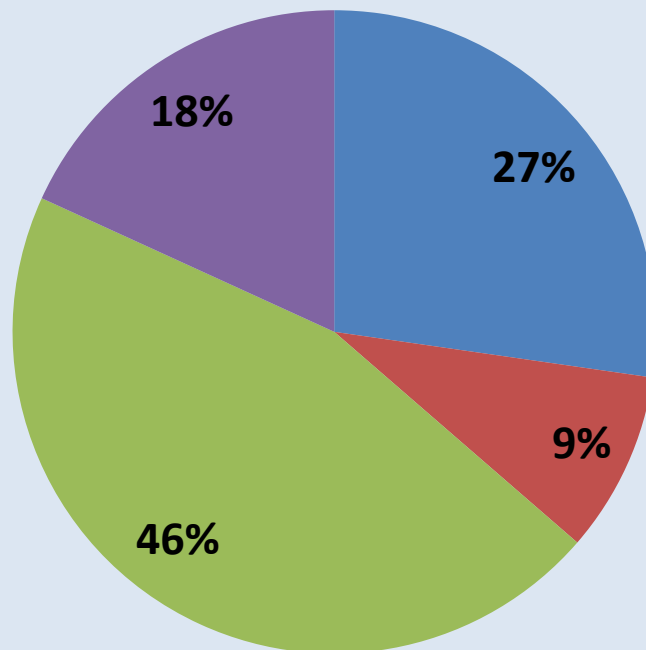## Survey of Travelers – Minnesota

**How would you prefer to receive travel information, including travel times, incident notifications, roadwork alerts and other notices? (Please Rank Options)**

# Current Practice: Travelers

**Survey of Travelers – Minnesota**

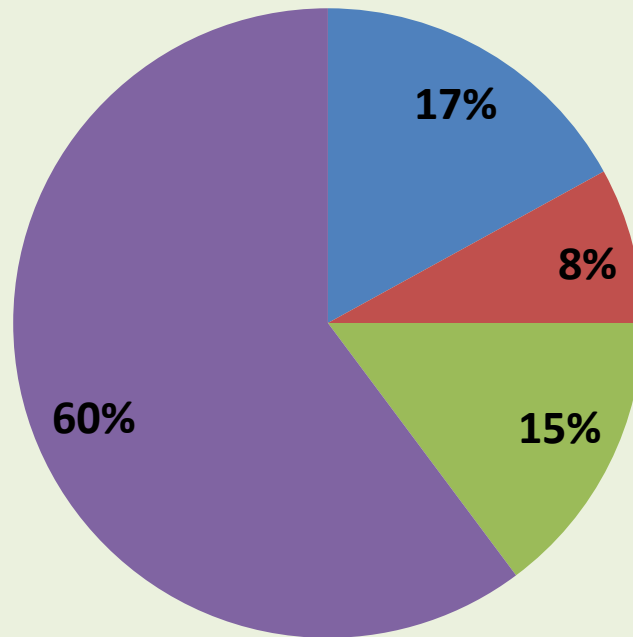**How would you describe your use of travel times?**



- ■ I check it for information to understand an upcoming trip.
- ■ I check it to decide whether to change my departure time.
- ■ I check it to decide whether to change my route. ★
- ■ A combination of all three options

Pie chart values: 27%, 9%, 46%, 18%

# Current Practice: Travelers

## Survey of Travelers – Washington

**How would you describe your use of travel times?**



- 17% — I check it for information to understand an upcoming trip.
- 8% — I check it to decide whether to change my departure time.
- 15% — I check it to decide whether to change my route.
- 60% — A combination of all three options ★

# Current Practice: Travelers

**Survey of Travelers – Minnesota**

**Did you do something different the last time you viewed a travel time message on an overhead message sign?**
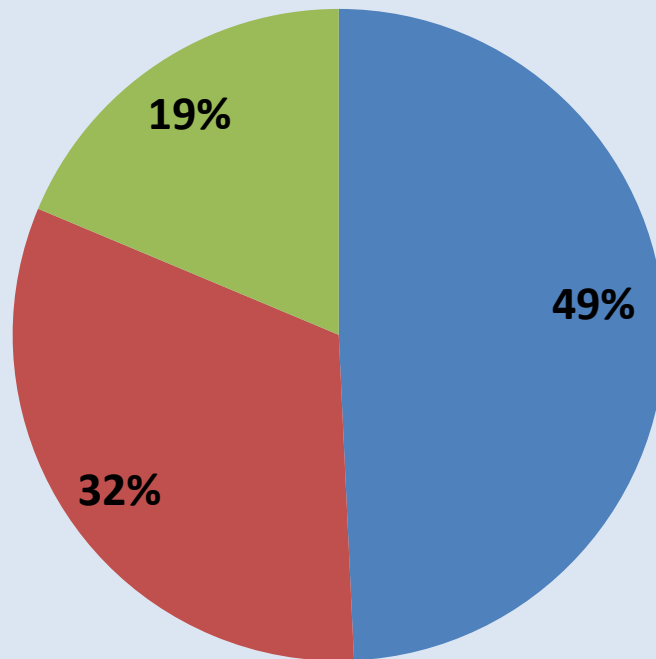


- No, the travel time was a typical time ★
- The Travel Time was longer than typical; so I changed my travel plans.
- The Travel Time was longer than typical, but I didn't change my travel plans.

49%

32%

19%

# Current Practice: Travelers

**Survey of Travelers – Washington**

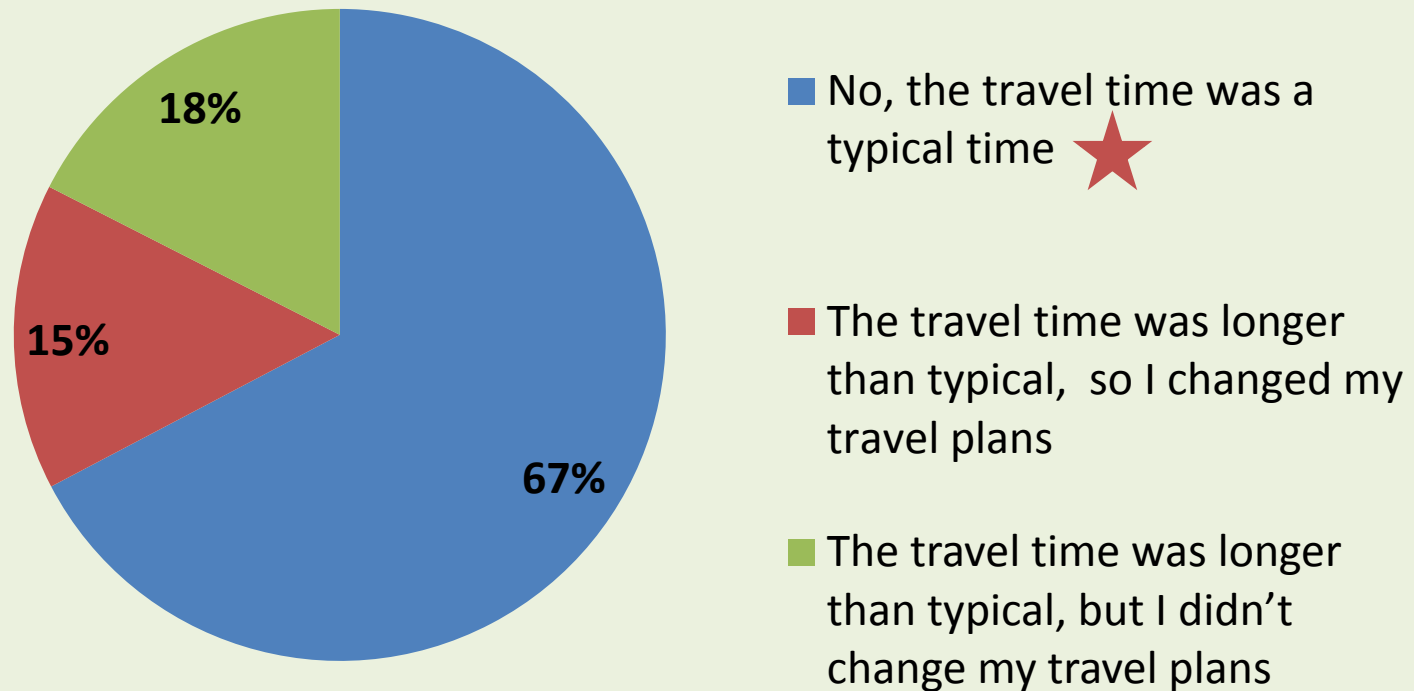**Did you do something different the last time you viewed a travel time message on roadside reader board?**



- No, the travel time was a typical time ⭐
- The travel time was longer than typical, so I changed my travel plans
- The travel time was longer than typical, but I didn't change my travel plans

18%
15%
67%

# Current Practice: Travelers
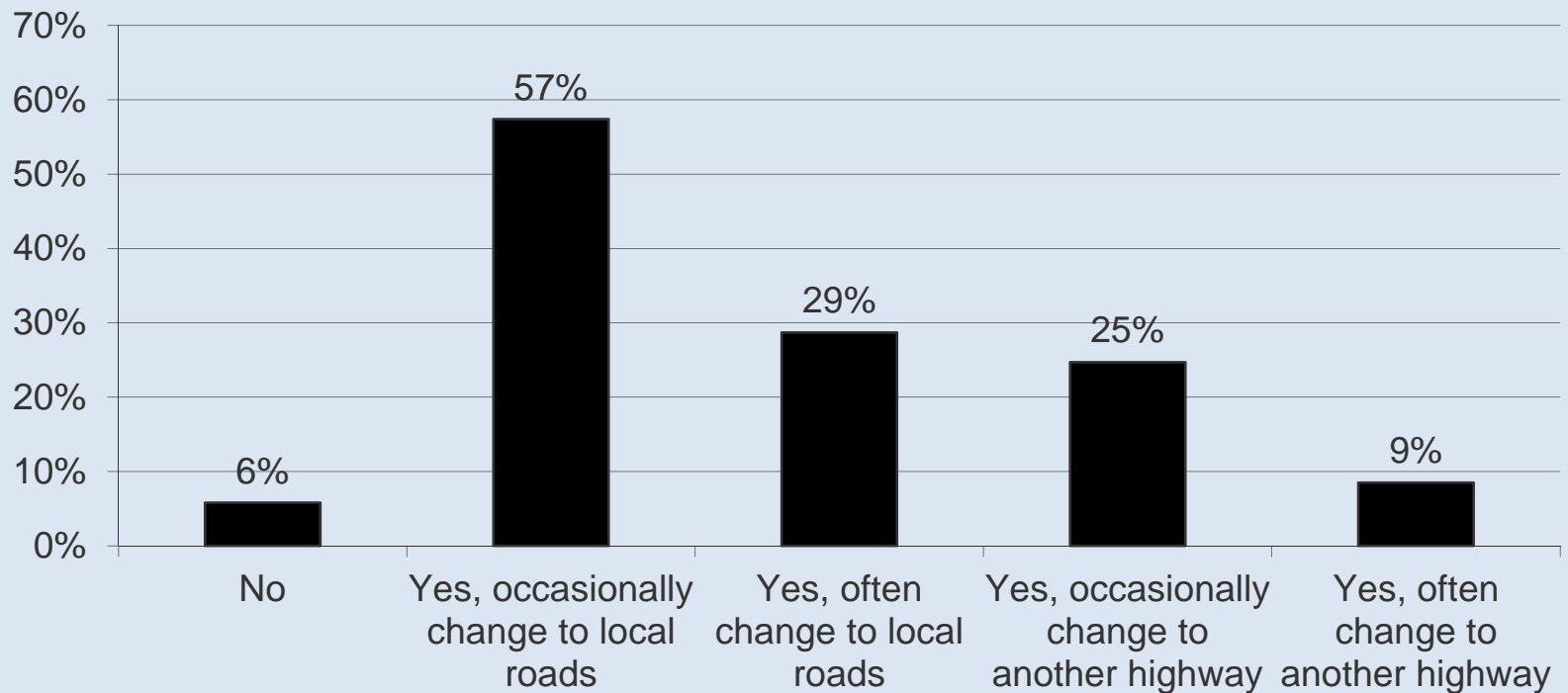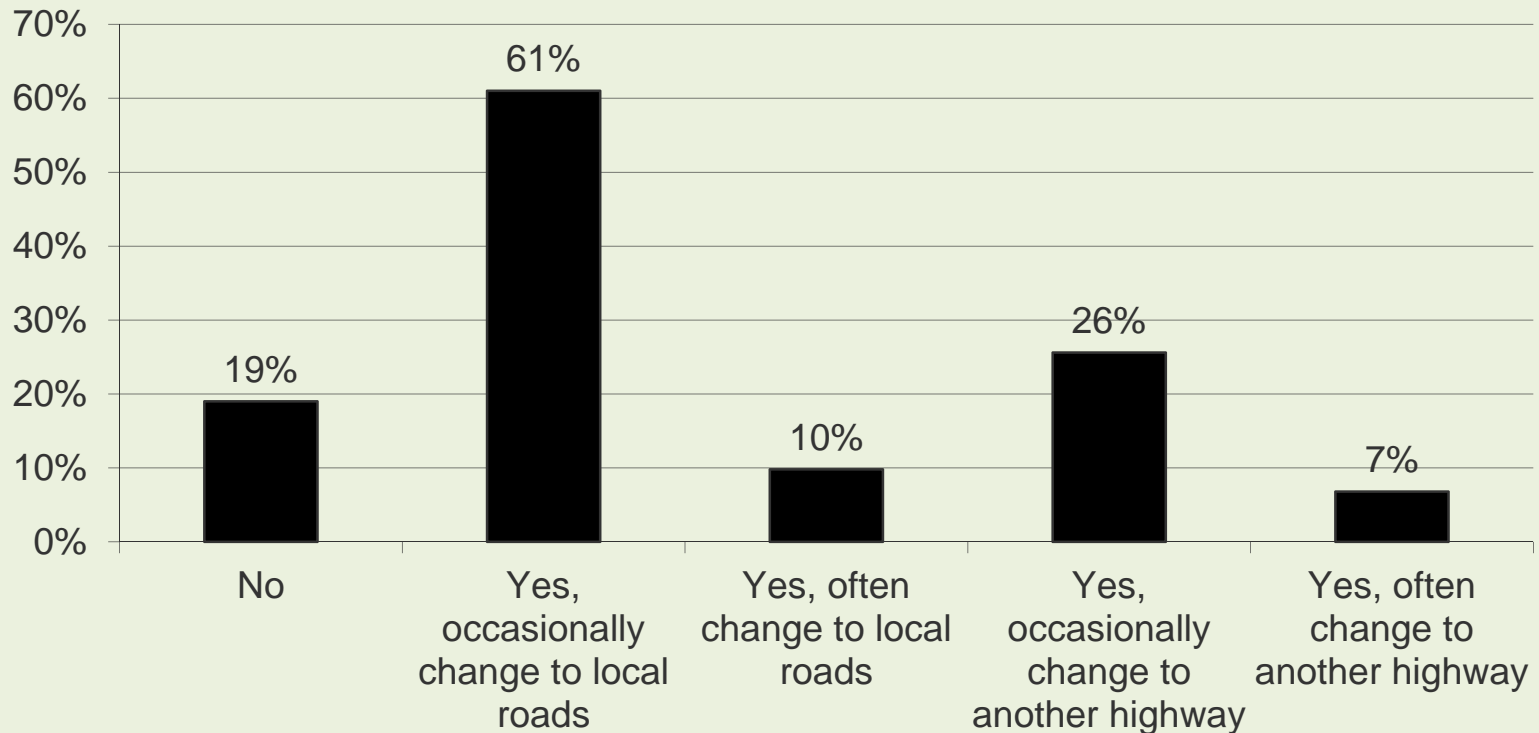
**Survey of Travelers – Minnesota**



**Have you ever exited the highway and drove on alternate highways or local roads based on travel time messages on the overhead message signs?**

| Response | Percentage |
|---|---|
| No | 6% |
| Yes, occasionally change to local roads | 57% |
| Yes, often change to local roads | 29% |
| Yes, occasionally change to another highway | 25% |
| Yes, often change to another highway | 9% |

# Current Practice: Travelers

**Survey of Travelers – Minnesota**



**Have you ever exited the highway and drove on alternate highways or local roads based on travel time messages on roadside reader boards?**

## Survey of Travelers – Minnesota

- **What makes you take an alternate route?**
  - "If normal one is delayed >5 min, I'll check the other. If that one is equally as delayed, I go back roads."
  - "If travel time is greater than 7 minutes more than the typical time."
  - "I look for a 10+ minute delay to alter my route."
  - "Over 20 mins, I'll definitely change routes."
  - "Typically I look for a time longer than I expect the alternate route to take."
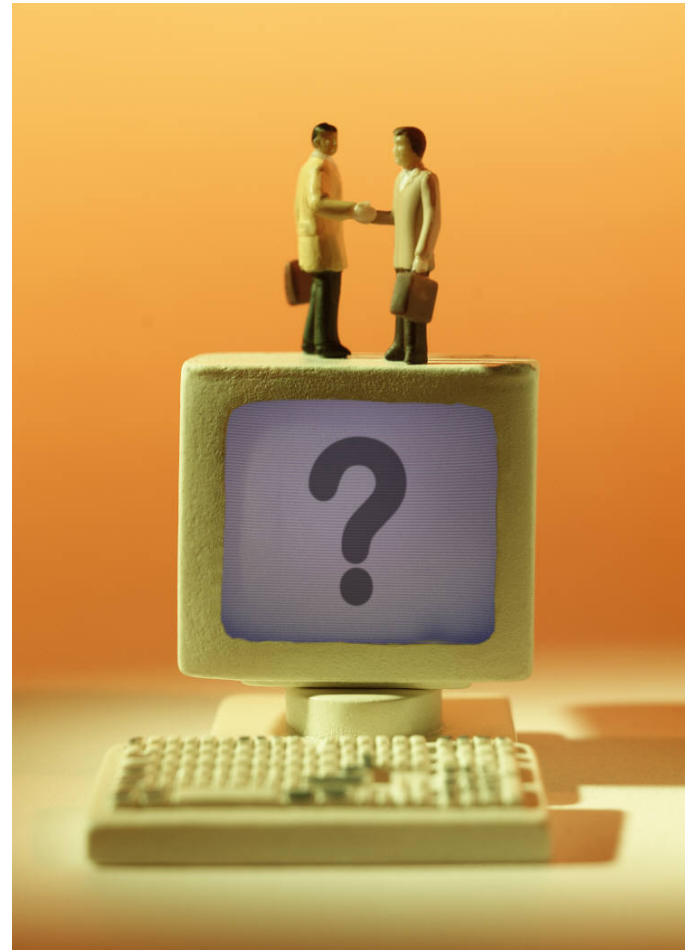
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## **Survey of Travelers – Washington**

- **What makes you take an alternate route?**
  - "Change plans when delay is >5 minutes or congestion is obvious prior to seeing reader board."
  - "10 minutes of delay or more"
  - "I will change for a delay greater than 15 minutes."
  - "30 min or more delay."
  - "It depends on how late I am!"

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# Outline

- Introduction
- Current Practices: Agencies
- Current Practices: Travelers
- **Peer Exchange**
- Questions



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# Peer Exchange

- Webinar series
  - August through November 2012
  - Sponsored by ENTERPRISE in partnership with USDOT and AASHTO
- Focused topics *(Completed Webinars)*
  - Dissemination tools (August 16)
    - WSDOT and WisDOT practices
  - Data and cost management (September 13)
    - USDOT RTSMIP Data Exchange Format work
    - GDOT and MoDOT practices

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# Peer Exchange

- Focused topics *(Upcoming Webinars)*
  - Customer needs and wants (October 18)
    - NCHRP 08-82 project
    - VDOT practices
  - Performance targets (November 15)
    - WSDOT and PennDOT practices

***Register through ENTERPRISE web page***

www.enterprise.prog.org/Projects/2010_Present/nexteraoftravelerinfo.html

# Questions

How do you think programs like Connected Vehicle will impacts traveler information?

**How do you think restricted transportation budgets will impact traveler information?**

Is traveler information a core service for transportation agencies?

**Where do you see traveler information in 10-20 years?**

What will customers want?

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