



Rural County Pavement
Preservation Planning

Applications in
Minnesota

Overview

Rural Counties across America are struggling with the crippling effects of keeping up with their crumbling infrastructure. A number of rural counties in Minnesota undertook innovative planning activities as a way to manage their respective transportation systems



Common Rural County Challenges / Purpose of the Effort

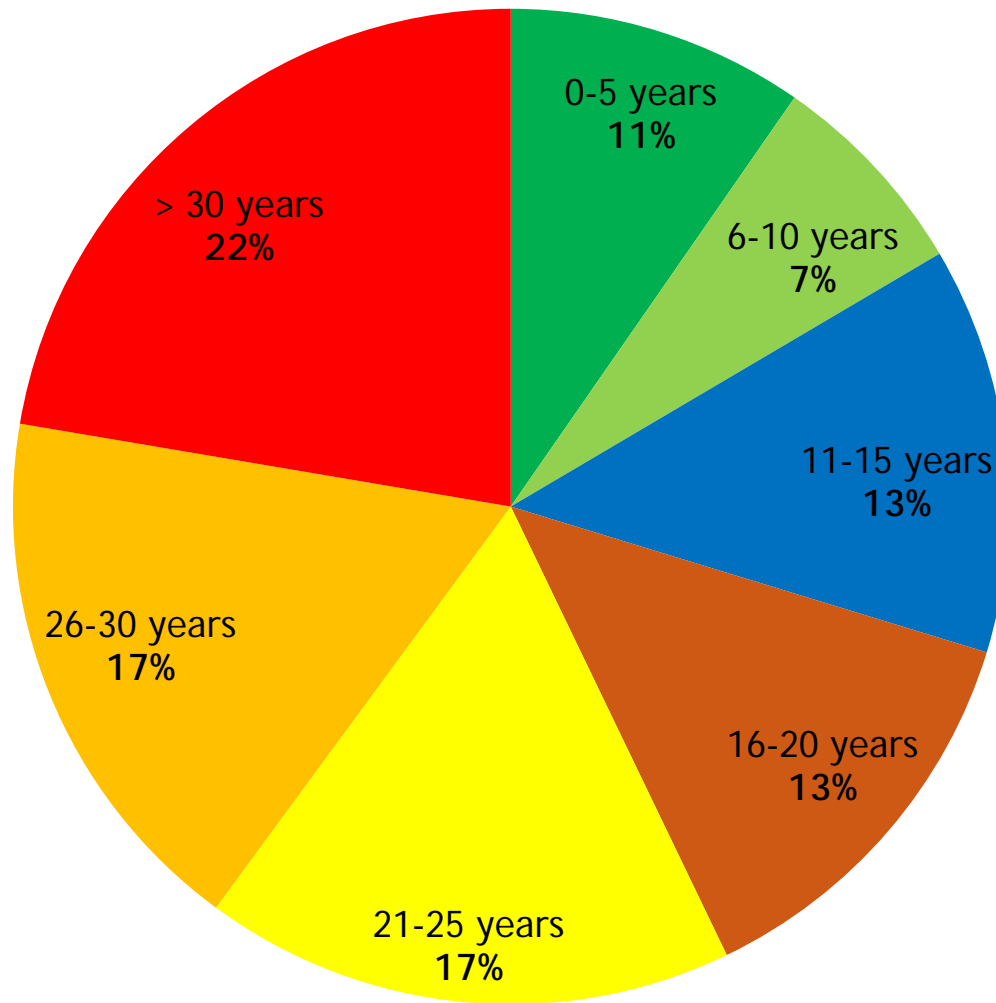
1. Leverage existing tools
2. Analyze existing road conditions
3. Manage funding opportunities versus road conditions
4. Utilize most current and innovative tools available
 - Detailed analysis and focused planning
 - Targeted communication methods
5. Develop customized solutions for future needs
6. Promote awareness of best practices

Integral to each step is: Education and Communication

- County Boards
- General Public

Common Rural County Challenges / Purpose of the Effort

Sample System Age



Note: Often typically an aging system in many rural environments

Common Rural County Challenges / Purpose of the Effort

Sample Rural County
Annual Roadway Need - \$15.2 million/yr.

Current Expenditure
\$3.4 million/yr.

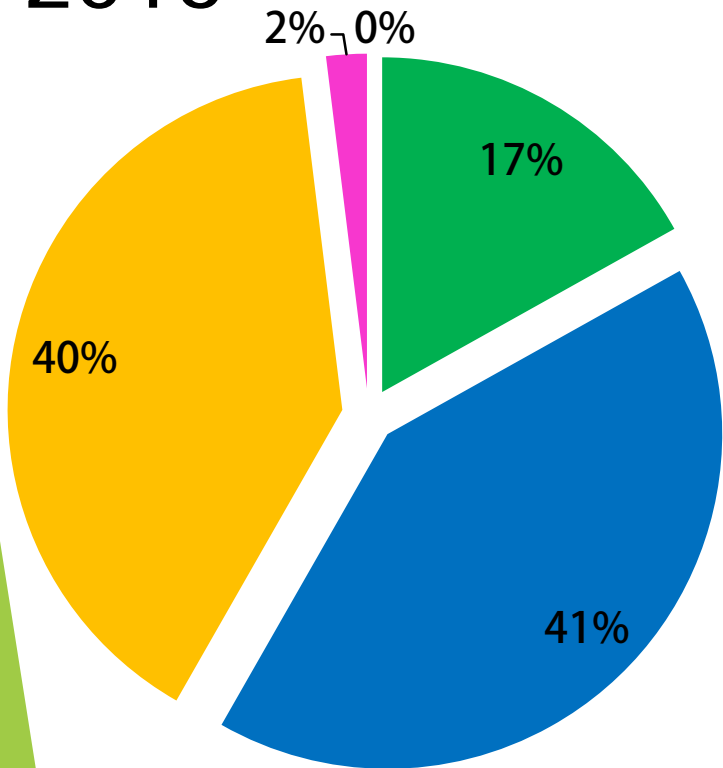
Year X Funding Gap
\$11.8 million/yr.

Note: This GAP analysis only represents pavement preservation and does not include roadway reconstruction needs

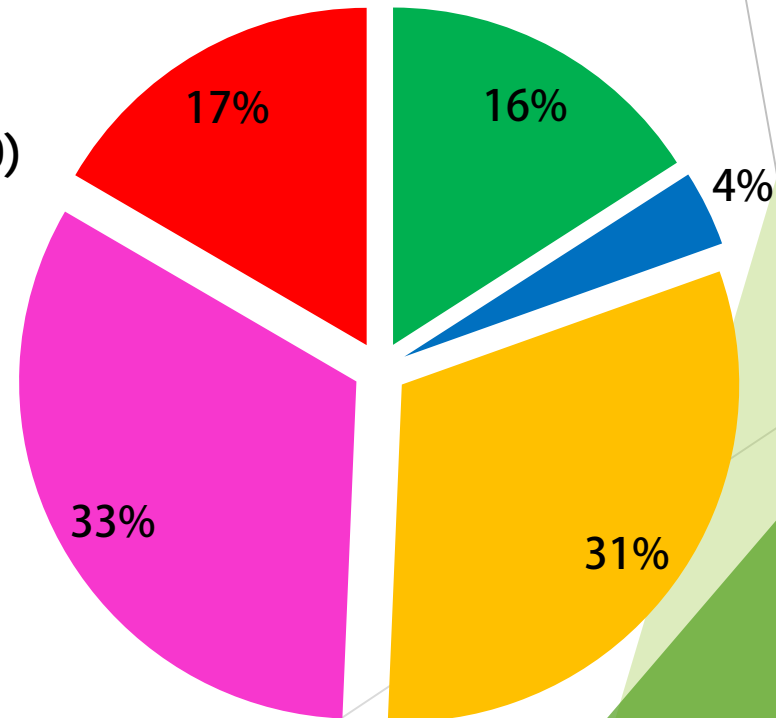
Common Rural County Challenges / Purpose of the Effort

CURRENT & FUTURE PROJECTED ROADWAY CONDITIONS
(Sample projection, based on current funding)

2016



2025



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

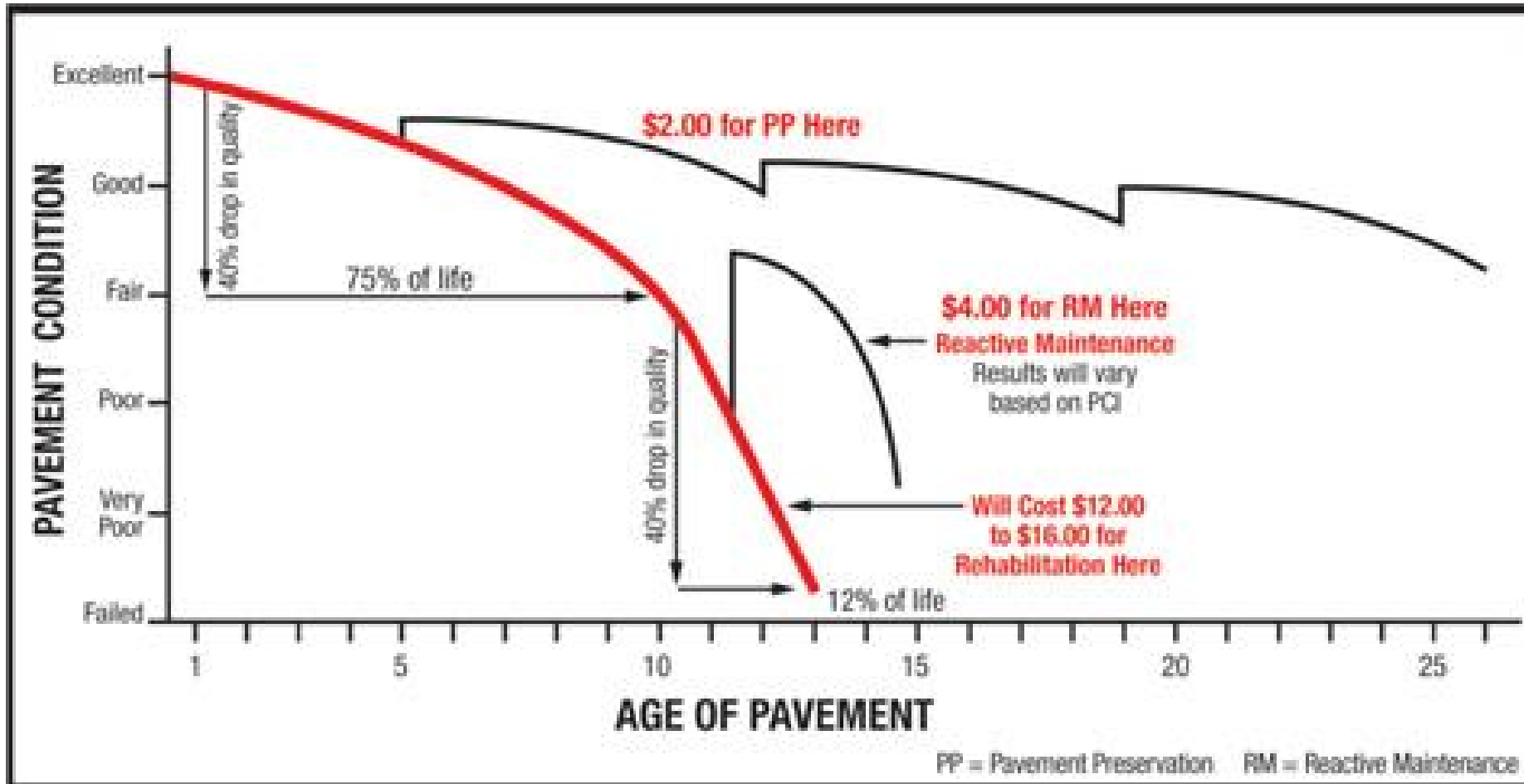
Common Rural County Project Prioritization



Prevent “fair condition” roads from falling into “poor condition”

- ▶ Use Pavement Management System to evaluate priorities, based on good data, new management policies, and performance measures
- ▶ Prioritize preservation strategies over more expensive reconstruction fixes
- ▶ Consider scope and cost

Common Rural County Typical Pavement Life Cycle



Pavement Preservation Planning Public / Stakeholder Outreach

Public Education and
Engagement

Stakeholder
Participation, Education,
and Engagement

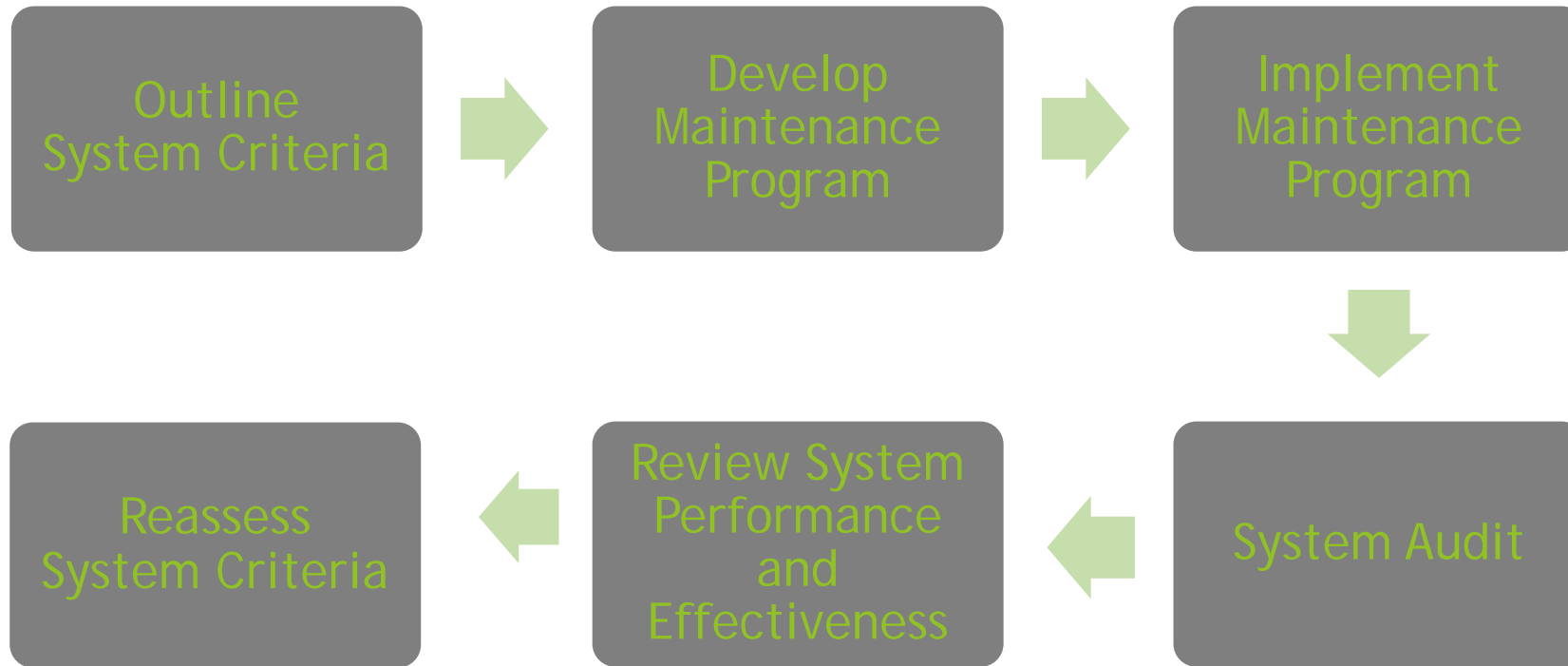
Targeted Group
Engagement



Pavement Preservation Planning Innovative Management Strategies

- ▶ Reduce System Size
- ▶ Develop a Tiered Roadway Maintenance Program
- ▶ Develop Performance Measures & Schedules
- ▶ Identify New Funding Sources
- ▶ Establish a Transparent Project Prioritization Process
- ▶ Promote Expanded Public Engagement

Pavement Preservation Planning Tiered Preservation System



Pavement Preservation Planning Tiered Preservation System

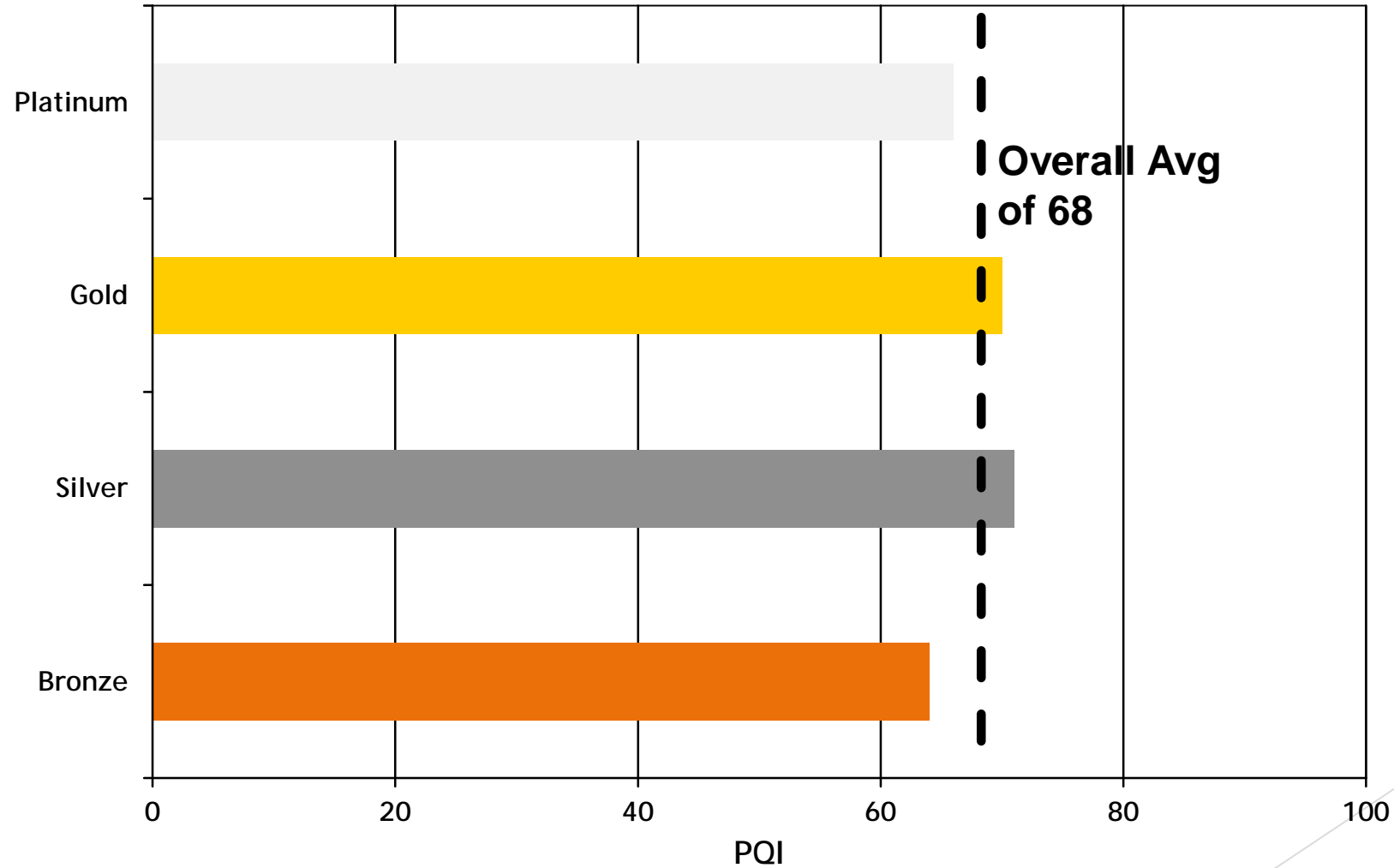
Current Highway System

Tiered System Criteria		Refinement and Verification*	Tiered Maintenance Description	Tiered Maintenance
Average Daily Traffic	Freight Routes			
<p>> 800</p> <p>> 400</p>	<p>< 9 Ton Routes</p> <p>County 9 - 10 Ton Routes Proposed Freight Routes Conceptual 10-Ton Network</p>	<p>→</p> <p>→</p>	<p>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.</p>	<ul style="list-style-type: none"> • 1st seal coat applied at year 3 after any major repair • 2nd seal coat applied 7 years after 1st seal coat • Apply major repair before PQI reaches 65 • Overall average PQI cannot be lower than 80
<p>400 - 800</p> <p>200 - 400</p>	<p>< 9 Ton Routes</p> <p>County 9 - 10 Ton Routes Proposed Freight Routes Conceptual 10-Ton Network</p>	<p>→</p> <p>→</p>	<p>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.</p>	<ul style="list-style-type: none"> • 1st seal coat applied at year 3 after any major repair • 2nd seal coat applied 7 years after 1st seal coat • Apply major repair before PQI reaches 50 • Overall average PQI cannot be lower than 75
<p>200 - 400</p> <p>< 200</p>	<p>< 9 Ton Routes</p> <p>County 9 - 10 Ton Routes Proposed Freight Routes Conceptual 10-Ton Network</p>	<p>→</p> <p>→</p>	<p>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.</p>	<ul style="list-style-type: none"> • 1st seal coat applied at year 3 after any major repair • 2nd seal coat applied 10 years after 1st seal coat • Apply major repair before PQI reaches 35 • Overall average PQI cannot be lower than 70
<p>< 200</p>	<p>< 9 Ton Routes</p>	<p>→</p>	<p>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.</p>	<ul style="list-style-type: none"> • Apply preservation methods before PQI reaches 25 • Overall average PQI cannot be lower than 60

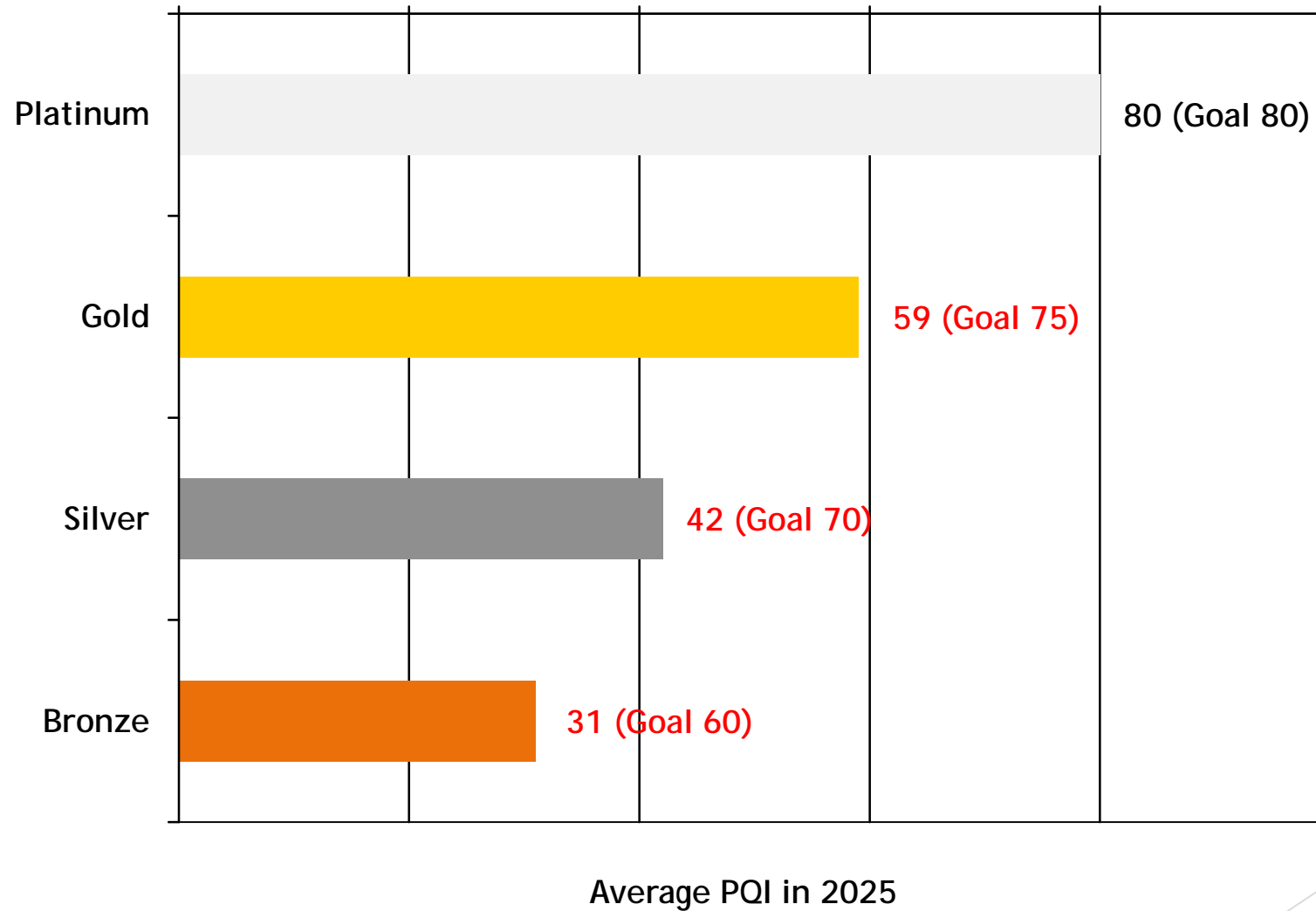
Pavement Preservation Planning Funding Opportunities

- ▶ Wheelage Tax (\$10/vehicle)
- ▶ Local Option ½ cent Sales Tax
- ▶ Bonding
- ▶ Increased local road and bridge levy
- ▶ State gas tax and/or registration fees
- ▶ Gravel Tax

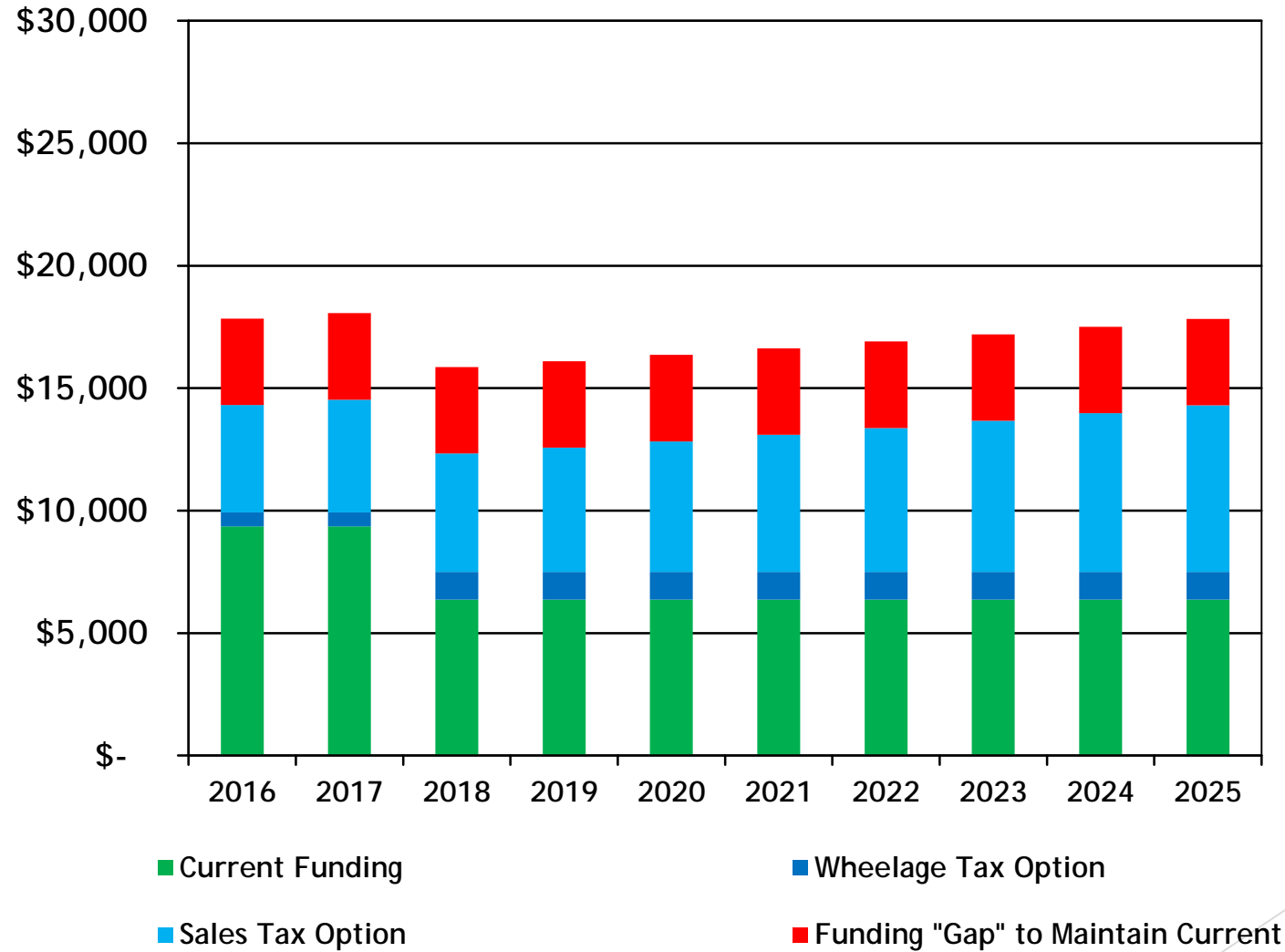
Pavement Preservation Planning Current Condition w/ Tiered System



Pavement Preservation Planning Resulting Tiered Conditions w/ Current Funding



Pavement Preservation Planning Funding Needed to Maintain Current Condition



Pavement Preservation Planning Rural County Lessons Learned

- Emphasizes the Need for a Long Range Vision
- Accurate Data is a MUST
- Pavement Asset Management System Helps
- Implement an Annual Plan Update Process
- Process Removes the Politics from Project Selection
- Public Outreach and Education - Provides an understanding of what the future holds and garners support

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