

# National Association of County Engineers

“The Voice of County Road Officials”



# What is NACE?

- Nonprofit, non-partisan professional association
- Representing over 1,900 members since 1956.
- Roads - about 1.74 million miles by counties.
- Bridges - counties also own 231,000 bridges and operate 1/3 of the nation's transit systems.

# NACE – More Than Engineers, County Road Professionals Titles:

- \* County Engineer \* Highway Superintendent
  - \* Road & Bridge Superintendent
- \* Parish Engineer \* Road Supervisor
  - \* Commissioner of Public Works
- \* Highway Administrator \* Transportation Director
  - \* Road Operations Manager
- \* Public Works Director \* Highway Commissioner
  - \* Engineer-Manager Road Commission
  - \* Road Master \* Road Administrator

# Annual Buying Power of NACE Members

Item	Expenditure
Transportation (Total Budget)	\$11.2 B
Road Construction	\$3.5 B
Road Maintenance	\$3.5 B
Equipment Purchasing	\$772 M
Equipment Repair/Maintenance	\$736 M
Signage/Traffic Control	\$195 M
Engineering Consultants	\$257 M
Equipment Fleet	> 350k Pieces

# NACE Officers 2015-2016



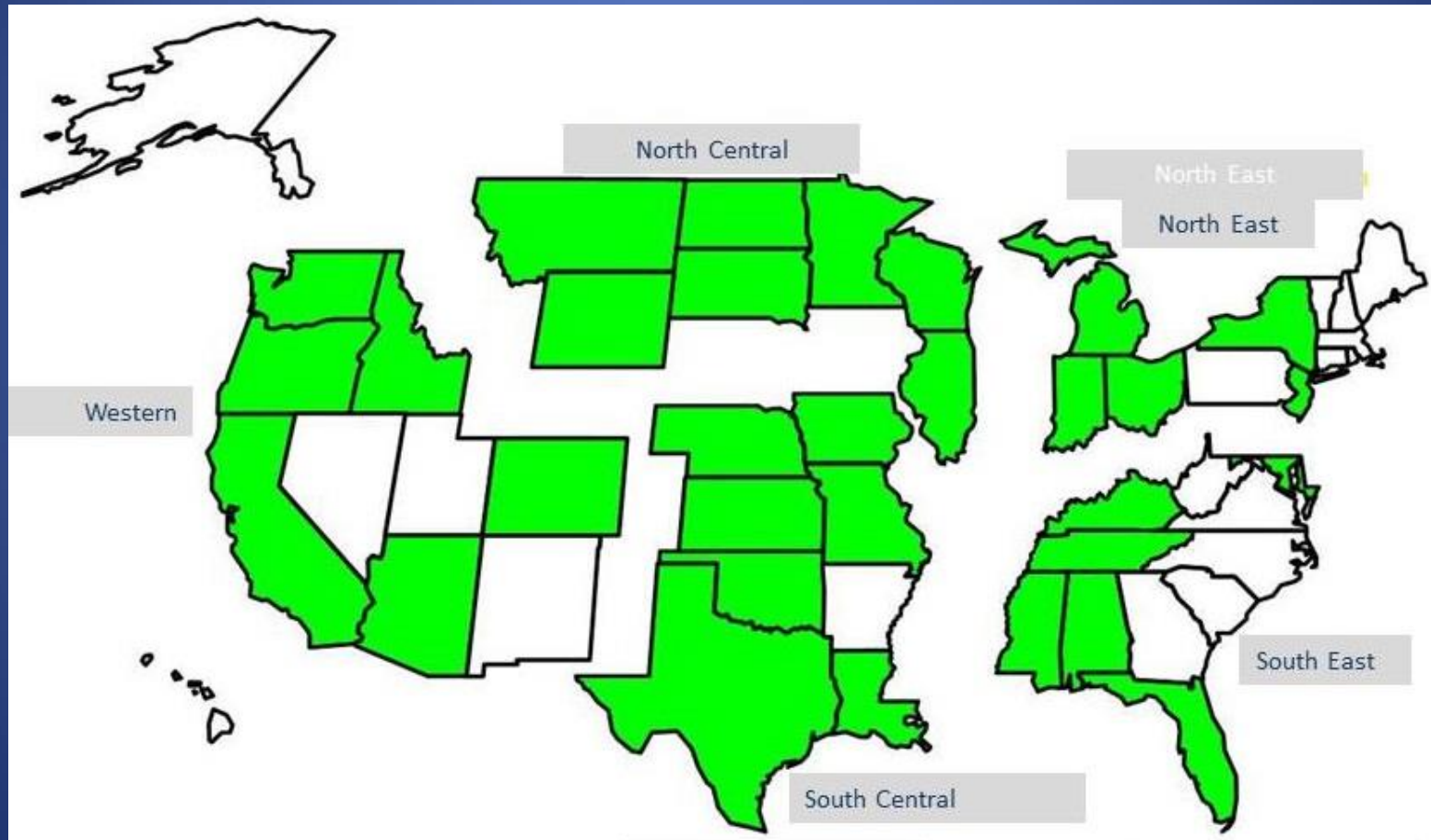


# NACE Board of Directors



# Regions & State Affiliates

(31 State Affiliates Shown in Green)



# Conferences

*Delivering best practices and the latest technology at national and regional meetings.*

- General sessions and technical sessions on issues important to you.
- Acquire information to optimize your county's resources.
- Exhibit show – latest & greatest.



# Conference Scenes



# What we do

- Networking
- Advocacy
- Professional Development

# Advocacy

*Representing county engineers and professional road managers nationally.*

- Legislative Priorities - NACE and NACo
- Testimony before Congress
- Visits on the Hill and Legislative Fly-ins
- Information and Alerts for individual call to action



# NACE Website



National Association of County Engineers

*The Voice of County Road Officials*

[Join](#) | [Members Login](#) | [About](#) | [Contact](#)



About NACE

News

Legislation & Regulations

Membership

NACE Events

Programs & Committees

Resources & Education

## Visit Local Roads Matter!



## Calendar at a Glance

- 10/24/2011 Oregon Association of County Engineers and Surveyors (OACES) Fall Conference  
Bend, OR
- 10/25/2011 Missouri Association of County Transportation Officials (MACTO) Conference  
Kansas City, MO - KCI Expo Center
- 10/25/2011 Midwestern Pavement Preservation Partnership (MPPP)  
Bismark, ND
- 10/26/2011 Texas Association of County Engineers and Road Administrators (TACERA) Conference  
San Antonio, TX



## News

E-news - biweekly for the latest information on legislation and regulatory issues, upcoming conferences-webinars, information on new publications, resource links and more (sign-up required on website).

NACE News - monthly publication for NACE members has current issues and member information in addition to articles of interest by NACE board members and committee members (be sure NACE has your current email address).



## Legislation

NACE is "The Voice of County Road Officials" You can view the [NACE legislative priorities](#) and the latest on Legislative and Regulatory issues and efforts!

Visit your members of Congress and tell them "Local Roads Matter!" see tips under [communication with congress](#).



## Upcoming Events

It's time to register for

NACE 2012 in

Lexington, Kentucky

April 1-5, 2012

Conference registration is now open!



## Member Info

See the new NACE membership video above and [Join NACE](#) to support "The Voice of County Road Officials"

NACE members include: county engineer, highway superintendent, public works director, highway commissioner, road manager, and many more titles - the goal is safe, efficient roads and bridges. See [Membership](#).

[Corporate members](#) expand their marketing efforts by taking advantage of member benefits such as exclusive newsletter ads,

# **NACE LEGISLATIVE PRIORITIES**

**Funding  
Streamlining  
Safety**



# FAST ACT

- Fixing America's Surface Transportation Act
- Signed into Law December 4, 2015
- 5 Year, \$305 B

# FUNDING

- Modest Increases in Funding
- Potentially more funding for locals
- Increases sub-allocation to locals
- Maintains off-system bridge set aside
- More transparency on where funds are spent.

# STREAMLINING

- Attempts to expand MAP-21 Reforms
- FAST requires lead agencies to establish project schedules for environmental impact statements and environmental assessments after consultation with and the concurrence of each participating agency for the project; currently, project schedules are not required.

# SAFETY

## Funding – Good

- FY16 - \$2.45 billion
- FY17 - \$2.51 billion
- FY18 - \$2.56 billion
- FY19 - \$2.6 billion
- FY20 - \$2.66 billion

## Bad

- Doesn't fix HRRR
- Limits Use of HSIP Funds
- Gives States way out for collecting Unpaved Road data which prevents using HSIP on those roads

# NACE 2017: April 9-13

## Cincinnati, Ohio





# Contact NACE

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## Lowest Life-cycle Cost Pavement Maintenance and Preservation

# Pierce County Washington

Pierce County is home to **830,000** residents, 24 cities and towns, each with an array of qualities



- *1,700 square miles, from Key Peninsula to Mount Rainier*
- *Urban, suburban and rural areas*
- *Sea level to 14,410ft*
- *3,190 lane miles of pavement (unincorporated county)*

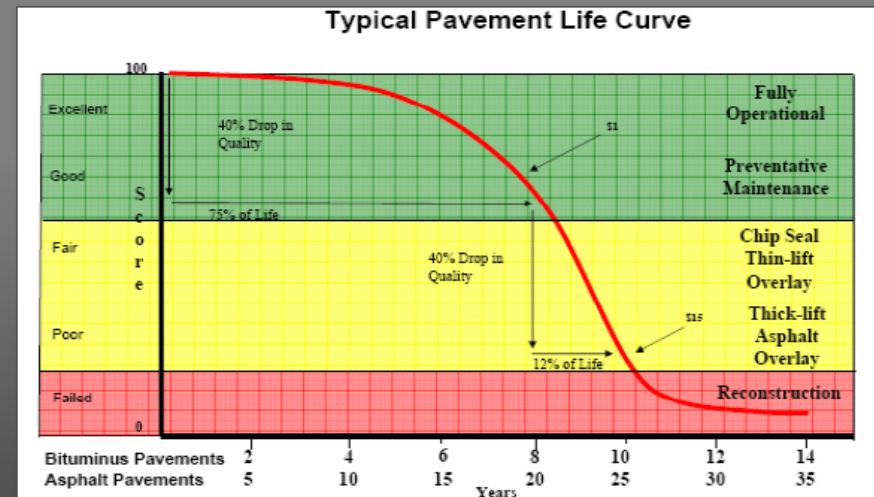




# Replacement Modeling

## Replacement Model

Determines the optimal time, scope of action and method to replace an asset consistent with its lowest lifecycle model.



Typically displayed over a deterioration curve, the replacement model considers the optimal balance of repair and maintenance typically required over time until replacement or reconstruction of the asset is required to avoid reaching a point of diminished return on investment. This model also serves to evaluate various MOP strategies and the associated costs of each



# Pavement Preservation Modeling

## Avoiding unnecessary deferred maintenance and preservation costs

- It can be tempting for decision makers and elected officials to fund road improvement projects over maintenance and preservation programs
  - Impacts of deferred M&P program are felt and compound over long term
  - Improvement projects typically garner greater short term public interest
    - “Our road condition looks fine...today”
    - The important elements of a pavement deterioration curves typically extend beyond term limits
- The costs of maintenance and preservation are exponentially higher than capital construction over the functional life of a pavement





# Pavement Preservation Modeling

## **Avoiding unnecessary deferred maintenance and preservation costs**

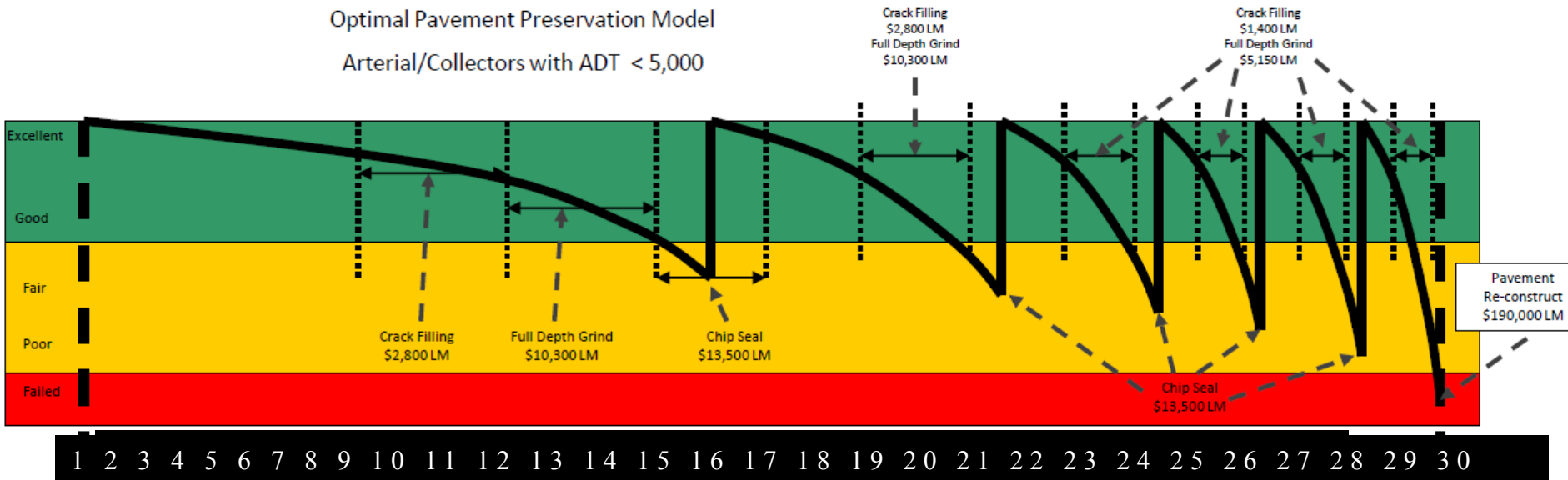
- It can be difficult to communicate the complex cause and effect relationship between deferring costs today and perhaps insurmountable M&P program needs in the future
  - Models rely on forecasting of somewhat technical content
  - Difficult to establish credibility and support for what could be considered short term sacrifice, especially if you've been doing a good job



# Pavement Preservation Modeling

## Optimal Pavement Preservation Model

Arterial/Collectors with ADT < 5,000



## Unsustainable Model

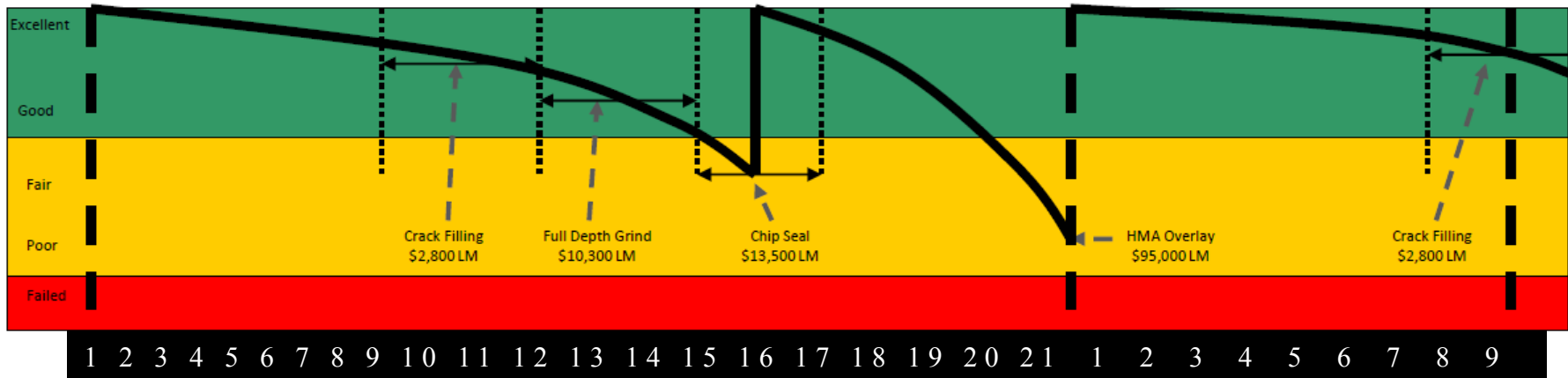
Maintenance and Repairs - \$52,400  
Pavement Preservation - \$67,500  
Pavement Reconstruction - \$190,000  
**30 Year Estimated Costs - \$309,900**  
(failed pavement condition)



# Pavement Preservation Modeling

## Optimal Pavement Preservation Model

Arterial/Collectors with ADT < 5,000



## Sustainable Model

Maintenance and Repairs - \$15,900  
Pavement Preservation - \$108,500  
30 Year Estimated Costs - \$124,400



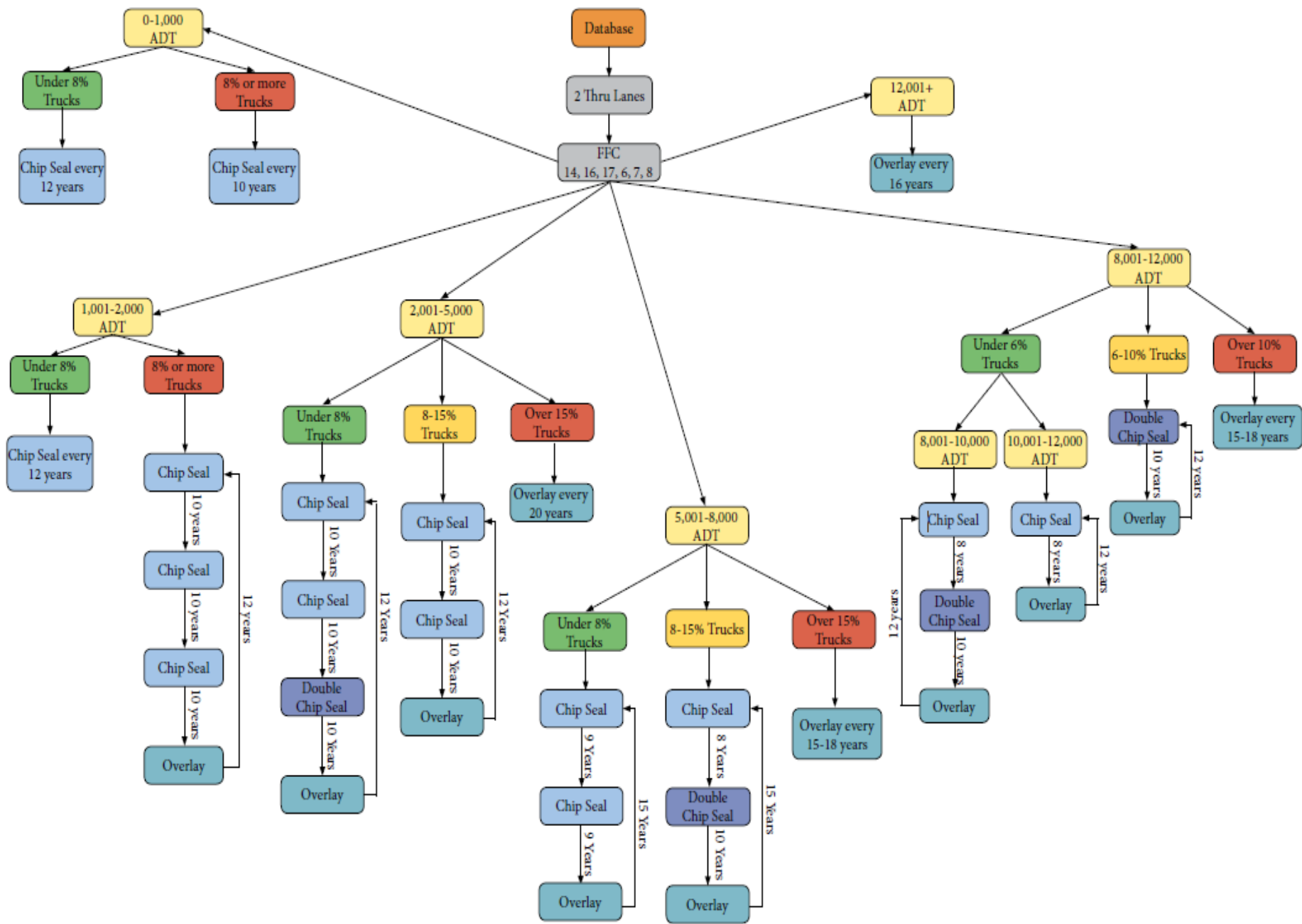
# Pavement Preservation Planning

## Pavement Preservation “Decision Tree”

How to determine what to do, when to do it, and to which pavement segments to achieve lowest lifecycle cost

### Consideration Factors

- Pavement category
  - Arterial, collector, local access, multilane, etc.
- Average traffic volume
- % heavy truck traffic
- Last maintenance/preservation year
  - Last maintenance/preservation treatment







# Pavement Preservation Planning

The decision tree provides a list of pavement segments that are likely to benefit optimally from routine maintenance/repairs and a preservative application within a given budget cycle

- Ideally produce a list of candidates that is 110% of capacity (budget, resources) to support change management
- Field assess this list of candidates to produce repair work orders
  - Work order information provides clear understanding of pavement condition, and the type, severity and extent of pavement defects (far superior condition assessment tool to PCI score alone)
- List is prioritized by:
  - Severity and extent of existing defects
  - Logistics considerations
  - Potential conflicts with planned construction activity (private or public)
  - Repair and pavement prep schedules



# Pavement Preservation Planning

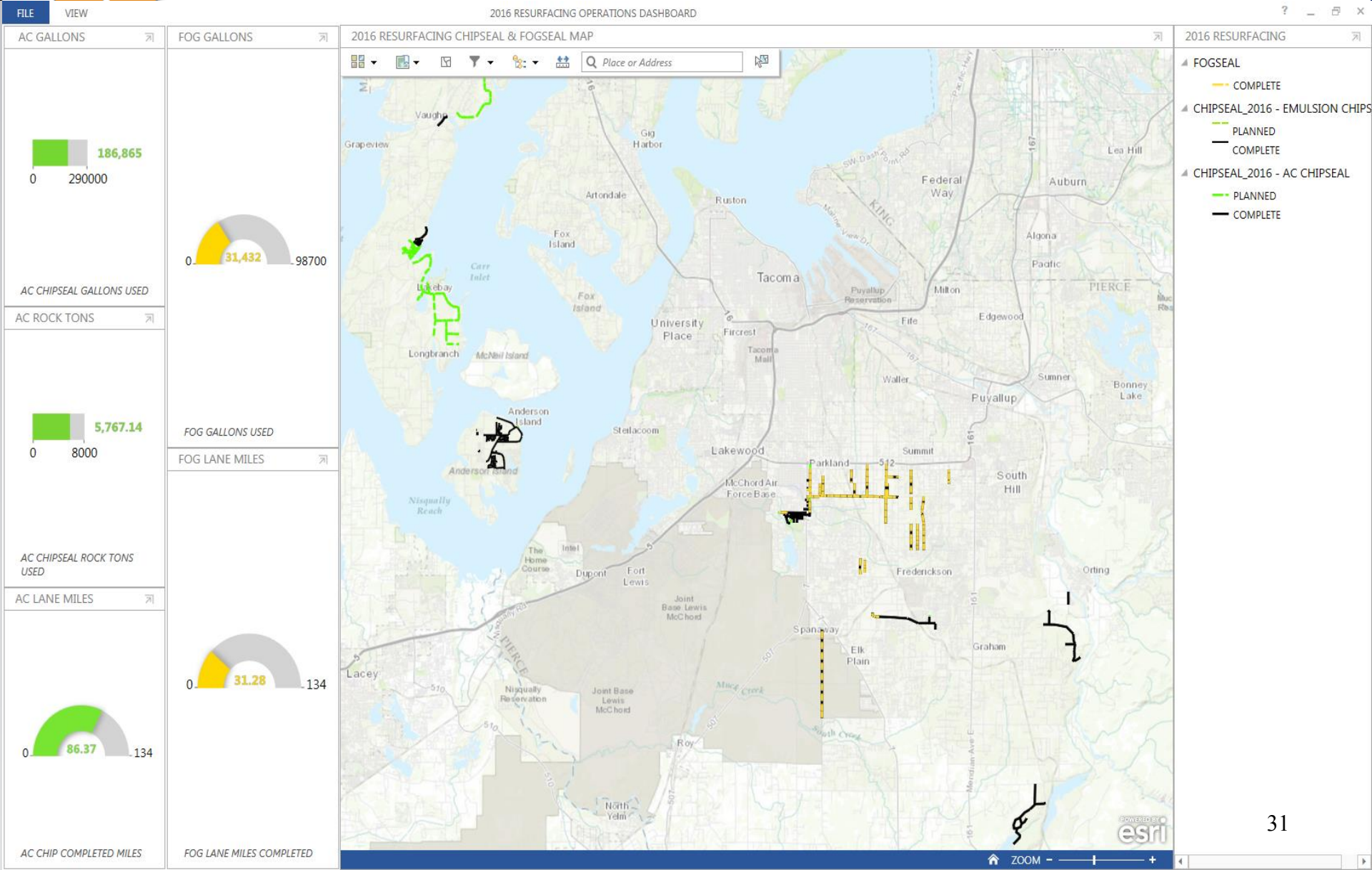
## Program development

### Determine optimal preservation action

- HMA overlay/inlay
  - These candidates populate HMA overlay/inlay contract as part of annual Transportation Improvement Program (TIP)
    - Typically higher traffic volume arterials & collectors (>12K ADT and/or multi-lane)
- Chip seal
  - These candidates populate annual chip seal program performed by county staff
    - Typically moderate to low traffic volume arterials & collectors (<12K, two lane)
      - 3/8" pre-coated aggregate @ 15lbs/sqyd; AC15 @ .38gal/sqyd
- Cape/slurry/micro-surface
  - These candidates completed by private sector contractor (small works) managed by Road Operations Division
    - Typically low traffic volume, curvilinear local access roads (<1K)



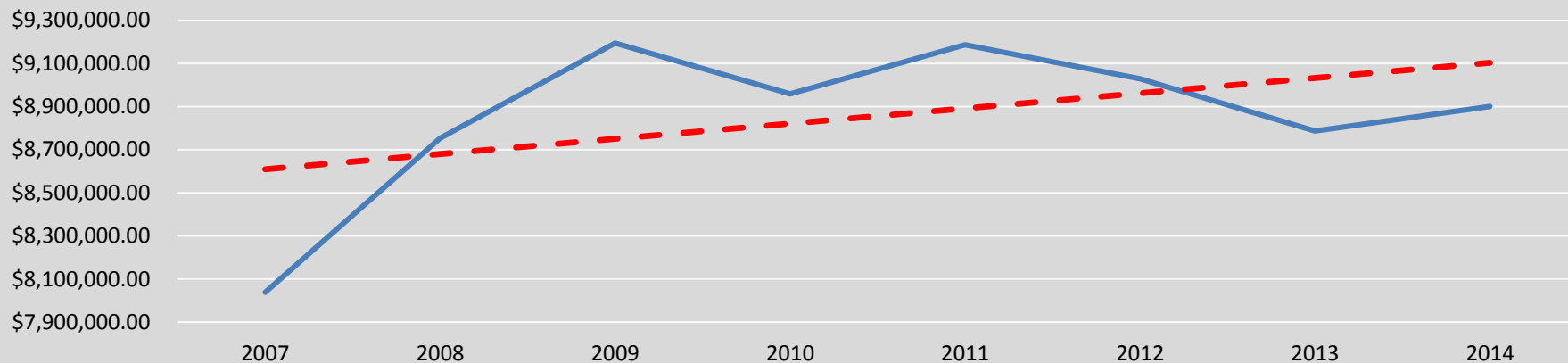
# Program Scheduling and Execution



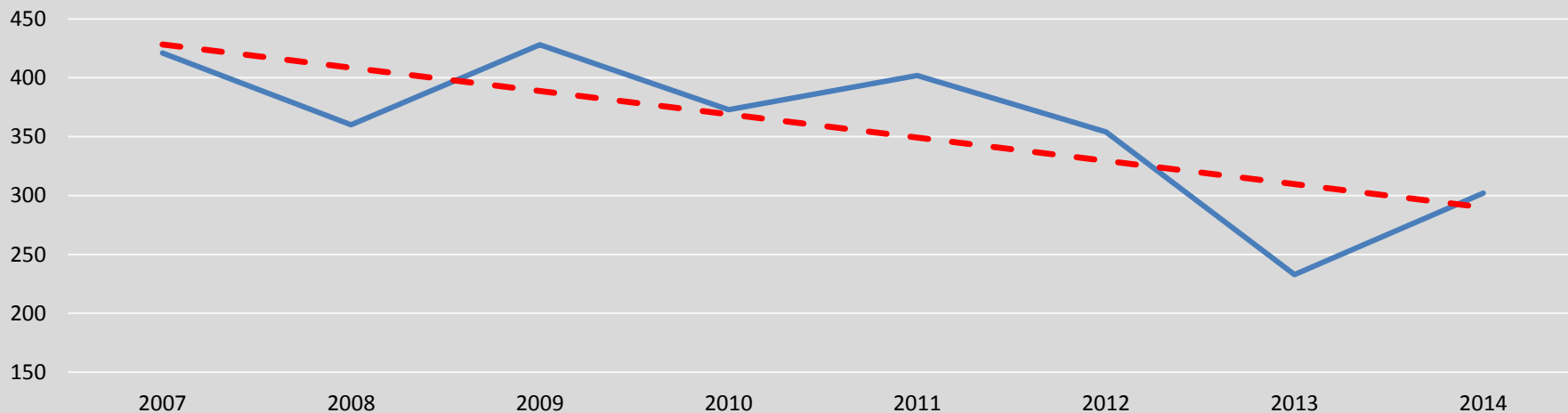


# Save Money and Improve Effectiveness

**Pavement Expenditures**  
(adjusted for actual inflation)



**Pothole Complaints**



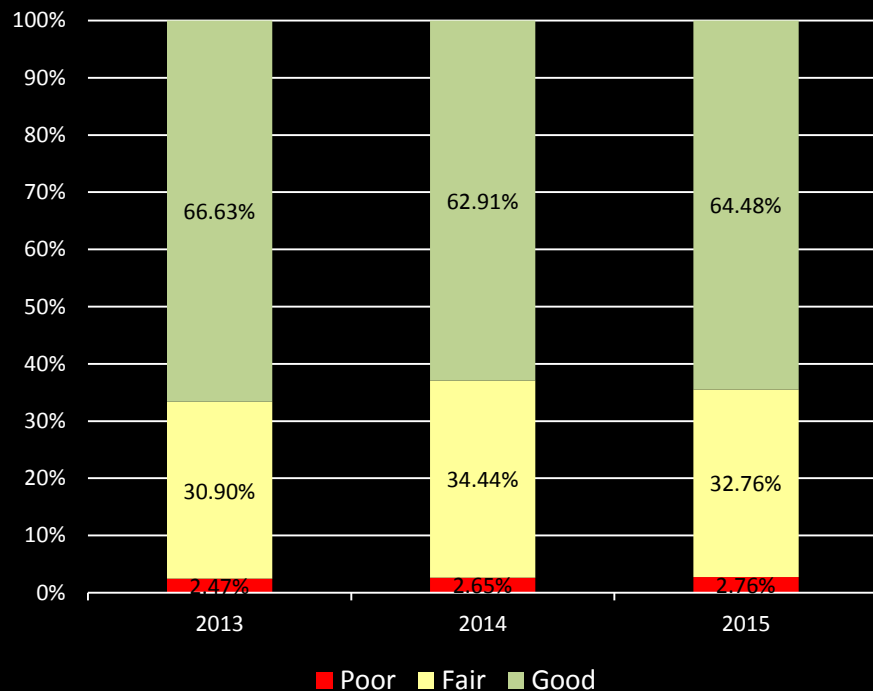


# Performance Monitoring

## Percentage of Pavement Segments in Good – Fair – Poor Condition

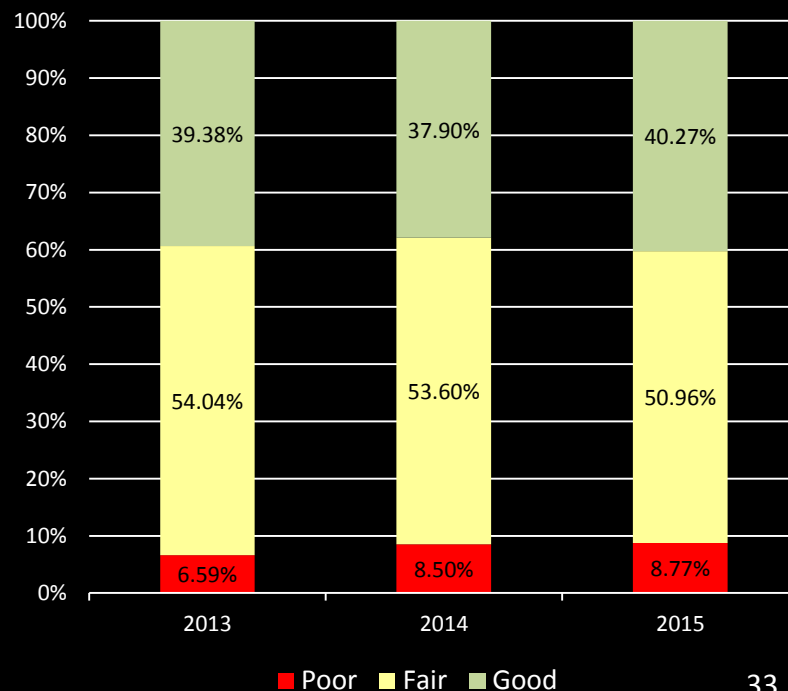
### Pierce County's Yearly Pavement Rating Distribution

Percentage of Lane Miles By Pavement Condition  
Arterials/Collectors



### Pierce County's Yearly Pavement Rating Distribution

Percentage of Lane Miles By Pavement Condition  
Local Access





# Questions?



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