

Transportation Asset Management Webinar Series

Webinar 5: Asset Management and Performance-Based Planning

Sponsored by FHWA and AASHTO

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Please do not put your phone on hold.

Please mute your phone.



Webinar 5 — July 10, 2013

FHWA-AASHTO Asset Management Webinar Series

- Sharing of knowledge is a critical component of advancing asset management practice
- This is the fifth of a 12-part webinar series that will be held over the next two years
- Webinars will be held every two months with topics such as asset management plans, AM data needs, etc.
- Welcome ideas for future webinar topics and presentations
- Submit questions using the webinar's Q&A feature
- Next webinar: **Addressing Preservation and Maintenance in Asset Management Plans – September 18, 2013 2:00 EST**

Welcome

- FHWA is pleased to sponsor this webinar series on Asset Management and Performance-based Planning, in cooperation with the AASHTO Sub-Committee on Asset Management
- There is a close relationship between AM and performance-based planning
 - Planning is the start of any asset management process.
- There are many benefits of tying planning and programming decisions to asset management goals and objectives
 - Having asset management well integrated into a performance-based planning process is an important ingredient in the value a transportation agency gets from asset management.
 - We'll be hearing more on this topic today

AM and Performance-Based Planning Overview

- Recently, progress has been made in improving the integration of AM and performance-based planning.
- FHWA Office of Planning has focused on improving performance-based planning practices in transportation agencies including:
 - Identifying performance measures that support policies, goals, & objectives.
 - Understanding the role of performance measures and performance-based thinking during the planning process.
 - Knowing what data resources are needed to support better decision-making.
- Important issues to address include:
 - Optimal resource allocation strategy for AM versus other funding needs
 - Growing importance of preservation and maintenance of assets.
 - Addressing the importance of asset management and safety relationships.
- Visit the FHWA Office of Planning and the Office of Asset Management websites for more resources.

Webinar Overview

- Today presentation includes three perspectives on asset management and performance-based planning.
- Presenters will discuss their agencies' efforts to integrate asset management and performance-based planning
- Presentations will address specific challenges, success factors, and key benefits obtained and will highlight successful approaches for strengthening the relationship between asset management and performance-based planning
- Together, we will explore the strategic and operational benefits that State DOTs are achieving by tying planning and programming decisions to asset management goals and objectives.

Learning Objectives

- Building working knowledge of key concepts and definitions in the areas of asset management and performance-based planning
- Understanding specific approaches to integrating asset management and performance-based planning
- Applying this knowledge to begin to answer the following questions:
 - What steps can your agency take to better connect components of asset management and performance-based planning?
 - What are the benefits that your DOT can expect from tying planning and programming to asset management goals and objectives?
- **SHARE LESSONS LEARNED, IDEAS, KNOWLEDGE!!!**

Webinar Agenda

- 2:00 Webinar introduction and overview**
Matt Hardy (AASHTO) Steve Gaj and Harlan Miller (FHWA)
and Hyun-A Park (Spy Pond Partners, LLC)
- 2:15 Performance-Based Planning in a Round Transportation World**
Keith Damron (Kentucky Transportation Cabinet)
- 2:35 The 2040 Plan for Southeast Michigan**
Tom Bruff (Southeast Michigan Council of Governments)
- 3:55 The NCDOT Experience**
Don Voelker (North Carolina DOT)
- 3:15 Q&A and wrap up**

KENTUCKY TRANSPORTATION CABINET

“Performance Based Planning in a Round Transportation World”

Keith R. Damron, PE
Director, Division of Planning
July 2013



A green ribbon graphic with a white border, featuring a central rectangular box containing the text "\$1 Billion".

\$1 Billion

Construction Letting Annually

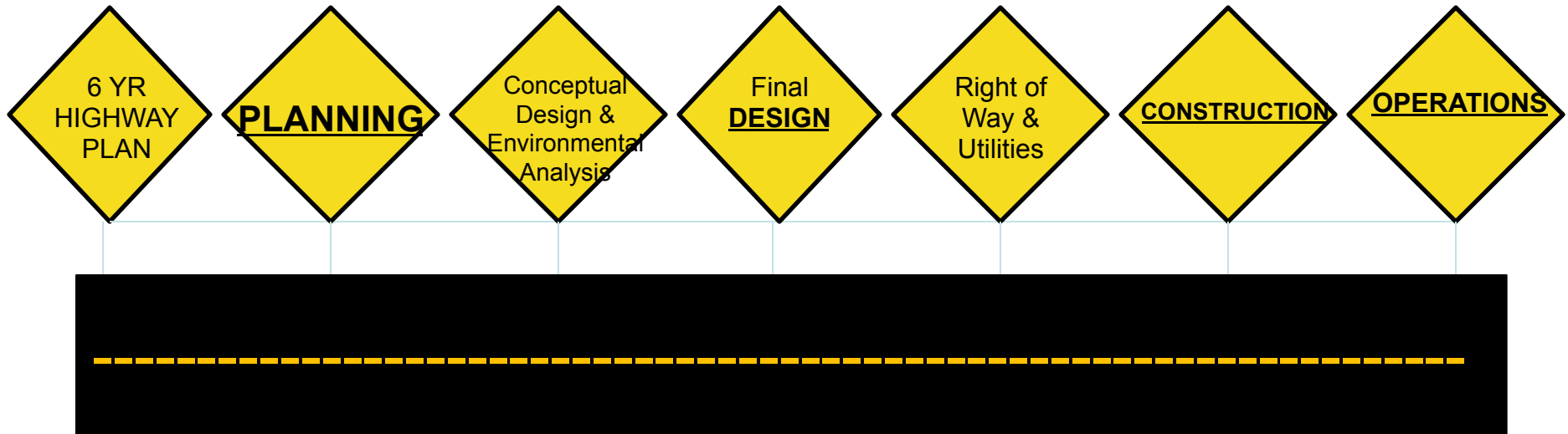
Public Roads in Kentucky

79,321 Miles

State Maintained Roads

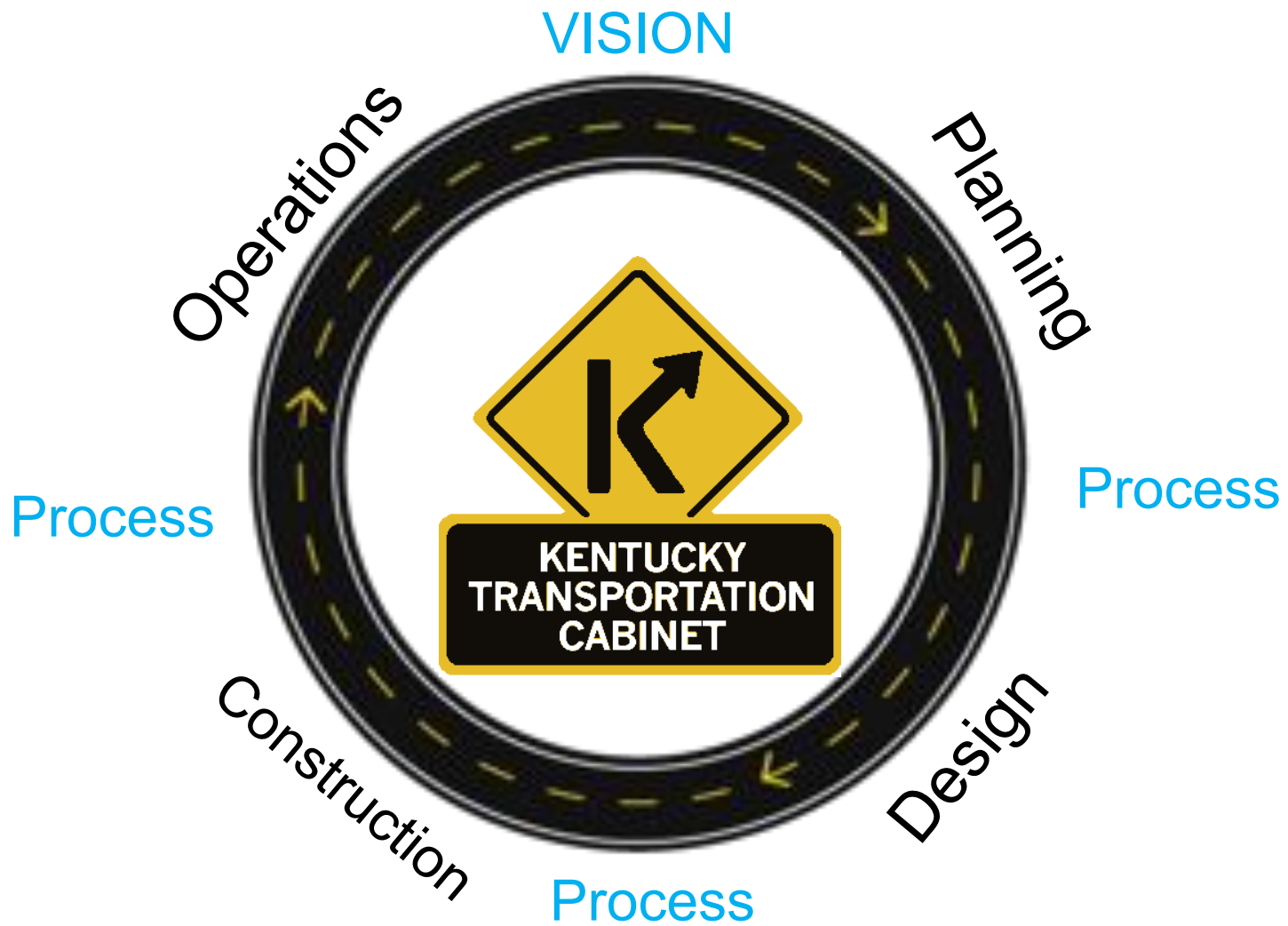
Over 27,616 Miles

The Transportation World Was Seen As Flat



**Kentucky's
Previous Linear
Process**

**Asset Management
Should lead
Decision Making**



The Transportation World is Round

TRANSPORTATION ASSET MANAGEMENT

CHALLENGE

KYTC Secretary Mike Hancock

- 1 KYTC Definition – Use data to define needs.**
- 2 Prioritize & Rank Needs based on quality information and well-defined objectives.**
- 3 Make better decisions about resource allocation and utilization.**

Maintenance Asset Management Focus Areas

Initial Focus

- Pavements
- Bridges

Under Development

- Signs
- Pipes/Culverts

Future Plans

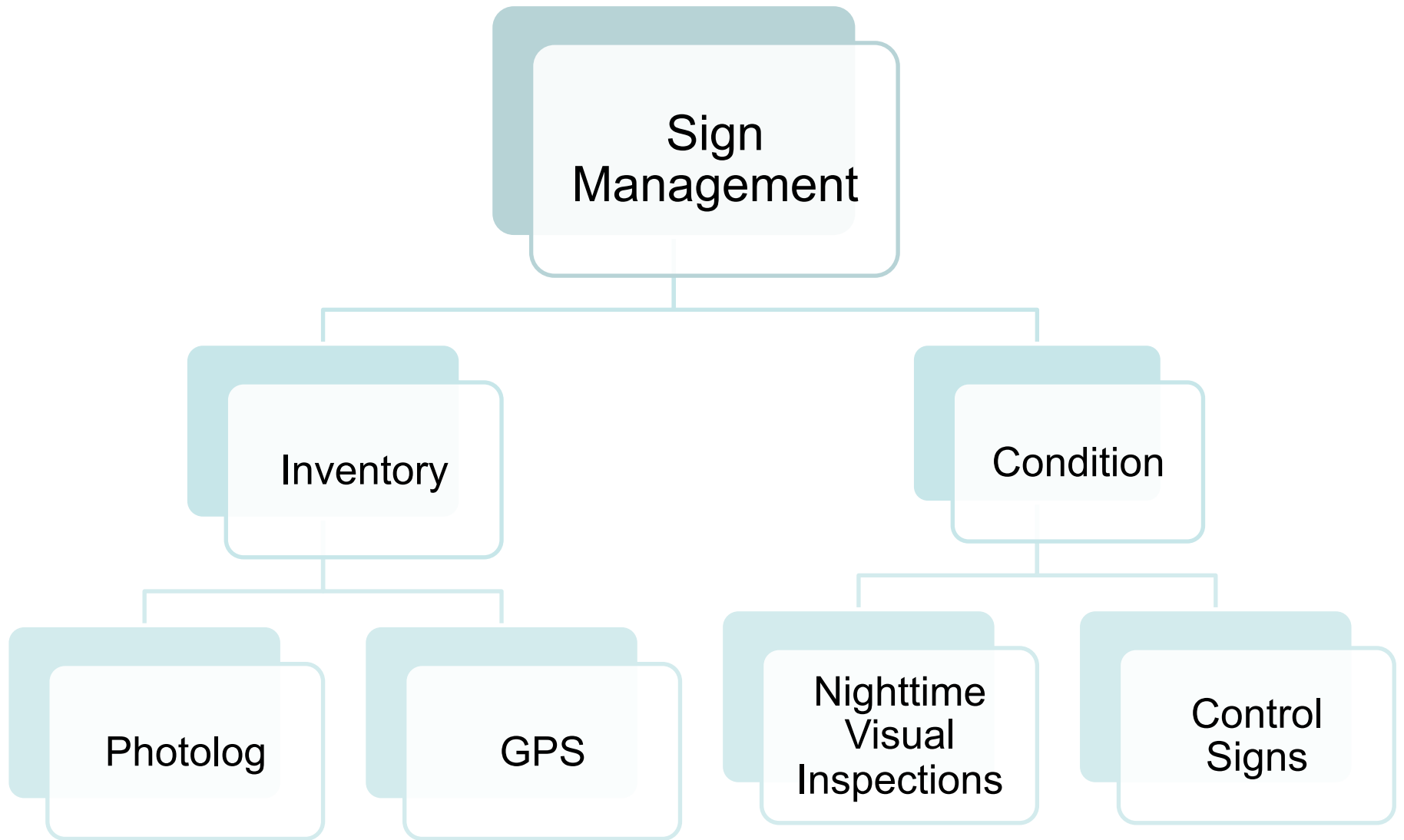
- Guardrail
- Striping
- Cable Barrier
- Etc.

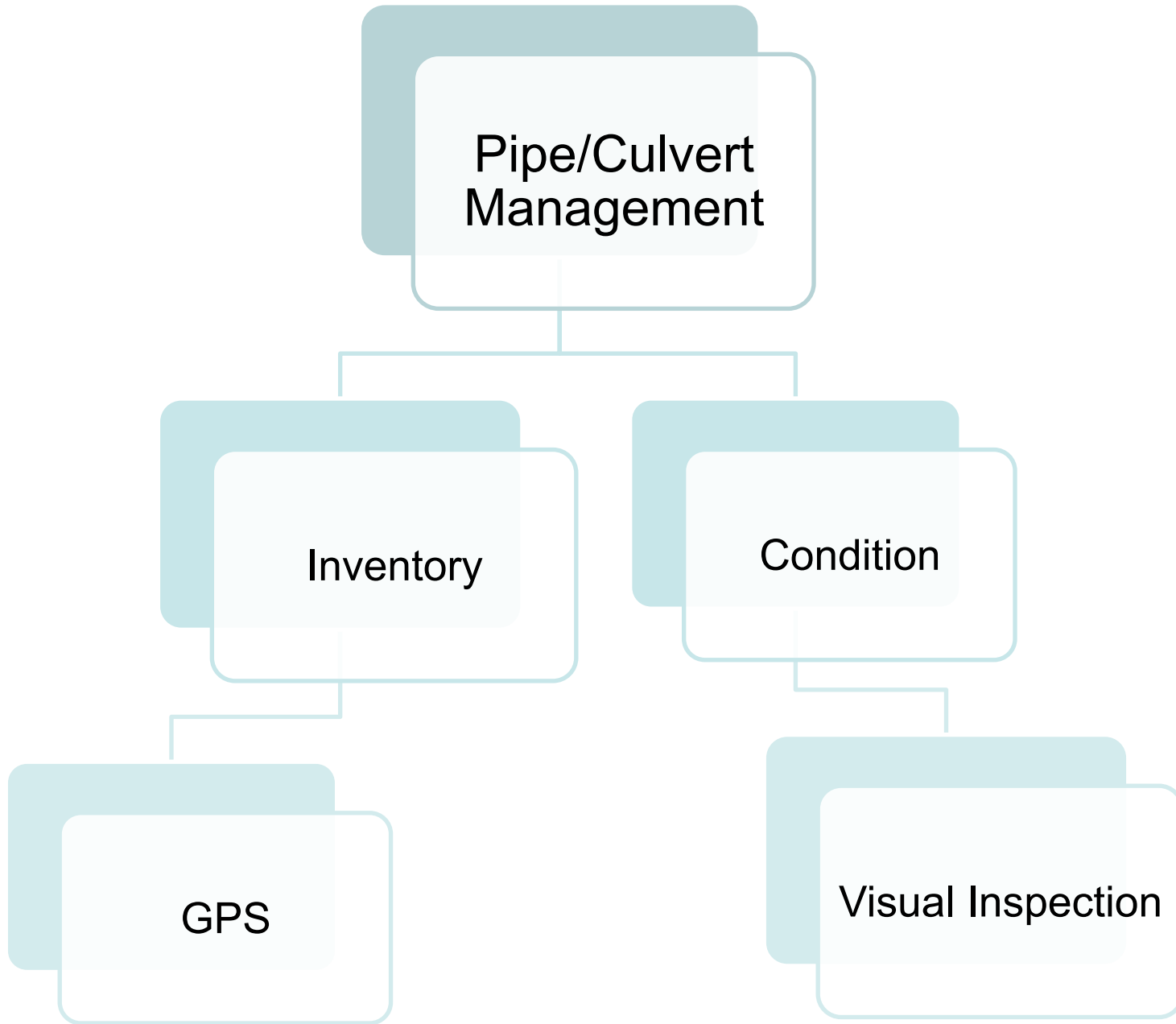
Pavement and Bridge Management



Maintenance Rating Program

- Identifies general areas of concern (guardrail, ditching, signage, etc.)
- Does not identify specific locations
- Additional funding to address issues
- Moving toward Asset Management





Traffic Asset Management Focus Areas

**High Friction
Surface**



Roadway Data Used

Crash

Milepoint

Curve
Data

Pavement



Rumble Strips

Roadway Data Used

Crash	Milepoint	Lane Width	Shoulder Width	Speed Limits	Auxiliary Lanes (TWLTL)
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Roadway Data Used

Milepoint

Crash

Functional Class

Speed Limit

of Lanes

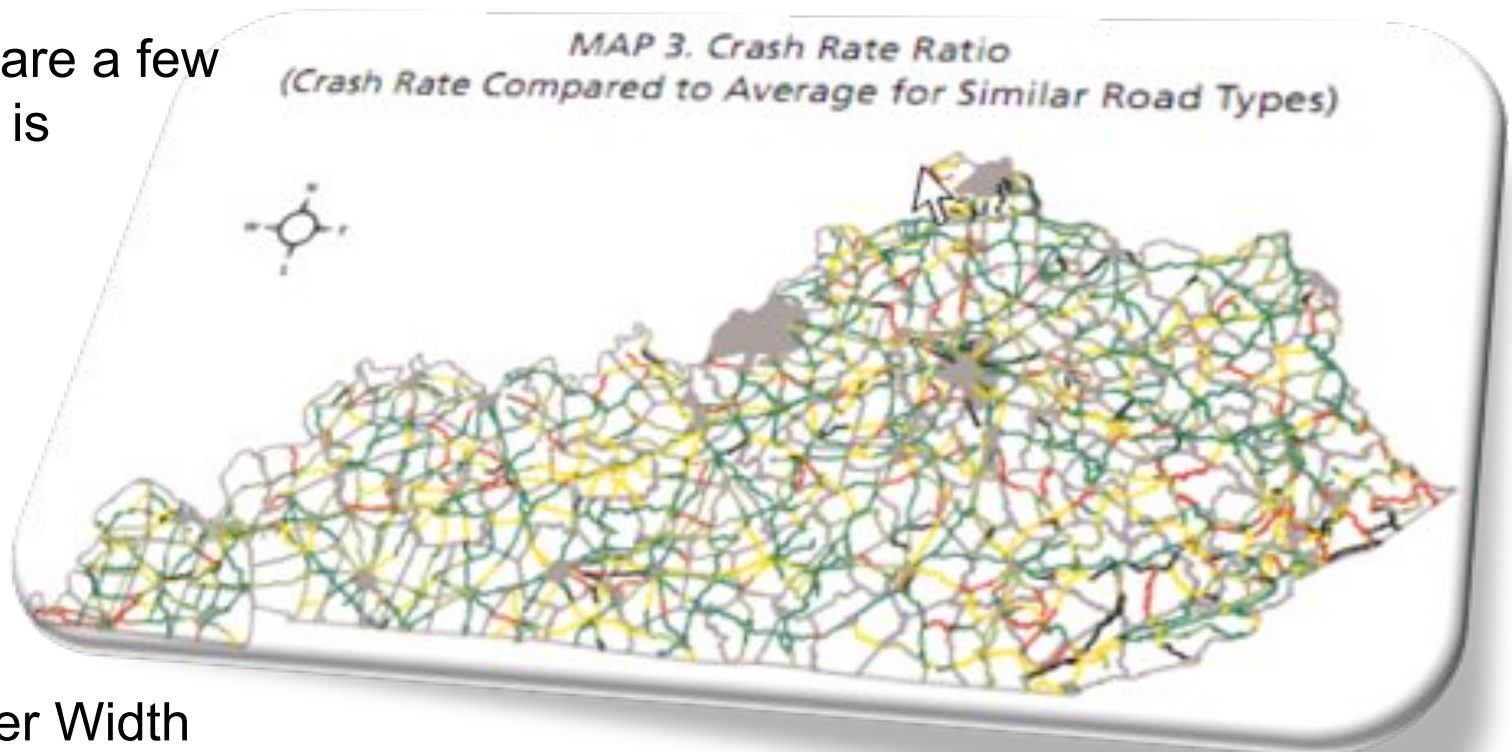
**Roadway
Departure
Corridors**



Using usRAP–US Road Assessment Program

usRAP -Below are a few data sets HSIP is currently using:

- Distance
- Length
- Traffic Flow
- Setting
- # of Lanes
- Paved Shoulder Width
- Unpaved Shoulder Width
- Speed
- Roadside Hazards
- Intersection types

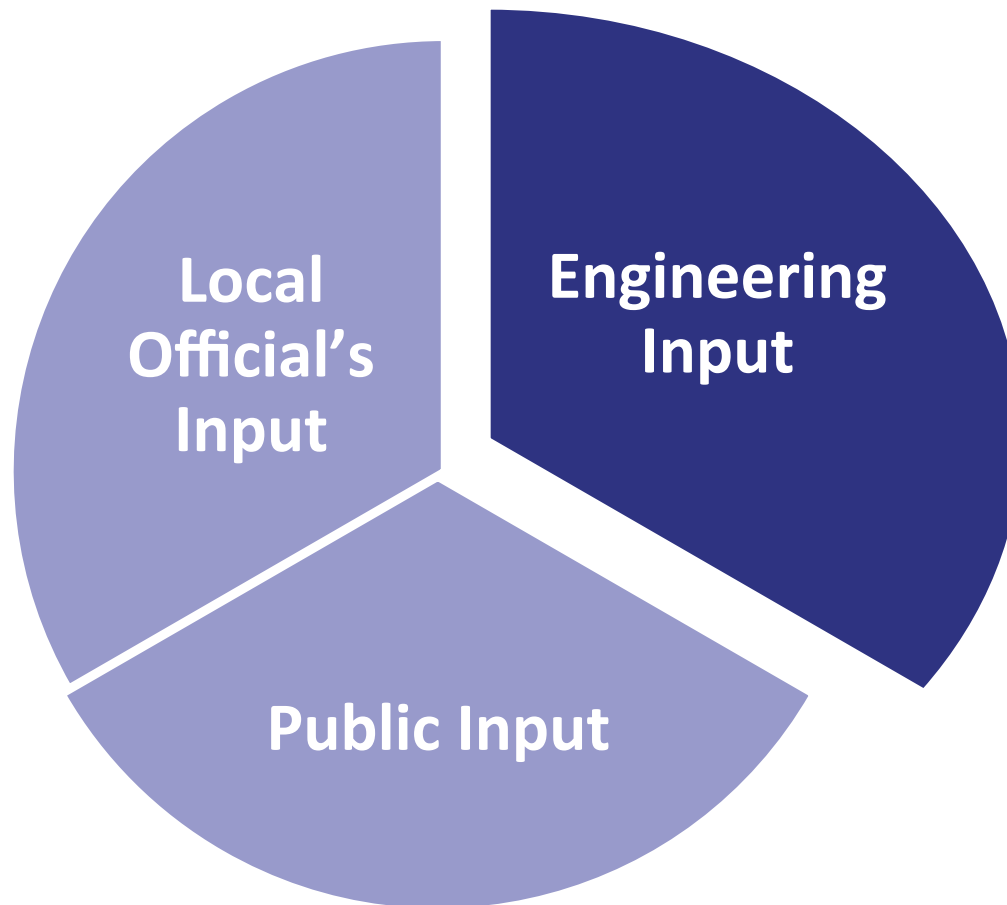




Kentucky's Unscheduled Needs List 2013

- **Over 2,453 projects**
- **Over \$60 billion**
- **Over 6,300 miles of roadway**
- **Over \$9.52 Million per Mile**
- **Over \$2.17 Million Average Per mile of the 27,616 State Road Miles**

Components of a Successful Planning Process



Statewide KYTC Planning Goals

GOAL 1 MOBILITY

GOAL 2 ACCESS

GOAL 3 CONNECTIVITY

GOAL 4 SAFETY

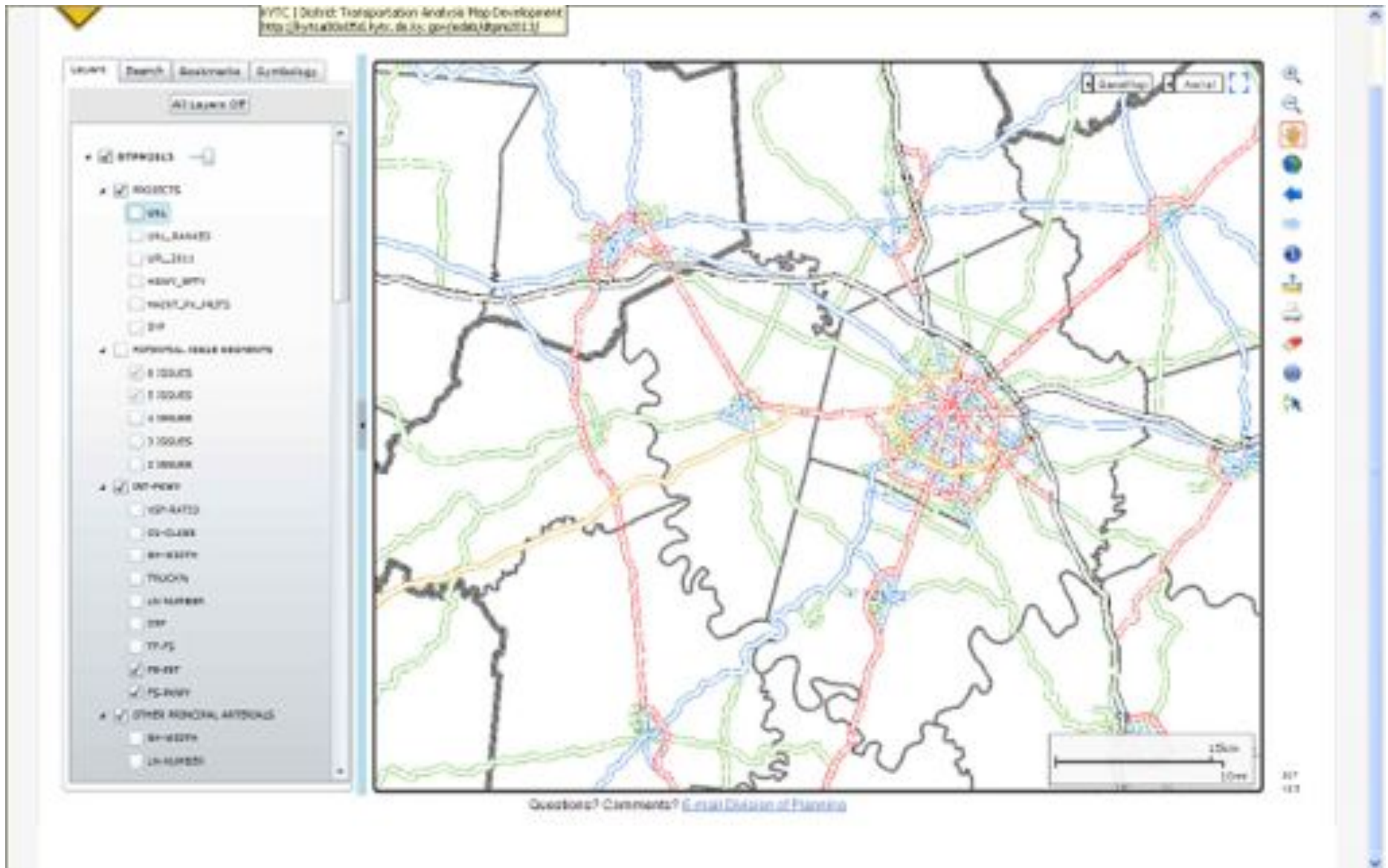
GOAL 5 SECURITY

Goal 6 Economic Stewardship

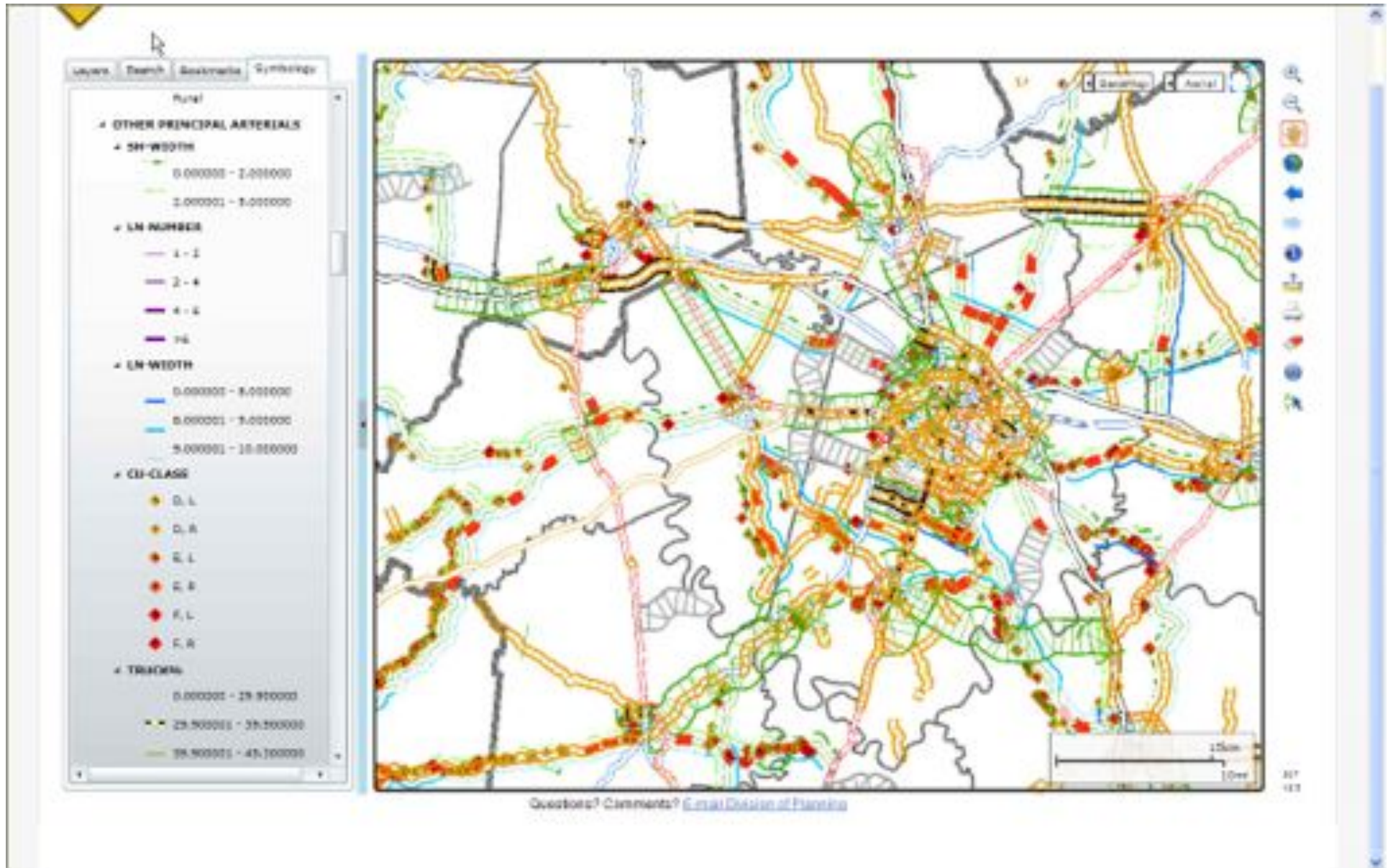
GOAL 7 ENVIRONMENTAL STEWARDSHIP

Goal 8 Involvement

PRIORITY ROUTES



CRF-VSF-Lane & Shoulder Width



Interactive Mapping System

Highway Data Layers include:

- Functional Classification
- Crash Critical Rate Factor (CRF)
- Volume-to-Service Flow (V/SF) Ratio
- Truck Percentages
- Number of Lanes
- Lane Widths
- Horizontal Degree of Curvature
- Vertical Grades
- Current Highway Plan Projects
- Current UNL Projects
- Composite Adequacy Ratings
- Landslide and Rockfall Locations
- Functionally Obsolete Bridges
- Structurally Deficient Bridges

District Transportation Plan



Highway District 12 Transportation Plan

Kentucky Department of Highways

October 2011



District 1

District 2

District 3

District 4

District 5

District 6

District 7

District 8

District 9

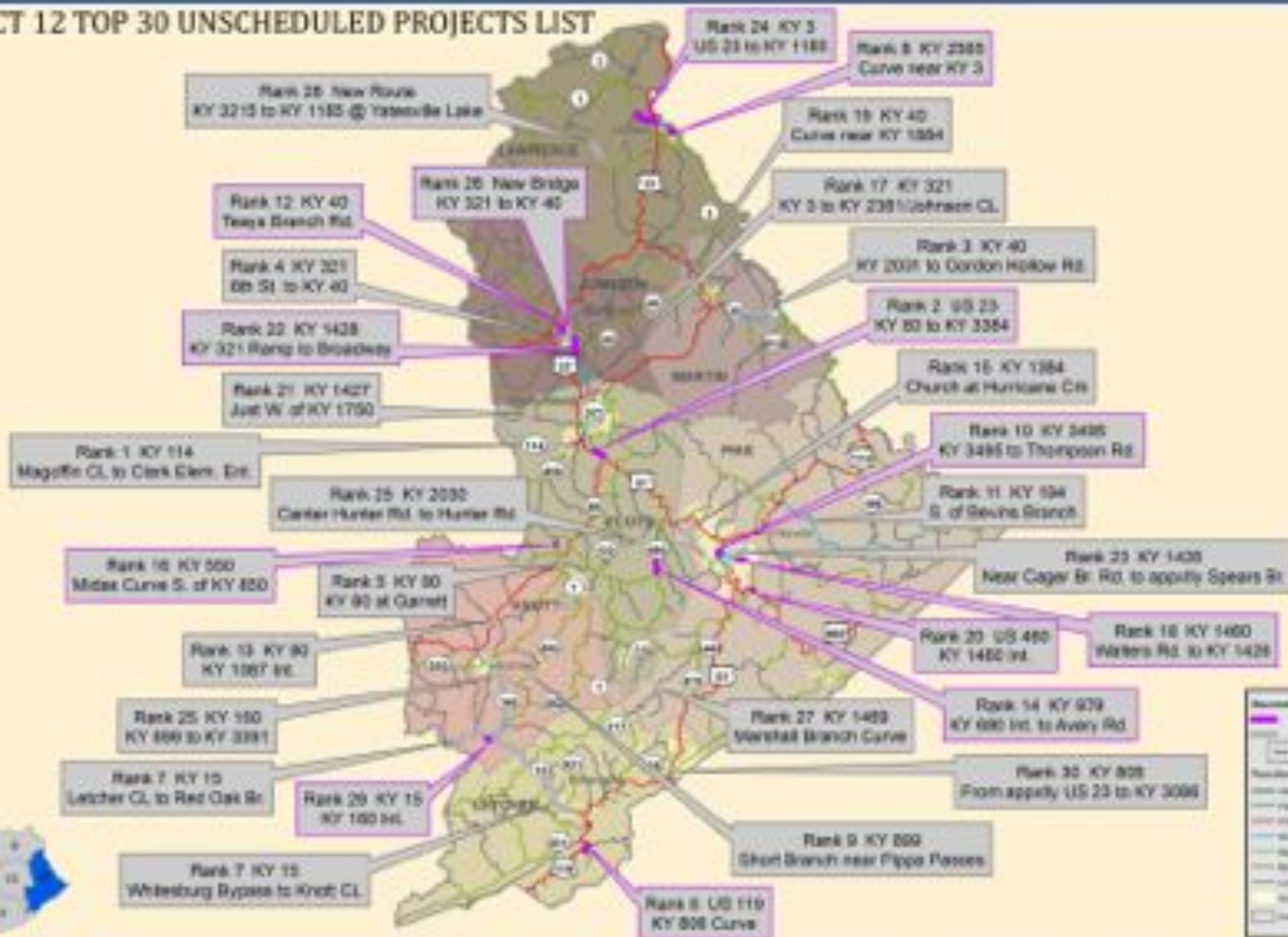
District 10

District 11

District 12



HIGHWAY DISTRICT 12 TOP 30 UNSCHEDULED PROJECTS LIST



Unscheduled Projects

- Rank 1-30

Regional Classification

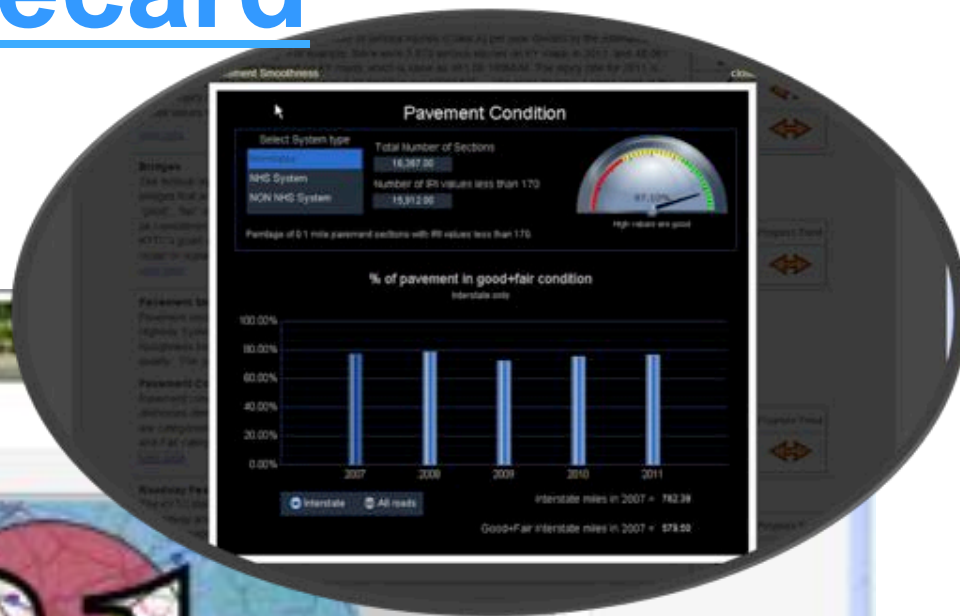
- Highway
- Interchange
- Major Road
- Minor Road
- Local Road
- Unimproved Rd.
- County Road

HIGHWAY DISTRICT PLANNING PROCESS

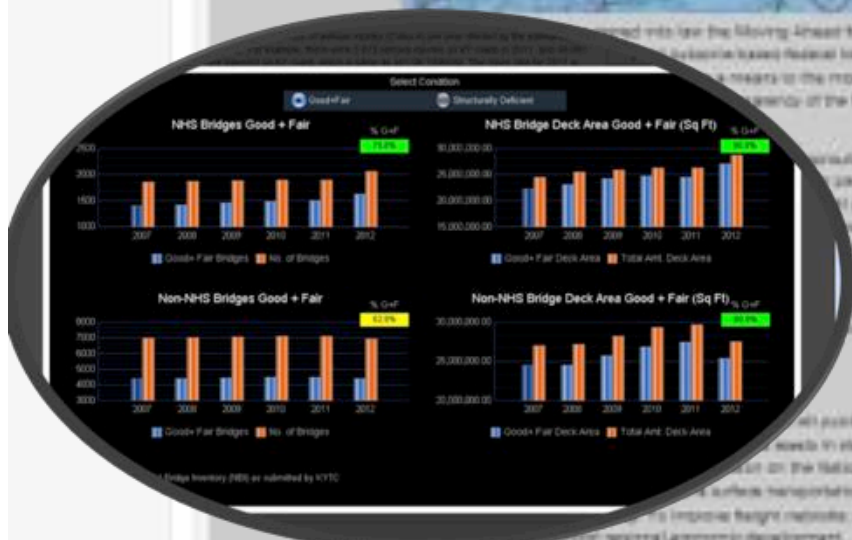
PLAN INTENT

- Provide a data-driven foundation for recommend projects.
- Provide quantifiable, documented information related to needs and deficiencies across Kentucky' s highway system.
- Provide support & a process for progressing projects from an idea to the Highway Plan.
- Meet the Goals and Objectives of the Cabinet & the Highway District through the Engineering Review.
- Utilize the current metropolitan and regional planning processes that provide the Public and Local Officials Input.

Kentucky's Scorecard



MAP21 Performance Measures



Asset Management For Future Performance Based Decision Making

- Improve Existing Management Programs
- Include More Assets
- Identify Comprehensive List of Needs
- Develop New Strategies to Address Needs
- Train Staff

Thank You?





SEMCOG

Southeast Michigan Council of Governments

DIRECTION
REGIONAL TRANSPORTATION PLAN
2035
FOR SOUTHEAST MICHIGAN

Establishing a Regional Investment Direction

Exploring Transportation Investment Choices

**Creating Success with Our
Transportation Assets:**

2040 Regional Transportation Plan
for Southeast Michigan



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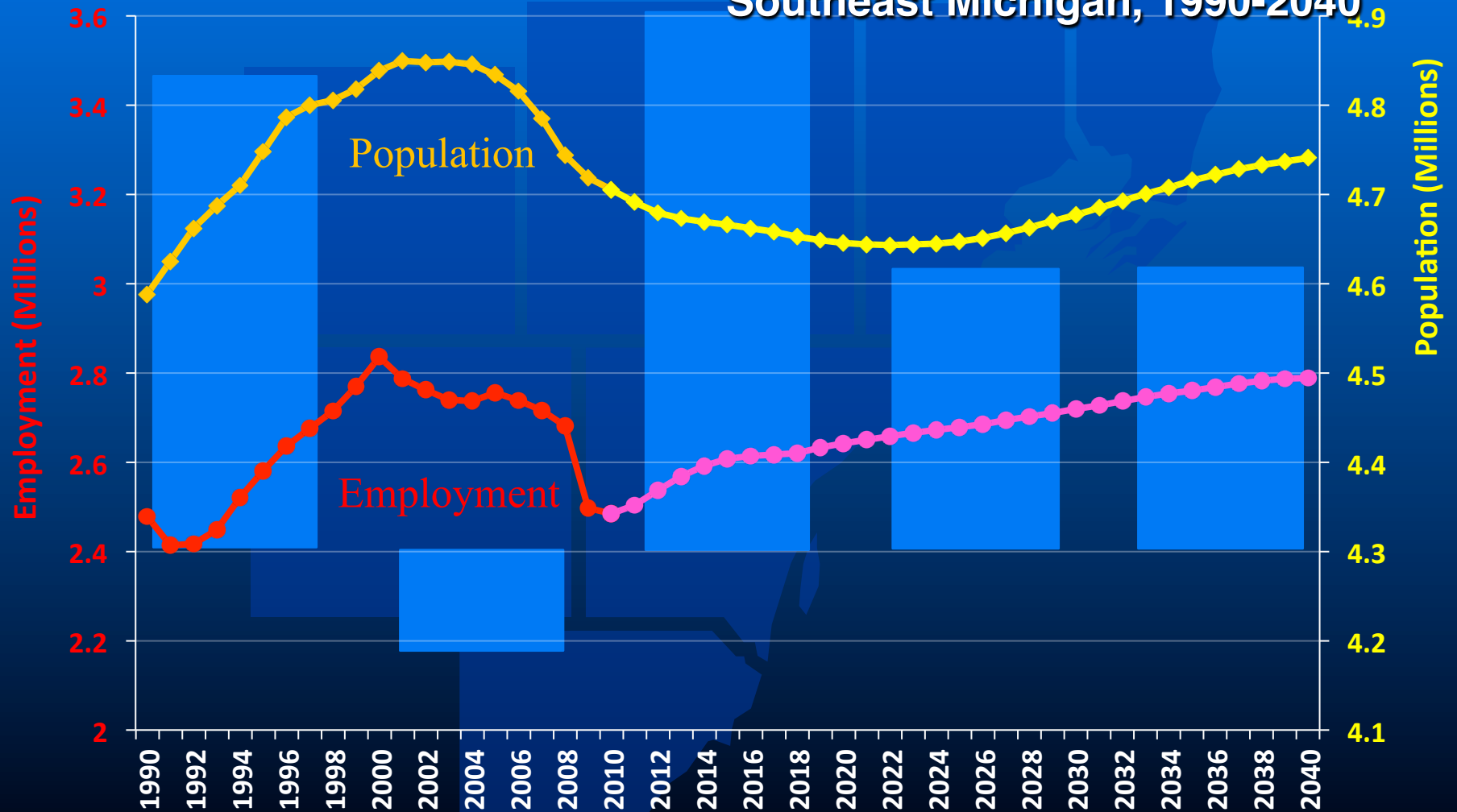


SEMCOG



Employment and population similar to 2000 levels

Southeast Michigan, 1990-2040



Is the glass half full or half empty?



System supports millions of
trips and millions of dollars
of commerce everyday

A close-up, low-angle shot of a rowing team in blue and white uniforms, captured in the middle of a stroke. The rowers are leaning forward, and their oars are visible, creating a sense of motion and teamwork. The background is slightly blurred, emphasizing the rowers in the foreground.

**This requires that we align
our scarce resources**

ACTIONS

OUTCOMES

SOUTHEAST

CREATING SUCCESS

MICHIGAN

MEASURES

SEMCOG



**Aligning resources requires
focusing on shared outcomes**



Our shared outcomes

Access
to Jobs, Markets,
Services, and
Amenities

Reliable, Quality
Infrastructure

Desirable
Communities

Economic
Prosperity

Fiscally
Sustainable
Public Services

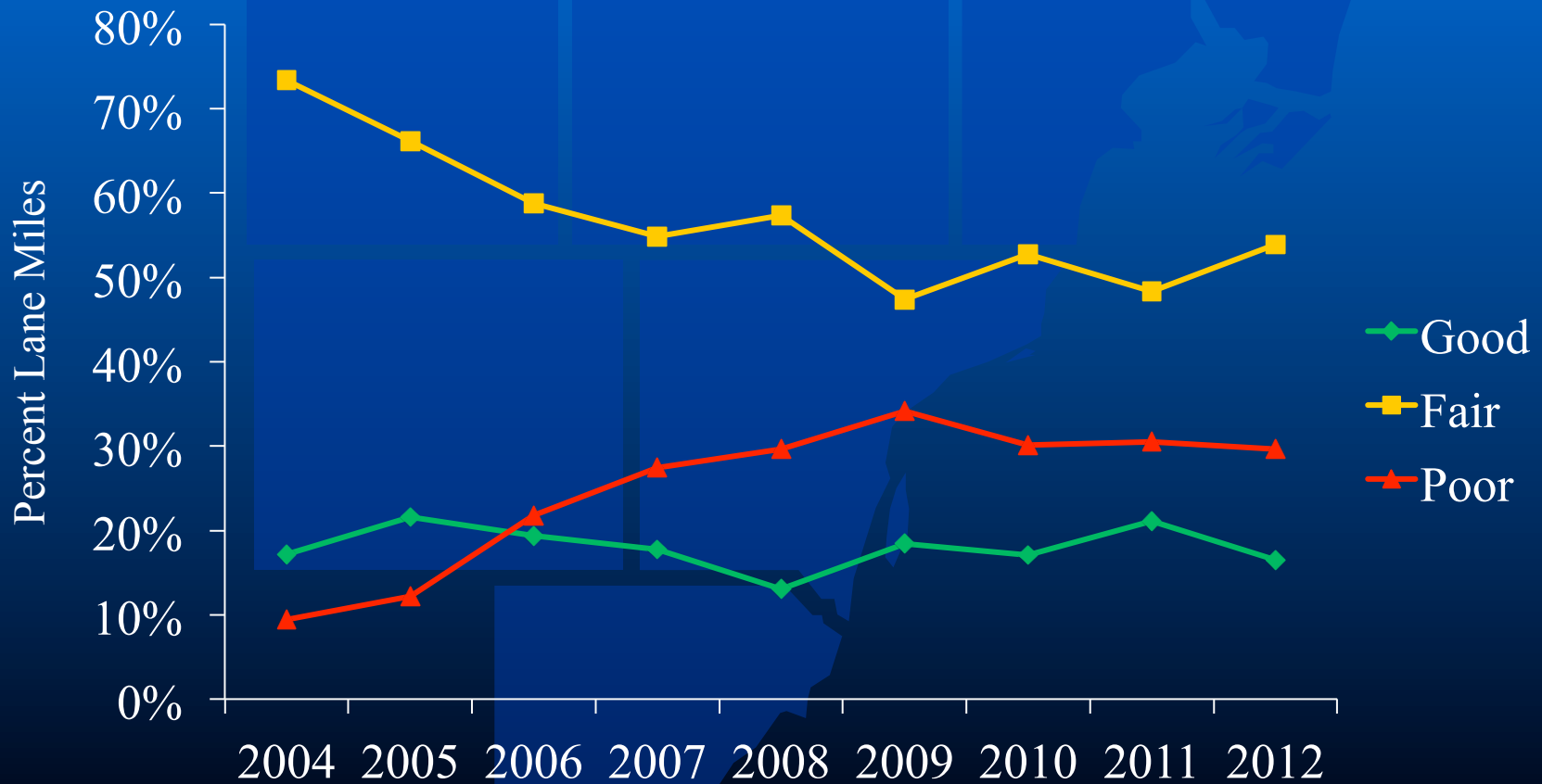
Healthy
Attractive
Environmental
Assets

Measuring the Condition of Our Transportation System

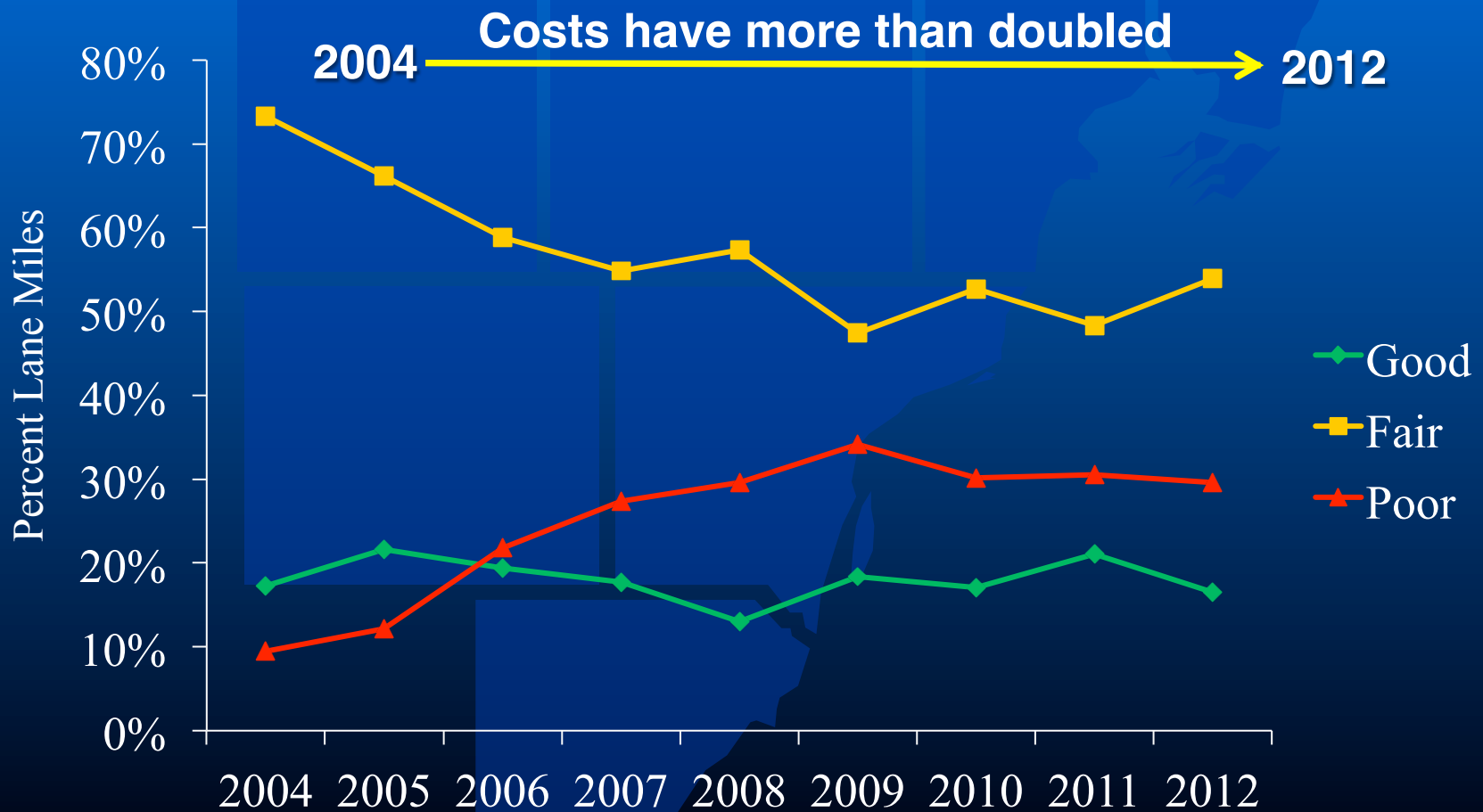


We're Under-Investing...

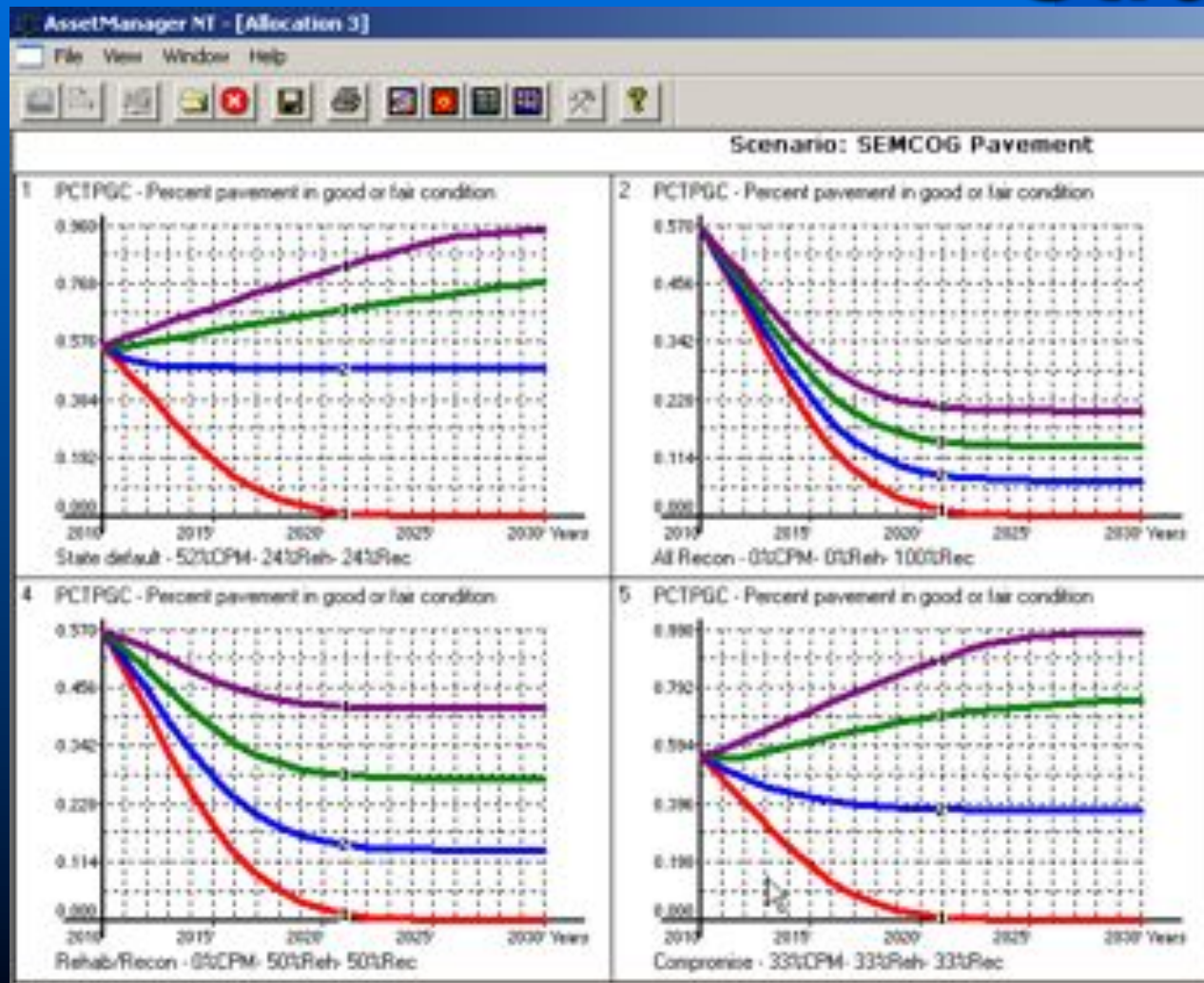
Changing pavement condition



...and it is escalating costs to taxpayers



Analysis of Pavement Strategies

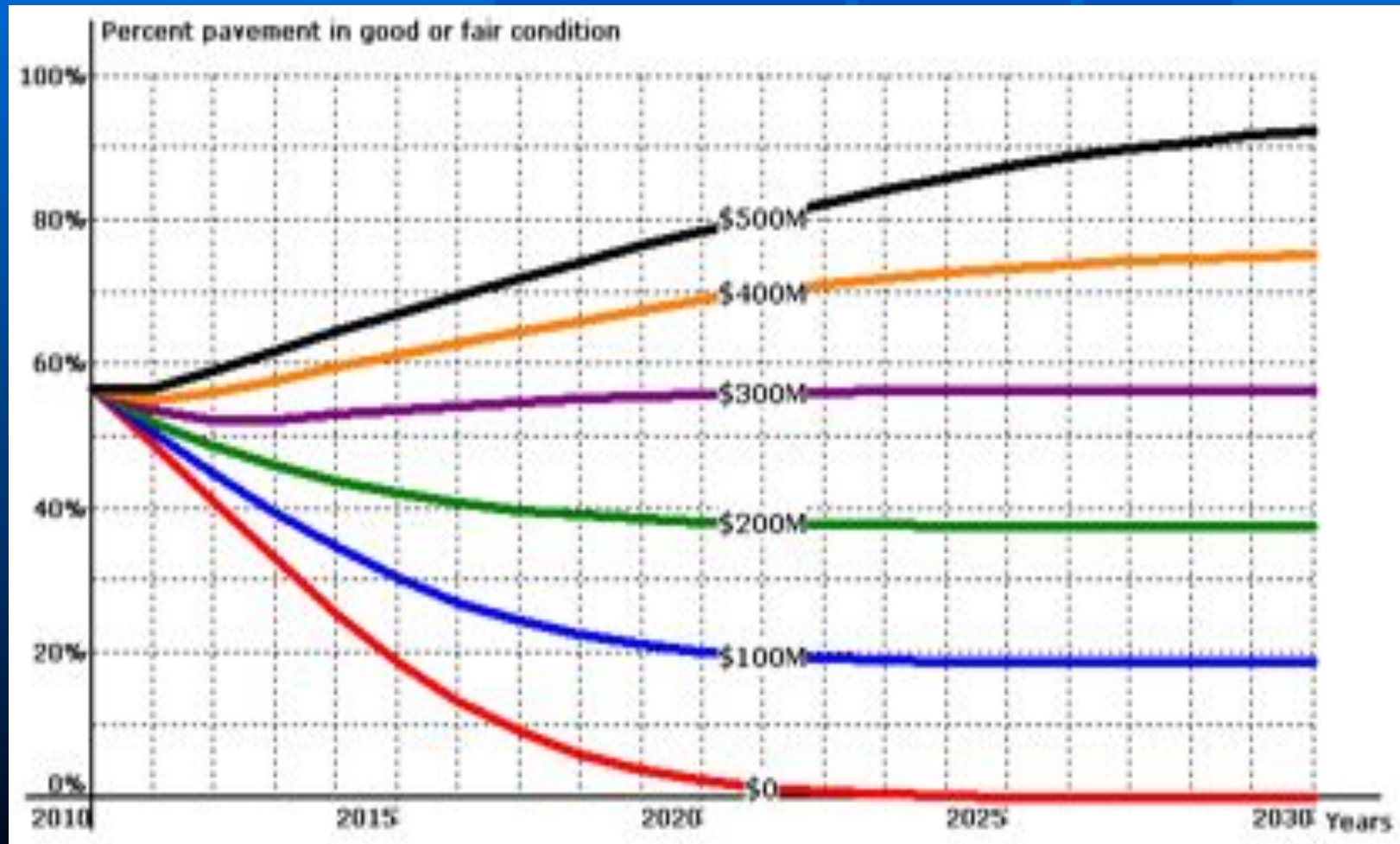


Key

- Do nothing
- \$200 million/year
- \$400 million/year
- \$600 million/year

Investment vs. Performance

Pavement



It's not just what we spend, It's how we spend it

Spend 10% on Prevention



Condition declines
From 70% to 40%
good/fair

Spend 50% on Prevention



Current condition sustained
70% good/fair

Same \$400 million, much different result

Other Program Areas Analyzed

- Transit
- Bridge preservation
- Roadway capacity expansion
- Non-motorized
- Safety
- Operations



Performance-based Planning

Fiscal Sustainability

Funding formula out of alignment with reality

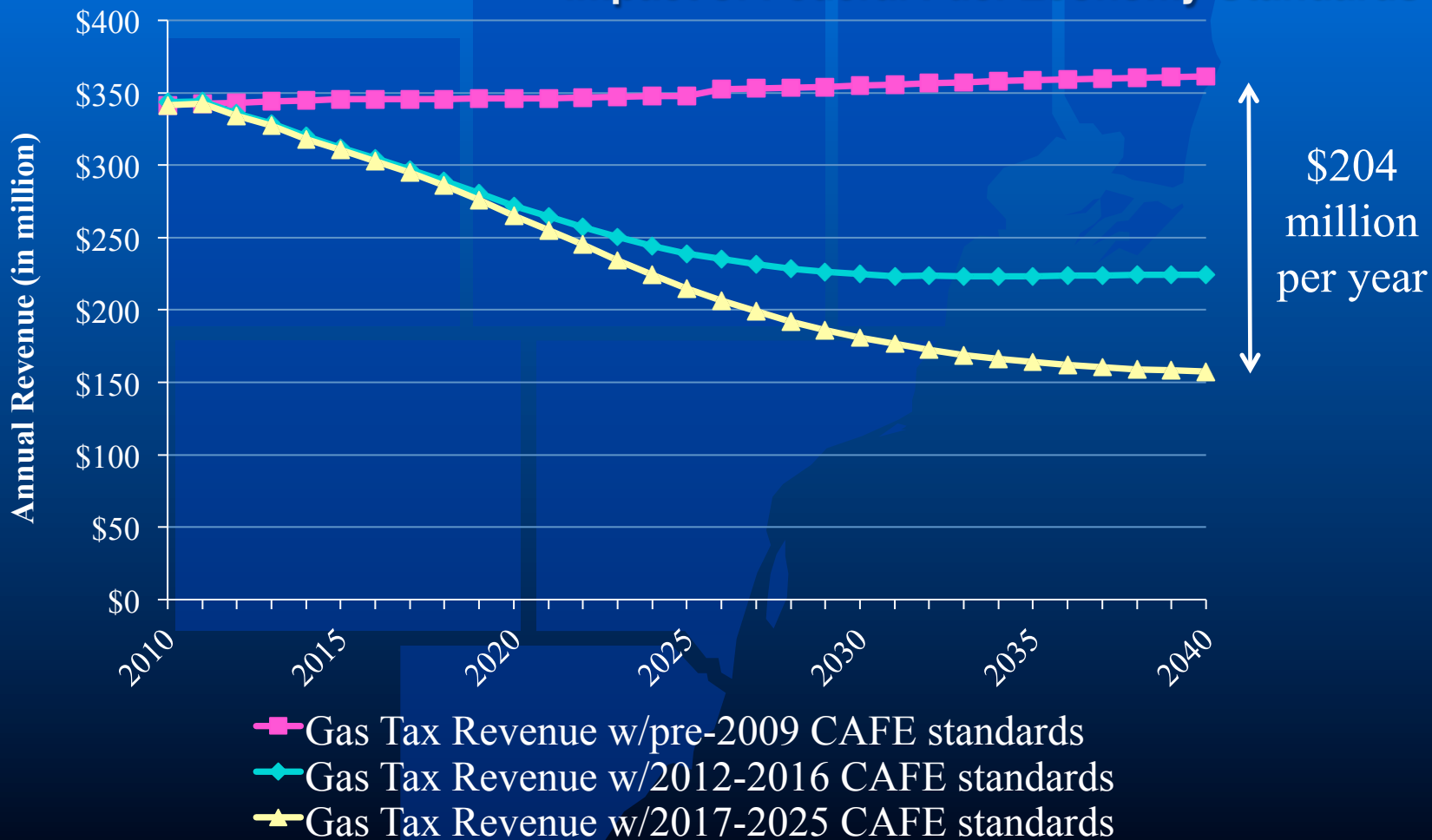
Revenues rely
on consumption



Policies emphasize
conservation

Infrastructure funding formulas are increasingly obsolete

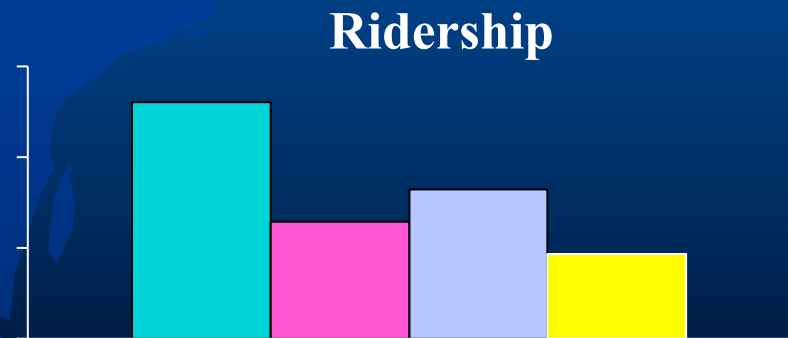
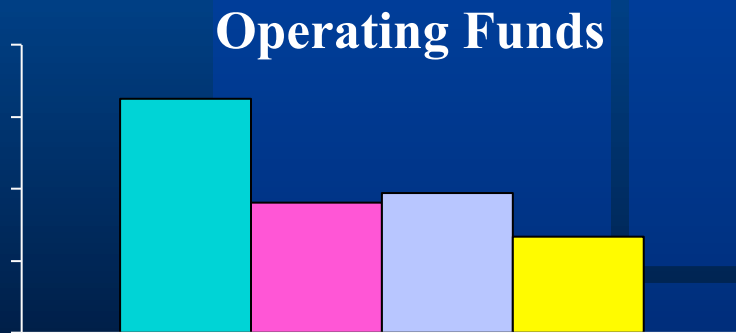
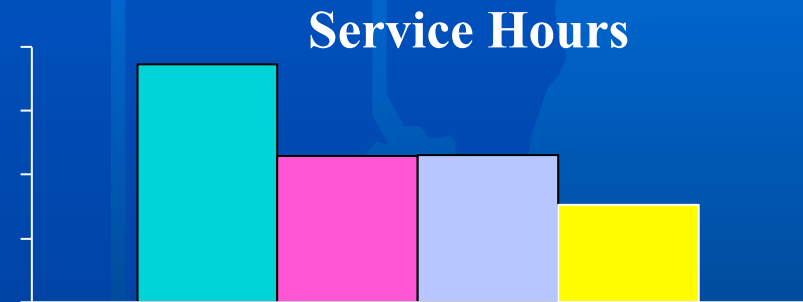
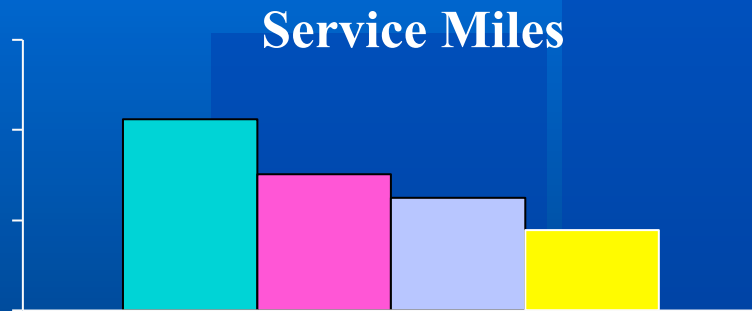
Impact of Federal Fuel Economy Standards





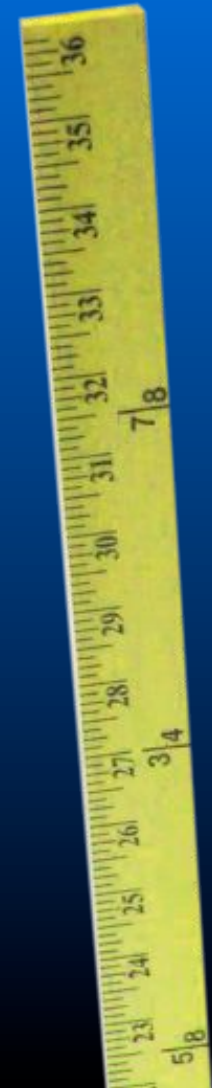
Measure: Transit ridership

Our Transit System Ranks Low



■ Pittsburgh ■ St. Louis ■ Cleveland ■ Southeast Michigan

Measure: Peak demand



**Peak demand is $\frac{1}{4}$ of day
but almost $\frac{1}{2}$ of daily travel
happens in those 6 hours**

Portion of day



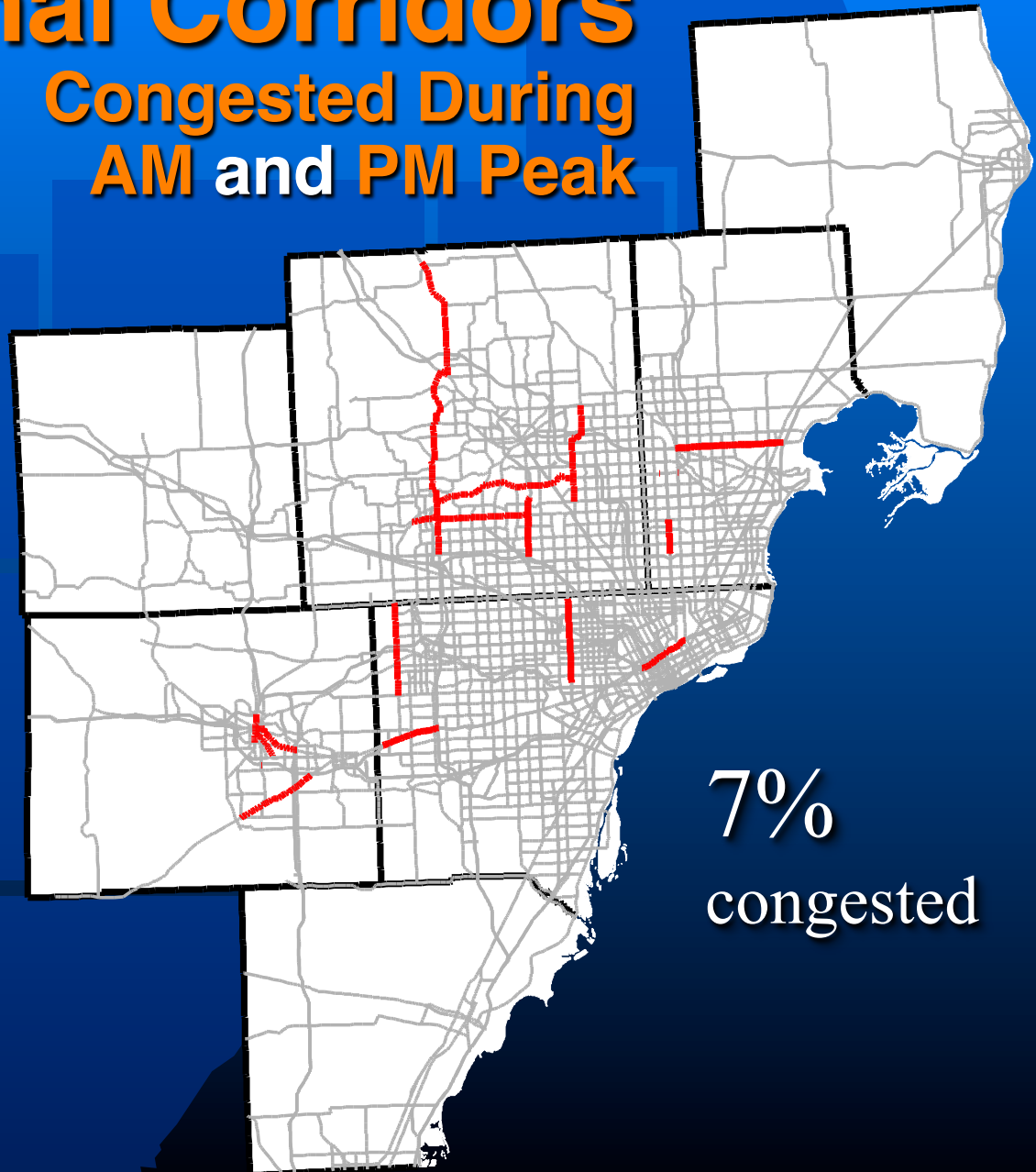
Portion of travel





Measure: System utilization

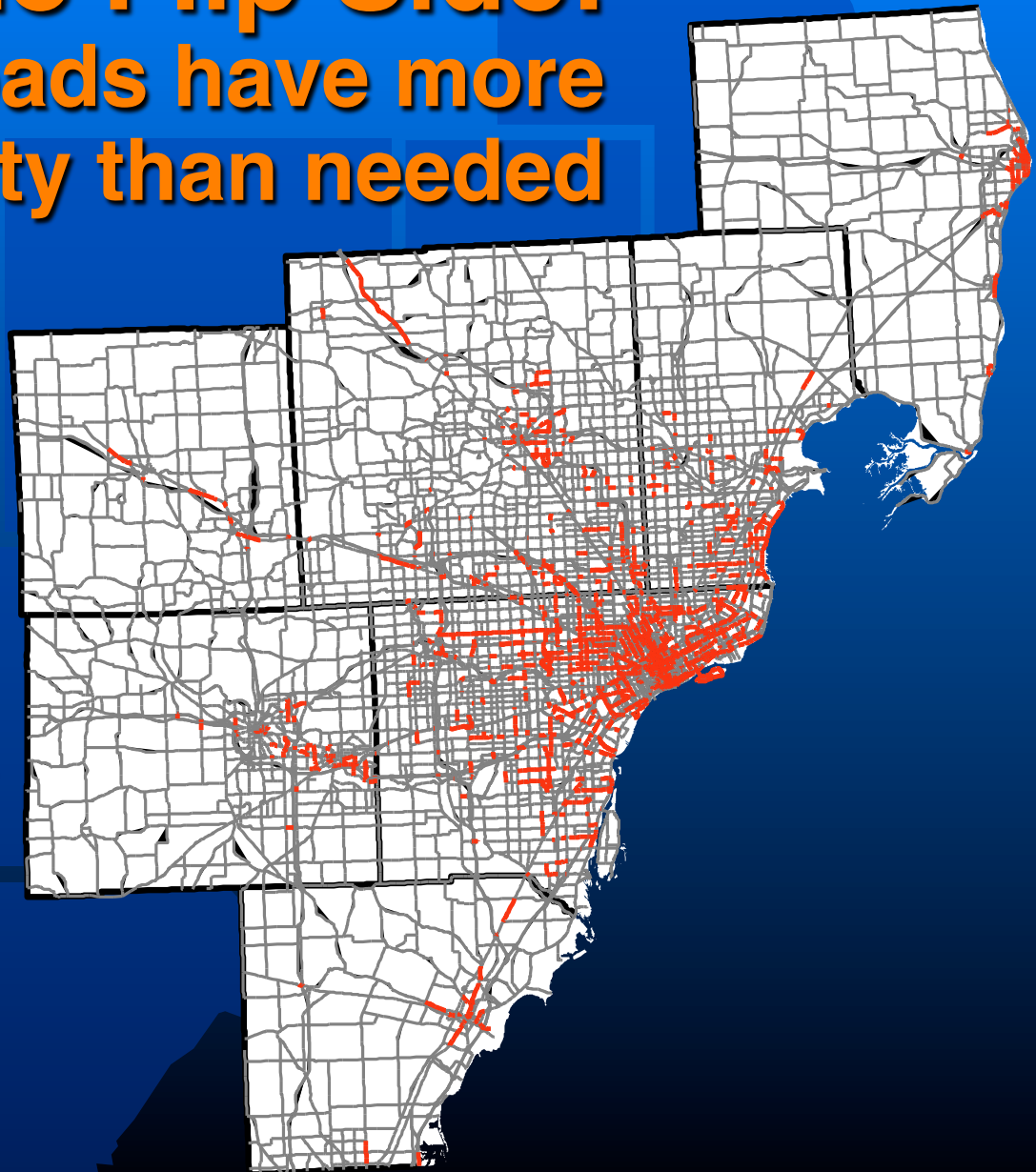
Regional Corridors Congested During AM and PM Peak

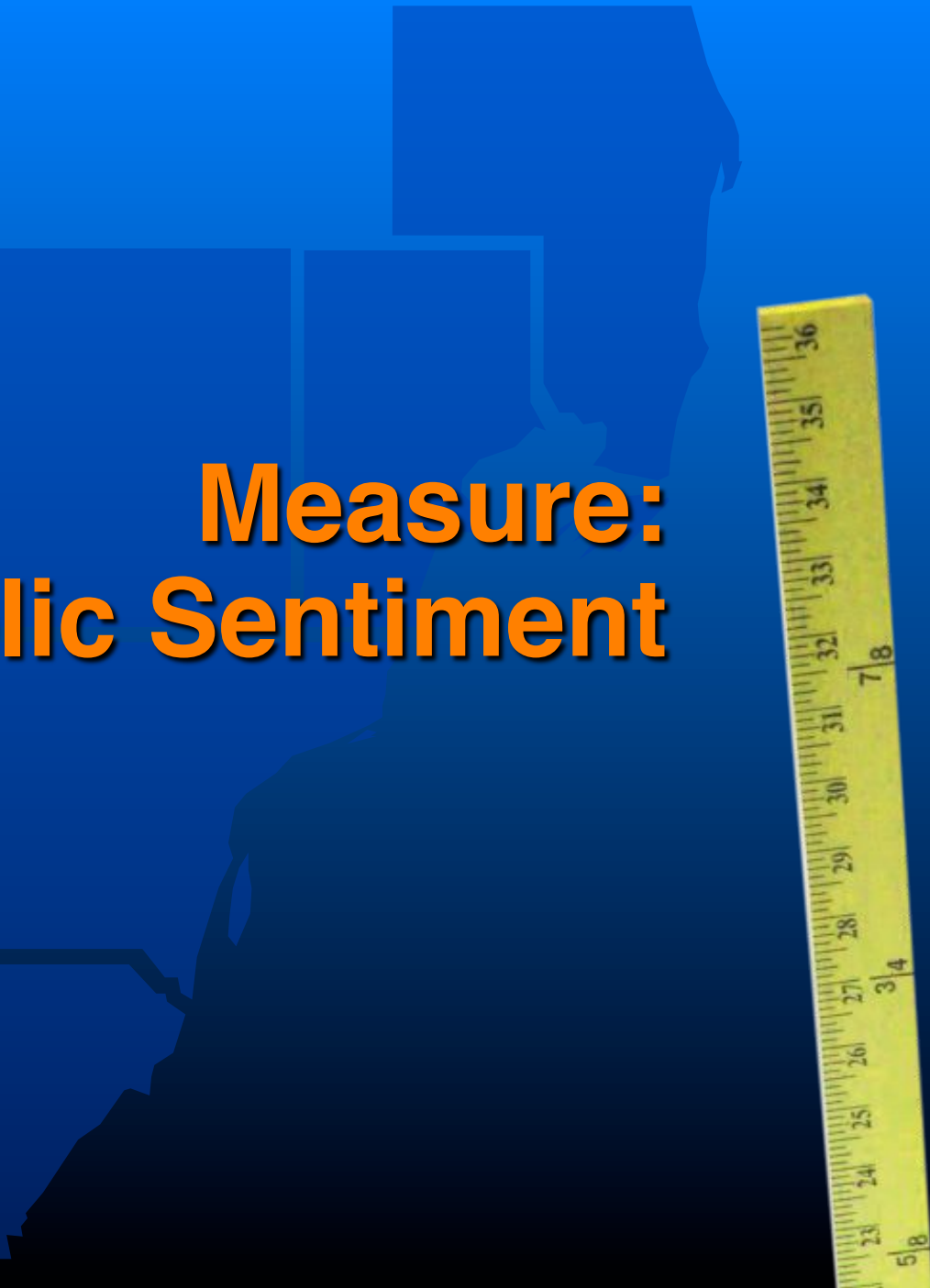


7%
congested

The Flip Side: Some roads have more capacity than needed

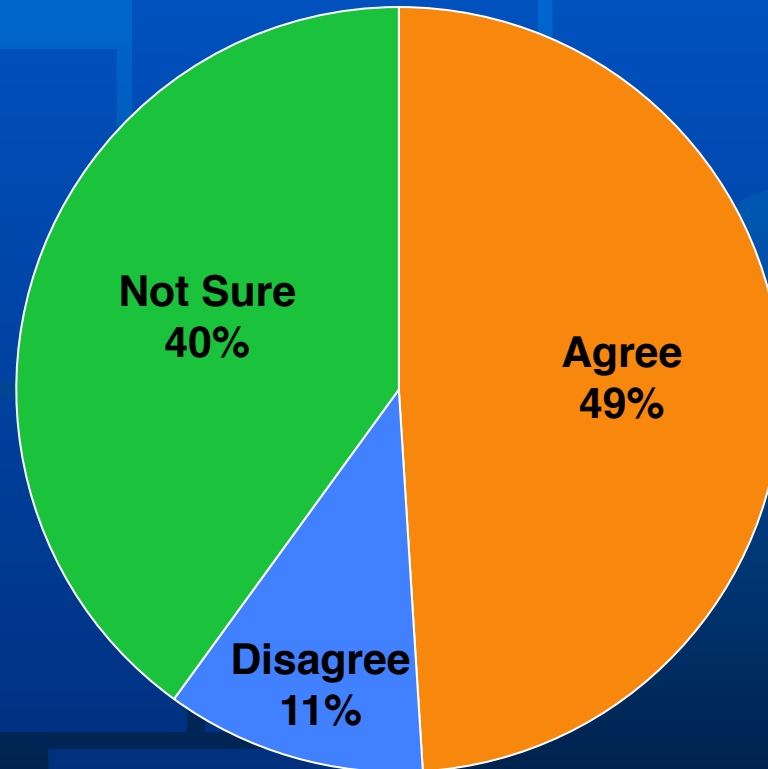
Over 600 miles
of roadway
could potentially
be downsized or
repurposed.





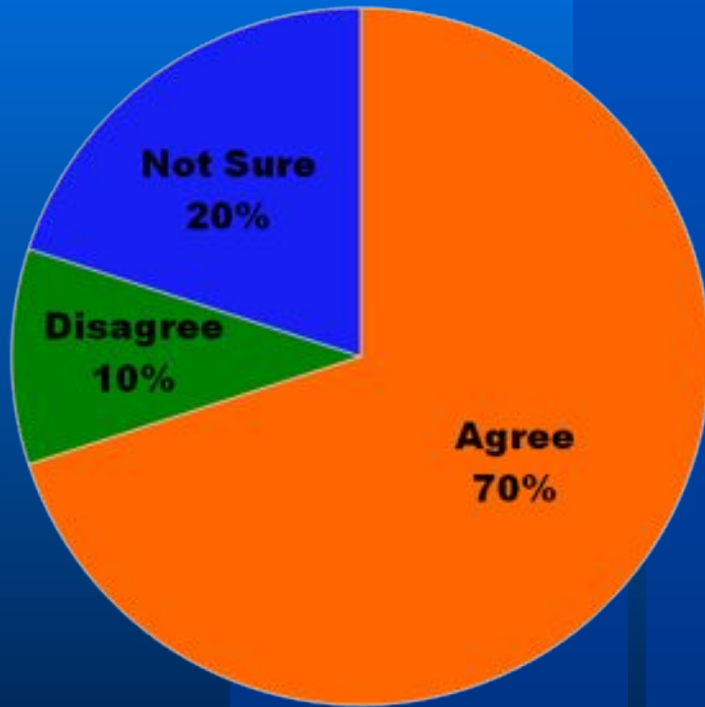
Measure: Public Sentiment

Only 11% think current funding methods will work in future

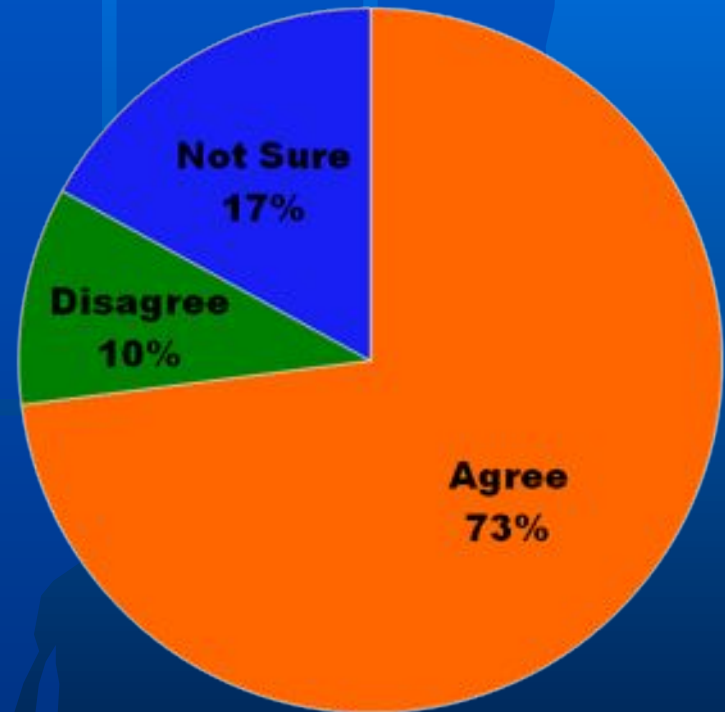


Current ways of funding won't work in future?

Funding Paradox



More funding is needed to ensure infrastructure is properly maintained.



It's not the amount we spend, it's how efficiently we spend it.

Residents understand its condition personally affects them

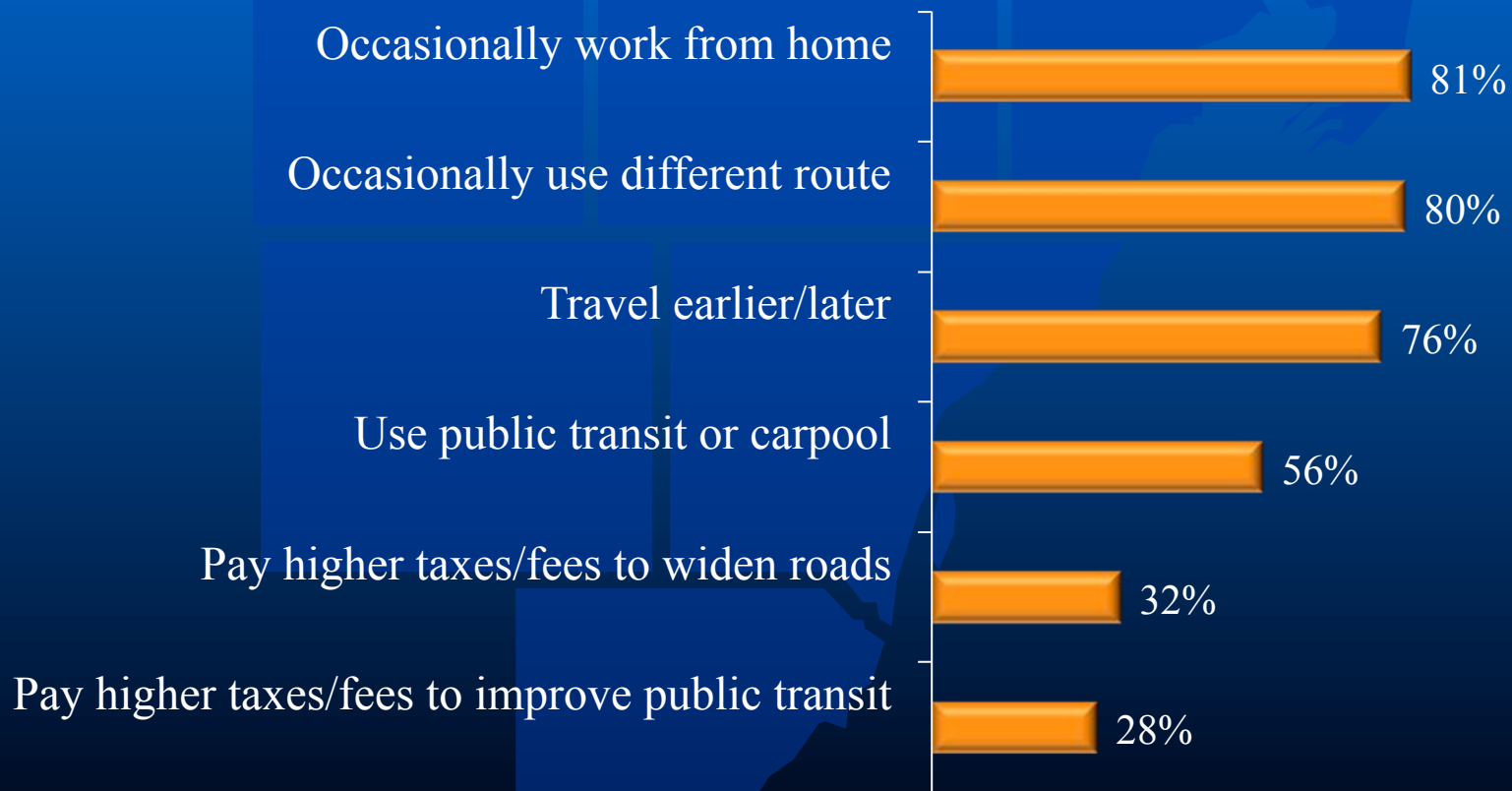
Agree

- Condition of our road system impacts each one of us 89%
- Quality of our public transportation system impacts each one of us 62%
- Condition of our water and sewer systems impact each one of us 87%
- Better roads extend vehicle life 90%



Good news: Significant majority are willing to act

Actions Willing to Take





Except for transit, most think they know how infrastructure is funded

But...

- 25% are “Not sure” or “Don’t know”
- Many basics are not well understood



**Now let's discuss where the
rubber hits the road**

Do we:

- Think regionally and act locally?

Yes and Yes!

SEMCOG

- Think locally and act regionally?



Aligning our actions



Less Alignment



Breaking the silos requires some adjustments in our thinking

Water/ Sewer



Roads



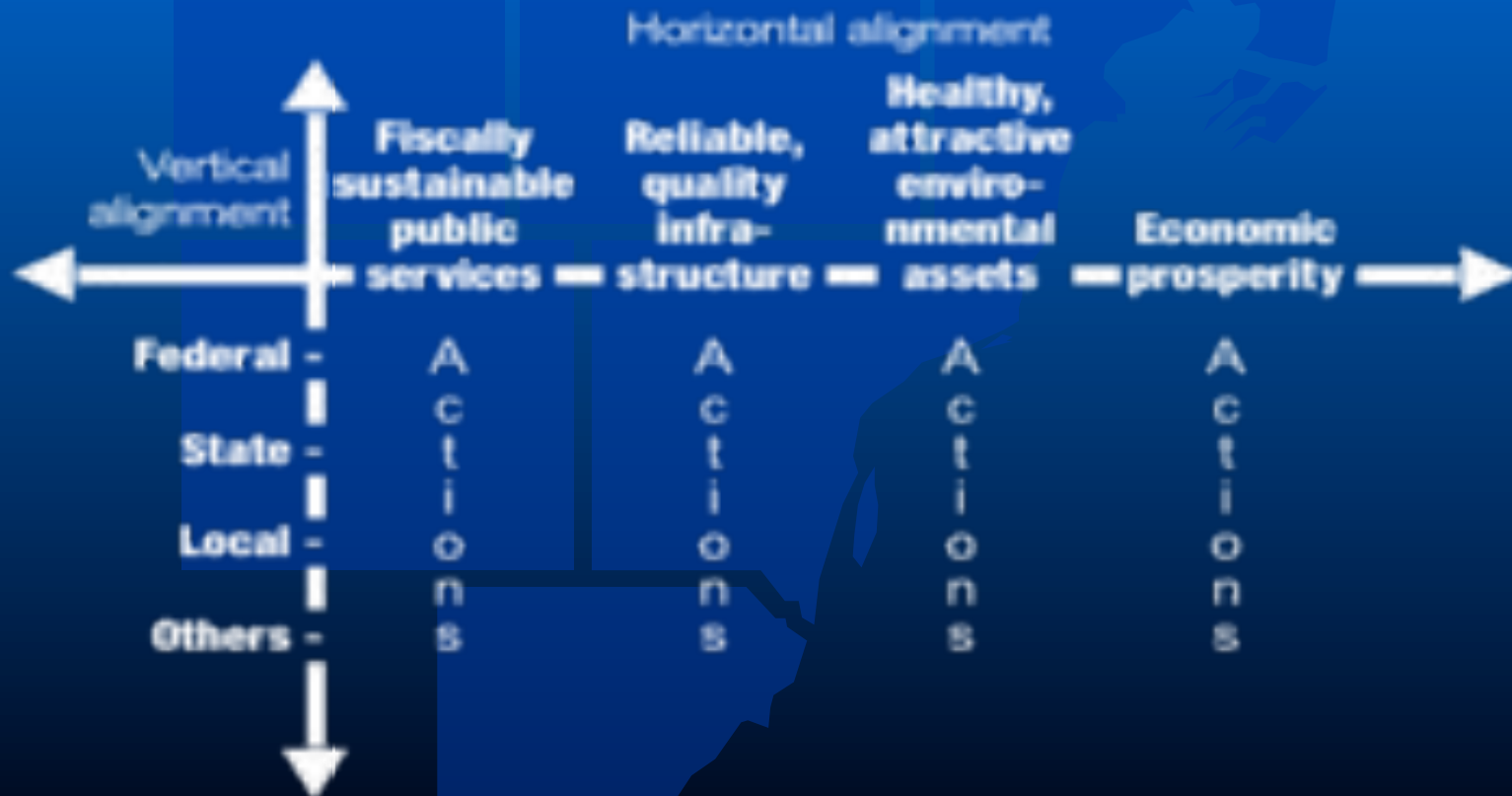
Environment



Transit



Actions in an outcome-focused decision structure are more aligned



Develop a Strategic Investment Process and Implement it!

Technical

- What is the cost effectiveness of different strategies?
- What is the total cost of different targets?

Develop a Strategic Investment Process and Implement it!

Policy

- What are the implications for the transportation system?
- How do differing targets impact other outcomes?
- Select targets
- Assure actions and revenue allocation reflects targets

Setting Targets

Category	Cost-Effective Target	Real Cost	Interim Target	Strategic Spending Level
Pavement	80%	\$500	70%	\$250
Bridges	90%	\$300	80%	\$200
Other...	85%	\$700	65%	\$250
Total cost effective target:		\$1500	Total strategic target:	\$700



Recap

The glass is half full: *We have much to be proud of*



System supports millions of
trips and millions of dollars
of commerce every day

Completing the circle



**These actions help fill the glass
positioning us for greater
success**



Thank you

- www.semcog.org
(www.semcog.org/2040RegionalTransportationPlan.aspx)
- Tom Bruff
SEMCOG
Plan and Policy Development Group
bruff@semcog.org
313-324-3340 (direct)



SEMCOG

Southeast Michigan Council of Governments

Questions?

- Submit your questions using the webinar's Q&A feature

Next webinar:

Addressing Preservation and Maintenance in Asset Management Plans – September 18, 2013 2:00 EST

Save the Dates!

A bimonthly webinar series, Wednesdays at 2:00 PM EST

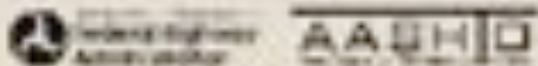
Announcing the next four webinars in the series:

July 10, 2012 2:00 PM EST – Asset Management and Performance-based Planning

September 18, 2013 2:00 PM EST – Addressing Preservation and Maintenance in Asset Management Plans

November 13, 2013 2:00 PM EST – Asset Management and Adaptation to Climate Change and Extreme Weather Events

January 22, 2014 2:00 PM EST – Data Needs, Issues, and Governance for Improved Management of Highway Assets



For more information or to register:
<http://tam.transportation.org>