Vision for Transportation Mobility and Safety

Arizona Transportation Operations Executive Summit
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Presented by
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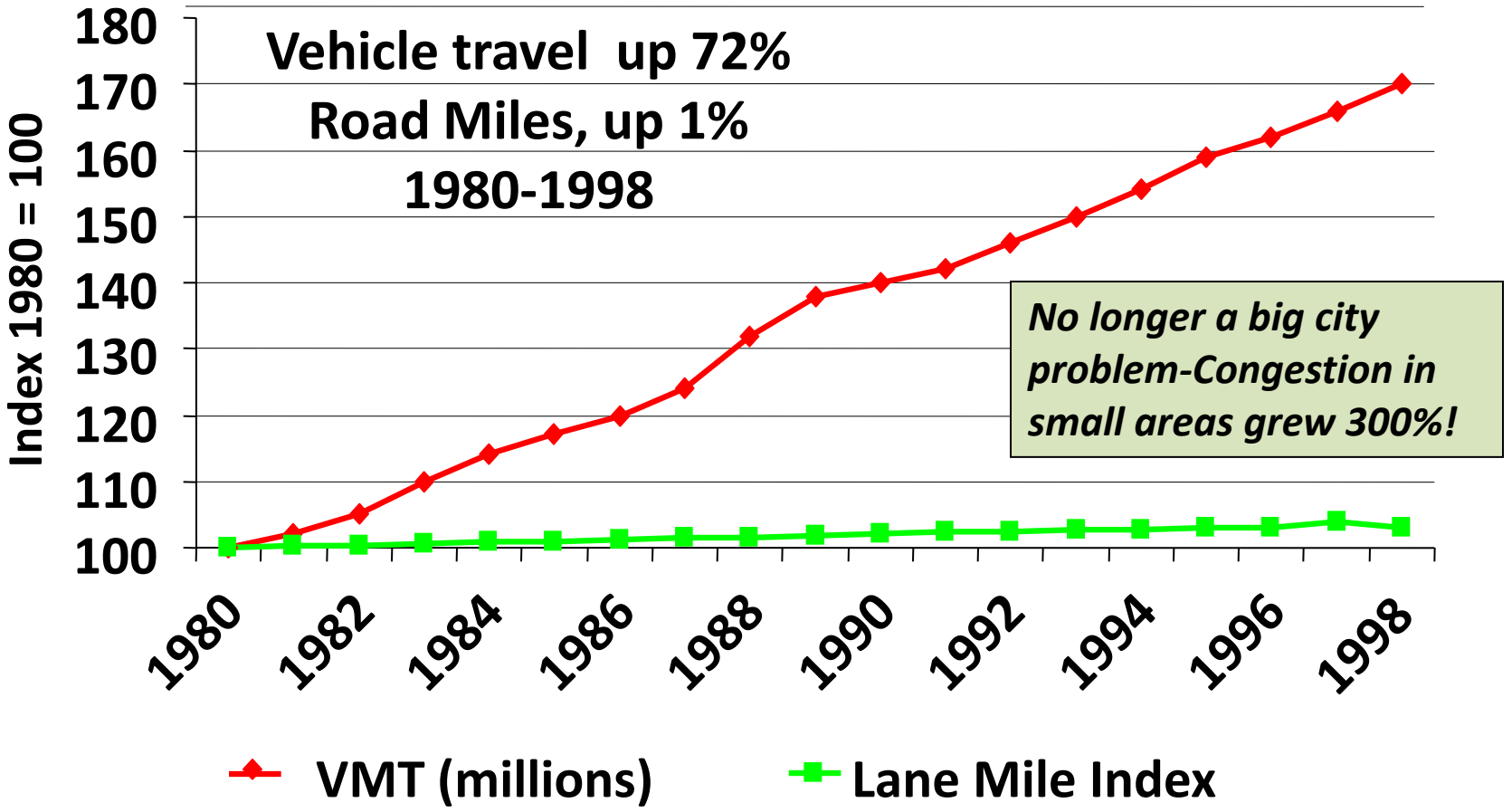
Mobility, Management and Operations

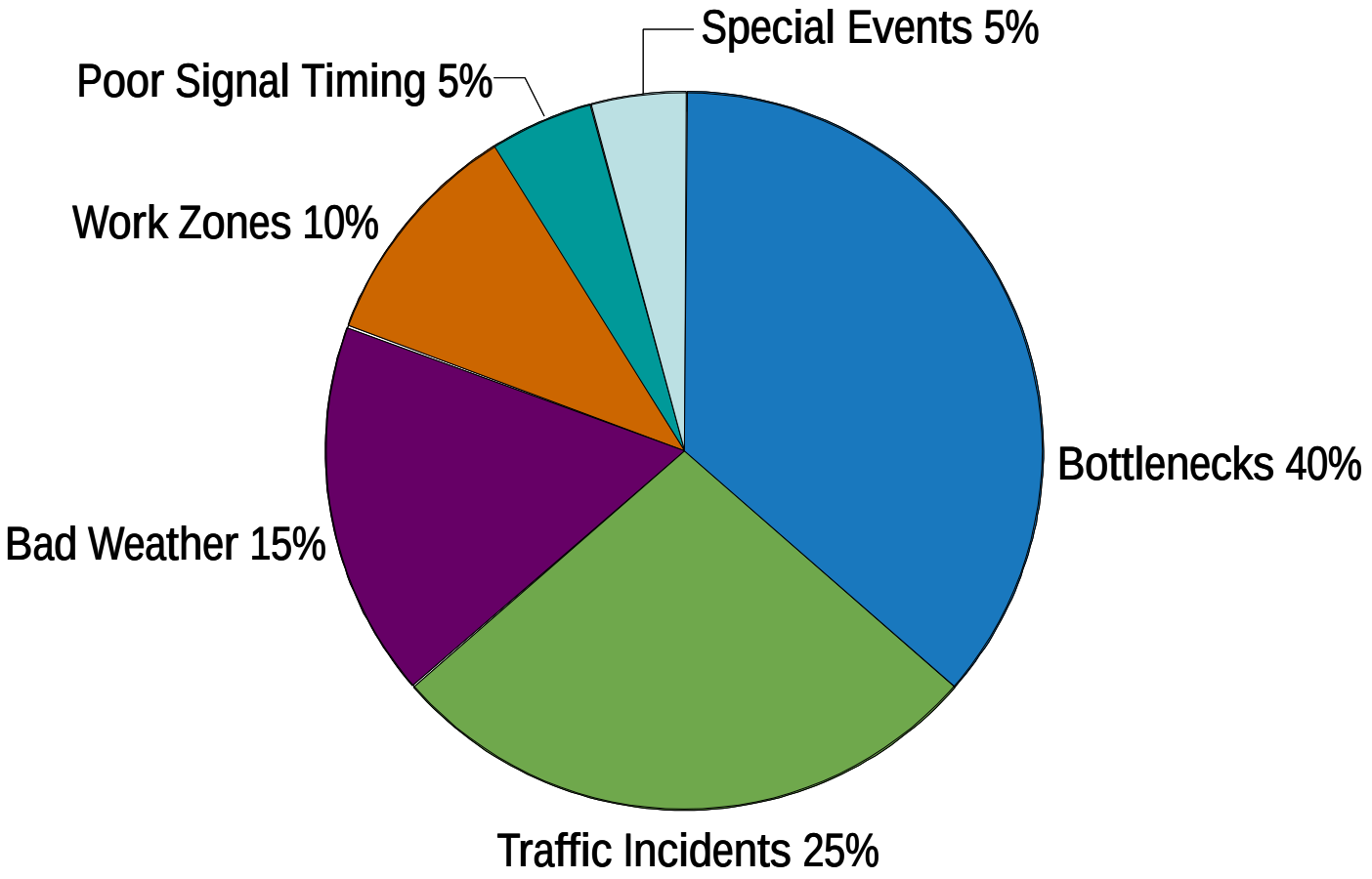
- Mobility – The ability of travelers and freight operators to proceed from origin to destination safely, efficiently and predictably

- Management and Operations (M&O) – The process of providing improved mobility using existing transportation infrastructure
  - (M&O is not the same as O&M!)

The Mobility Problem



Contributions to Poor Mobility



The Leverage of Operations

STRATEGY	CONGESTION/DELAY	SAFETY
Ramp Metering	- +/-0.16 hrs per 1000 VMT	
Electronic Monitoring	Supporting deployment	
VMS	-0.5% incident delay	
Variable Speed Limits	-5% total delay	-5% fatalities
Traffic Signal Retiming	-10% - 20% total delay	
Cell Phone Reporting	-4.5% incident duration	-5% fatalities
Surveillance Cameras	-4.5% incident duration	-5% fatalities
On-Call Service Patrols	-25-35% incident duration	-10% fatalities
All Combined	Multiplicative reduction	-10% fatalities
Road Weather Management	-3% total delay (Northern)	
511 only	-3-5% total delay, rural only	
VII	-12% total delay	

Why does this matter?

Travel time and Travel time reliability lead to:

- Economic Vitality
- Livability
- Accessibility

- Insert picture of happy phoenix!

Comparison of Operations and Construction

Characteristic	Construction	Operations (Strategies)
Coverage	Localized	Broad
Travel demand	May be significant	Usually modest
Cost	High	Low
Implementation	Long time	Short

Benefit Cost Analysis

- Agencies are frequently faced with comparison of operational alternatives in a resource-constrained environment
- The challenge?
  - find the best solution to a problem when multiple solutions exist
- May be performed either as a planning or design activity

Benefits and Costs for Operations

- B/C can be an effective tool for selling the safety and mobility benefits of operations
- B/C ratios for operations typically much larger than those for new construction
- Favorable ratios due to:
  - Operational improvements typically affect a larger geographic area
  - Costs are usually lower

Representative B/C – Arterial Widening*

- Case study:
  - Upgrading a two-lane roadway to a four-lane cross section
  - Included improvements to intersection design
  - Year 1: ADT = 15,000 vehicles grows to Year 20: ADT = 26,300 vehicles
- Benefit-Cost ratio between 3.6 and 4.5
- 96% of benefits resulted from adding a lane to each intersection approach
- An “old” example with representative results

* Source: Witkowski, J MBENEFIT ANALYSIS FOR SKETCH PLANNING OF HIGHWAY IMPROVEMENTS, Transportation Research Record 1116, 1987

Representative B/C – Signal Retiming

- Case study:
  - Retime signals at 15 intersections along a five mile arterial
  - Retiming cost $2,000 per intersection
  - ADT 15,000 veh.
  - Average intersection delay before retiming 20 sec. per veh.
  - Delay reduction 10%
  - Delay cost = $20 per veh.-hr
- First Year Weekday Benefits = $650,000
- Project Costs = 15*$2,000 = $30,000
- Benefit Cost Ratio = 22

Customer Service

We've Made a Start…

The picture is not entirely bleak

- Customer surveys
- Context sensitive design
- Freeway service patrols
- 511 and VMS travel times
- Websites
- Information brochures

But We Have a Long Way to Go

If you lived in a particular state (“S”) and wanted to report a traffic signal failure, Google would provide the following:

- “S”DOT Phone Directory
- “S”DOT Pothole Hotline
- “S”DOT Trash Reporting Hotline (discontinued)

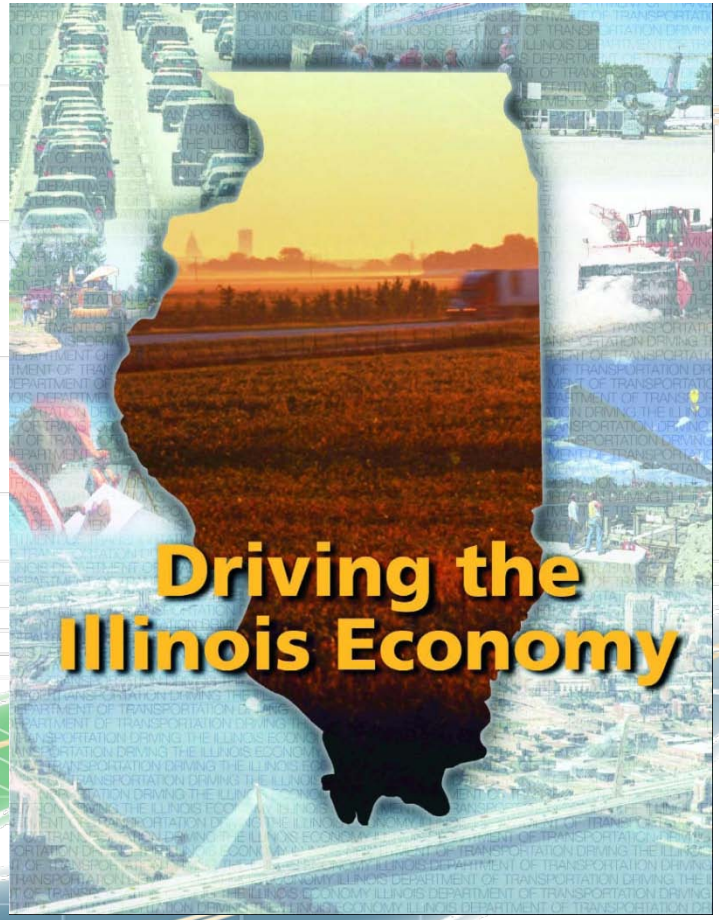
Is this a customer-friendly organization?

An Example of Effective Outreach

The Medtronic Annual report demonstrates a customer service orientation

Illinois – A Transportation Example

The Illinois annual report is internally focused



Page 2 Highlights the Difference

The Medtronic Mission To contribute to human welfare by the application of biomedical engineering in the research, design, manufacture and sale of products that alleviate pain, restore health and extend life.

In fulfilling our Mission, we are improving the lives of nearly 6 million people each year. With each one, we move a step closer to a world in which every person who needs a therapy receives it.

Stacey Brickson, *USA* (cover)

Herniated Cervical Disc

After Stacey completed her first Ironman Triathlon in 1995, she was hooked. For the next six years, she competed in races across the United States. Then, two car accidents left her with a herniated cervical disc that limited her neck mobility and jeopardized her competitive future. "Running became unbearable; even biking and swimming were out of the question," she said. Conventional remedies, such as medications and physical therapy, offered little relief, so Stacey enrolled in a clinical trial for a Medtronic Prestige cervical disc.* Her damaged disc was replaced with one of our surgical-grade stainless steel discs, which are designed to allow motion. Stacey's pain was gone within a day, and she was able to return to the triathlons she loves. "This single procedure changed the outcome of my life," Stacey said. "Now, the sky's the limit."

**Investigational device in the United States.*
Patient results may vary.

Chiemi Takahashi, *Japan*

Sudden Cardiac Arrest

When Chiemi was diagnosed with a life-threatening heart condition, its effects were all too familiar. She was only 10 years old when her mother died from the condition—hypertrophic cardiomyopathy—which also took the lives of her brother and sisters years later. The devastating genetic disease interferes with the heart's ability to pump blood. In severe cases, it can also increase the heart rate, causing sudden cardiac arrest. As a result, Chiemi's doctor recommended an implantable cardioverter defibrillator (ICD). Eight months after receiving the Medtronic device, it saved Chiemi's life, shocking her heart back into rhythm while she was having dinner with a friend. "Without my ICD, I would have died in that restaurant," Chiemi said. "I just wish my mother and siblings could have had one, too."

Illinois Department of Transportation

In this fourth annual report documenting the Department's accomplishments to the people of the state of Illinois, I again am proud to highlight the work results of thousands of employees and private contractors.

But first, I am retiring from state service at the end of 2002 after more than 34 years at IDOT and nearly 12 years as the Secretary. I would like to thank Governor Ryan, legislators, contractors and Department employees for working with me to modernize Illinois' transportation system, one of the busiest in the nation. We have met many challenges over the years in all modes of transportation. There are new challenges to face, including the retirement of more than 1,100 Department employees under the state's early retirement plan. However, we have worked hard to ensure a smooth transition into the new year.

Now back to the accomplishments for Fiscal Year 2002. Here are just a few of them:

- Improved more than 1,550 miles of road and 333 bridge projects statewide;
- Rehabilitated a portion of I-57 in Cook County to improve highway safety;
- Sustained high-speed rail development in the Chicago-St. Louis corridor;
- Supported 14 major transit and 38 major airport projects;
- Maintained a low traffic fatality rate on Illinois highways;
- Reduced deaths in construction work zones with the help of Department public service announcements featuring the children of highway workers; and
- Continued a major administrative program to improve Departmental operations through strategic initiatives.

The Department was able to develop many more multi-modal transportation projects through the Governor's Illinois FIRST program, which provides additional billions of dollars to all transportation modes from FY 2000 through FY 2004.

As partners with private industry, all levels of government, and citizens who use and pay for the system, we work hard to maintain and improve one of the nation's best transportation systems and to invest the taxpayers' money in the state's transportation infrastructure effectively and efficiently.

Thanks once again to all those in this state who have made me proud to have served as a leader in this important industry.

Kirk Brown
Secretary, Illinois Department of Transportation

How do DOT Annual Reports Measure Up?

- Do they talk about customer service?
- Are customers' experiences highlighted?
- Do they talk about "we" vs. "you"?
- What do they say about agency priorities?

Customer Calls (complaints)

- Many consider complaints to be an annoyance
- Handling complaints properly is the epitome of good customer service
- Have you tried contacting your own organization with a problem?
- Is the person receiving the call an administrative aid in a district office?

A Negative Example – A Traffic Signal Complaint

1. Customer calls with complaint about signal operation
2. Call answered by clerical personnel
3. Information regarding location is recorded and customer is thanked for call
4. Problem may or may not be checked, but the customer never hears from the agency again.

A Positive Example – A Traffic Signal Complaint

1. Customer calls to complain about signal operation
2. Trained technician or TOC operator answers phone
3. Explains signal operation (e.g. how do actuated controllers work), and indicates problem will be checked
4. Checks signal and calls customer to explain problem resolution
5. Expresses thanks and "puts the customer in charge of the intersection" for reporting future problems.
6. Educated lay person is now a collaborator. Another set of eyes in the field, and a supporter of the agency.

Where are we going?

The Details Are More Difficult To Predict

- "I think there is a world market for maybe five computers."

  --Thomas Watson, chairman of IBM, 1943

- "640K (memory) ought to be enough for anybody."

  -- Bill Gates, 1981

- “Windows displays are nothing more than a passing fad.”

  – Phil Tarnoff, 1985

The Future – Some Things are Certain

- Focus on operations increases
- Congestion pricing increases
- Telecommuting becomes recognized as a transportation function
- Sophistication of vehicle electronics increases (with or without public sector participation)
- Performance measurement is mandated

Operations Demands Attention

- In a resource constrained world, low cost actions must be considered
- Higher B/C ratio than other alternatives
- Faster implementation
- Operations is the interface with the customer
- It's time for a change in the way we think


WHOA