

# Word on the Streets

## Their Management, Condition, and Maintenance

Board of Aldermen  
Discussion Session  
May 27, 2014



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Civil Engineer



# Pavement Management Program

- Asphalt Streets (entire subdivision)
  - Year 0-Asphalt Surface Installed
  - Year 7-Microsurfacing
  - Year 14-Microsurfacing
  - Year 20-Mill and Asphalt Overlay
- Concrete Streets and Alleys
  - Replacement of Alleys every 25-30 years
- Cracksealing every 2 years (east/west)



# Mill & Overlay

- Replace/upgrade curb ramps
- Remove 2"-3" of asphalt by cold milling
- Repair underlying base
- Pave with 2"-3" of asphalt
  - Aggregate (rock & sand)
  - Asphaltic concrete
- Plan on every 20 years



# Microsurfacing

- Replace/upgrade curb ramps
- Thin layer, 1/4"- 3/8" thick
  - Asphalt emulsion
  - Water
  - Aggregate (granite or slag)
  - Portland Cement
  - Polymer Binder
- Wearing course, seals surface, extending asphalt life
- Plan on every 7 years





# Novachip/UBAWS

## (Ultra-thin bonded asphalt wearing surface)

- Replace/upgrade curb ramps
- Remove  $\frac{3}{4}$ " of asphalt by cold milling
- Pave with  $\frac{3}{4}$ " of Novachip (modified asphalt)
  - Asphalt emulsion sprayed directly in front of paver
  - Aggregate (rock & sand)
  - Asphaltic Concrete (petroleum)
  - Polymer
- New to Clayton, but used by County
  - Brentwood Boulevard (Galleria)
  - Hanley Road (Maplewood Commons)





# Alley Replacement

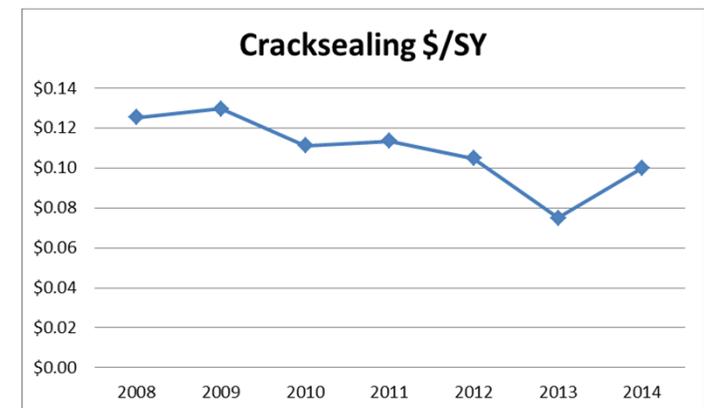
- Full replacement of concrete
- 4" Aggregate base
- 8" Concrete
- Should last 30 years





# Crack and Joint Sealing

- Rubberized sealant
- Keeps out water and incompressibles (rocks)
- Prevents damage due to freeze-thaw
- Extends pavement life
- Less than \$50,000 per year
- Each area every 2 years
  - Even years: east of Hanley
  - Odd years: west of Hanley
  - Omit streets to be overlaid





# Curb Ramp Replacement

- Compliance with ADA
- About 25 specific requirements
  - Grades/Slopes
  - Widths
  - Level Landing
  - Detectable Warning
  - Color Contrast
- MoDOT checklist is 19 pages
- Triggered by “alteration” to the street

# Curb R

- Compl
- About

- Grad
- Width
- Level
- Detectable
- Color Contrast

- MoDOT checklist
- Triggered by “alteration” to the street

**ADA CHECKLIST**

Revised August 30, 2012

MoDOT

Job No. \_\_\_\_\_ Route \_\_\_\_\_ County \_\_\_\_\_ Location \_\_\_\_\_

Figures/Examples	Pedestrian Access Route Requirements <sup>1</sup>			
		YES	NO	NA
<p>Sidewalk Width</p> 	<ul style="list-style-type: none"> <li>The minimum continuous and unobstructed clear width of a pedestrian access route shall be 4.0 feet, exclusive of the width of the curb.</li> <li>The continuous clear width of pedestrian access routes for medians and pedestrian refuge islands must be 5 feet minimum in order to allow for passing space.</li> <li>MoDOT Sidewalks shall be 5 feet wide minimum. <sup>2</sup></li> <li>MoDOT Sidewalks located within 2 feet of the back of curb are to be constructed 6 feet wide minimum and constructed adjacent to the back of the curb. <sup>2</sup></li> <li>Exception: an unaltered, existing sidewalk shall be 3 feet wide minimum and shall provide 5 foot x 5 foot passing spaces at intervals of 200 feet maximum. <sup>2</sup></li> <li>Exception: The clear width shall be permitted to be reduced to 32 inches minimum for a length of 24 inches maximum provided that reduced width segments are separated by segments that are 48 inches long minimum and 36 inches wide minimum.</li> <li>Detectable warning surfaces shall be provided, where a curb ramp, landing, or blended transition connects to a street. Where commercial driveways are provided with traffic control devices or otherwise are permitted to operate like public streets, detectable warnings should be provided at the junction between the pedestrian route and the street.</li> <li>Gratings, access covers, and other appurtenances shall not be located on curb ramps, landings, blended transitions, and gutters within the pedestrian access route.</li> <li>Grade breaks shall not be permitted on the surface of curb ramps, blended transitions, landings, and gutter areas within the pedestrian access route. Surface slopes that meet at grade breaks shall be flush.</li> </ul>			
<p>Passing Spaces</p>	<ul style="list-style-type: none"> <li>Walkways in pedestrian access routes that are less than 5 feet in clear width shall provide passing spaces at intervals of 200 feet maximum.</li> <li>Pedestrian access routes at passing spaces shall be 5 feet wide for a distance of 5 feet.</li> </ul>			
<p>Sidewalk Running Slope</p> <p>The grade that is parallel to the direction of travel, expressed as a ratio of rise to run or as a percent.</p>	<ul style="list-style-type: none"> <li>The running slope of a pedestrian access route shall be 5 percent maximum.</li> <li><b>Roadway Grade Exception:</b> Where pedestrian access routes are contained within a street or highway right-of-way, the grade of the pedestrian access route is permitted to equal the general grade established for the adjacent street or highway.</li> <li>Running Slopes shall be measured using a calibrated 2 foot long digital level.</li> </ul>			



# FHWA/DOJ Clarification

## Maintenance

- Crackfilling and Sealing
- Surface Sealing
- Chip Seals
- Slurry Seals
- Fog Seals
- Scrub Sealing
- Joint Crack Seals
- Joint Repairs
- Dowel Bar Retrofit
- Spot High-Friction Treatments
- Diamond Grinding
- Pavement Patching

## Alterations

- Open-graded Surface Course
- Cape Seals
- Mill & Overlay
- Hot In-Place Recycling
- Microsurfacing
- Asphalt Overlay
- Asphalt & Concrete Rehabilitation and Reconstruction
- New Construction

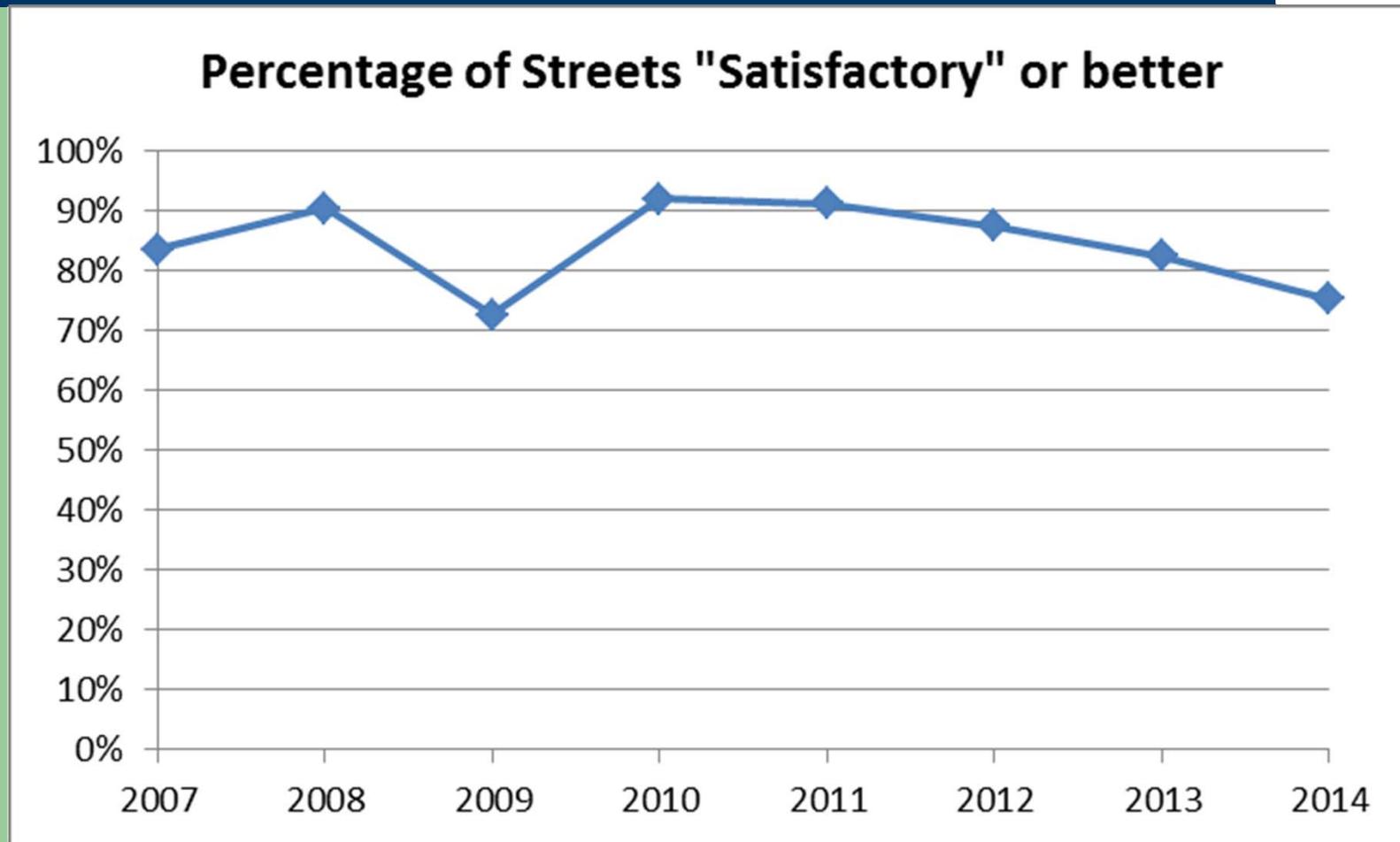


# Annual Pavement Evaluation

- Performed in January each year
- Each street/alley evaluated
- Alley replacement prioritized based upon condition and budget
- Streets follow predictable decline and improvement due to our program



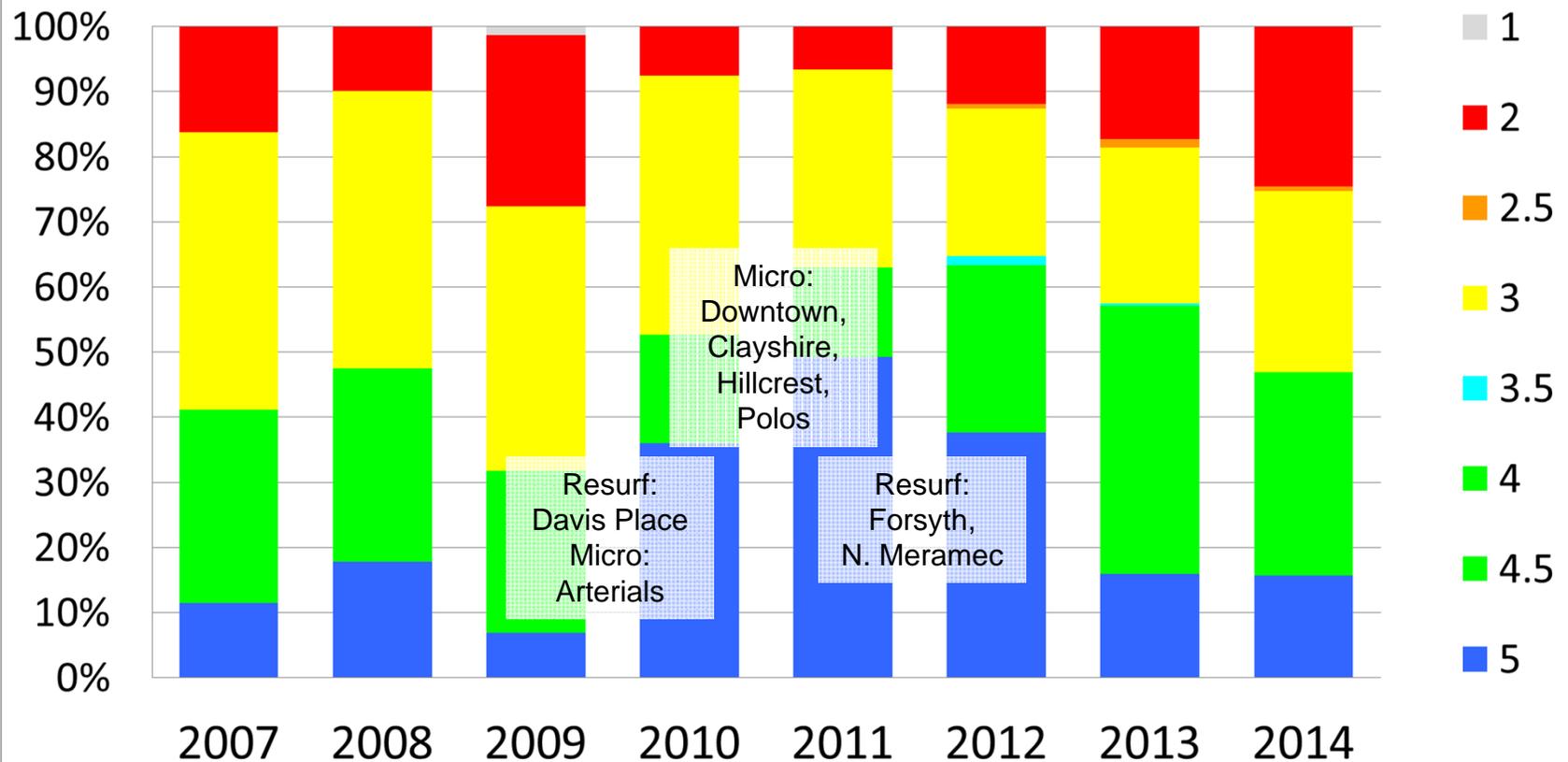
# Pavement Rating Results



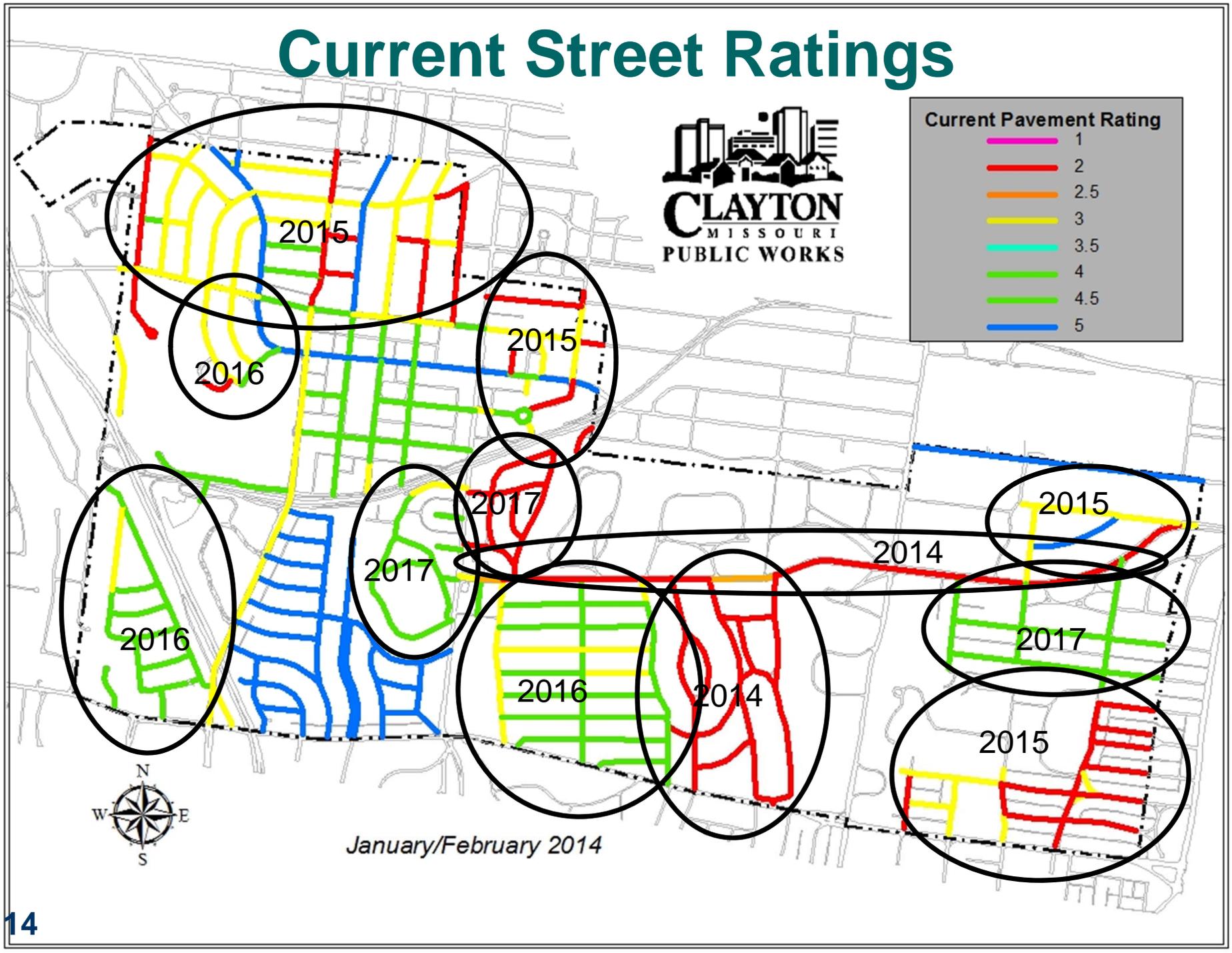


# Street Ratings (2007-2014)

## Street Ratings

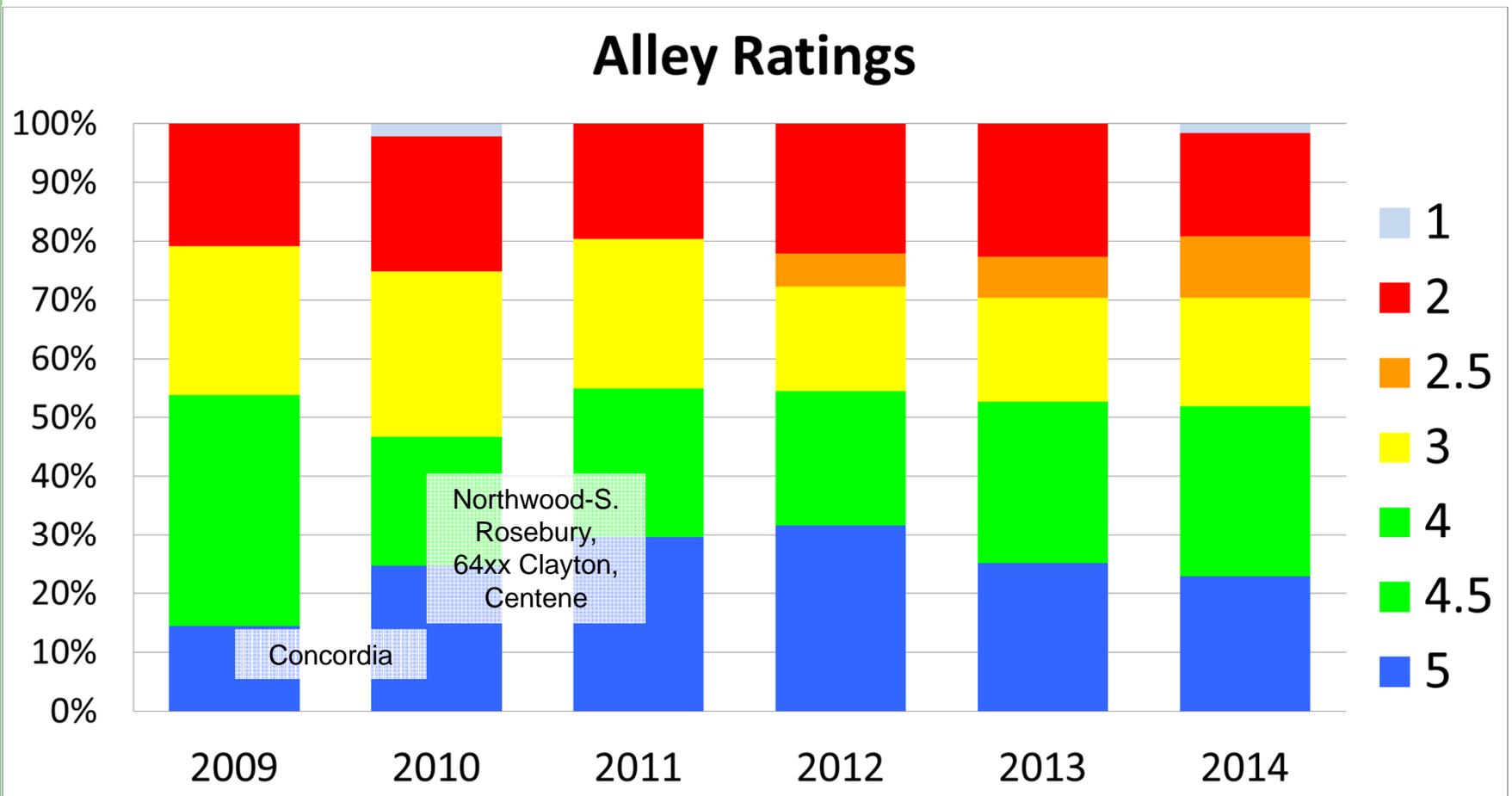


# Current Street Ratings

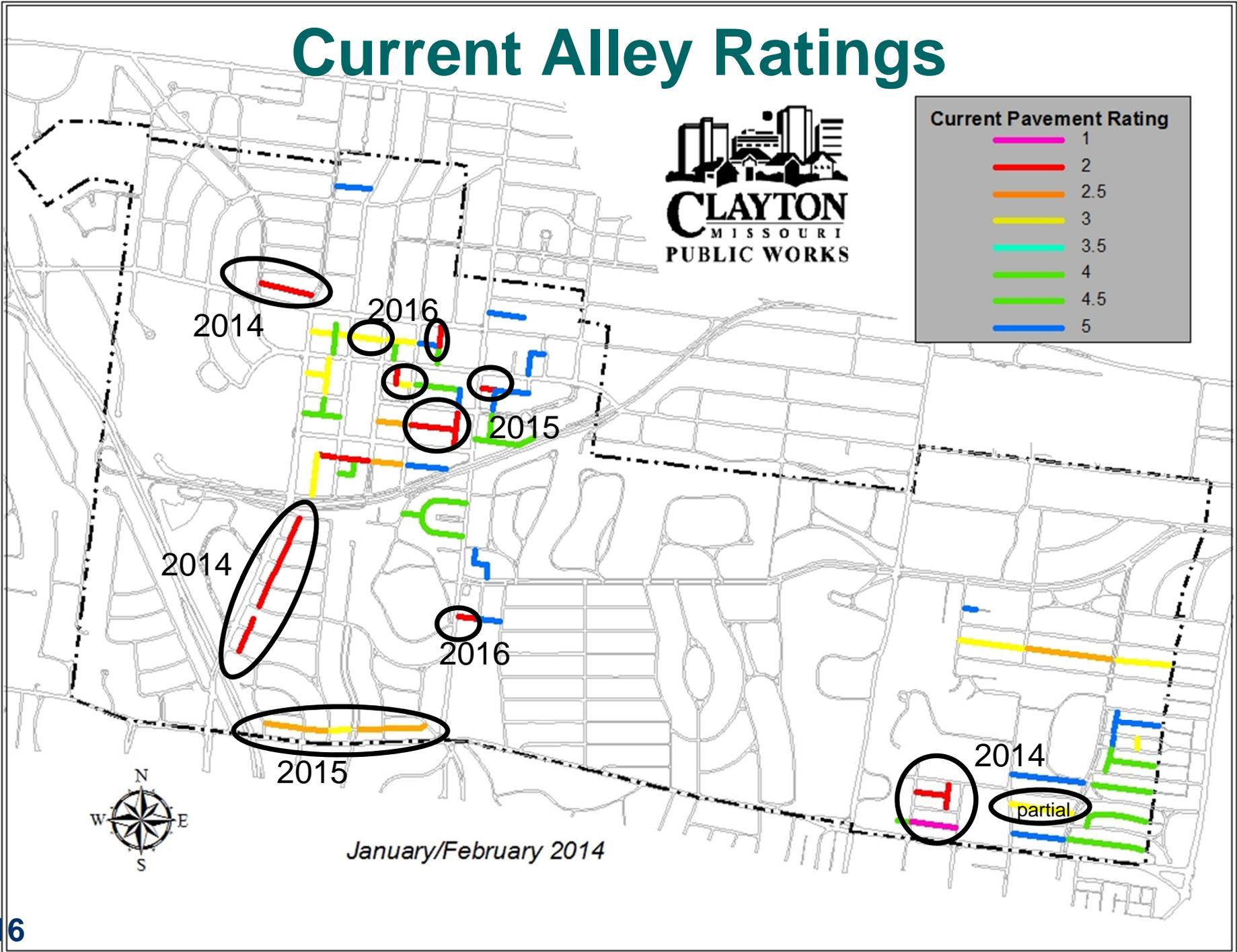




# Alley Ratings (2009-2014)

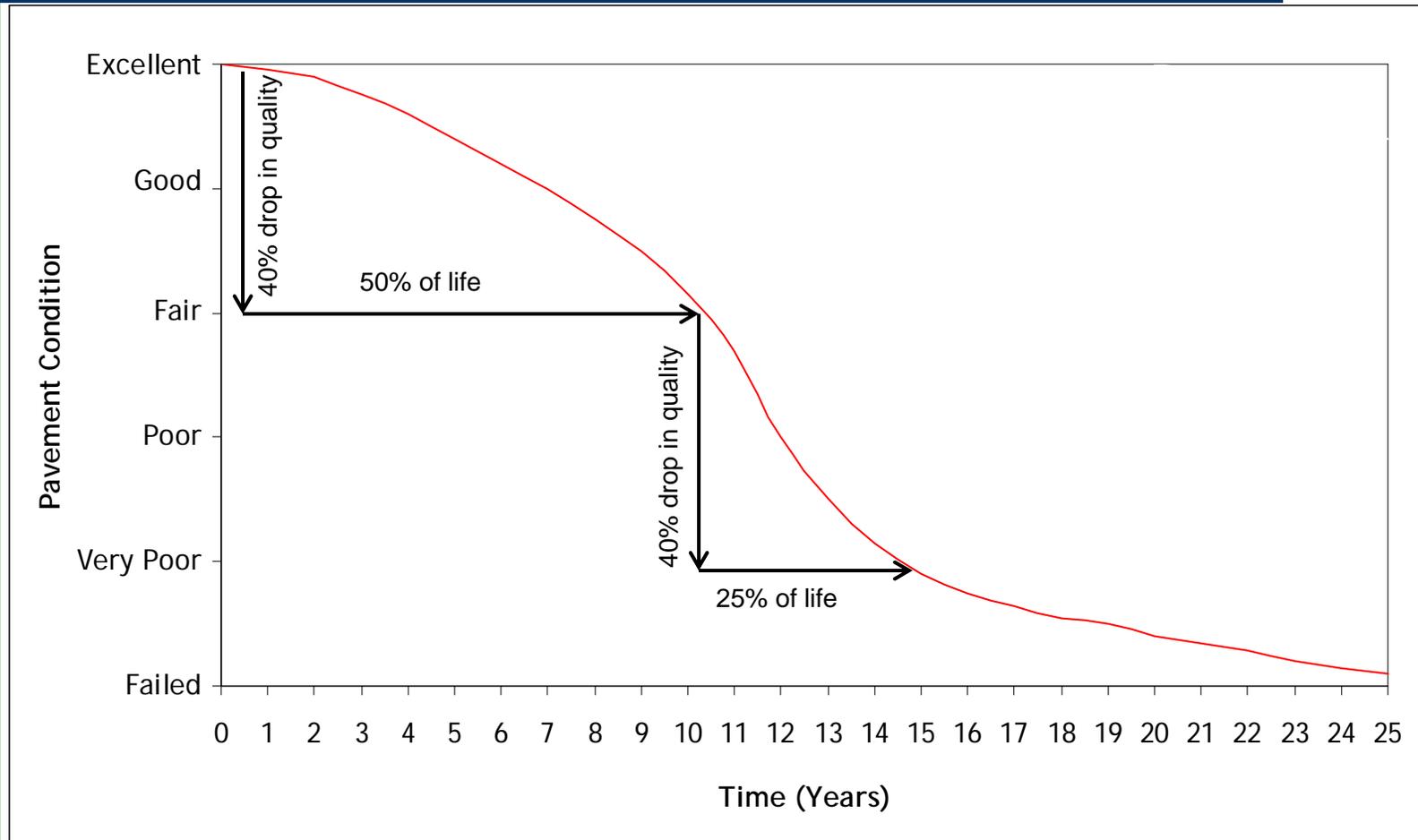


# Current Alley Ratings



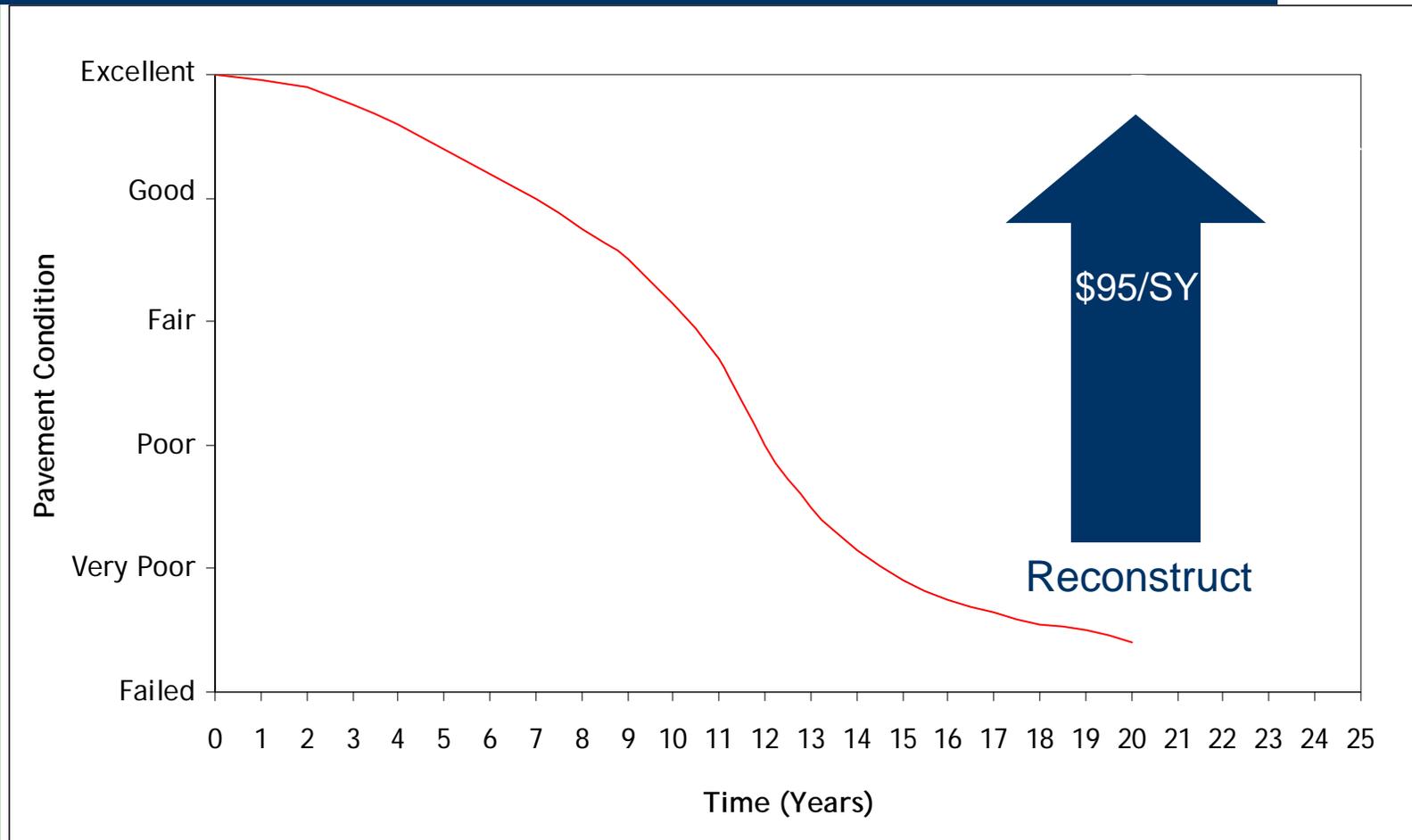


# Deterioration of Pavement



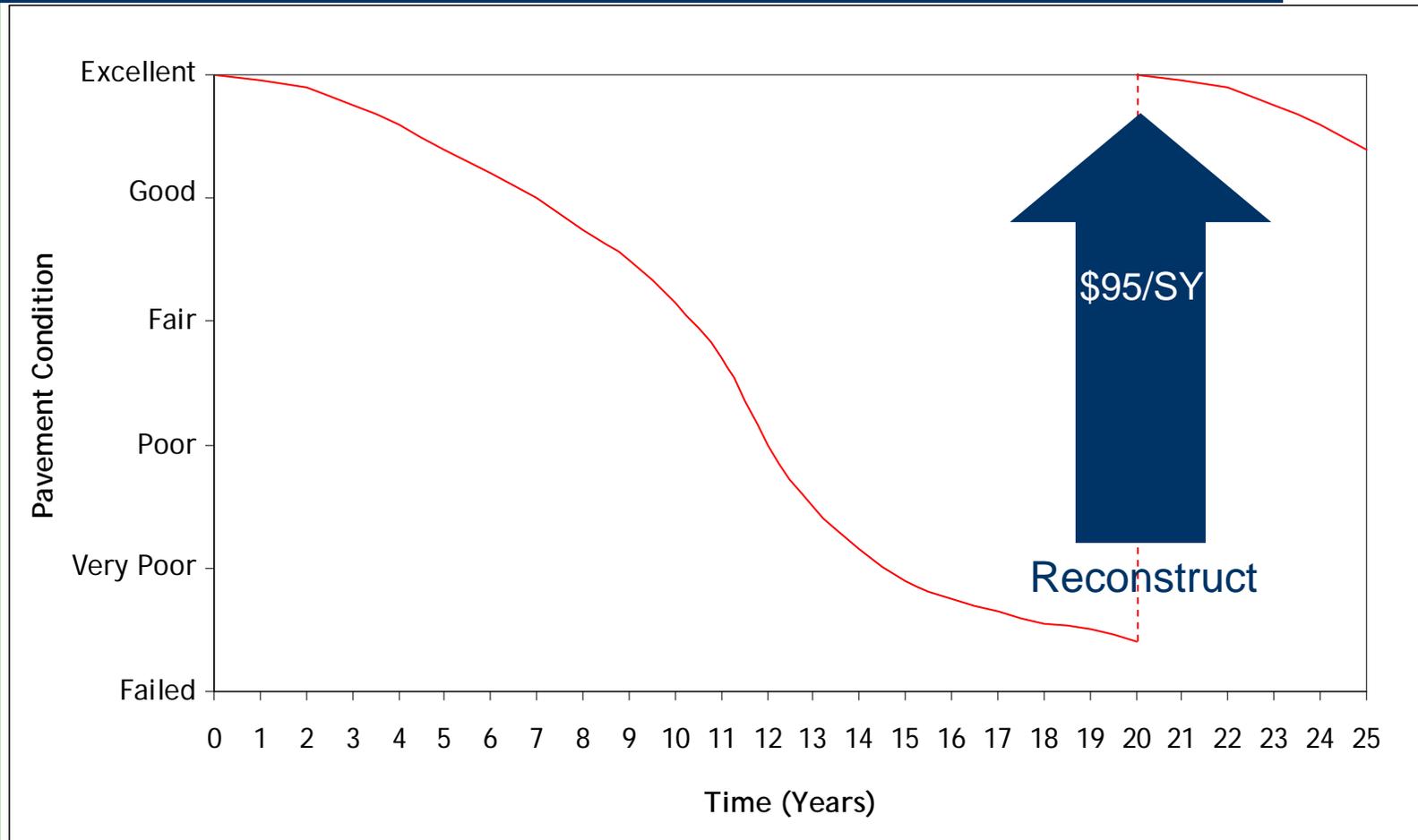


# Reactive Pavement Strategy

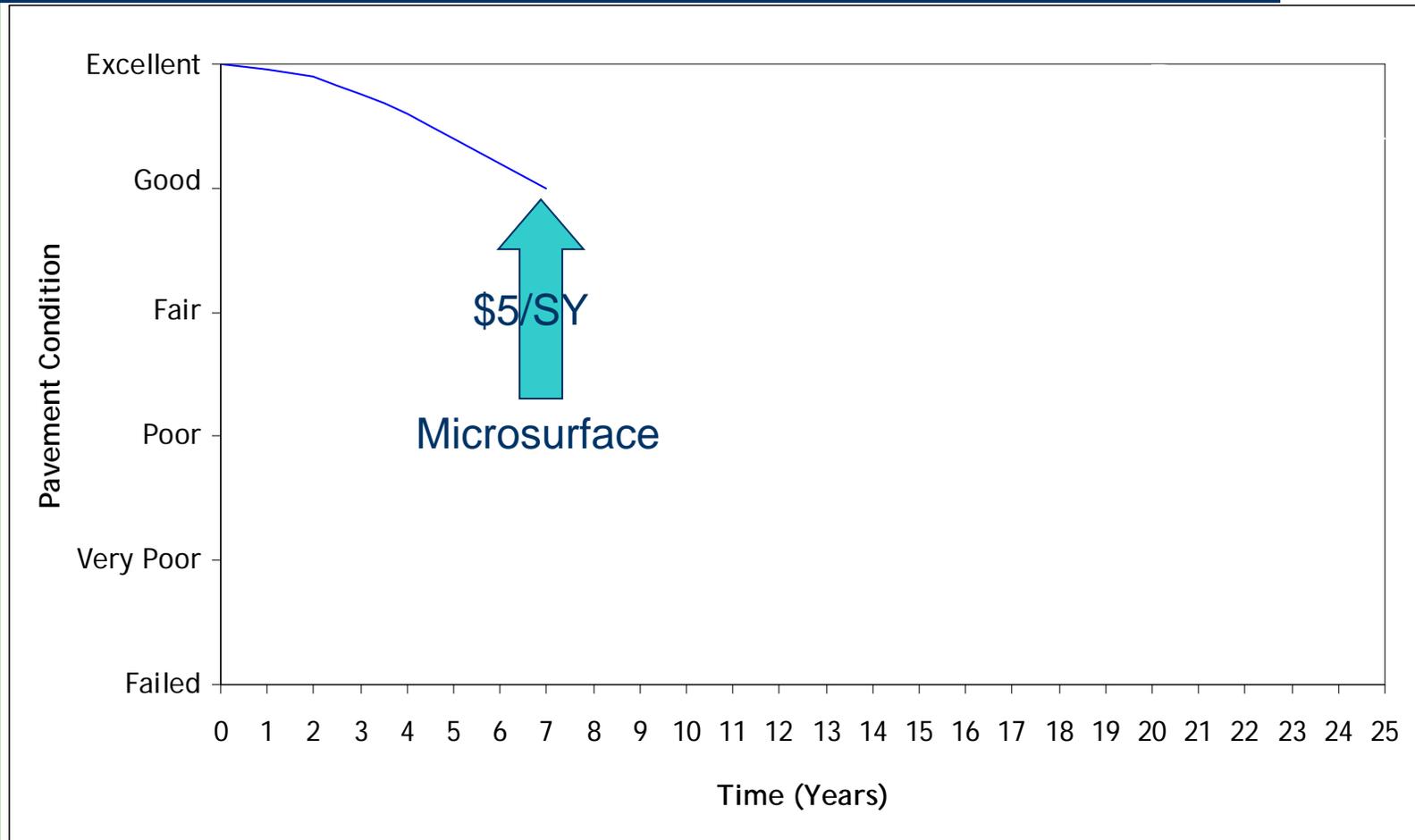




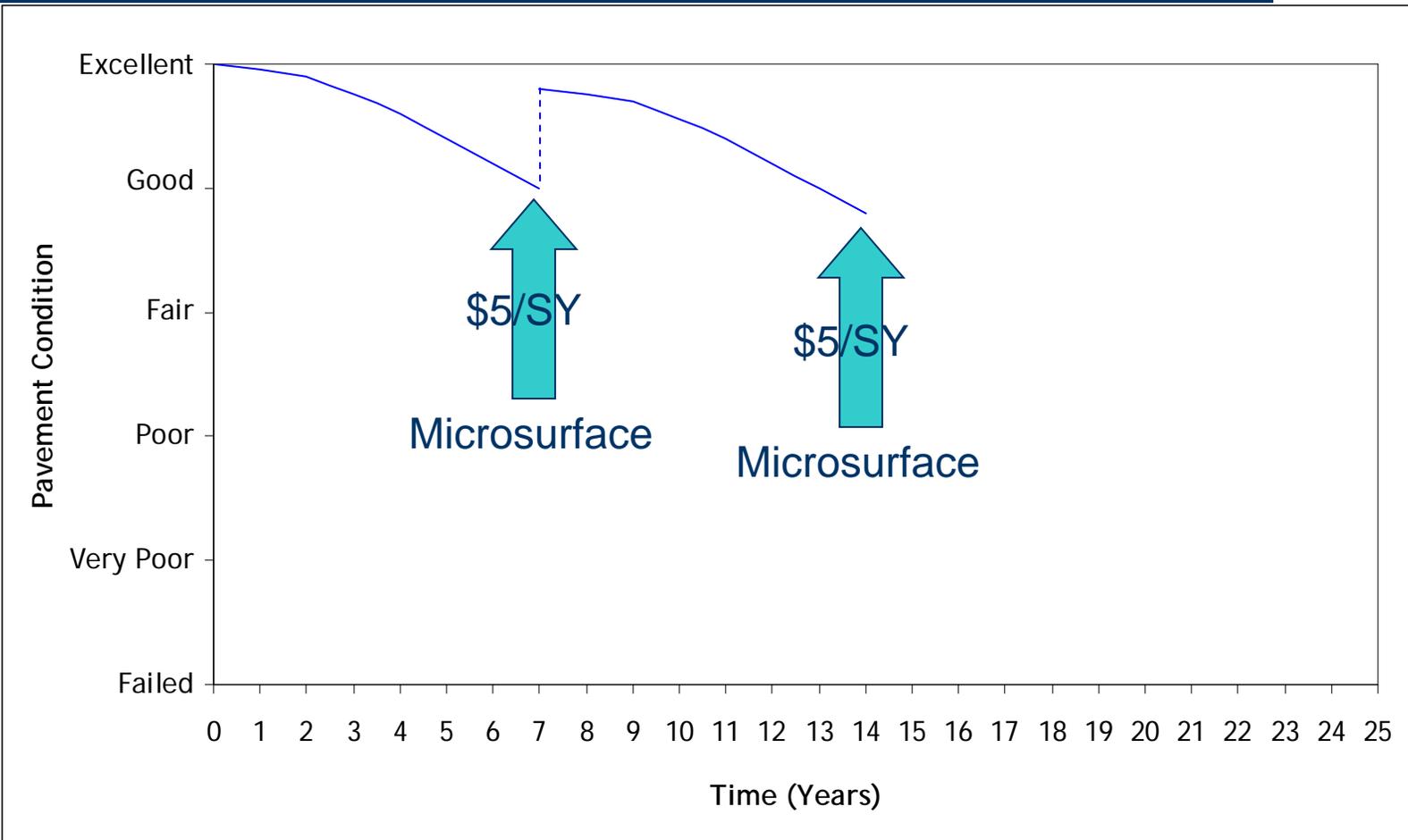
# Reactive Pavement Strategy



# Proactive Maintenance Strategy Years 0-7

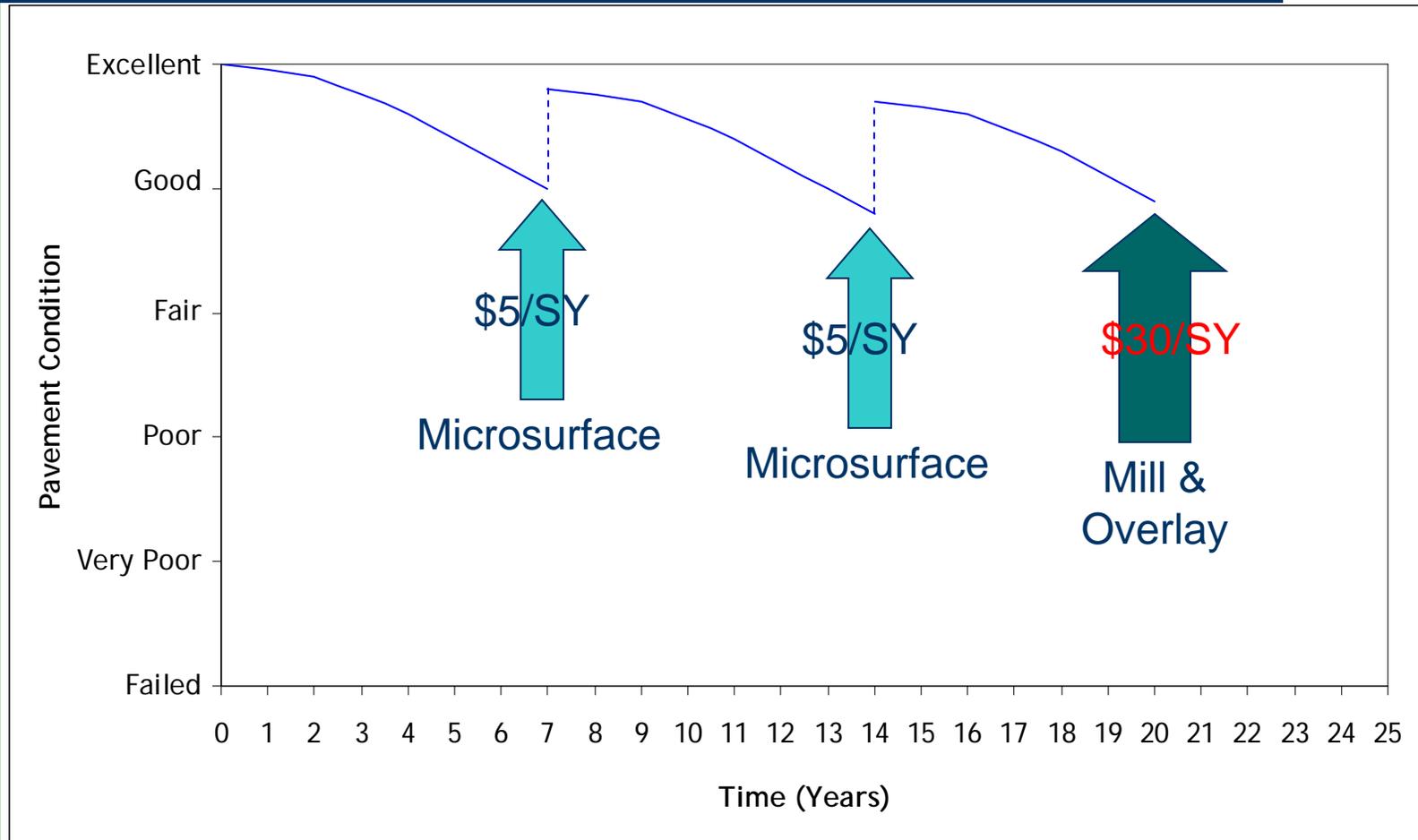


# Proactive Maintenance Strategy Years 7-14

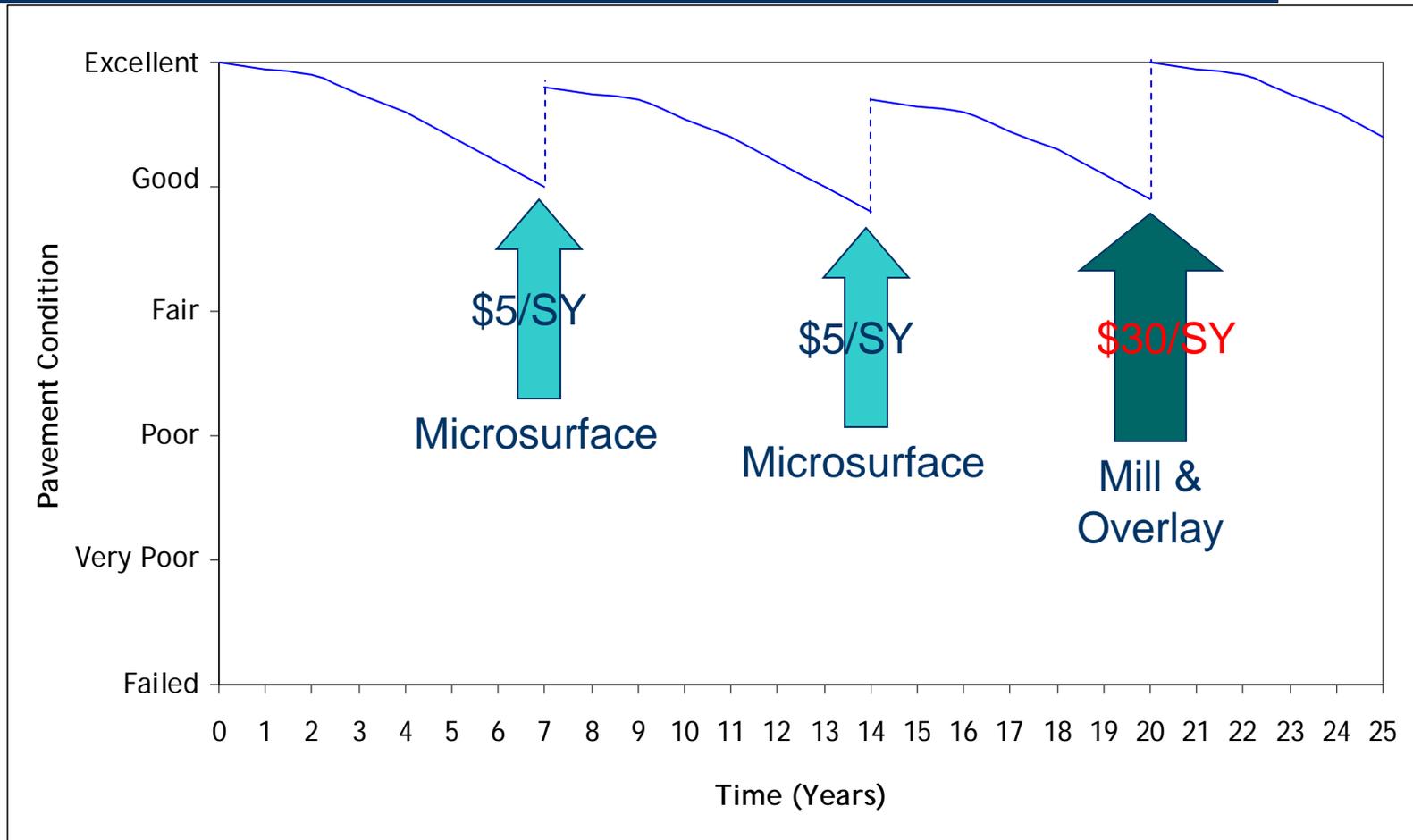




# Proactive Maintenance Strategy Years 14-20

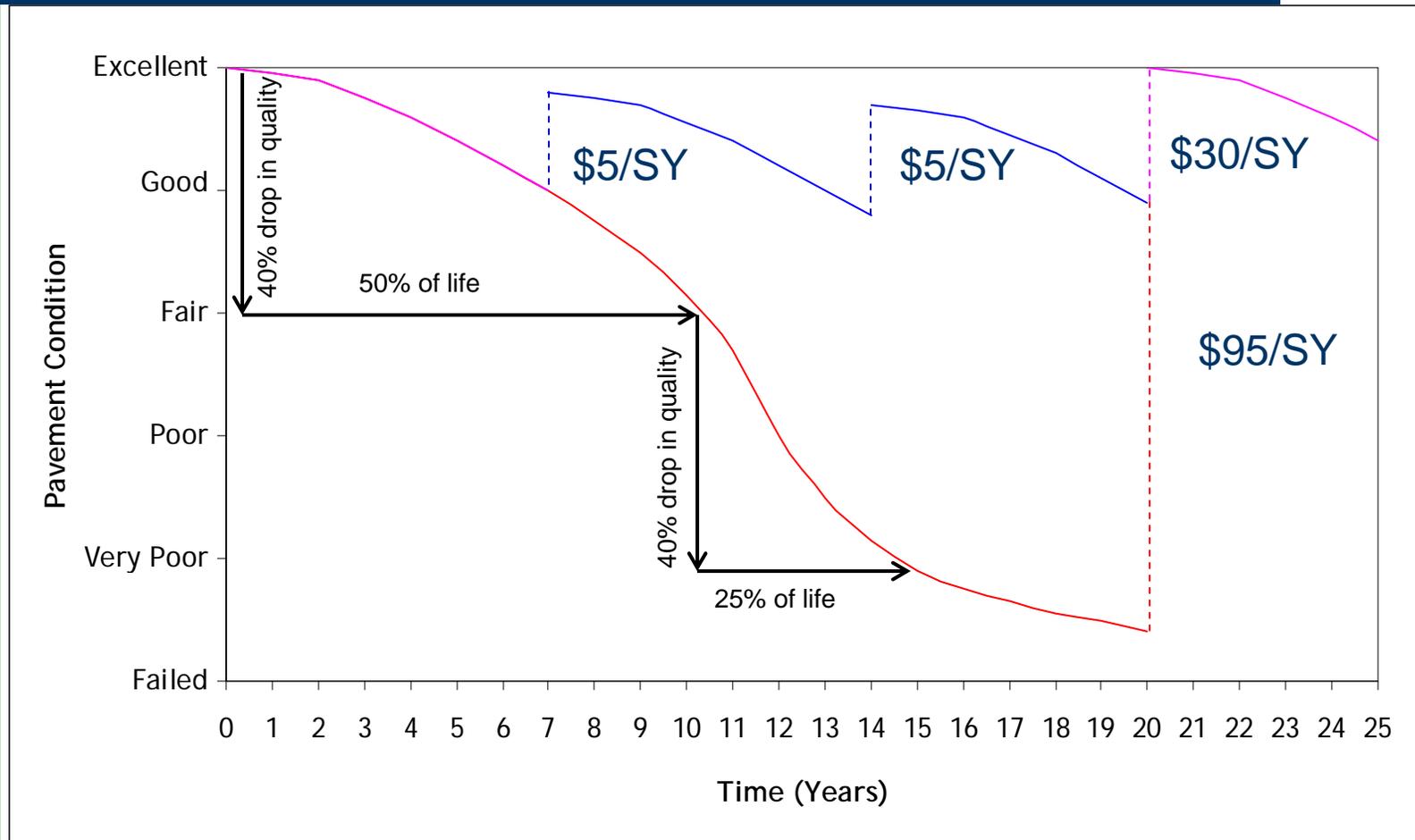


# Proactive Maintenance Strategy Years 20+





# Proactive vs. Reactive





# Benefits of a Proactive Program

- Pavement maintained at higher level
- Significant cost savings
- Entire subdivisions treated at same time
- Establishment of sequence
- More predictable budget
- Extends life of pavement





# Upcoming Major Projects

- Wydown Boulevard Resurfacing Project
- Brentwood/Carondelet Streetscape Project
- Claverach Park Resurfacing Project
- 2014 Alley Replacement Project
- 2015 Residential Resurfacing Project



# Wydown Blvd. Resurfacing Project

- Under contract with Krupp Construction
- 80% Federal Reimbursement
- Work to start June 16<sup>th</sup>
  - Curb & Gutter Replacement
  - Ramp Replacement
  - Mill & Overlay
  - Crosswalk Construction
  - Striping
- November completion
- [www.claytonmo.gov/roadwork](http://www.claytonmo.gov/roadwork)



# Brentwood/Carondelet Streetscape Project

- Bid opening May 28<sup>th</sup>, expect to bring contract to next BOA meeting for approval
- 80% Federal Reimbursement
- Work to start in mid-July
  - Curb & Gutter Replacement
  - Sidewalk and Ramp Replacement
  - Street Trees with Irrigation
  - Electrical Conduits and Streetlights
  - Crosswalk Construction
- October completion
- [www.claytonmo.gov/streetscape](http://www.claytonmo.gov/streetscape)

# Claverach Park Resurfacing Project

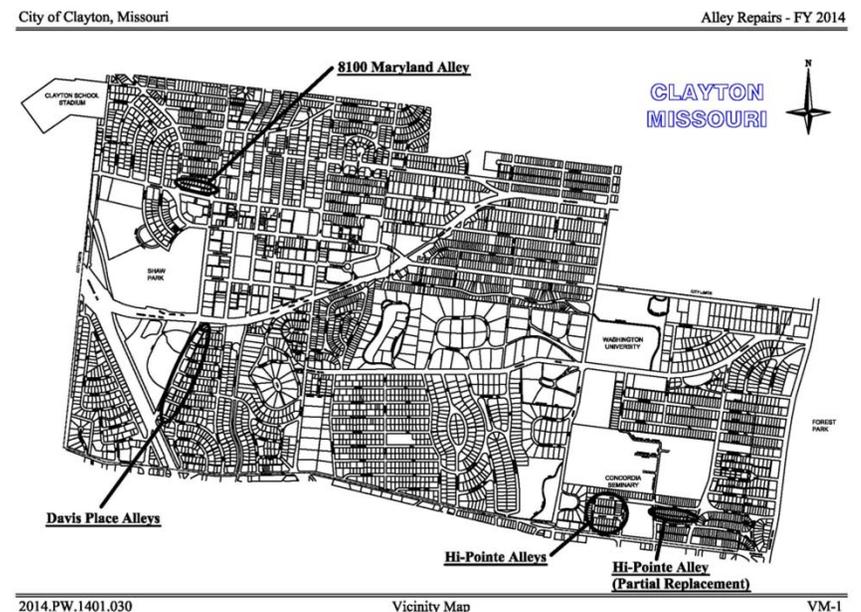


- Advertised May 21<sup>st</sup>, open bids June 11<sup>th</sup>, expect to bring contract to BOA June 24<sup>th</sup> for approval
- Work to start in late July
  - Ramp Replacement
  - Base Repair
  - Mill & Overlay
- November completion
- [www.claytonmo.gov/claverach](http://www.claytonmo.gov/claverach)



# Alley Replacement Project

- Advertised May 21<sup>st</sup>, open bids June 11<sup>th</sup>, expect to bring contract to BOA June 24<sup>th</sup> for approval
- Work to start in late July
  - Remove existing alley
  - Install 4" aggregate base
  - Pour 8" concrete pavement
- October completion
- [www.claytonmo.gov/alleys](http://www.claytonmo.gov/alleys)



2014.PW.1401.030

Vicinity Map

VM-1



# 2015 Residential Resurfacing Project

- Design contract in place
- Bid work in January, start construction in April/May
  - Ramp Replacement
  - Base Repair
  - Mill & Overlay
- Clayton Gardens, Old Town, Hanley Place, Maryland Terrace, Northmoor, Skinker Heights, Hi-Pointe, DeMun Park
- Cooperating with University City where work straddles boundaries

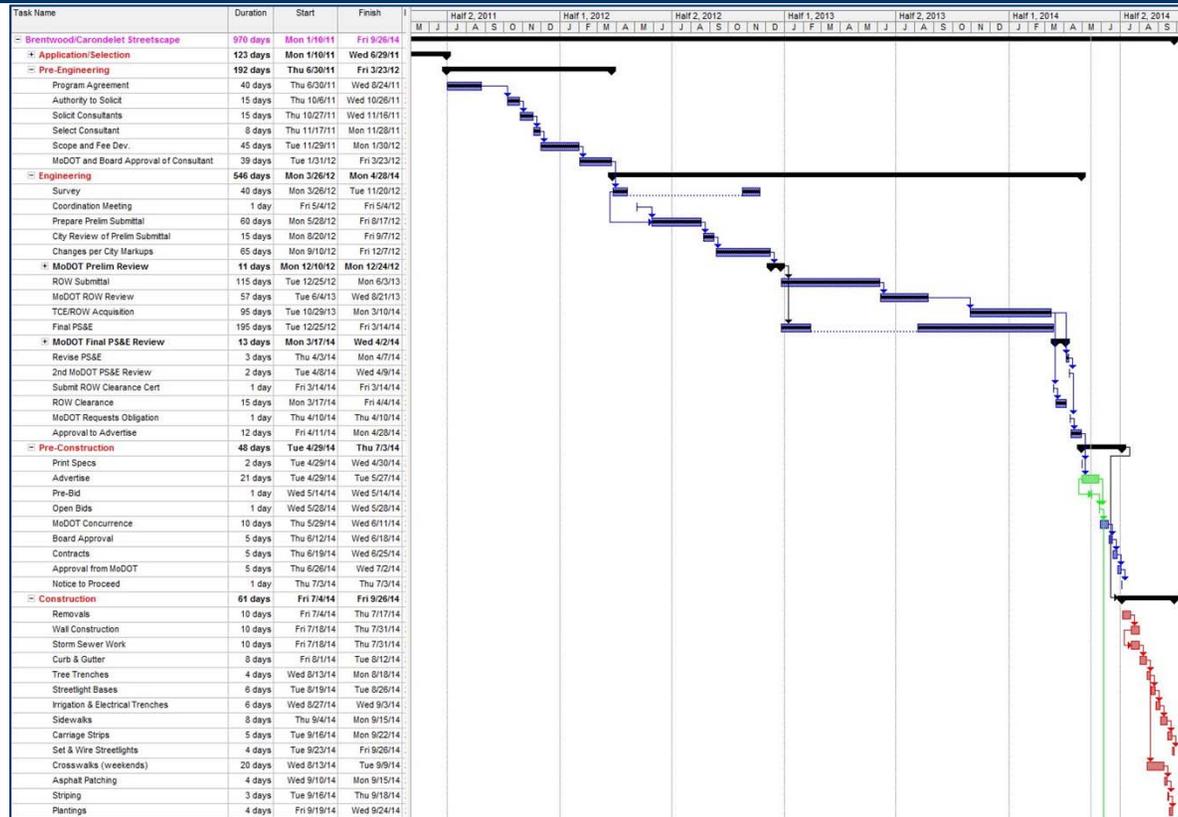


# Project Communications

- Mailings
- City Website
- CityViews
- Electronic Message Panels
- Metro (bus re-routing)
- No Parking Signage
- Construction Signage

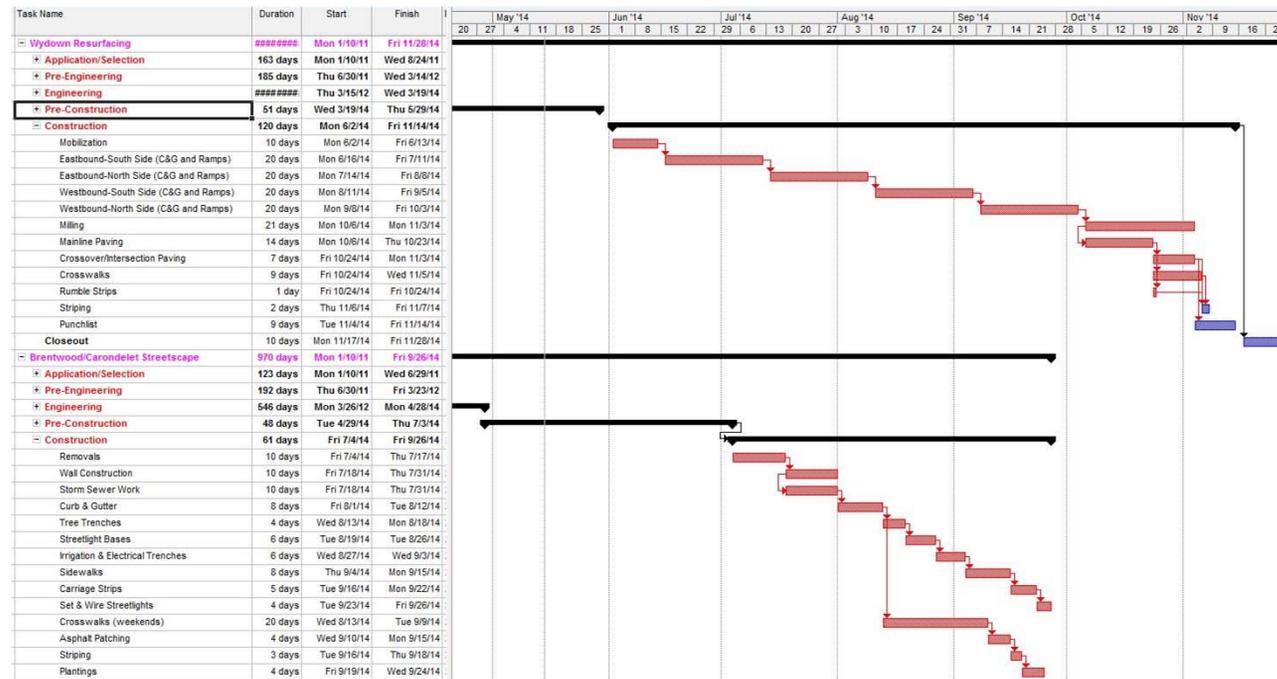


# Why do projects take so long?



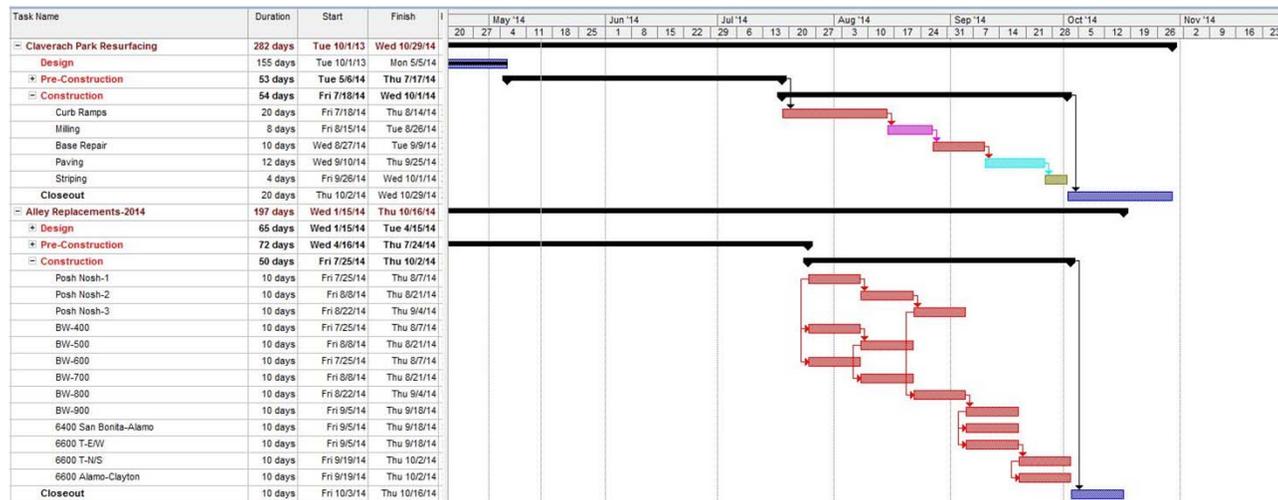


# Construction Phase: Wydown Resurfacing Project & Brentwood/Carondelet Streetscape Project



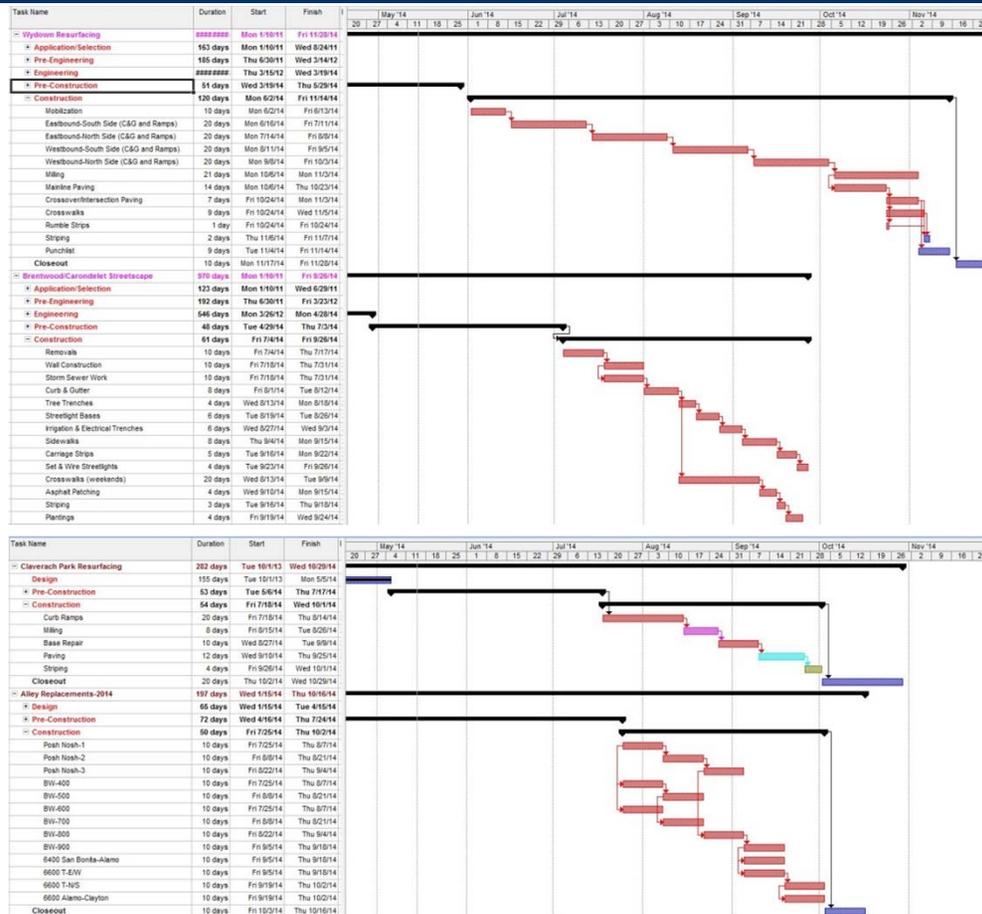


# Construction Phase: Claverach Park Resurfacing Project & Alley Replacement Project





# All Four Major Projects



# Questions

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