



Town of Clayton
Town Council Work Session Agenda
Monday, August 4, 2025 at 3:00 PM
Rotary Room, Town Hall
111 E. Second Street

1. CALL TO ORDER

2. ADJUSTMENT OF THE AGENDA

- a. **POTENTIAL ACTION:** Adopt or Adjust the Agenda

3. STAFF INTRODUCTIONS AND RECOGNITIONS

- a. 3:00 - 3:10 p.m.
Franck Boissette, Permit Specialist
Presenter: Alicia Thomas, Development Services Manager

4. ITEMS FOR DISCUSSION

- a. 3:10 - 3:40 p.m.
Electric Master Plan Update
Presenters: Ethan Poppe, Seth Locklear and Tony Pearce from Electric Consulting Engineers

5. BREAK

- a. 3:40 - 3:45 p.m.

6. ITEMS FOR DISCUSSION

- a. 3:45 - 4:00 p.m.
Clariti Update
Presenter: Courtney Tanner, Deputy Town Manager
- b. 4:00 - 4:30 p.m.
Security Updates
Presenter: Rich Cappola, Town Manager

7. BREAK

- a. 4:30 - 4:35 p.m.

8. ITEMS FOR DISCUSSION

- a. 4:35 - 5:00 p.m.
Pavement Condition Survey and Predictive Modeling Presentation
Presenters: Tim Robbins, Public Works Director and Steve Lander, WithersRavenel
[Pavement Condition Survey and Predictive Modeling Presentation](#)

9. ADJOURNMENT

- a. POTENTIAL ACTION: Motion To Adjourn



Town Council Regular Meeting Agenda Cover Sheet

Meeting Date

August 4, 2025

Agenda Location

ITEMS FOR DISCUSSION

Item Title

Pavement Condition Survey and Predictive Modeling Presentation

Presenter(s)

Tim Robbins - Public Works Director and Steve Lander- WithersRavenel

Suggested Action

Information Only

Strategic Priorities Alignment



☐ Vibrant Downtown



☒ Desirable Amenities and Spaces



☒ Sustainable Infrastructure



☒ Mobility, Transportation, and Transit



☐ Diversified Economic Development



☐ Community Outreach and Engagement



☐ Public Safety

Public Hearing: No

If Approved, Will Document Require Recordation? No

Does This Item Require a Communication Plan?

☐ Public Hearing (Required by GS)

☐ Newspaper Notice (Required by GS)

☐ Public Forum/Input Session

☐ E-News Distribution

☐ Social Media

☐ Special Mailing

☐ Public Hearing (Not Required by GS)

☐ Newspaper Notice (Not Required by GS)

☐ Press Release

☐ Website

☐ Survey

☒ None Required

Summary

WithersRavenel will present the findings of the recently completed Pavement Condition Survey (PCS), which evaluated the condition of all Town-maintained streets, parking lots, and greenways using industry-standard assessment methods. The survey produced Pavement Condition Index (PCI) scores for each segment, which help quantify pavement conditions on a scale from 0 (failed) to 100 (excellent).

The presentation will provide a summary of the overall network condition, explain how predictive modeling is used to forecast future maintenance needs, and outline recommended resurfacing and preservation strategies based on funding scenarios. These findings will support long-term capital planning, assist in prioritizing projects, and provide a data-driven foundation for future roadway maintenance investments.

Additionally, the survey results support coordination with utility and water resources projects, minimize disruption to residents and businesses, and enhance public transparency by clearly communicating how maintenance decisions are made.

Council Discussion Opportunities:

- Integration of PCI data into annual resurfacing plans and capital improvement programming.
- Coordination of pavement work with utility projects to maximize efficiency and cost savings.
- Public communication strategies to explain how and why street maintenance priorities are set.
- Long-term funding needs and preservation strategies to extend pavement life and reduce reconstruction costs.

Funding Source

N/A

Corresponding Documentation

[Clayton 2025 PCS Council Presentation](#)

Submitted By: Shannon Poole, Public Works/Operations

Reviewed By:

Tim Robbins, Public Works Director	Approved - Jul 29 2025
Rich Cappola, Town Manager	Approved - Jul 31 2025
Heidi Holland, Town Clerk	Approved - Jul 31 2025



Town of Clayton, NC 2025 Pavement Condition Survey Council Presentation

July 21, 2025



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FIRM PROFESSIONALS

Steve Lander, PE

Director of Pavement Management
32 Years of Experience

Rob Holland

Construction Manager II
Construction Administration
37 Years of Experience

Vlad Mitchev, PE

Director of Pavement Operations
25 Years of Experience

Zach Ward, PE

Assistant Project Manager
6 Years of Experience



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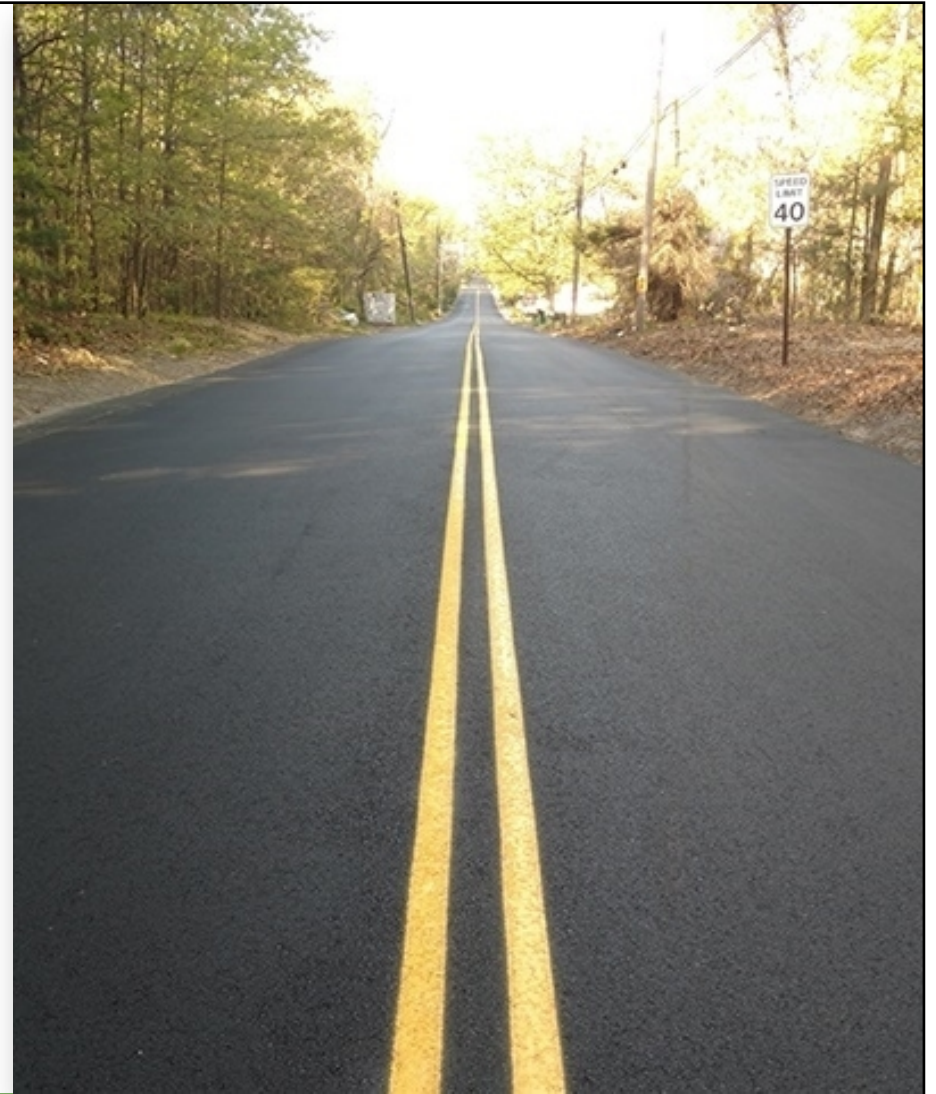
Project Deliverables

- Analysis
- Appendix C – Street, Parking Lot, and Greenway Listings
- Database
- GIS
- PCI Map
- Presentation
- Report



PCS

- **Pavement Condition Survey (PCS)**
 - **Phase 1**
 - FHWA recommends a survey every 2-3 years
 - Unbiased Perspective
 - **Software Analysis**
 - Predictive Modeling
 - Optimized Work Plans
 - **Report**



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PCS

Windshield survey

- Experienced 2-person crew
- Survey vehicle maintains 5-10 mph speed

Equipment

- Vehicle
- Laptop – Field Application
- Measuring wheel
- GPS

Safety

- PPE • Vehicle mounted signs • Strobe lights

Pavement Condition Survey

Prefix: Direction: Street Name: Street Type: Suffix: Completed Today: 0.00

From: Lake Street To: South Talbert Boulevard Class: A Jurisdiction: CITY Total Remaining: 486,614.37

Asphalt Height: ☐ -2 ☐ -1 ☒ N ☐ 1 ☐ 2 ☐ 3

Width: 30 Length: 879 Lanes: 2

GIS Length: 879.21 Square Yardage: 2,931

Current Rating: 23 (High/50-75) Previous Rating: 100

Transverse Cracking: 100 (None) Previous Rating: 100

Block Cracking: 100 (None) Previous Rating: 100

Patching/Potholes: 94 (High/0-5) Previous Rating: 100

Surface Defects: 69 (Medium/Extreme) Previous Rating: 100

Roughness/Rutting: 100 (None) Previous Rating: 100

Reflective Cracking: 100 (None) Previous Rating: 100

Comment:

Save QC Complete Repave Reset Cancel

1625693.931 765269.144 Feet

Pavement Type

☐ Paved ☐ Unpaved ☐ Concrete ☐ Brick ☐ Composite

Median

☐ No ☐ Yes

Stripping

☐ No ☐ Yes

Crack Seal

☐ No ☐ Yes

Curb Gutter

☐ 0 ☐ 1 ☐ 2

Curb Gutter Type

☐ None ☐ Roll ☐ Std ☐ Valley ☐ Vert ☐ Other

Pavement in Gutter

☐ No ☐ Yes

Sidewalk

☐ None ☐ One ☐ Both

Marking Condition

☐ N ☐ P ☐ F ☐ G

Speed Humps

☐ No ☐ Yes

Bike Lane

☐ No ☐ Yes

Oxidation

☐ No ☐ Yes

Spot Repair Tree Root

☐ N ☐ C ☐ S ☐ TR



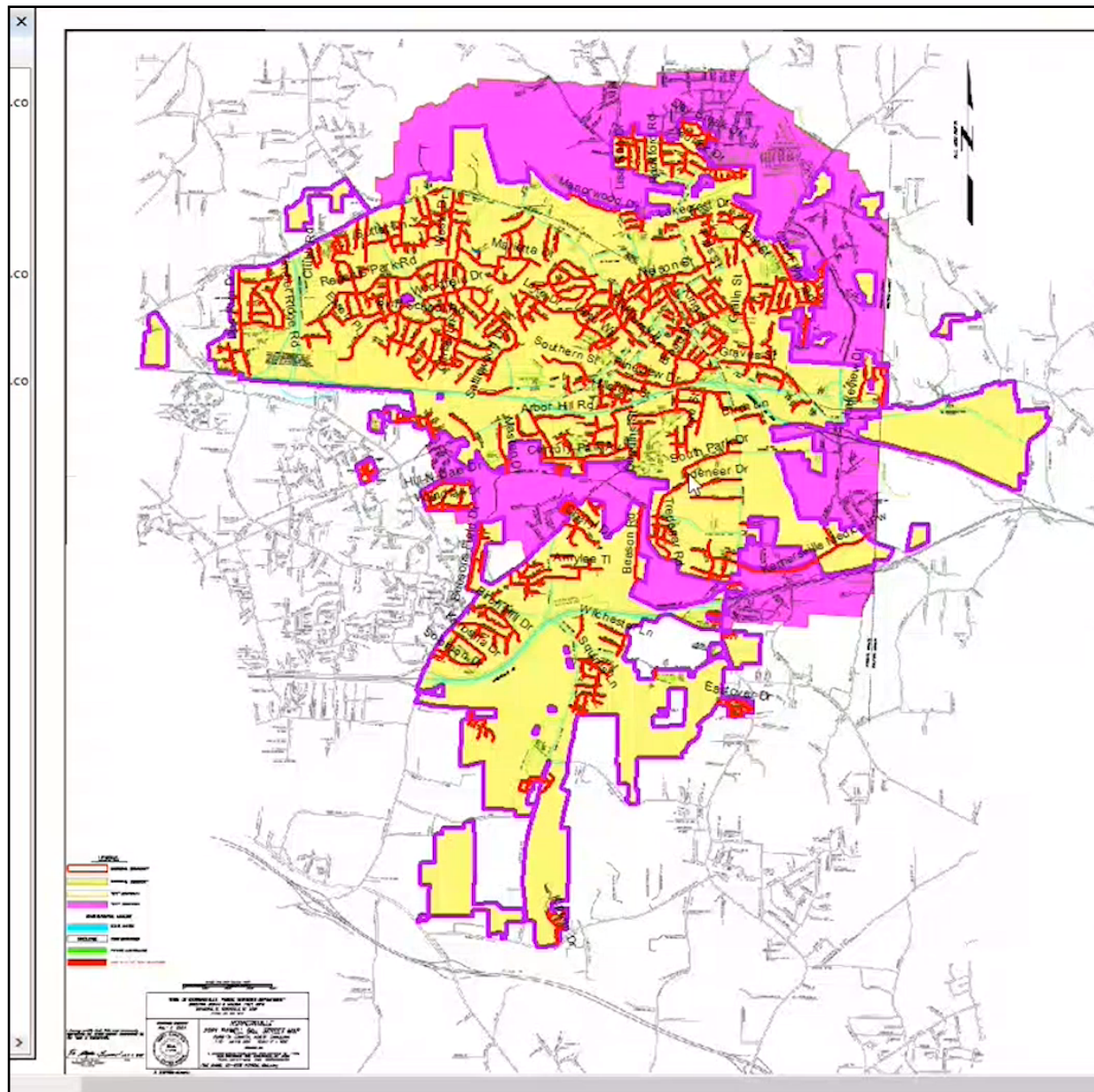
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PCS Methodology

- Clayton maintains 97 miles of asphalt pavement streets
- WR completed the PCS in February 2025
- Seven common pavement surface distresses observed (LTPP)
 1. Fatigue Cracking (3x6)
 2. Transverse Cracking (3x4)
 3. Block Cracking (3x6)
 4. Patching/Potholes (3x6)
 5. Surface Defects (3x4)
 6. Rutting/Roughness (3x4)
 7. Reflective Cracking (3x4)



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Pavement Condition Survey

Prefix: Direction: Street Name: Street Type: Suffix: Completed Today: 0

From: To: Class: Jurisdiction: Total Remaining: 0

Asphalt Height: ☐ -2 ☐ -1 ☒ N ☐ 1 ☐ 2 ☐ 3

Width: Length: Lanes:

GIS Length: Square Yardage: 0

Pavement Type: ☐ Paved ☐ Unpaved ☐ Concrete ☐ Brck ☐ Composite

Merlin: ☐ No ☐ Yes

Striping: ☐ No ☐ Yes

Crack Seal: ☐ No ☐ Yes

Curb Gutter: ☐ 0 ☐ 1 ☐ 2

Curb Gutter Type: ☐ None ☐ Roll ☐ Sid ☐ Valley ☐ Vert ☐ Other

Pavement in Gutter: ☐ No ☐ Yes

Sidewalk: ☐ None ☐ One ☐ Both

Marking Condition: ☐ N ☐ P ☐ F ☐ G

Speed Humps: ☐ No ☐ Yes

Bike Lane: ☐ No ☐ Yes

Gridlock: ☐ No ☐ Yes

Soil Recall Tree Root: ☐ N ☐ C ☐ S ☐ TR

Current Rating: Previous Rating: Current PCI: Previous PCI:

Fatigue Cracking:

Transverse Cracking:

Block Cracking:

Patching/Potholes:

Surface Defects:

Roughness/Flutting:

Reflective Cracking:

Comment:

Save QC Complete Repave Reset Cancel

Street Inventory

Table 7 – Pavement Types

Surface Type	Miles	Percent of System
Asphalt Pavement (P)	97.00	99.9%
Unpaved (U)	0.08	0.1%
Concrete (C)	0.03	.0%
Total =	97.11	100.0%



Street Inventory

Table 8 – Low and High-Volume Street Breakdown

Volume	% Miles	Miles	Lane Miles	Avg Rating	Cost Per Mile	Total Cost	% Cost
Low	89.1%	86.43	172.62	80	\$86,114	\$7,442,864	80.8%
High	10.9%	10.57	22.22	79	\$167,307	\$1,768,431	19.2%
Total	100.0%	97.00	194.84	80	\$94,962	\$9,211,295	100.0%



Findings

- PCI = 80
 - Other Roadway Networks
- Network Condition – “Fair”

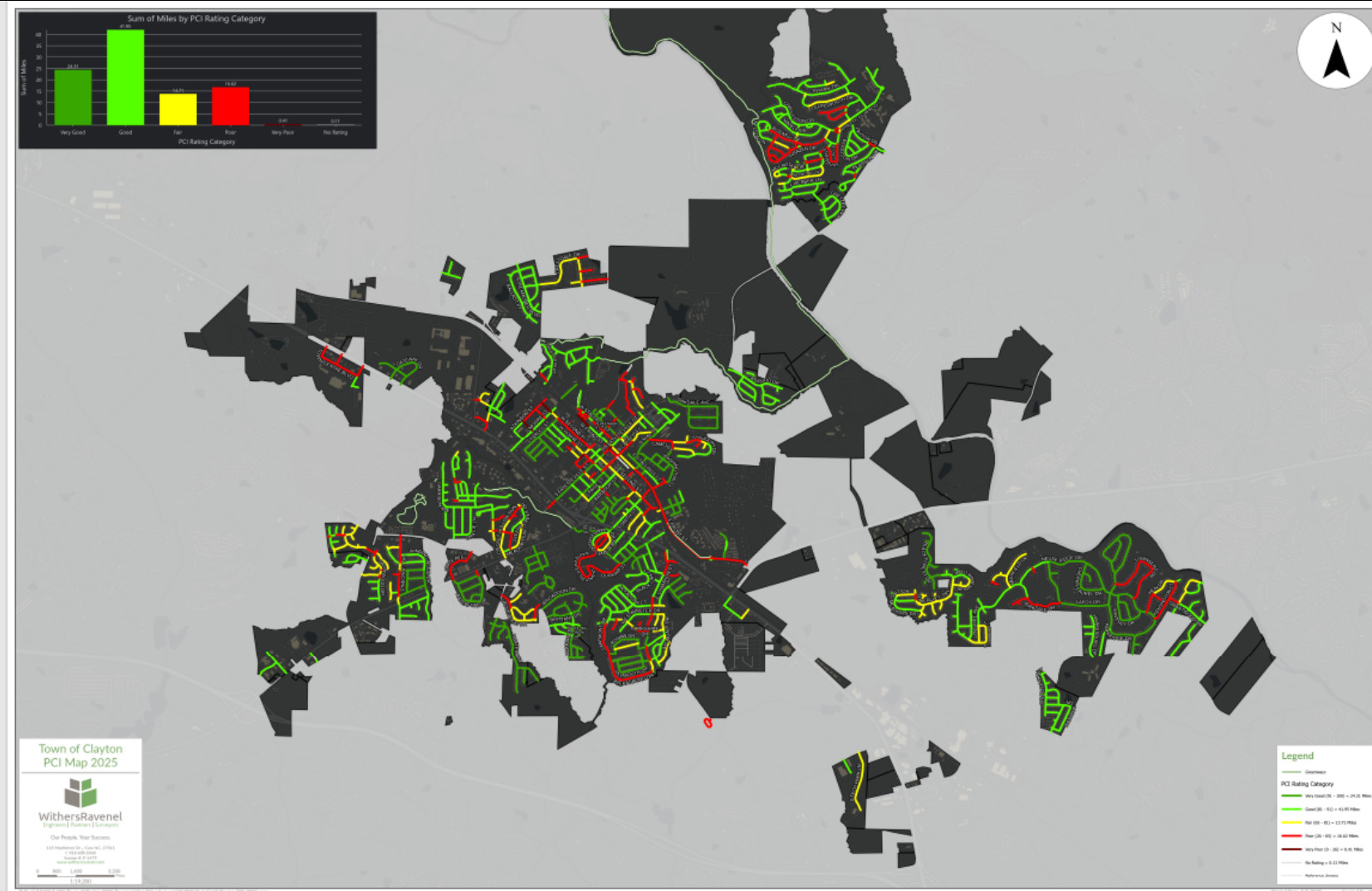
PCI Condition State	
VERY GOOD	91 – 100
GOOD	81 – 91
FAIR	65 – 81
POOR	26 – 65
VERY POOR	0 – 26

- RAV = \$58M

Table 3 – PCI Comparison

Municipality	Centerline Miles	PCI
Town of Fuquay-Varina	154	85
Town of Morrisville	60	82
★ Town of Clayton	97	80
Town of Holly Springs	156	80
Town of Apex	133	79
Cary	530	79
Village of Clemmons	76	78
City of Sanford	134	73
City of Mount Airy, NC	73	71
Town of Kernersville	98	69
City of Hickory	240	66
City of High Point	450	66
City of Lexington	126	65
City of Asheville	411	61
City of Greensboro	1,091	61





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Backlog Maintenance Needs

Table 2 – Backlog Maintenance Needs

Maintenance Activity	Lane Miles	Cost
No Treatment	52.52	\$0
Preservation – Prevent (Rejuvenators)	48.08	\$401,546
Crack Seal	19.43	\$105,670
Patching (Full-Depth Asphalt)	13.19	\$221,533
Preservation – Correct (Micro Surfacing)	27.00	\$1,364,544
Rehabilitation – Mill and Overlay	33.80	\$6,818,822
Reconstruction (FDR)	0.82	\$299,180
Totals	194.84	\$9,211,295

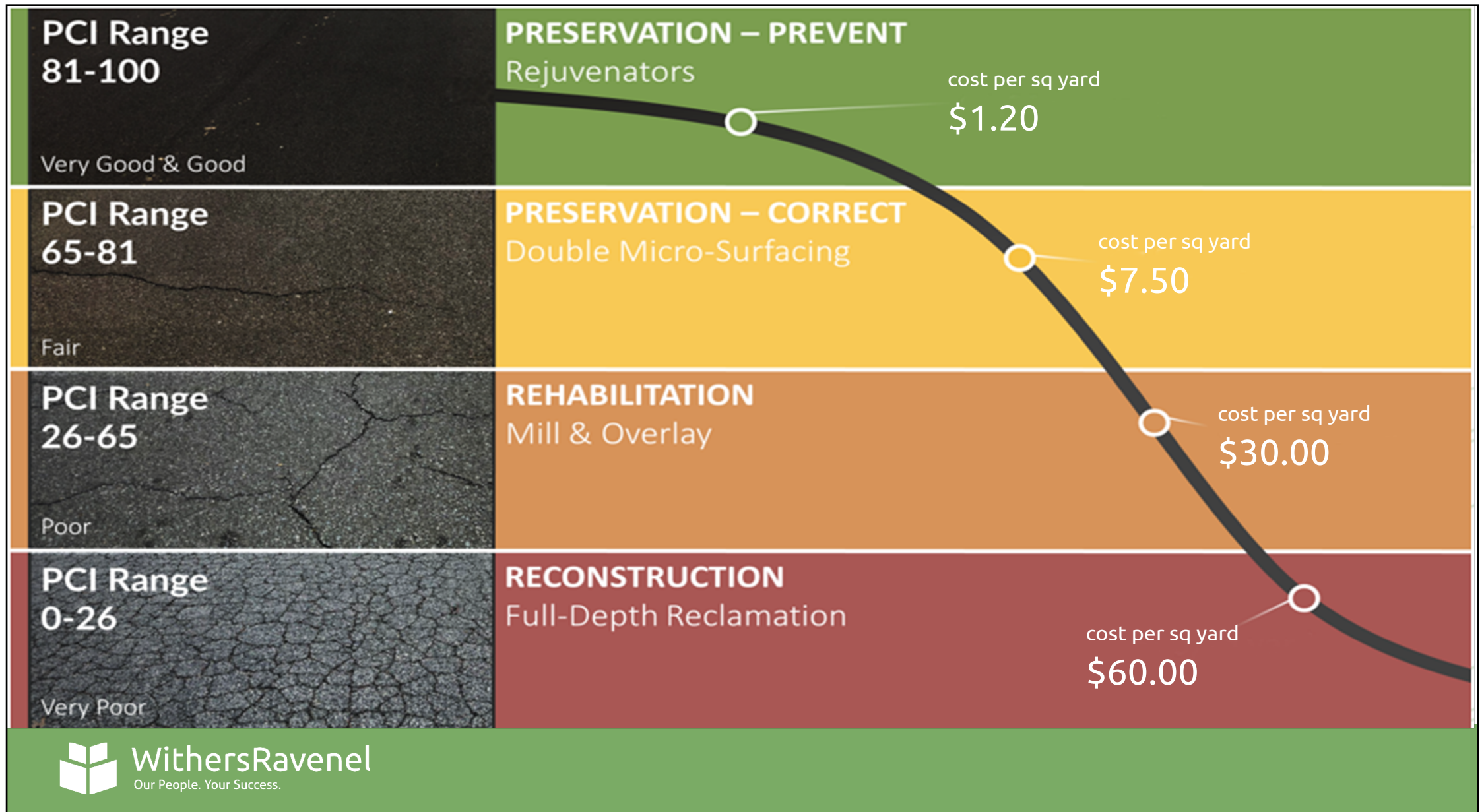


Maintenance Activities

Table 4 – Maintenance Activity Recommendations

PCI Range	Recommended Maintenance Activity
81 to 100	Preservation – Prevent, Crack Seal, and Patching
65 to 81	Preservation - Correct
26 to 65	Rehabilitation
0 to 26	Reconstruction





Unit Costs

Table 5 – Maintenance Activities and Unit Costs

Maintenance Activity	Unit Cost	Segment Life Extension (YR) *	\$/SY/YR*
Crack Sealing	\$0.85/SY	2	\$0.43
Preservation – Prevent (Rejuvenators)	\$1.20/SY	4	\$0.30
Patching (Full-Depth Asphalt)	\$50.00/SY	15	\$3.33
Preservation – Correct (Microsurfacing)	\$7.50/SY	7	\$1.07
Rehabilitation (Mill and Overlay)	\$30.00/SY	15	\$2.00
Reconstruction (FDR)	\$60.00/SY	20	\$3.00

* These numbers are averages and can vary with costs and pavement performance.
\$/SY/YR = Unit Cost divided by Segment Life Extension (YR)



Result of The Analysis

- **3 Budget Scenarios (20-Year Analysis)**
 1. Current Budget \$2.5M/YR
 2. Powell Bill (\$1M/YR)
 3. \$2.5M/YR Years 1-5, Then \$1.5M/YR

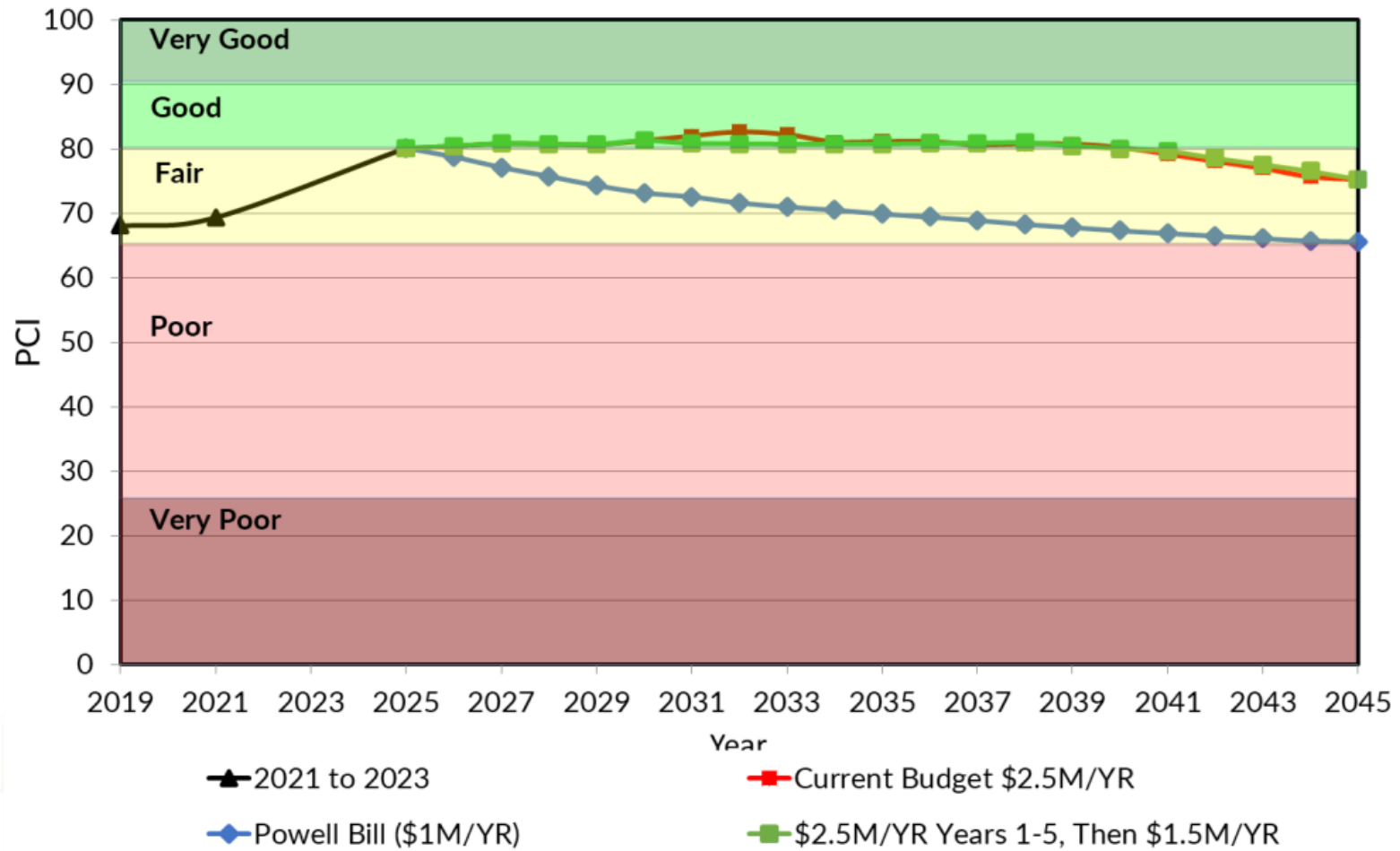


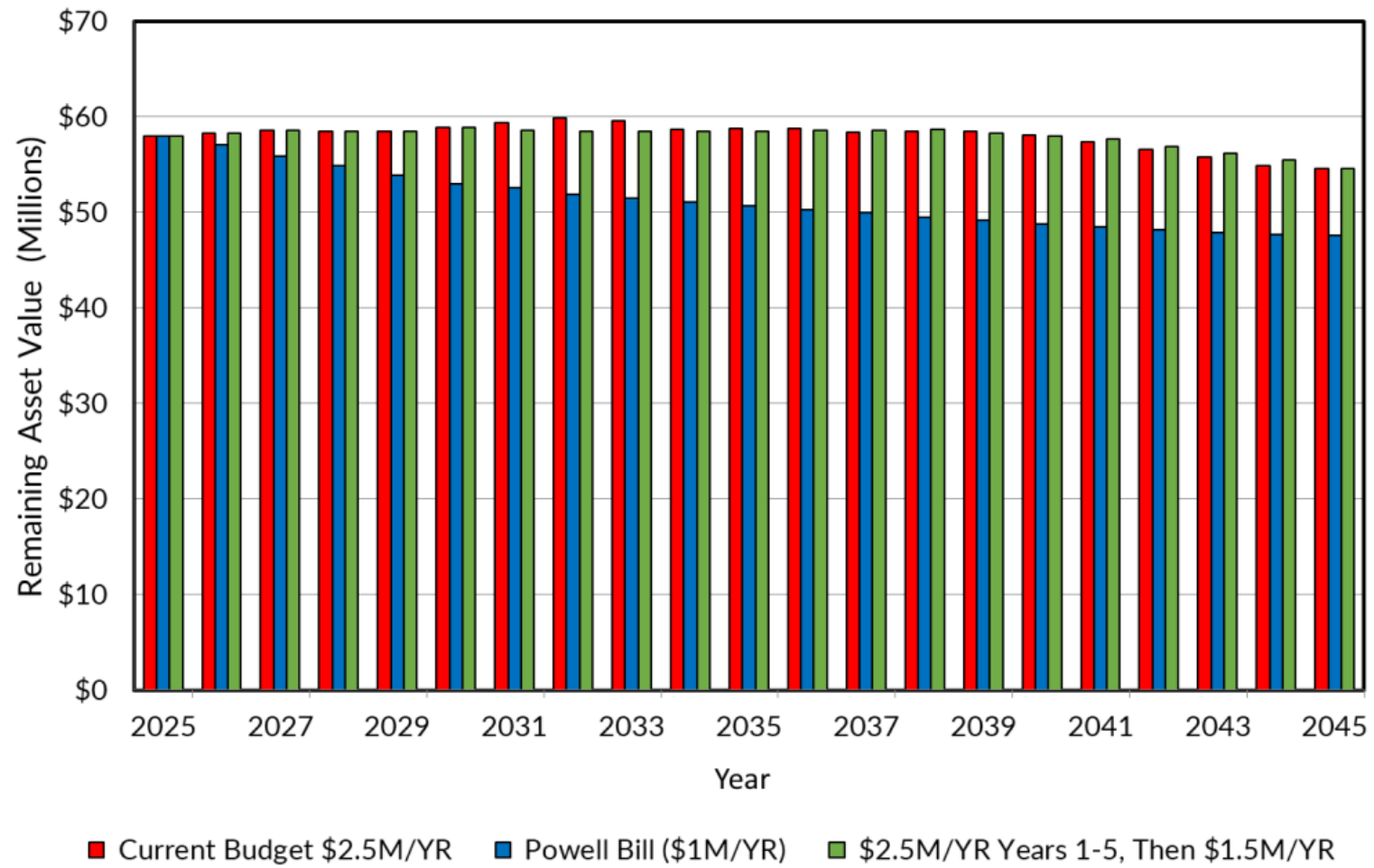
Results

Table 6 – Predictive Modeling Results – Remaining Asset Value (RAV)

Scenario Number & Name	PCI (Year 20)	20-Year RAV	Change in RAV
Current Condition	80	\$57,999,284	N/A
#1 – Current Budget \$2.5M/YR	75	\$54,555,843	\$(3,443,441)
#2 – Powell Bill (\$1M/YR)	66	\$47,530,401	\$(10,468,883)
#3 - \$2.5M/YR Years 1-5, Then \$1.5M/YR	75	\$54,550,811	\$(3,448,473)

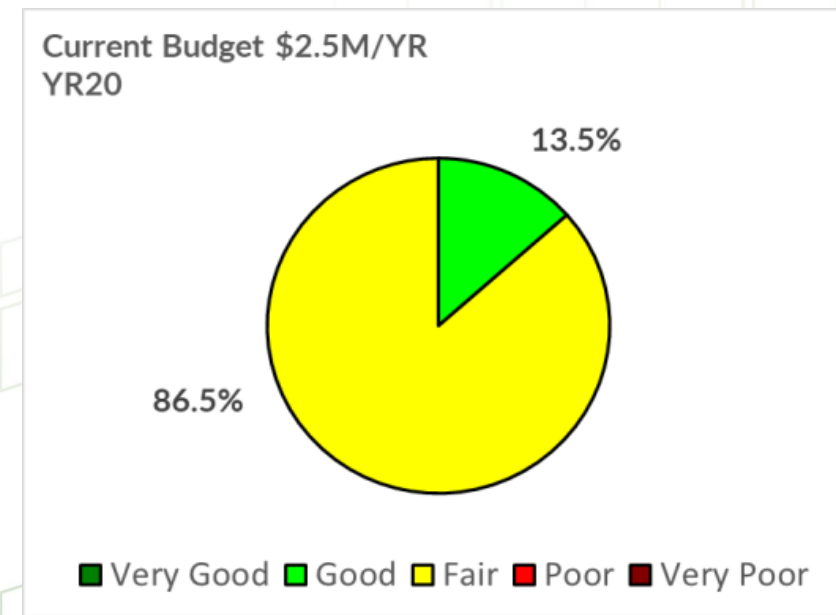
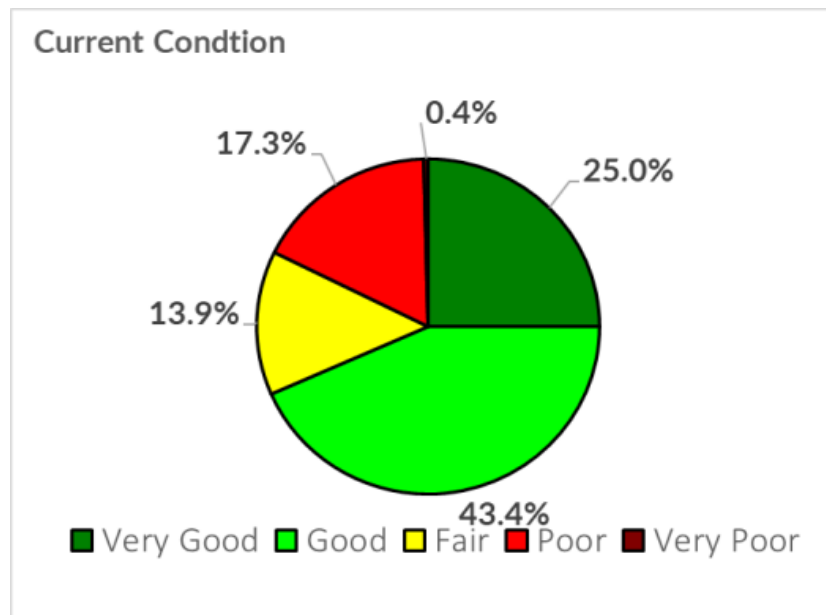






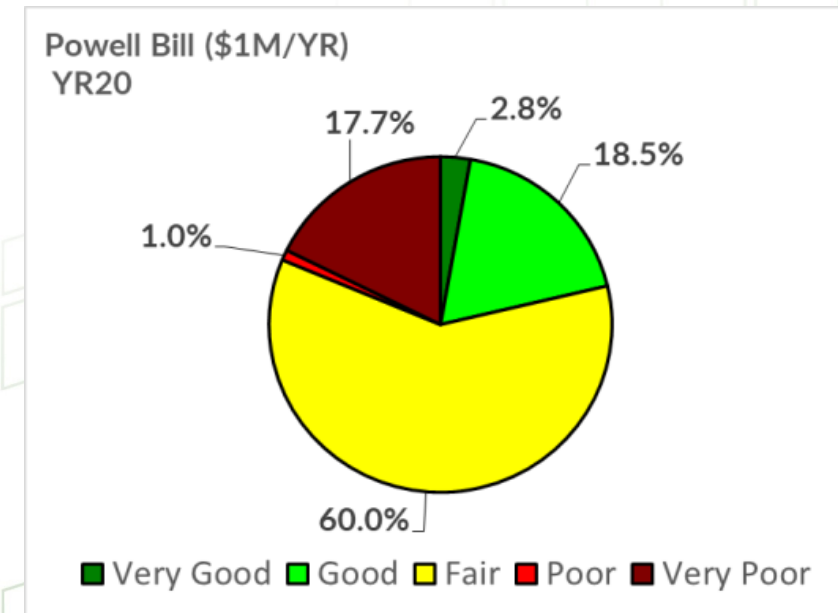
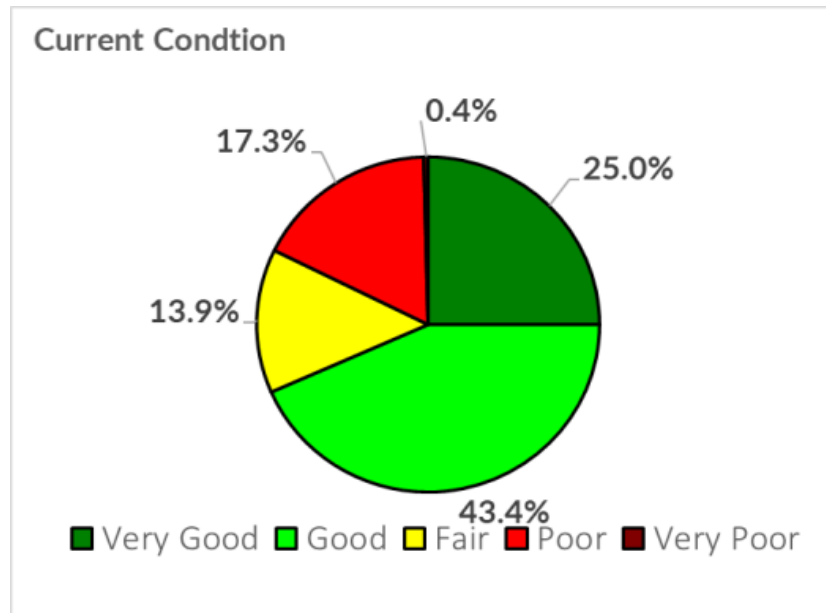
Network Condition

PCI Condition State	
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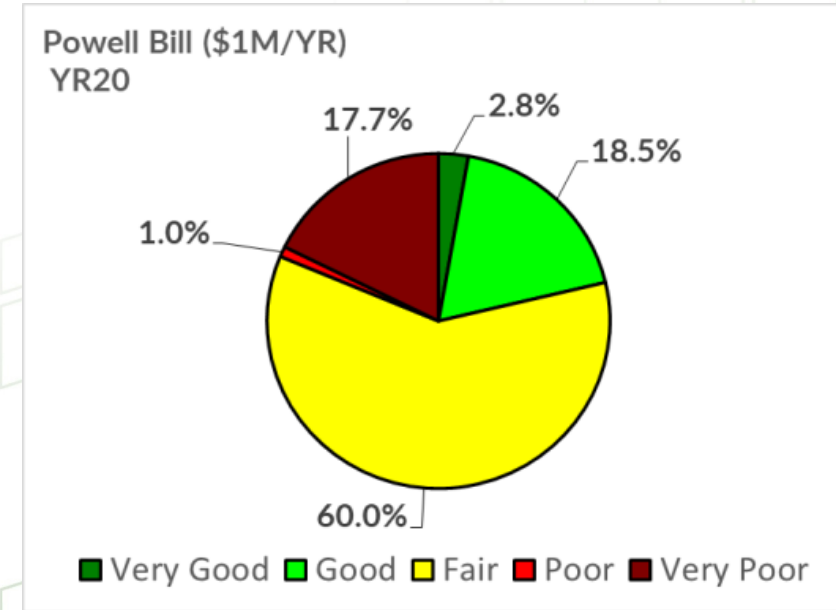
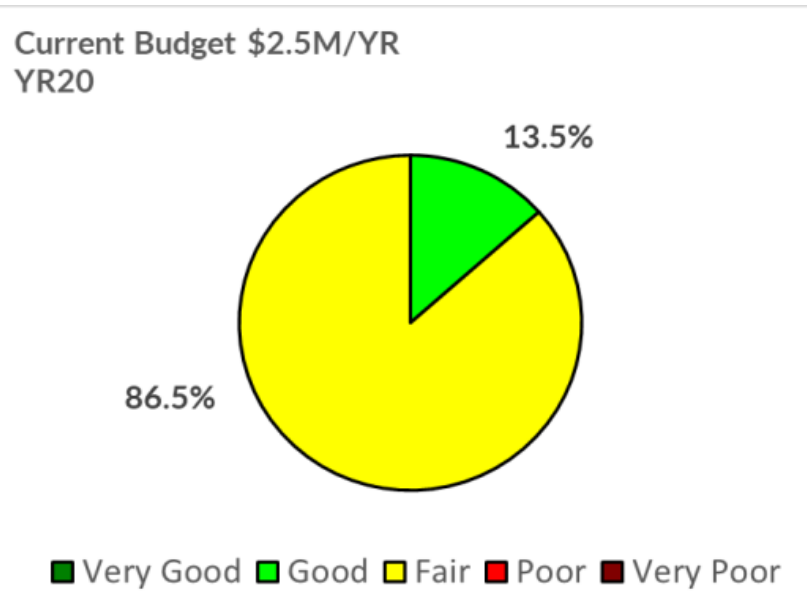
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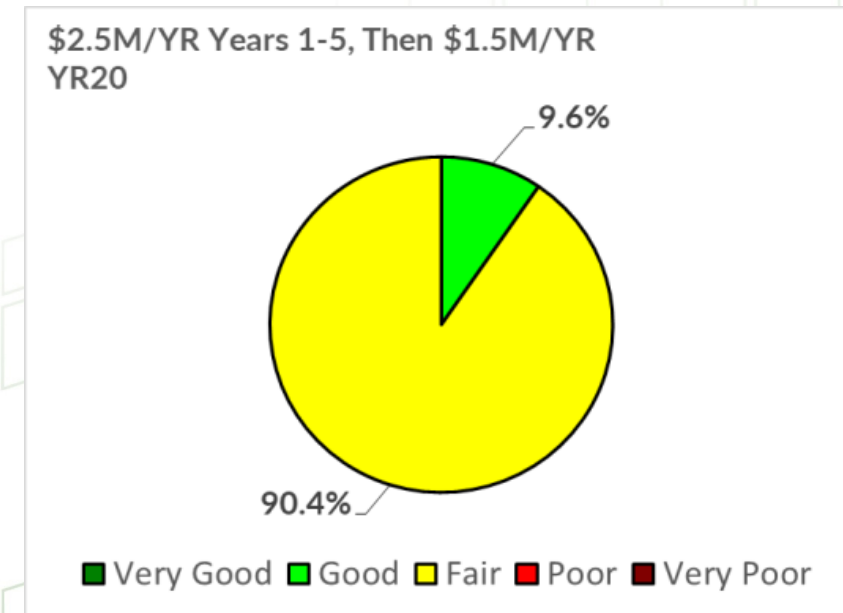
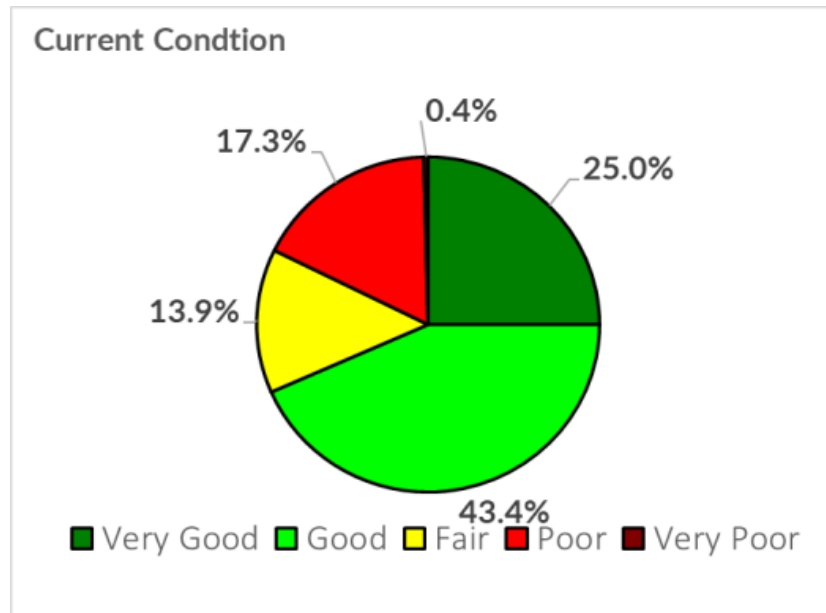
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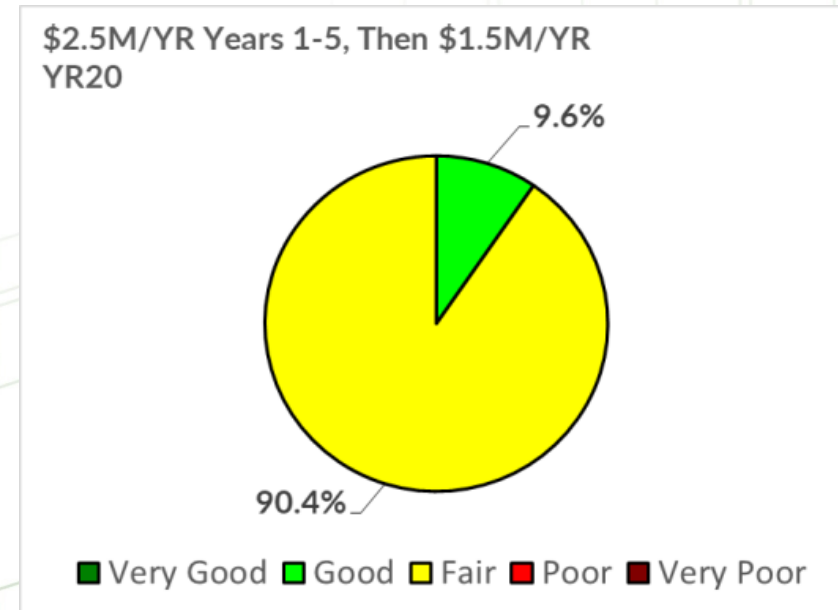
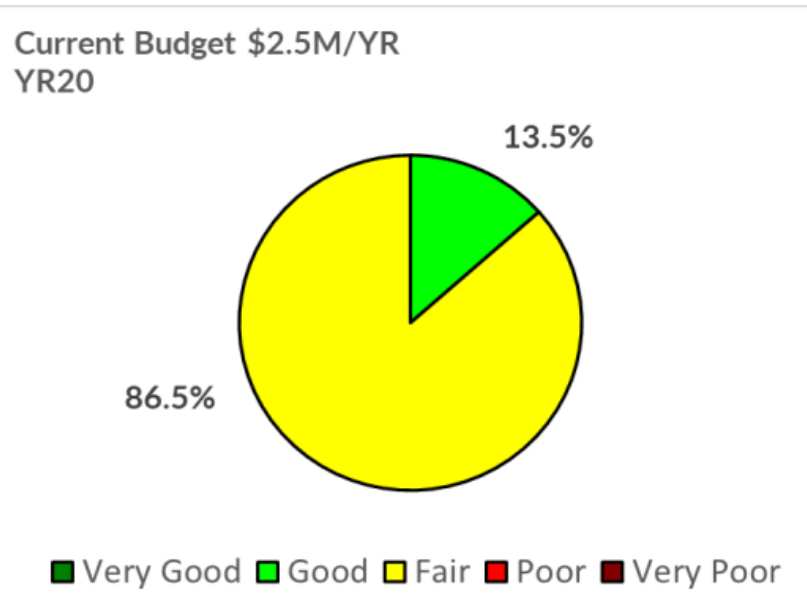
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Network Condition

PCI Condition State	
VERY GOOD	91 - 100
GOOD	81 - 91
FAIR	65 - 81
POOR	26 - 65
VERY POOR	0 - 26



Recommendations

- Maintain Annual Roadway Funding
- Regular PCSs (Every 2 to 3 Years)
- Geotechnical Testing
- Utilizing the Full Toolbox
 - Preservation (Prevent and Correct)
- Construction History
- Utilize Software Results
- Integrate with Other Assets



Bid Documents – Phase 2

Legend

	Limit of Work		Raise Curb
	Mill 2"		Sidewalk
	Mill - 3"		Maintain Drainage
	Mill - 4"		Adjust Catch Basin
	Mill - 5"		MH Manual Adjust
	FDR		MH New
	Patch - 4"		MH Adjust Riser
	Patch - Tree Root		MH Remove Riser
	Patch - Full Depth		Replace ADA Ramp
	Driveway Apron		WV Manual Adjust
	Loop		WV New
	Raised Cross Walk		WV Adjust Riser
	Speed Hump		WV Remove Riser
	Curb and Gutter		



Repair Item	Quantity	Unit
Asphalt Concrete Surface Course, Type S9.5C (1.5")		Tons
Asphalt Concrete Surface Course, Type S9.5C (2.0")	334.6	Tons
Asphalt Concrete Surface Course, Type S9.5C (3.0")		Tons
Asphalt Concrete Intermediate Course, Type I19.0C (2.5")		Tons
Speed Hump - R/R (Flat Top Speed Hump)		EA
Milling Asphalt Pavement - 1.5" Depth		SY
Milling Asphalt Pavement - 2.0" Depth		SY
Milling Asphalt Pavement - 3.0" Depth	2859.6	SY
Milling Asphalt Pavement - 4.0" Depth		SY
Milling Asphalt Pavement - 5.0" Depth		SY
Full Depth Reclamation		SY

	Limit of Work		Raise Curb
	Mill 2"		Sidewalk
	Mill - 3"		Maintain Drainage
	Mill - 4"		Adjust Catch Basin
	Mill - 5"		MH Manual Adjust
	FDR		MH New
	Patch - 4"		MH Adjust Riser
	Patch - Tree Root		MH Remove Riser
	Patch - Full Depth		Replace ADA Ramp
	Driveway Apron		WV Manual Adjust
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	Speed Hump		WV Remove Riser
	Curb and Gutter		

Repair Item	Quantity	Unit
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Asphalt Concrete Surface Course, Type S9.5C (3.0")		Tons
Asphalt Concrete Intermediate Course, Type I19.0C (2.5")		Tons
Speed Hump - R/R (Flat Top Speed Hump)		EA
Milling Asphalt Pavement - 1.5" Depth		SY
Milling Asphalt Pavement - 2.0" Depth		SY
Milling Asphalt Pavement - 3.0" Depth	2859.6	SY
Milling Asphalt Pavement - 4.0" Depth		SY
Milling Asphalt Pavement - 5.0" Depth		SY
Full Depth Reclamation		SY

Repair Item	Quantity	Unit
Milling Asphalt Pavement (Edge Milling - 4')		SY
Milling Asphalt Pavement (Edge Milling - 6')		SY
R&R, 4" Depth Patching, Asphalt Type I19.0C	31.7	Tons
R&R, Full Depth Patching, Asphalt Type I19.0C		Tons
Tree Root Patch, Asphalt Type I19.0C (6")		Tons
New Manhole (including Adjustment)		EA
Remove Manhole Riser Ring		EA
Adjust Manhole Structure, Manual	2	EA
New Water Valve (including Adjustment)	1	EA
Remove Water Valve Riser Ring		EA
Adjust Water Valve Structure, Manual	7	EA

Repair Item	Quantity	Unit
R&R Standard 30" Curb and Gutter (C&G)		LF
Raise Standard 30" Curb and Gutter	70	LF
Raised Crosswalk		EA
R&R 6'd x 8'w Driveway Apron		SY
Adjust Catch Basin		EA
Inductive Loop - Saw cut		LF
R&R ADA 2010 Curb Ramp Single		EA
R&R ADA 2010 Curb Ramp Double		EA
Retrofit ADA 2010 Curb Ramp 2'x4' Truncated Domes		EA
Ramp, Median Island with Cut Through		EA
Ramp Removal		EA
5' Sidewalk		LF

Town of Cary Pavement Evaluation FY 22 ST-3403 Wake County, North Carolina	
RESURFACING MAP MIDENHALL WAY	
Segment ID: 2402	Figure 19-2402
Begin Street: CHERWELL DR	
End Street: TYNEMOUTH DR	



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Construction Inspection - Phase 3



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