

# Otter Tail County 2040 Transportation Plan



*Better roads for a better Otter Tail... our values, our priorities*

**Asset Management Peer Exchange**

Adopted July 21, 2015



# Study Purpose and Goals

1. Leverage existing tools
2. Analyze existing road conditions
3. Comparison of funding versus road conditions
4. Make new tools available
  - Analysis and planning
  - Communications
5. Develop customized solutions for future needs
6. Promote awareness of best practices

Integral to each step is: **Education and Communication:**

- County Boards
- General Public

# Gap Analysis:

# Otter Tail County

**Miles of Asphalt Roads** = 1,070

County State Highways = 935

County Roads = 135

**Number of Vehicle Bridges** = 75

Functionally Obsolete = 0

Structurally Deficient = 9

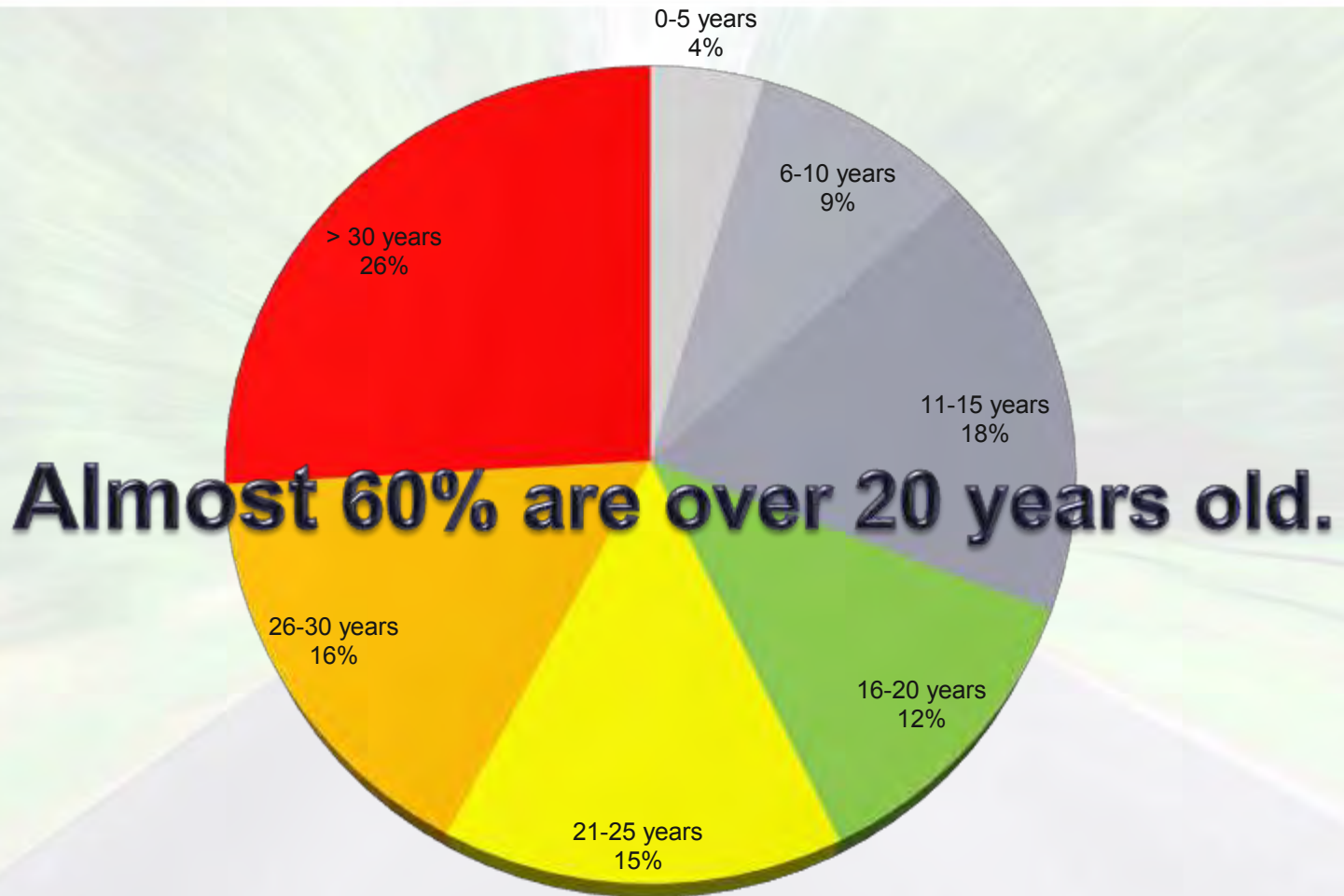
Adequate = 66



*Phelps Mill Photo by Elizabeth A. Armour  
(Wikimedia Commons)*

# Gap Analysis:

# Otter Tail County Existing Road Age (Asphalt)





# Gap Analysis:

# Otter Tail County

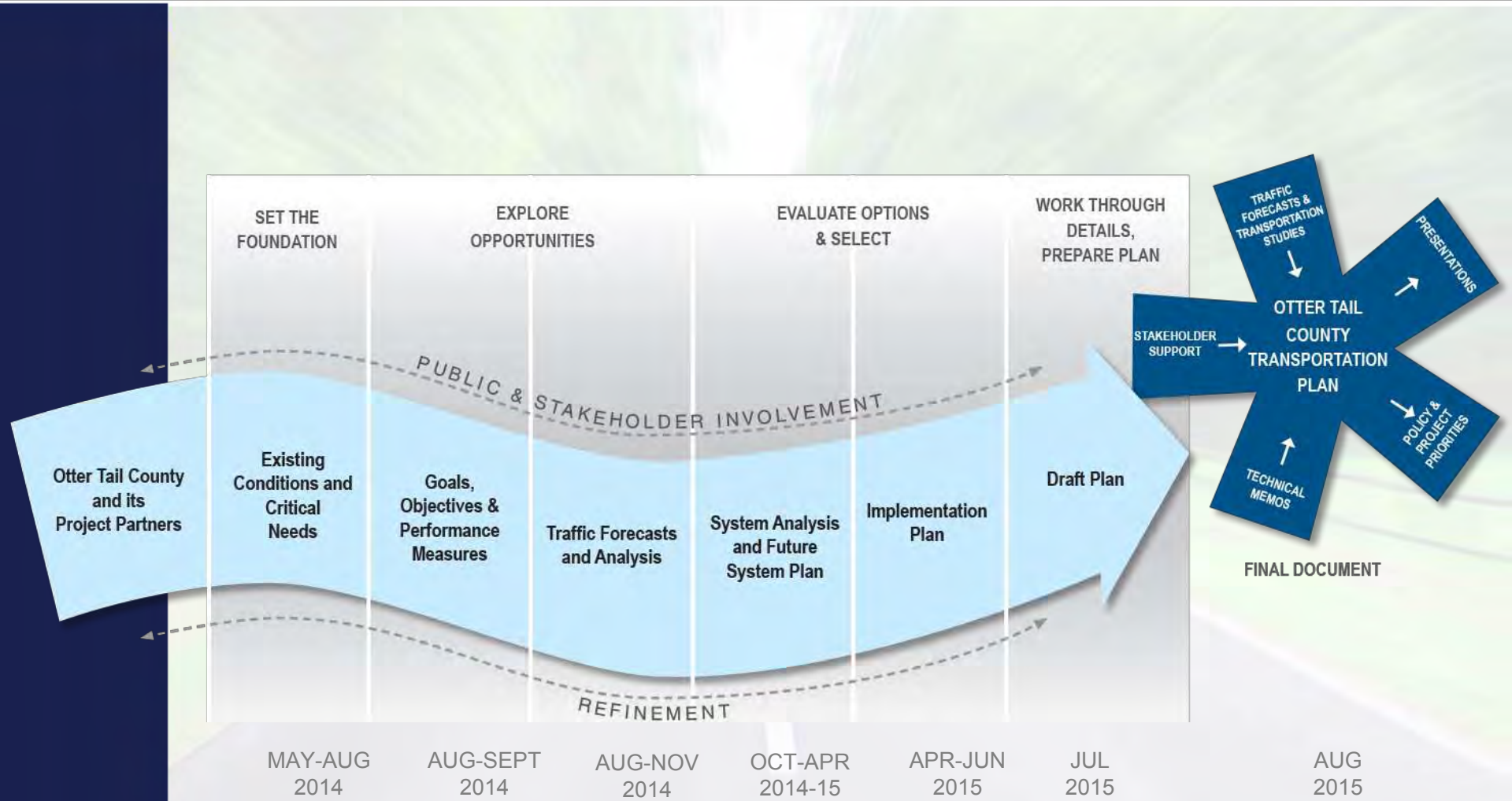
**Otter Tail County  
Annual Roadway Need - \$15.2 million/yr.**

**Current Expenditure (2011)  
\$3.4 million/yr.**

**Year 1 Funding Gap  
\$11.8 million/yr.**

Note: This GAP Analysis is for pavement preservation and does not include reconstruction.

# Transportation Plan Study Process



# Preservation Strategies Evaluated in Plan

- Reducing System Size
- Developing a Tiered Roadway Maintenance Program
- Developing Performance Measures & Schedules
- Identifying New Funding Sources
- Establishing a Transparent Project Prioritization Process
- Promoting Expanded Public Engagement

# 2040 Transportation Plan Outreach

## Otter Tail County

- **Extensive Public Engagement Process:**
  - Open Houses (6 mtgs)
  - Focus Group Sessions (2 mtgs)
  - Consultations with Other Interests (cities, major businesses, townships, MnDOT D-4, WCI, etc.)
  - Project Management Team (8 mtgs)
  - Project Steering Committee (5 mtgs)
  - County Board Sessions (2 mtgs)
  - Study Website
  - Public Hearing (1 mtg)





# Tiered Preservation System

Current Highway System

Tiered System Criteria		Refinement and Verification*	Tiered Maintenance Description	Tiered Maintenance
Average Daily Traffic	Freight Routes			
<ul style="list-style-type: none"> <li>&gt; 800</li> <li>&gt; 400</li> </ul>	<ul style="list-style-type: none"> <li>&lt; 9 Ton Routes</li> <li>County 9 - 10 Ton Routes</li> <li>Proposed Freight Routes</li> <li>Conceptual 10-Ton Network</li> </ul>		<p><b>PLATINUM:</b> These routes are the backbone of the County's network. Common traits of these routes include: typically having higher traffic volumes, are on the current or proposed freight network, and provide connectivity to MnDOT's roadway network, and population centers throughout the County. Platinum priority routes, totaling 371.08 miles (35%), would be targeted for the highest maintenance standards and schedules.</p>	<ul style="list-style-type: none"> <li>1st seal coat applied at year 3 after any major repair</li> <li>2nd seal coat applied 7 years after 1st seal coat</li> <li>Apply major repair before PQI reaches 65</li> <li>Overall average PQI cannot be lower than 80</li> </ul>
<ul style="list-style-type: none"> <li>400 - 500</li> <li>200 - 400</li> </ul>	<ul style="list-style-type: none"> <li>&lt; 9 Ton Routes</li> <li>County 9 - 10 Ton Routes</li> <li>Proposed Freight Routes</li> <li>Conceptual 10-Ton Network</li> </ul>		<p><b>GOLD:</b> This second tier of routes, totaling 280.42 miles (26%), serves mid-level traffic volumes, lower freight movements, and connectivity throughout Otter Tail County by linking to the Platinum Routes. While Gold Routes generally function at a lower classification than Platinum Routes, they are regionally significant due to the additional connectivity. These routes would have mid-level maintenance standards and schedules.</p>	<ul style="list-style-type: none"> <li>1st seal coat applied at year 3 after any major repair</li> <li>2nd seal coat applied 7 years after 1st seal coat</li> <li>Apply major repair before PQI reaches 50</li> <li>Overall average PQI cannot be lower than 75</li> </ul>
<ul style="list-style-type: none"> <li>200 - 400</li> <li>&lt; 200</li> </ul>	<ul style="list-style-type: none"> <li>&lt; 9 Ton Routes</li> <li>County 9 - 10 Ton Routes</li> <li>Proposed Freight Routes</li> <li>Conceptual 10-Ton Network</li> </ul>		<p><b>SILVER:</b> This tier, making up 251.12 miles (24%) of the roadway network, serves lower traffic, decreased freight movements, and provides relatively short connections between Platinum and Gold Routes. These routes generally function at a lower classification and would have lower maintenance standards and longer schedules.</p>	<ul style="list-style-type: none"> <li>1st seal coat applied at year 3 after any major repair</li> <li>2nd seal coat applied 10 years after 1st seal coat</li> <li>Apply major repair before PQI reaches 35</li> <li>Overall average PQI cannot be lower than 70</li> </ul>
<ul style="list-style-type: none"> <li>&lt; 200</li> </ul>	<ul style="list-style-type: none"> <li>&lt; 9 Ton Routes</li> </ul>		<p><b>BRONZE:</b> These roadways totaling 164.25 miles (16%), have the lowest traffic volume, restricted weight limits, and low functional classification. These routes would receive the lowest maintenance and may be recommended for an alternate surface or a turnback.</p>	<ul style="list-style-type: none"> <li>Apply preservation methods before PQI reaches 25</li> <li>Overall average PQI cannot be lower than 60</li> </ul>

# Tiered Preservation System

## PLATINUM:

These routes are the backbone of the County's network. Common traits of these routes include: typically having higher traffic volumes, are on the current or proposed freight network, and provide connectivity to MnDOT's roadway network and population centers throughout the County. Platinum priority routes, totaling 371.08 miles (35%), would be targeted for the highest maintenance standards and schedules.

- Typically higher volumes
- Current and proposed freight network
- Provide connectivity to MnDOT system
- 35% of the system

## GOLD:

This second tier of routes, totaling 280.42 miles (26%), serves mid-level traffic volumes, lower freight movements, and connectivity throughout Otter Tail County by linking to the Platinum Routes. While Gold Routes generally function at a lower classification than Platinum Routes, they are regionally significant due to the additional connectivity. These routes would have mid-level maintenance standards and schedules.

- Mid-level traffic volumes
- Lower freight volumes
- Connectivity throughout the county connecting to Platinum routes
- 26% of the system

## SILVER:

This tier, making up 251.12 miles (24%) of the roadway network, serves lower traffic, decreased freight movements, and provides relatively short connections between Platinum and Gold Routes. These routes generally function at a lower classification and would have lower maintenance standards and longer schedules.

- Serves lower traffic
- Decreased freight movements
- Provides relatively short routes between Platinum and Gold routes
- 24% of the system

## BRONZE:

These roadways totaling 164.25 miles (15%), have the lowest traffic volume, restricted weight limits, and low functional classification. These routes would receive the lowest maintenance and may be recommended for an alternate surface or a turnback.

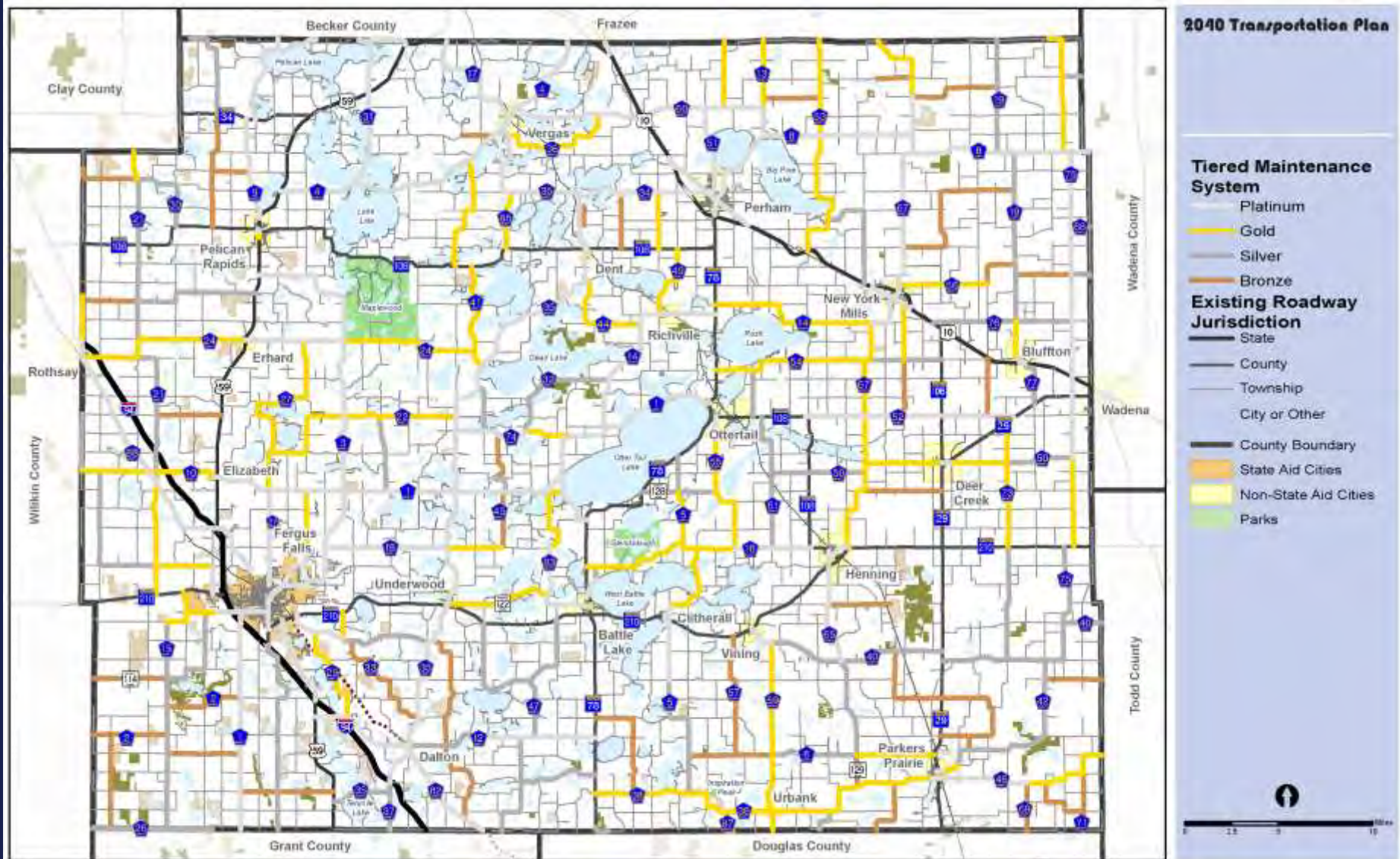
- Lowest traffic volumes
- Restricted weight limits
- Low functional classification
- 15% of the system

# Revenue Enhancements

- Wheelage Tax (\$10/vehicle): \$568,650/yr. (2013 est.)
- Local Option ½ cent Sales Tax \$4,384,000/yr. (2013 est.)
- Bonding
- Increased local road and bridge levy
- State gas tax and/or registration fees (legislative proposal): \$2,280,000/yr. (2015 est.)
- Gravel Tax



# Tiered Roadway Maintenance System







# Project Prioritization

- Prevent “fair condition” roads from falling into “poor condition;” avoid worst first approach
- Used County Pavement Management System to evaluate priorities, based on good data, new management policies, and performance measures
- Prioritized preservation strategies over more expensive reconstruction fixes.
- Developed scope and cost
- Established program of projects (10 year list)

# System Preservation Analysis

## System Characteristics

What are the system impacts of the various funding options?

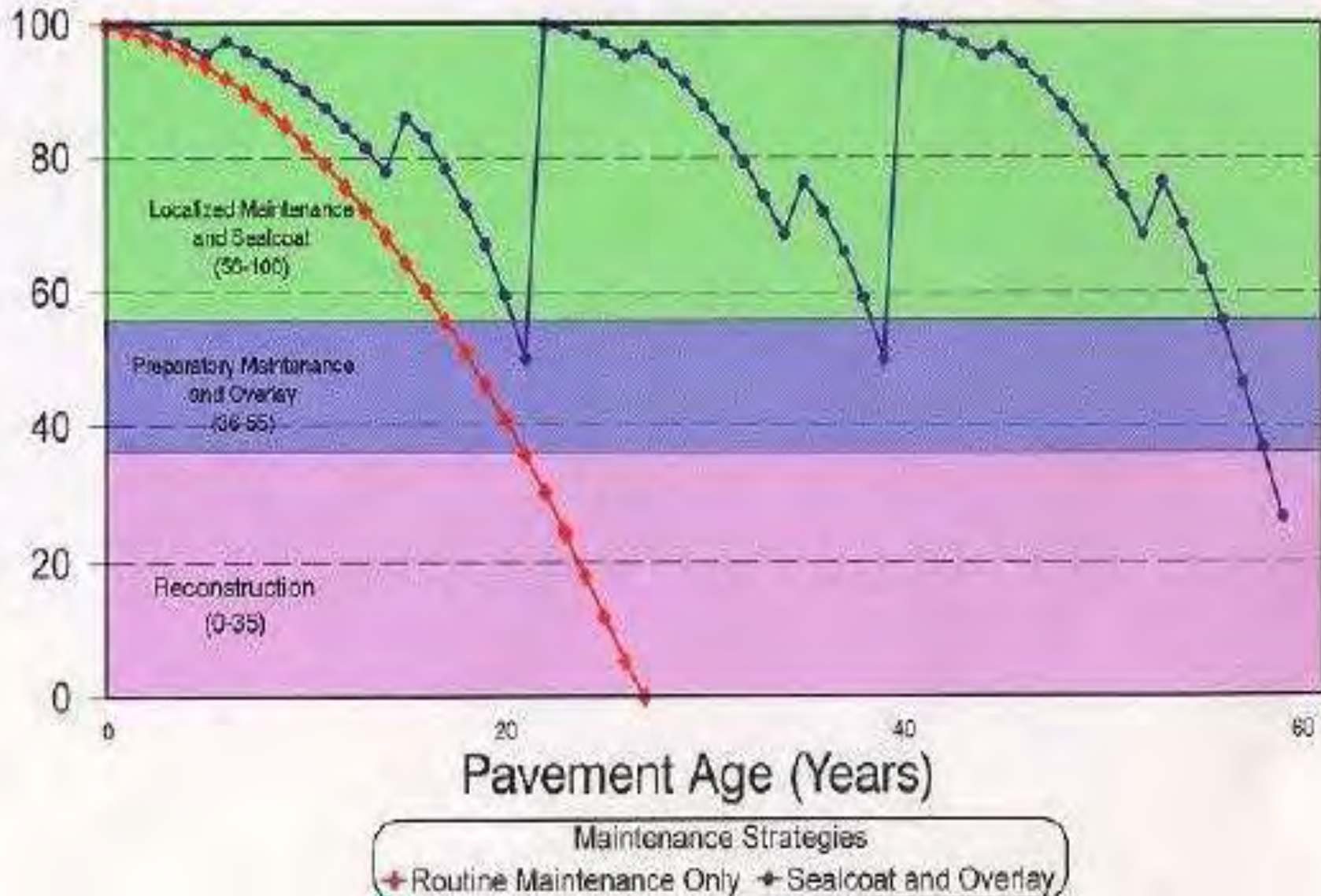
Do the funding options meet the standards set for each Tier?

# System Characteristics

- Tiered Preservation System – Platinum, Gold, Silver and Bronze
- Pavement Age
- PQI – Pavement Quality Index
  - Ratings performed by MnDOT
  - Even mix of ride and surface condition
  - 100 good, 0 failed

# Pavement Age

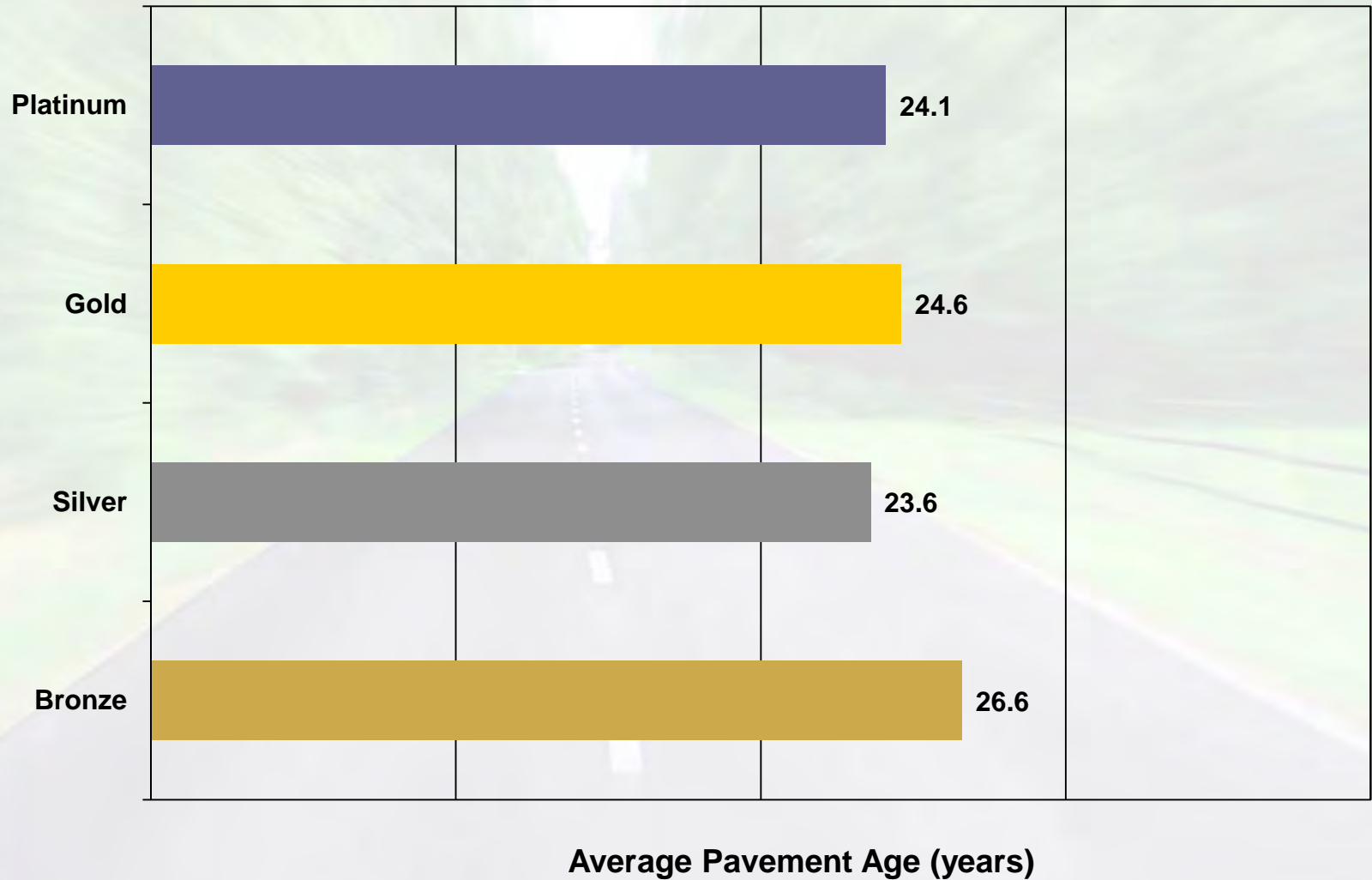
## Typical Pavement Life Cycle





# Pavement Age

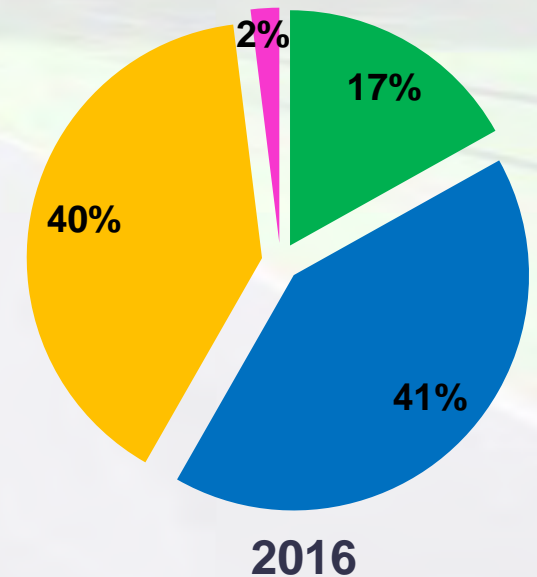
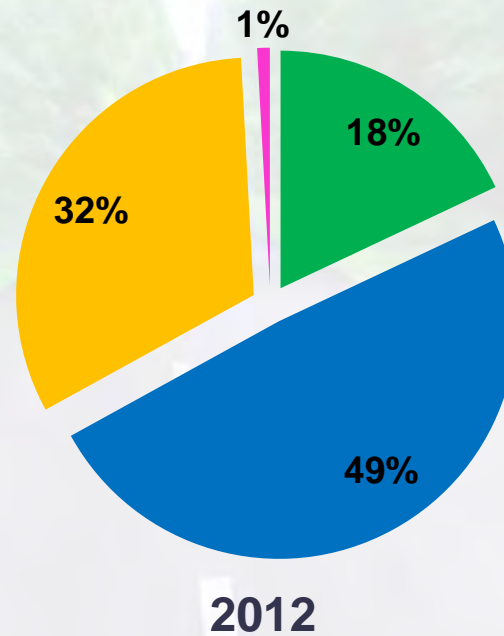
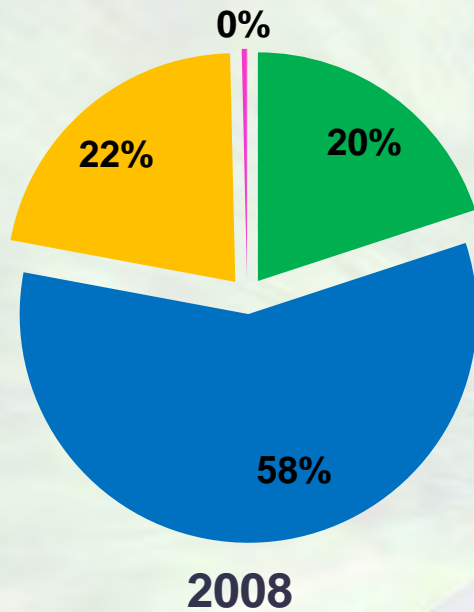
## According to Tier Assignments



# What does the PQI Look Like?

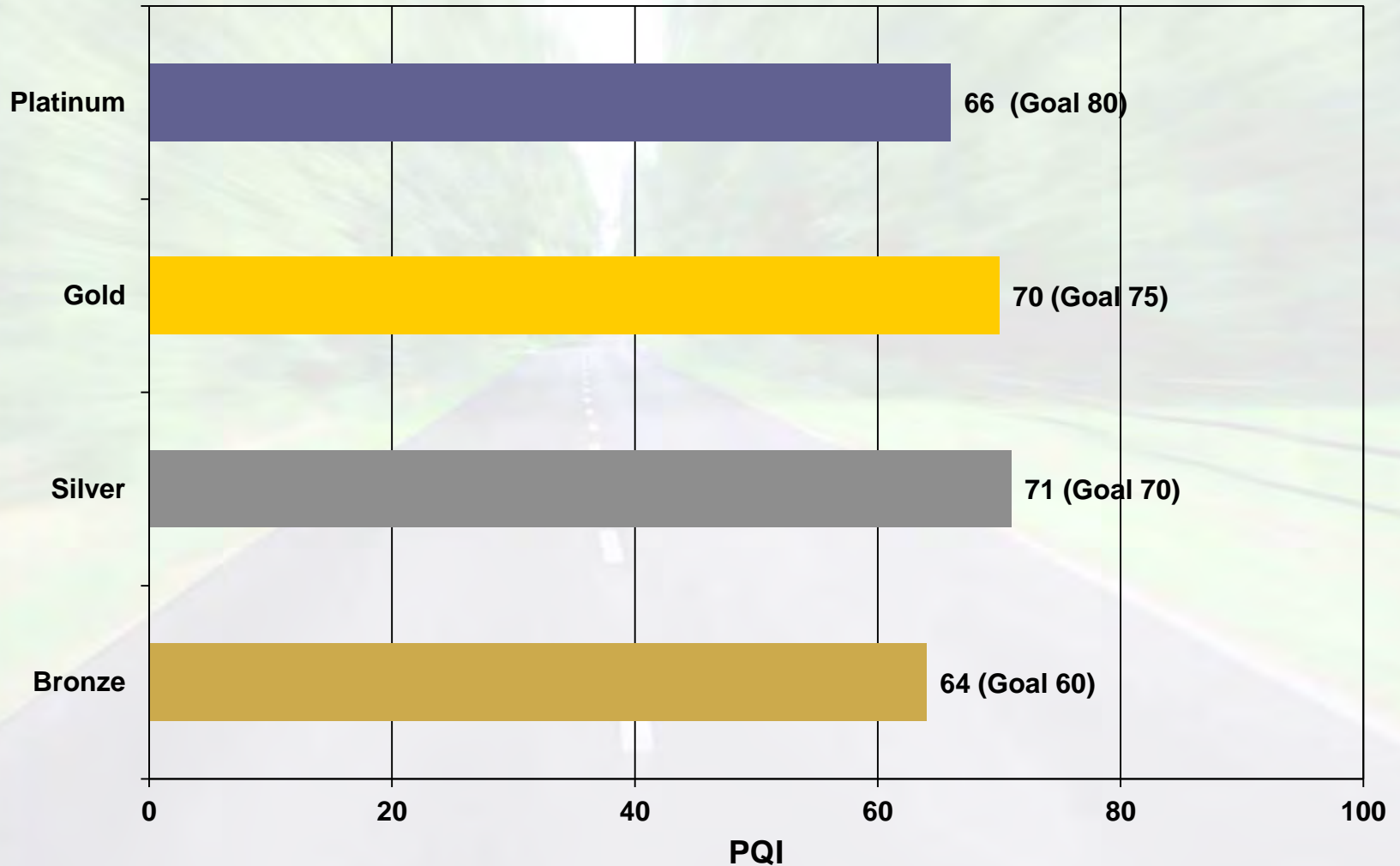


# Comparative Roadway Conditions



- Very Good (80-100)
- Good (60-79)
- Fair (40-59)
- Poor (20-39)
- Very Poor (0-19)

# 2014 Condition Based on Tier Assignments





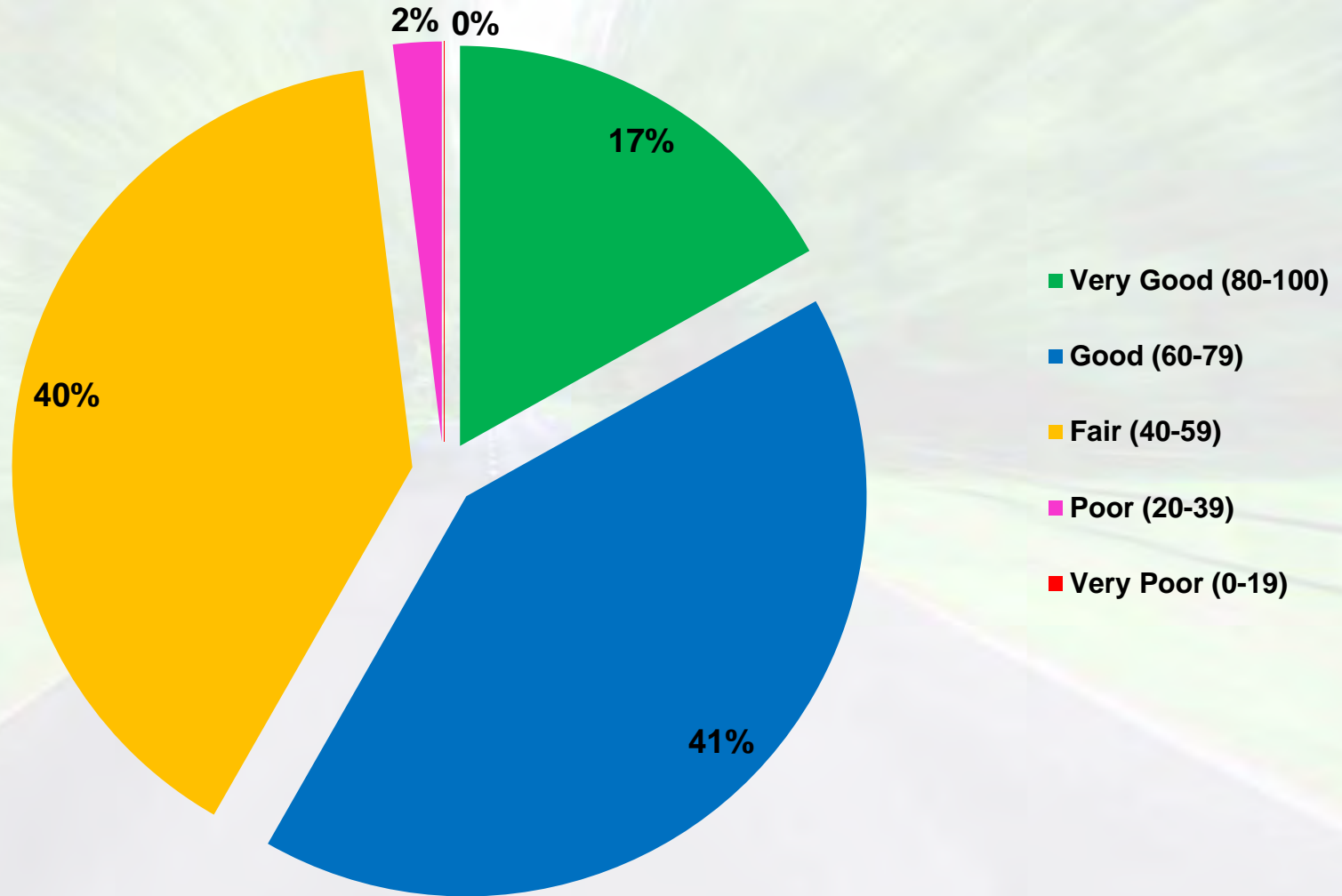
# How Do We Meet the Goals?

## FUNDING SCENARIOS

- 1 - Current Funding (CH and CSAH)
- 2 - Wheelage Tax Option (CH and CSAH)
- 3 - Sales Tax Option (CH and CSAH)
- 4 - Gas Tax Option (CSAH only)
- 5 - Wheelage plus Sales
- 6 - Maintain Current Condition of 68

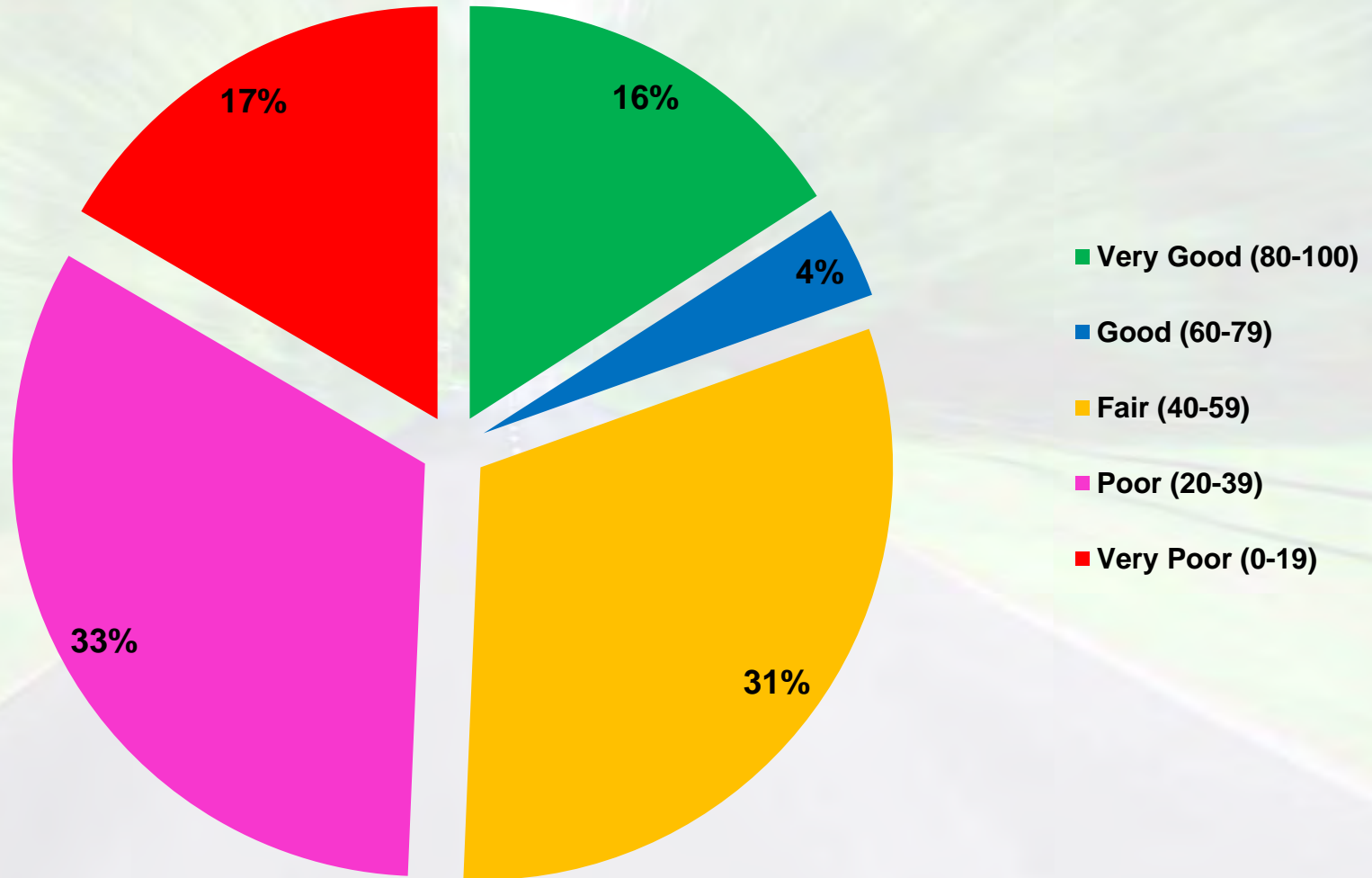
# 2016 ROADWAY CONDITIONS

*(Projected, based on current funding)*



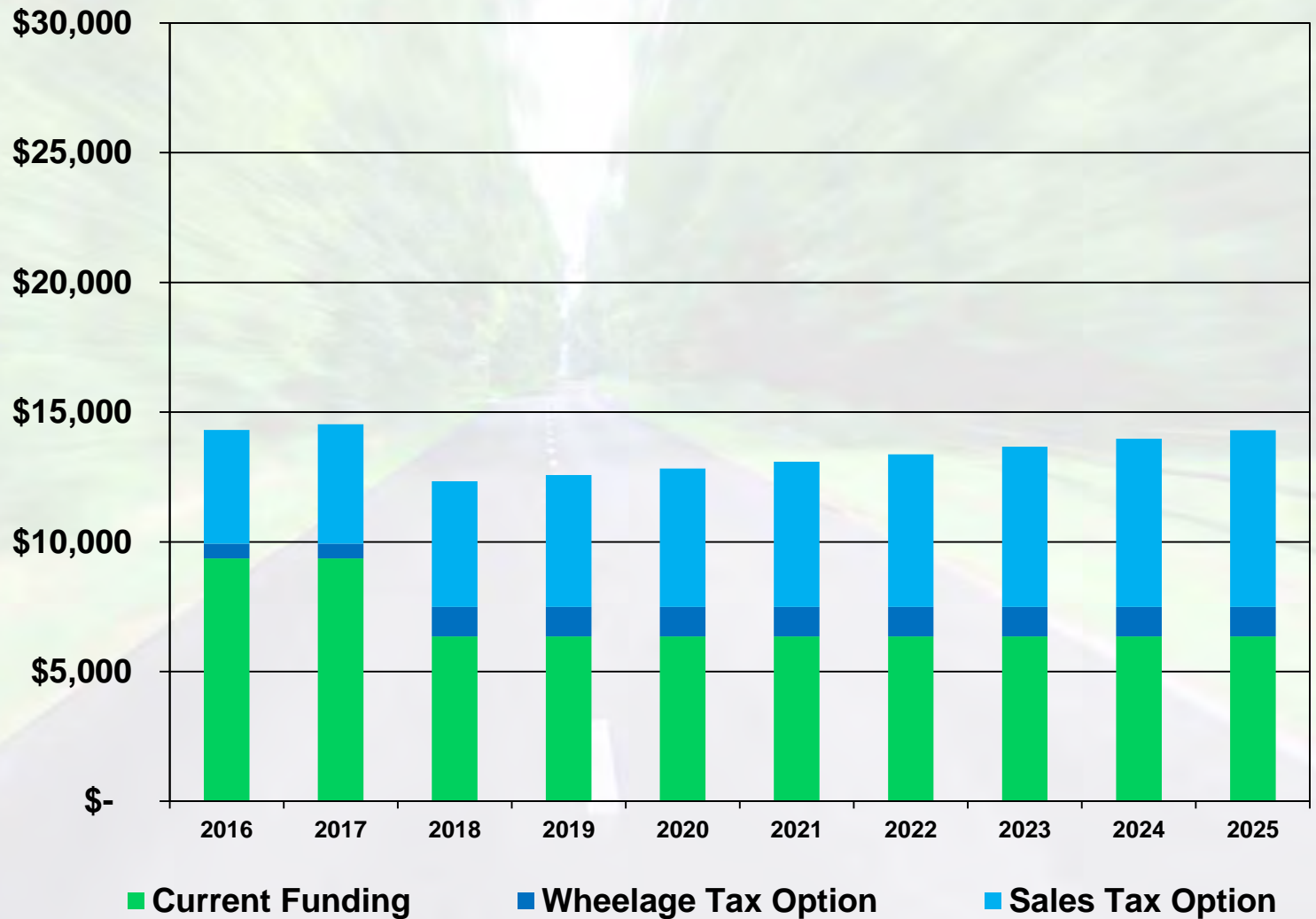
# 2025 ROADWAY CONDITIONS

*(Projected, based on 2015 funding)*



# 5 - Current + Wheelage + Sales

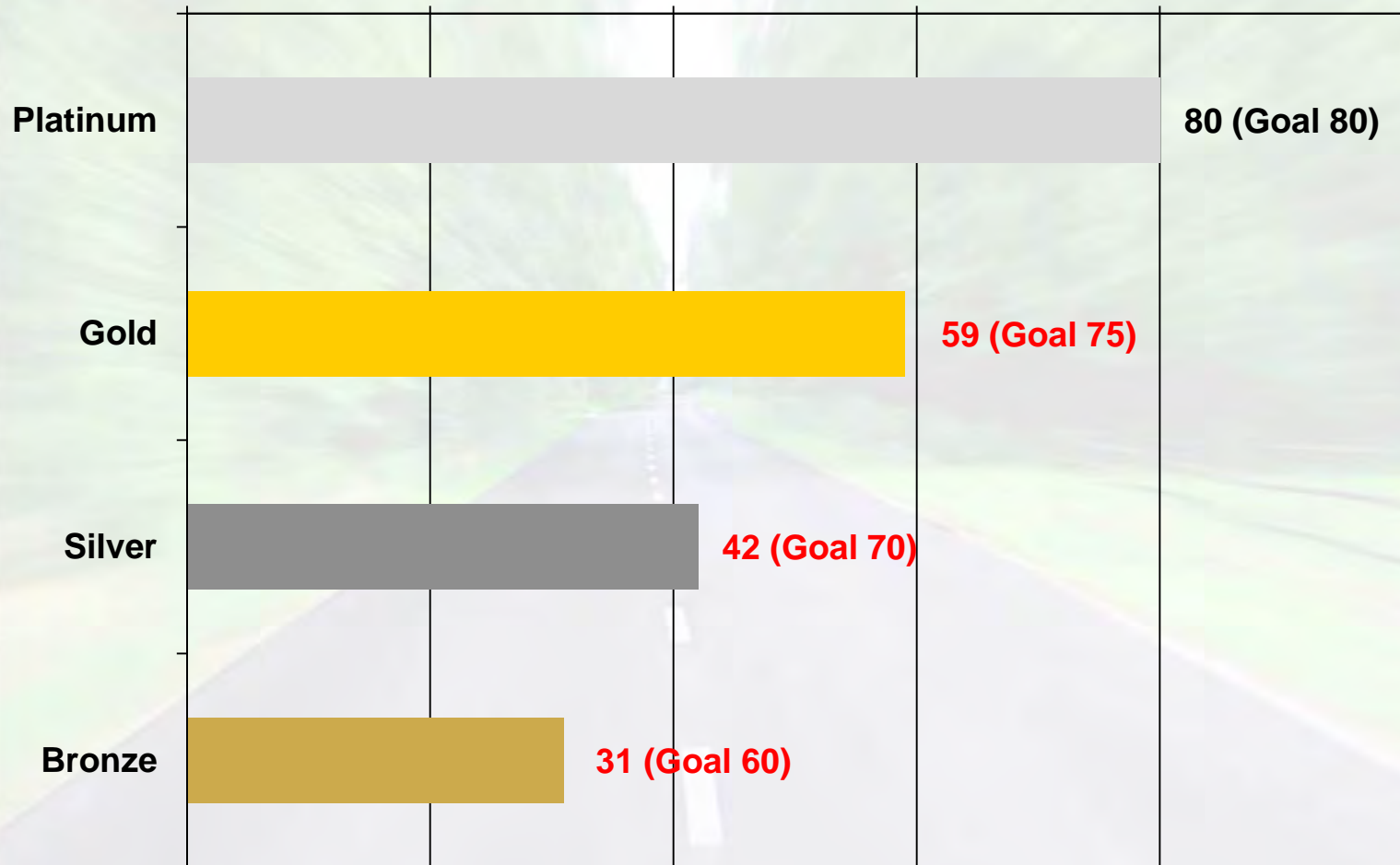
## *Annual Funding*





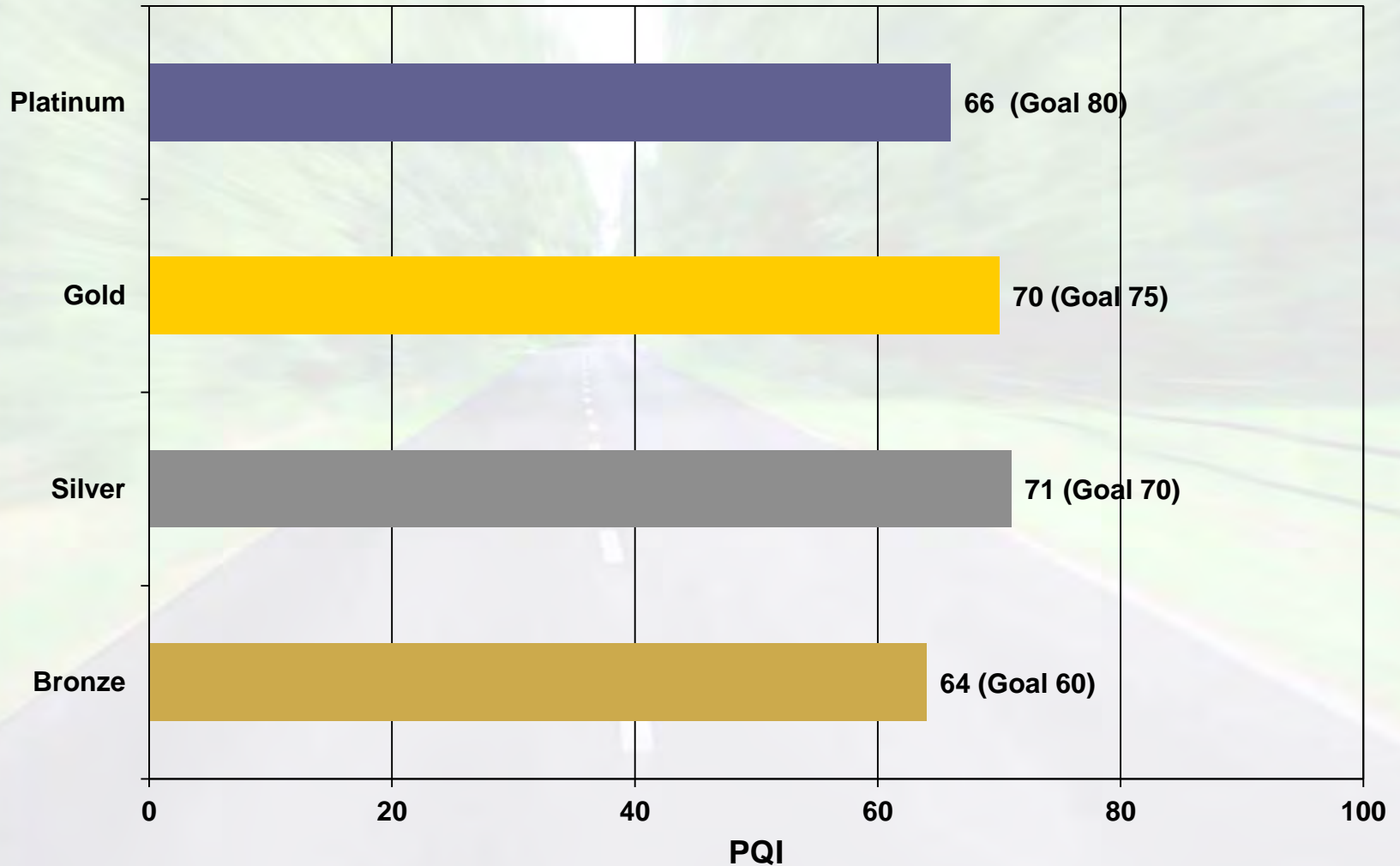
# 5 - Current + Wheelage + Sales Results

## *2025 Condition*

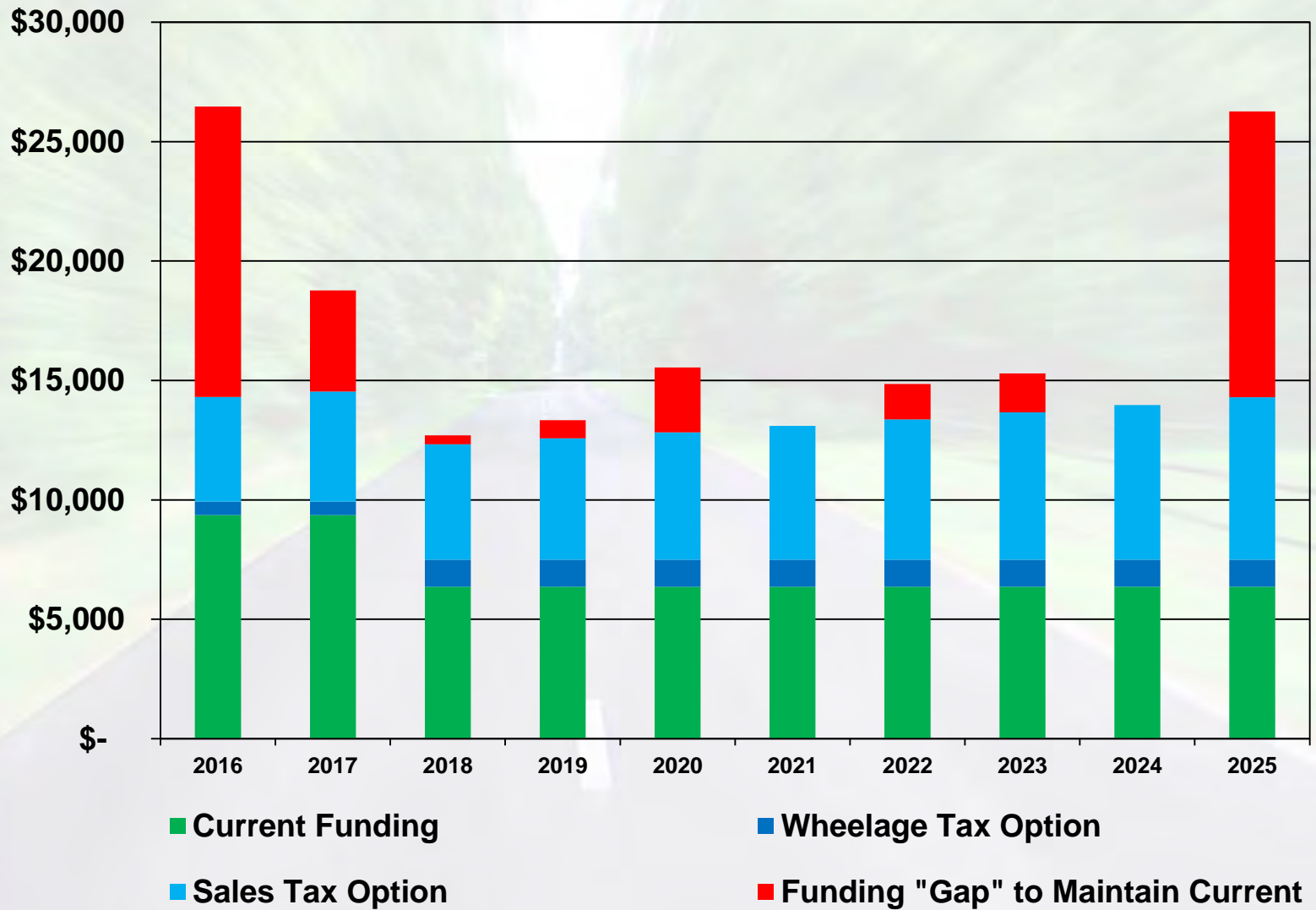


Average PQI in 2025

# 6 – Maintain Current Condition

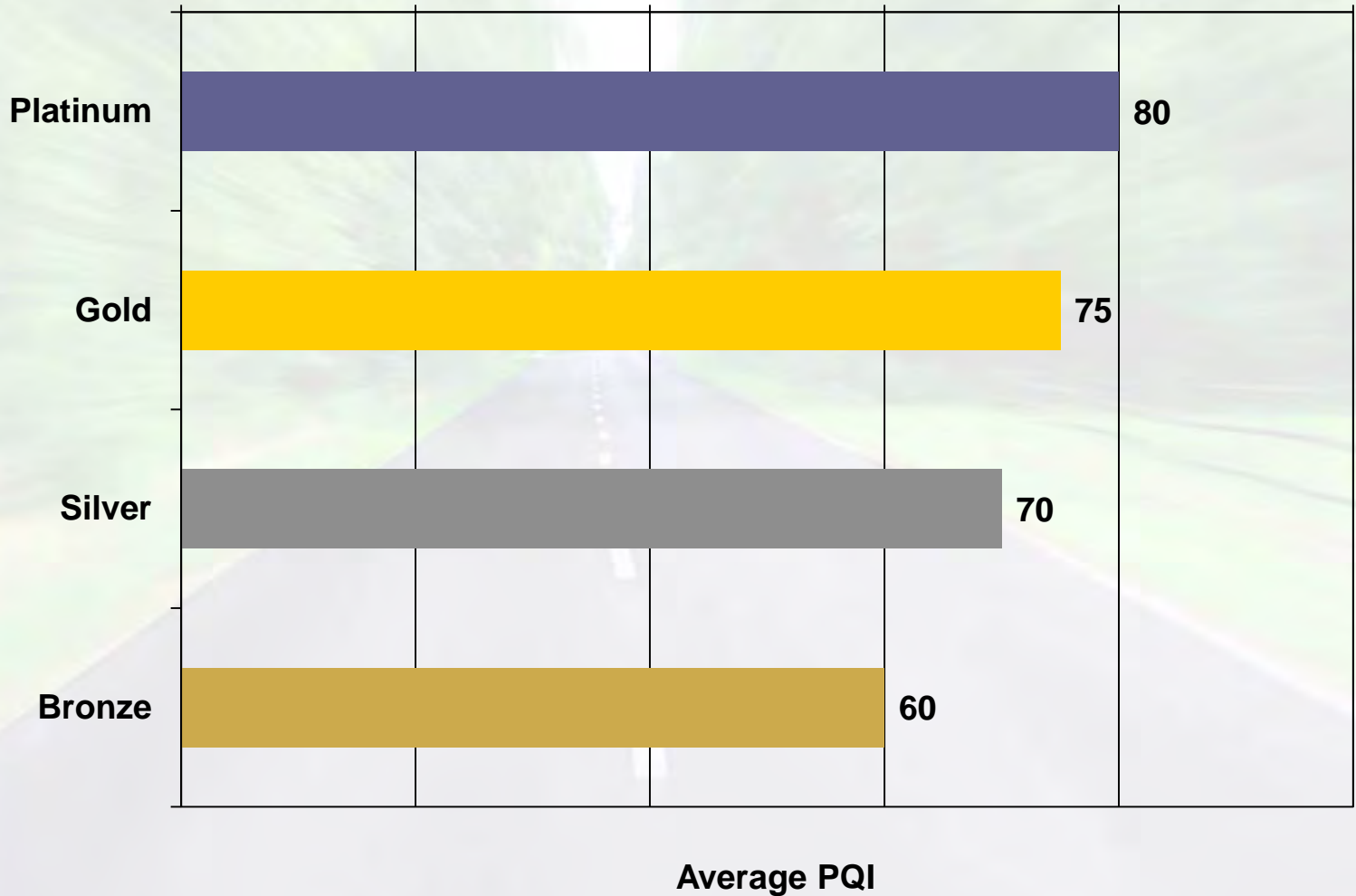


# 6 – Maintain Current Condition



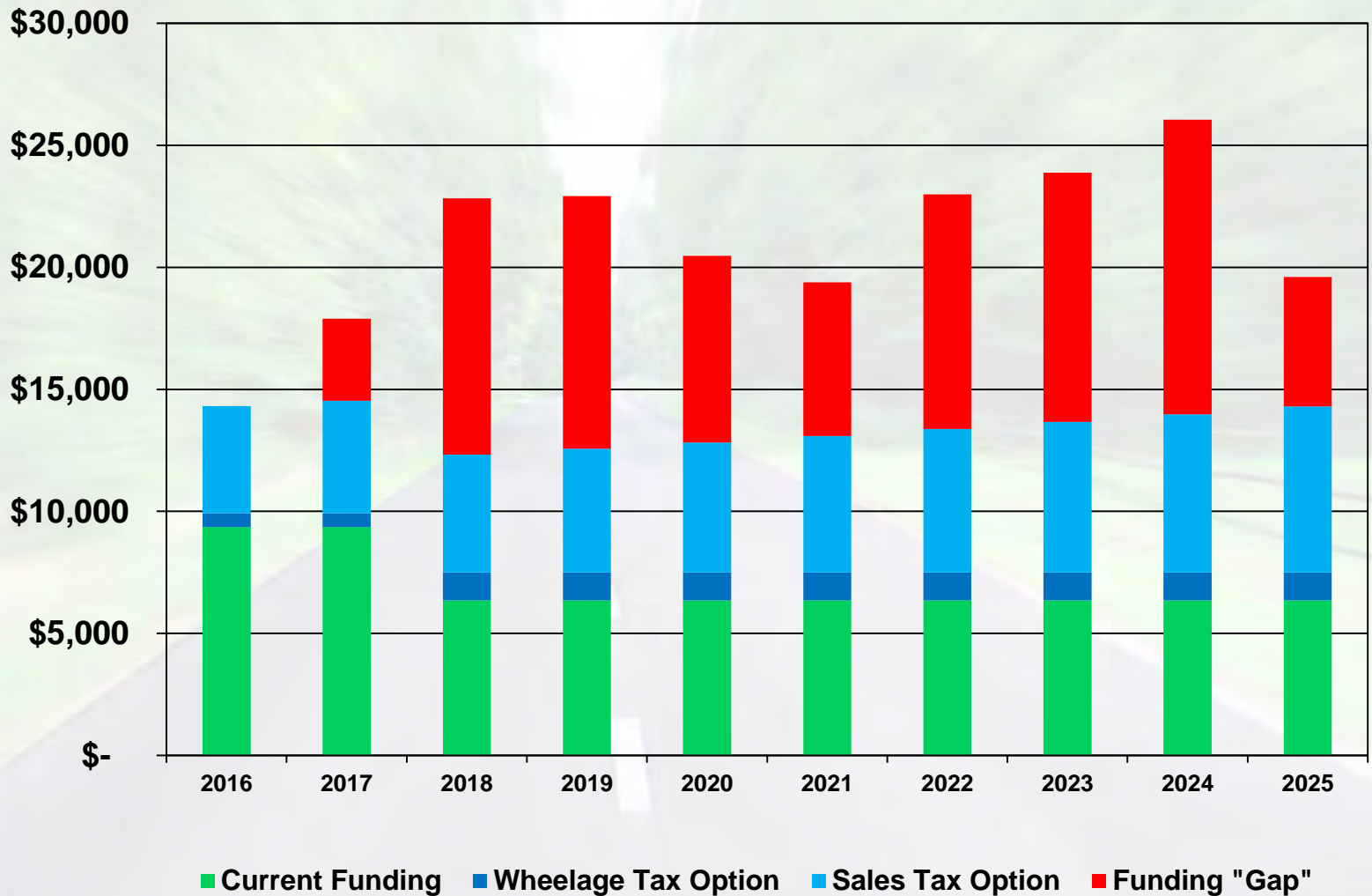
# PQI Goals

## *2025 Condition*



# Funding to Meet PQI Goals

## *2025 Condition*





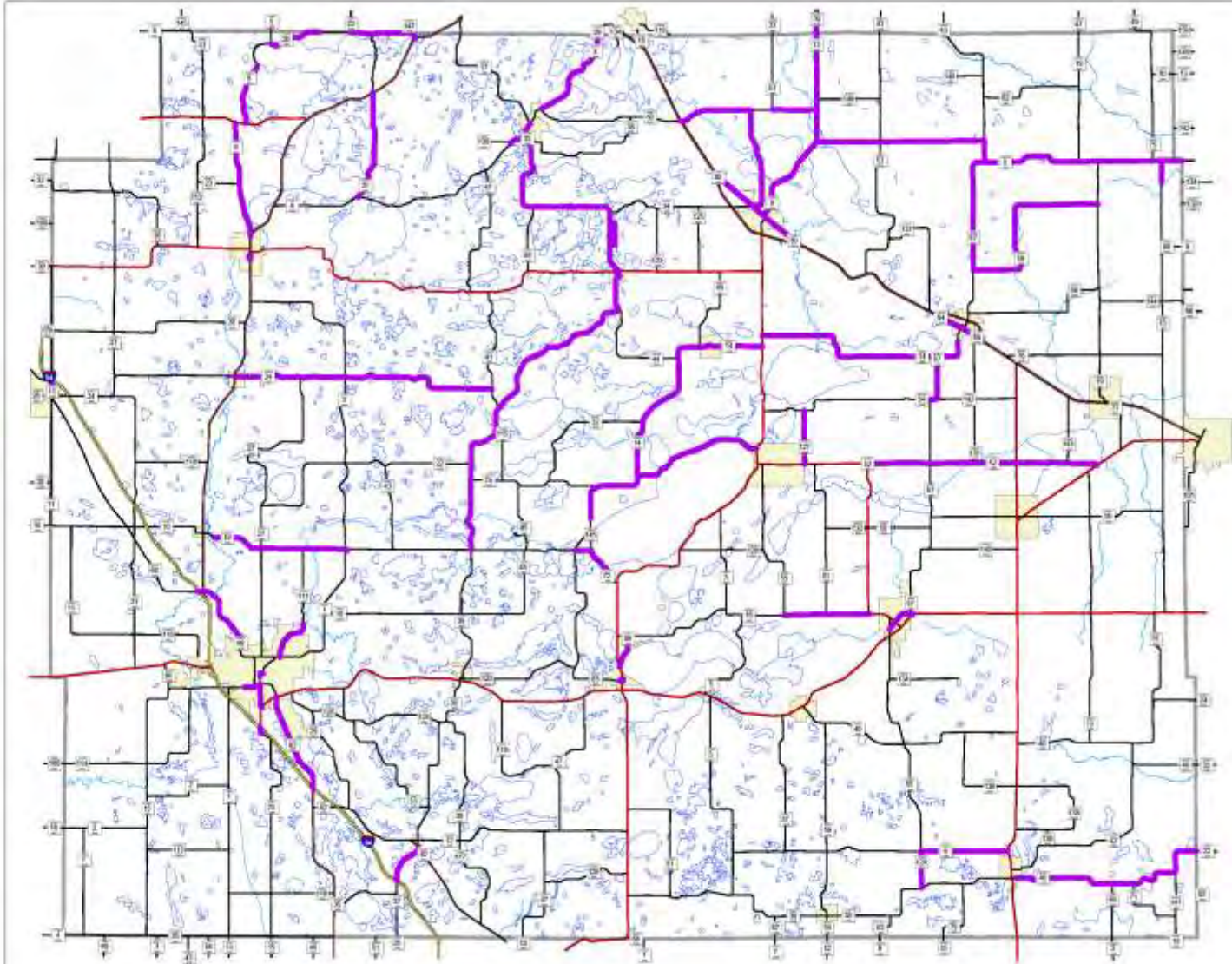


# 2016 -2025 Proposed Resurfacing Projects



Project Year/ DRAFT

— 2016-2025 Resurface



# Conclusions and Outcomes

- Public Outreach and Education
- Asset Management System
- Accurate Data
- 25 member Plan Steering Committee Involvement
- Provides for an Annual Plan Update Process
- Provides Resources for Plan and Plan Updates
- Provides a Time Frame to “Do It Right”
- Data Driven Project Selection Process
- Identified a Long Range Vision
- Public Understanding of What the Future Holds