

# City of Palm Coast, Florida Agenda Item

Agenda Date: April 25, 2023

<b>Department</b>	CONSTRUCTION MANAGEMENT & ENGINEERING	<b>Amount</b>
<b>Division</b>	ENGINEERING	<b>Account #</b>
<b>Subject</b>	PRESENTATION – PAVEMENT MANAGEMENT PROGRAM UPDATE	
<b>Presenter: Carl Cote, Director of Stormwater &amp; Engineering</b>		
<b>Background:</b>		
<b>Council Priority:</b>		
<b>D. Sustainable Environment and Infrastructure</b>		
<p>This presentation is an update on the City Pavement Management Program funding shortfall.</p> <p><b><u>Original Background:</u></b></p> <p>In order to be more efficient with the limited funding available and ongoing needs (1,126 lane miles), the city sought professional engineering services for the implementation of a pavement management program. This program is designed to preserve and extend the useful life of paved surfaces throughout the City and optimize the available funds to meet the network condition needs. With careful planning and diligent effort, highest performance standards are maintained while reducing the overall long-term costs of managing the network pavement system.</p> <p>On August 1, 2017, City Council approved a contract with Transmap Corporation to assist in the development of a Network Pavement Management System. The general objective was for the consultant to collect pavement data by way of a digital survey and to create a Pavement Condition Index (PCI) for each city-maintained roadway. The PCI allows the City to determine a pavement condition standard and plan for maintaining all roadways.</p> <p>Given the persistent shortage of funds for maintaining these street systems, the preservation and stewardship of existing roads have become major activities for all levels of government. An excellent way of maximizing the return on investment for the money that exists for road maintenance is to implement a Pavement Management System. Pavement management is a systematic approach to extending the life of a pavement network. More specifically, it is the process of planning, budgeting, funding, designing, constructing, monitoring, evaluating, maintaining, and rehabilitating the pavement network to provide maximum benefits with available funds. A Pavement Management System provides tools and methods for finding and implementing the best Maintenance &amp; Rehabilitation (M&amp;R) strategies. Repairing streets when they are still in fair condition ultimately cost less over their lifetime than waiting to fix roads that have fallen into poor condition. In other words, the proactive approach of routine pavement management means less money wasted on frequent roadway reconstruction and a potential savings of millions of dollars.</p>		

On August 28, 2018, City Council was presented with the findings of the Final Pavement Management Report. Those findings determined time Arterial and Collector roadways had a PCI average of 83 and Local roadways had a PCI average of 78. In order to maintain the current level of service, and existing PCI average, additional funding was requested however it was not approved by City Council.

In order to provide a more accurate forecast and better performance model for roadway maintenance, it is recommended to have the roadways digitally surveyed every 4 to 5 years. On August 17, 2021, City Council approved a Work Order with Transmap Corporation to conduct a survey and to provide a report and updated forecast for the city's pavement management program comparing project revenue as well as recommended funding needed to maintain the current roadway system condition for arterial and residential roads.

This item is a presentation to present City Council with the findings and funding needs based upon the updated survey that was completed with proposed new revenue options to provide the necessary funding.

**Recommended Action:  
FOR PRESENTATION ONLY**



# **Pavement and Roadway Asset Management Program**

City Council Update: April 25, 2023

# City Council Focus Areas & Priority





# City of Palm Coast Total Pavement Network

- ~ 542 centerline miles
- Total Value - \$846M\*

Roadway Class	Center Line Miles	Lane Miles	% Lane Miles
Arterial & Collector	103.12	246	21.8%
Local	439.14	880	78.2%
Total	542	1126	100%

\* Average full construction cost, \$1.56M/mile – Transmap report



# Who is Transmap?

- Extensive Florida experience
- MicroPAVER Trainer Developers
- Best Technology (LCMS/LiDAR)
- Esri Public Works Partner - 20 Years
- 300 Cities and Counties
- Open Source
- APWA Public Works Partner
- Registered Engineering Company (1994)



# Data Collection: 8/28/17-9/8/17 & 10/13/21-10/21/21



**Laser Crack Measurement System (LCMS)**  
•4,000+ point lasers  
•Length, width, and depth of cracks

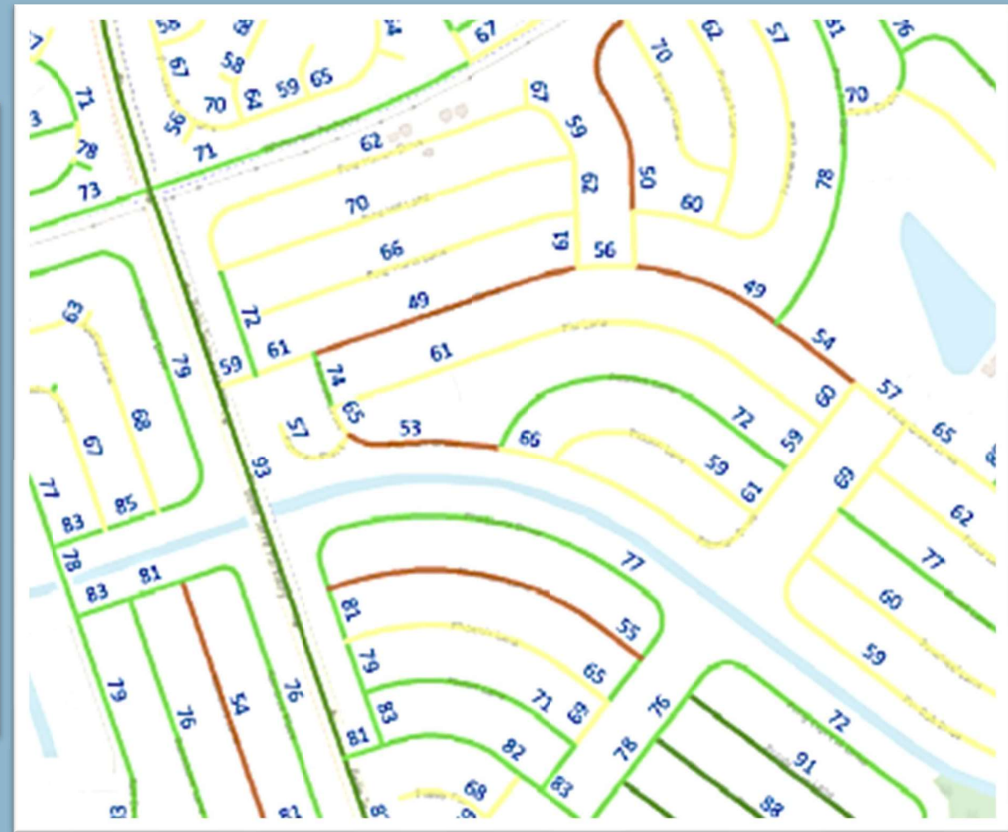
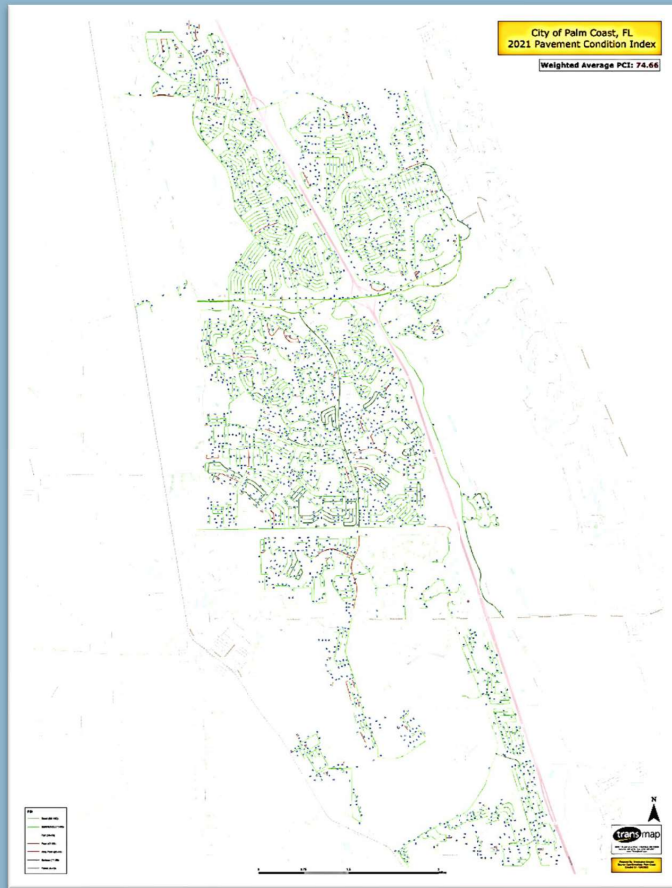


**Panoramic Camera**  
•6 lenses  
•Panoramic view  
•Asset condition

**LiDAR**  
•~700,000 points  
•Intensity value for signs  
•Striping/marking extraction



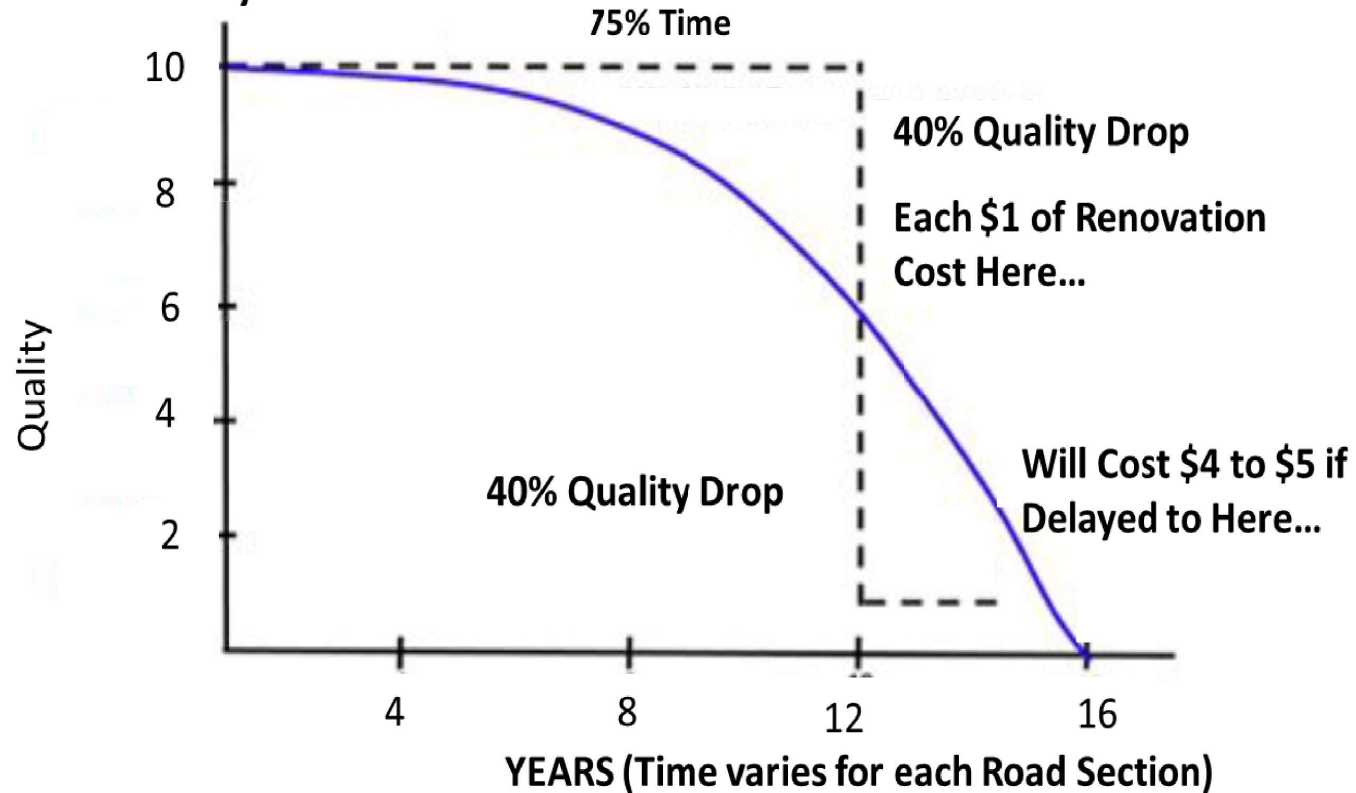
# 2021 Pavement Condition Index Map



# PCI Ranges & Life Cycle Curve

PCI Range	Condition
86-100	Good
71-85	Satisfactory
56-70	Fair
41-55	Poor
26-40	Very Poor
11-25	Serious
0-10	Failed

Cost of Timely Maintenance



# PCI Summary – City Roadways

2017	PCI Range	Condition	2021	Road %
PCI=79	86-100	Good	PCI=75	4.57%
	71-85	Satisfactory		60.77%
	56-70	Fair		31.50%
	41-55	Poor		3.04%
	26-40	Very Poor		0.12%
	11-25	Serious		0%
	0-10	Failed		0%





# Arterial Roadway



Matanzas Woods Parkway - 47 PCI



# Arterial Roadway



Matanzas Woods Parkway - 47 PCI



# Arterial Roadway



Royal Palms Parkway – 53 PCI



# Arterial Roadway



Royal Palms Parkway – 53 PCI



# Residential Roadway



Weyanoke Lane & Weyburh Place – 46 PCI & 63 PCI



# Residential Roadway



Kaywood Place – 64 PCI

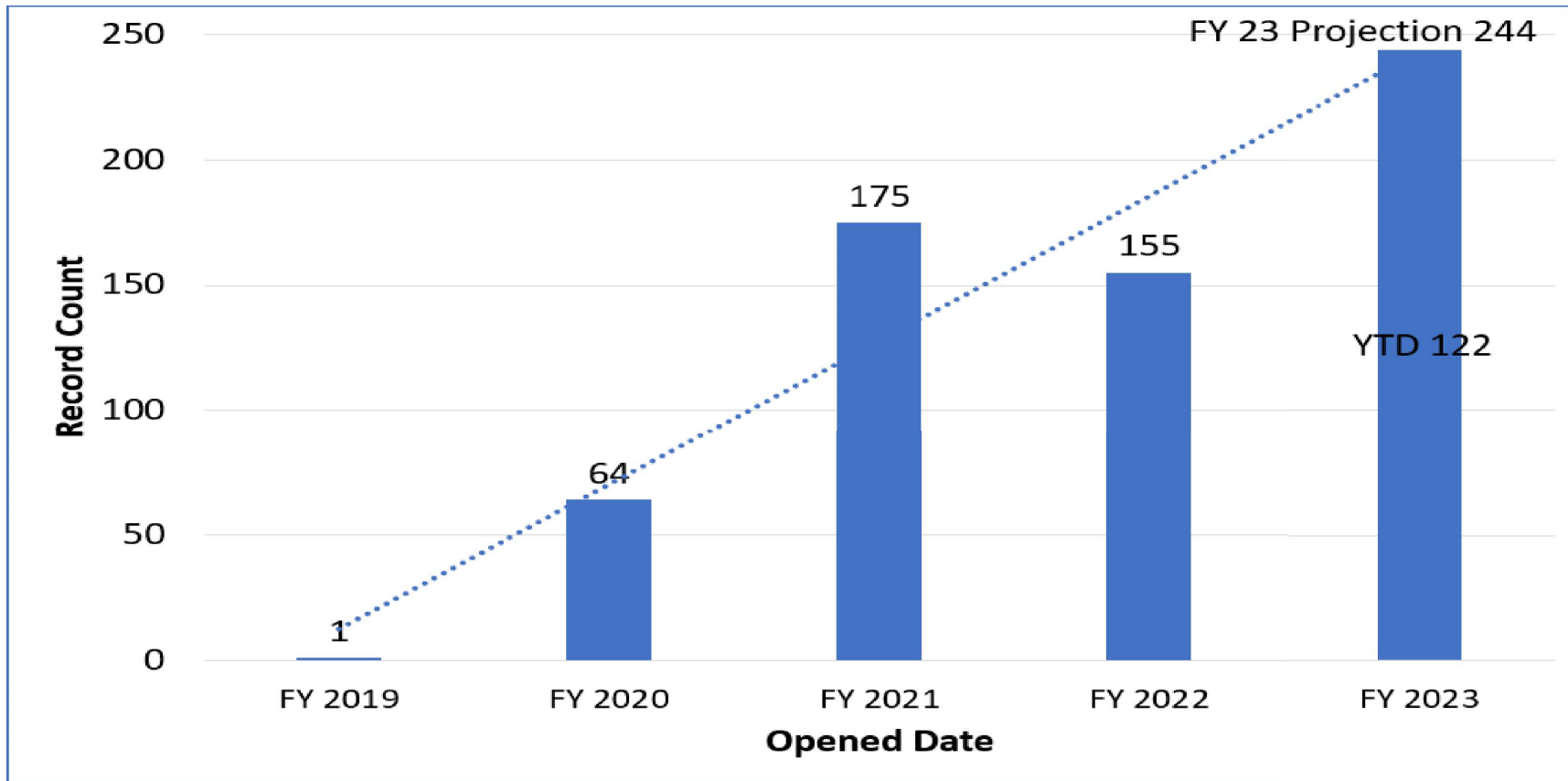


# Residential Roadway



Kaywood Place – 64 PCI

# City Work Order Requests – Potholes....



# Average Network PCI Comparison

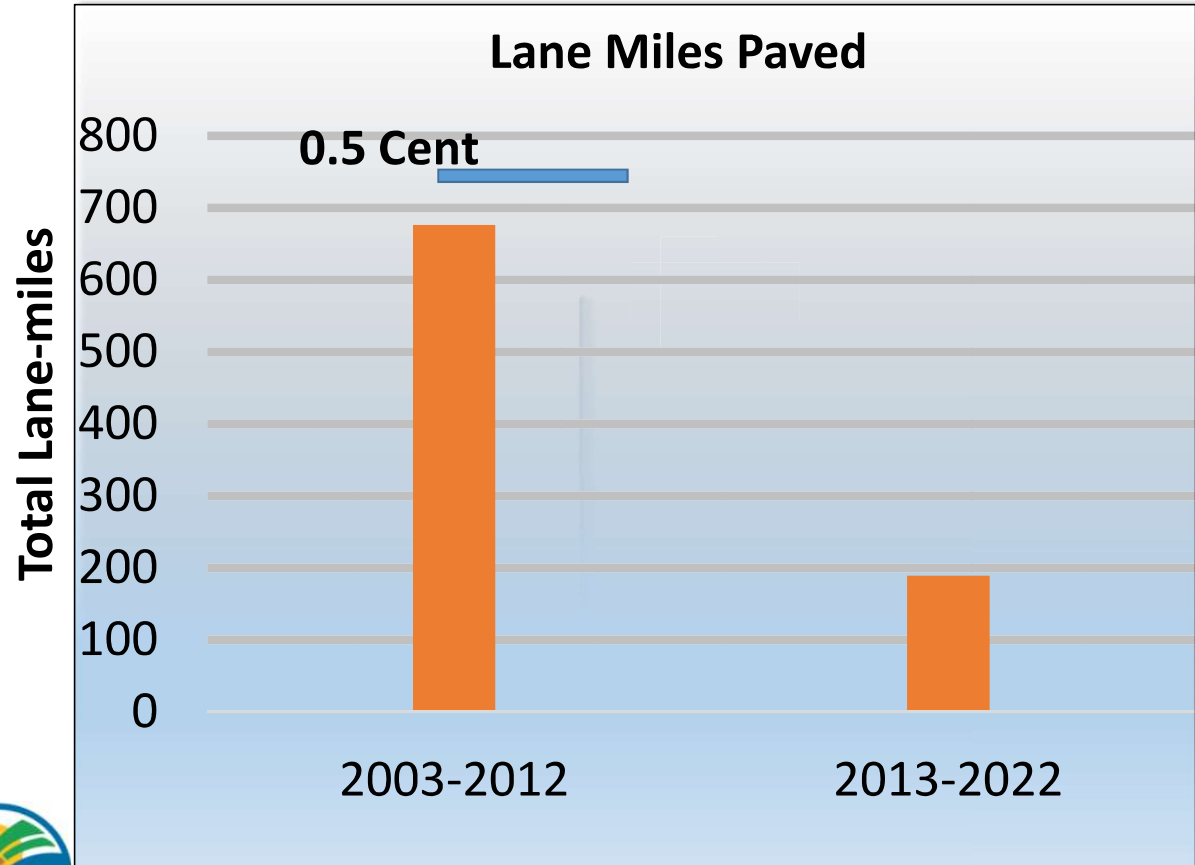
Community	Average PCI
Average in Florida	75
Palm Coast 2017	79
Palm Coast 2021	75

Community	Year of Inventory	# of Miles	Average Network PCI
Oakland Park	2018	116	81
Pembroke Pines	2021	202	78
Boca Raton	2017	220	78
Tamarac	2018	137	78
Miami Gardens	2020	277	75
Sarasota	2021	228	75
Gainesville	2018	390	75
<b>Palm Coast</b>	<b>2021</b>	<b>542</b>	<b>75</b>
Hollywood	2020	359	74
Largo	2020	139	73
Clearwater	2021	320	72
Delray Beach	2019	148	72



Source: Transmap staff

# Milling & Resurfacing History



New Roadways or Resurfacing as part of Roadway Improvement Project
Pine Lakes Parkway (north)
Palm Coast Parkway (6 lanes)
Palm Harbor Extension
Royal Palms Parkway (west)
Bulldog Drive
Old Kings Road Extension
Old Kings Road Widening



Source: PC Staff Spreadsheet, PC Milling and Resurfacing History



# STREETS IMPROVEMENT FUND

## Local Option Fuel Tax

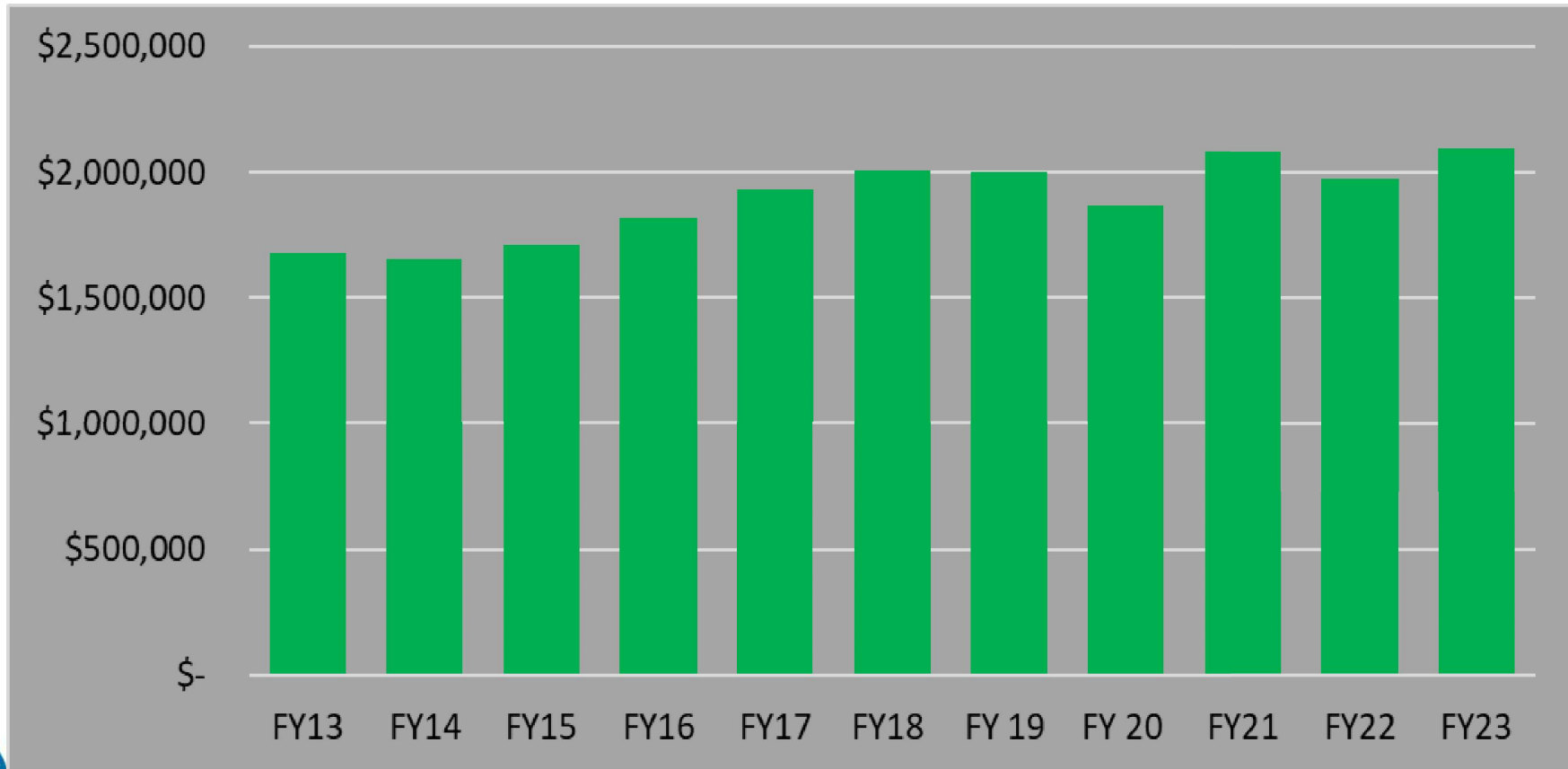
- Currently 6 cents per gallon on fuel purchased in Flagler County
- Distributed per Inter-local agreement based on road miles
- Restricted for Transportation Expenses

## State Revenue Sharing (b)

- Portion of State sales and use tax collections & one-cent municipal fuel tax
- State requires use of 22.64% of these funds to be used for street maintenance costs; City transferred 45% of fees received from the State to this fund in FY 2021

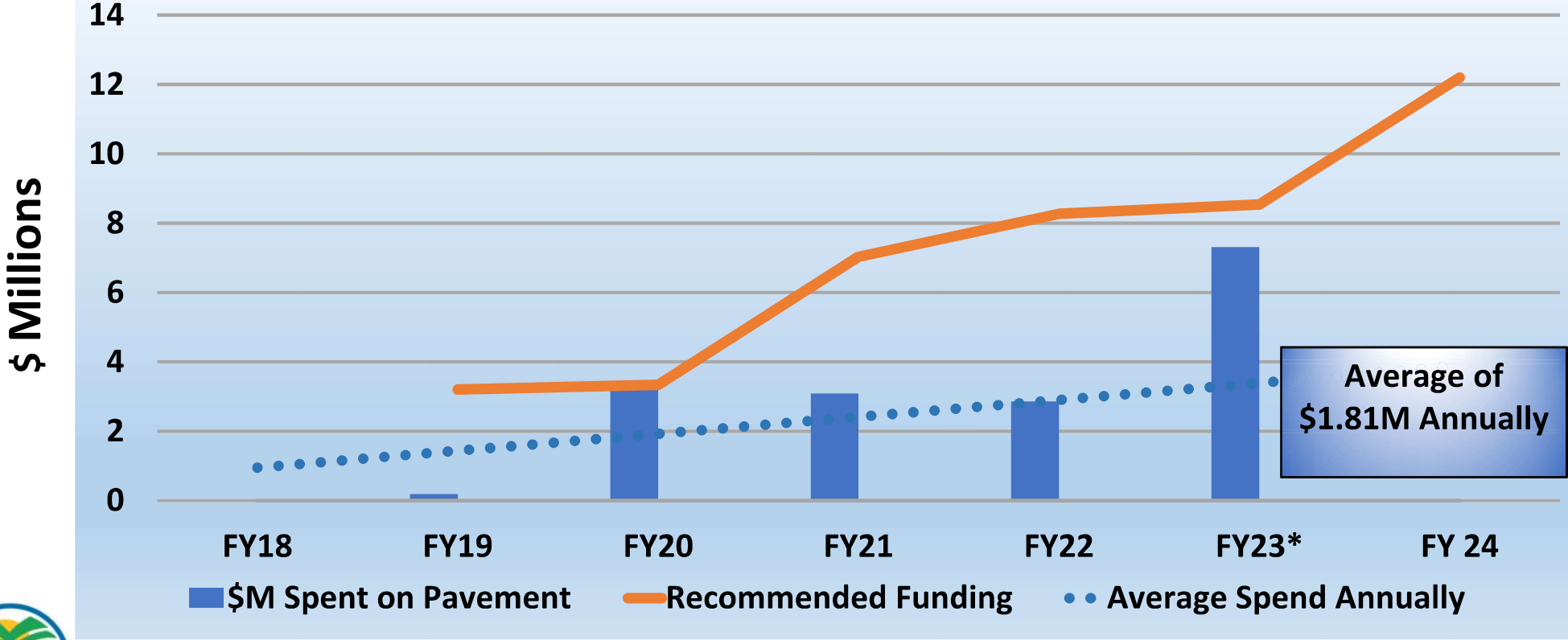


# Local Option Fuel Tax Revenue History



# Milling & Resurfacing History

\$Millions Spent Resurfacing



Source: Munis Year-to-Date Budget Report \*\$5M carryover including \$550,000 from fund balance

# 5-Year CIP (FY23-27)

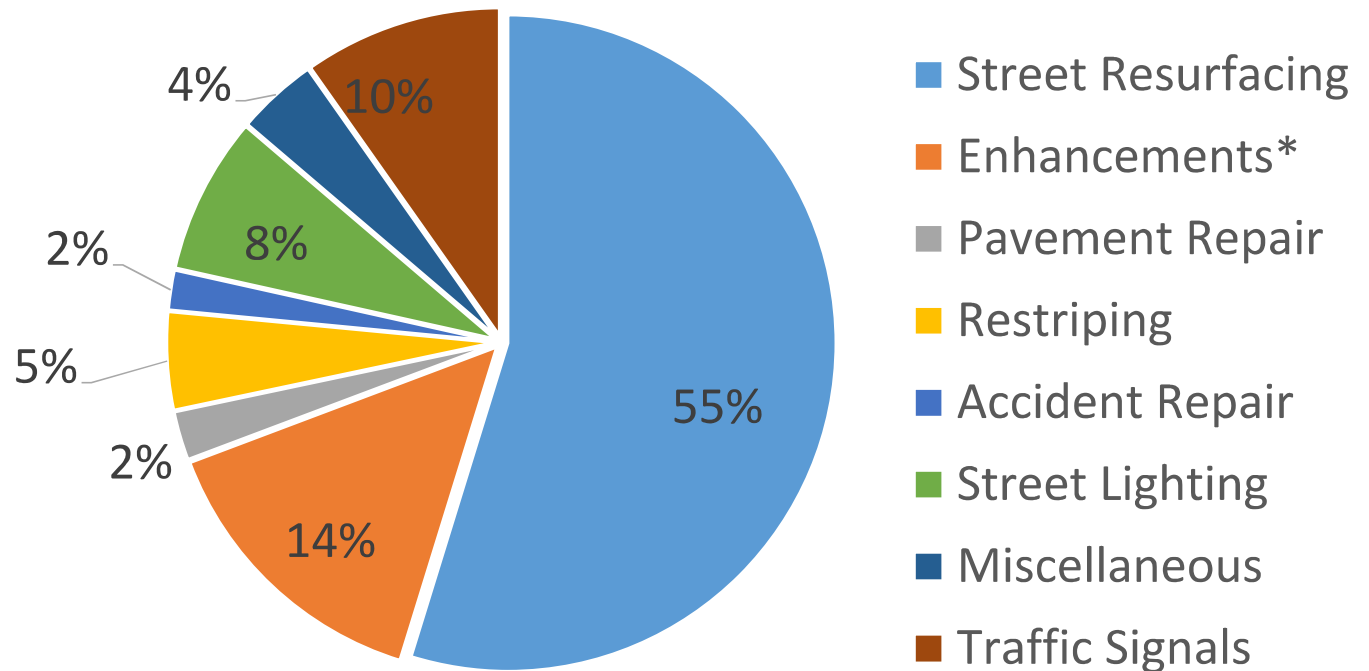
## STREETS IMPROVEMENT FUND

FUEL TAX REVENUE PLUS MUNICIPAL REVENUE SHARING TAX

YEARLY AVERAGE: TOTAL FUND \$3,104,000 - RESURFACING \$1,700,000

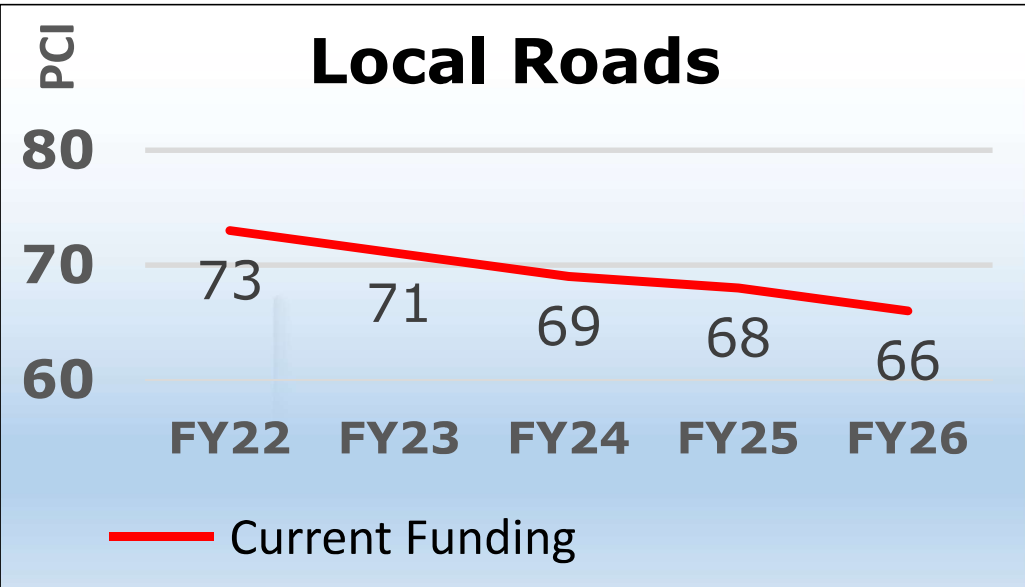
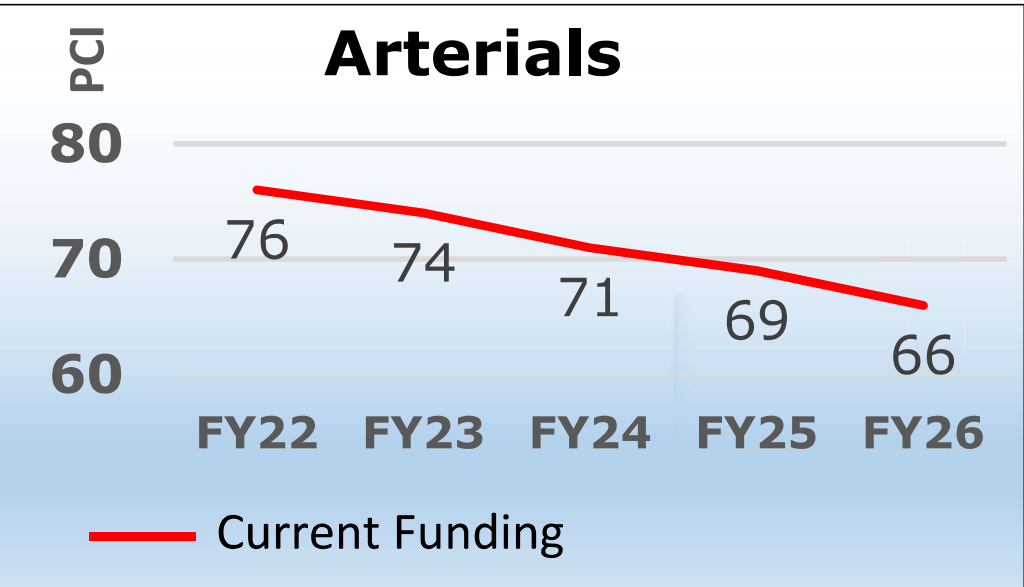
### UNFUNDED ITEMS:

- Median Beautification
- Entry/Gateway Signs
- Neighborhood Signs
- Sidewalks



Source: PC Staff Spreadsheet, Five Year Capital Improvement Plan

# 5-Year PCI Projection - Current Funding

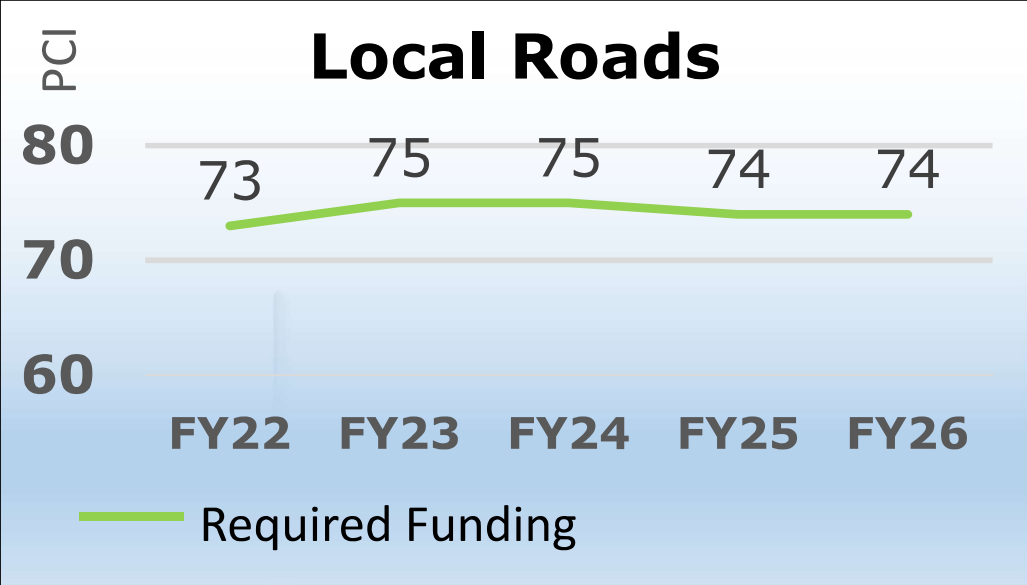
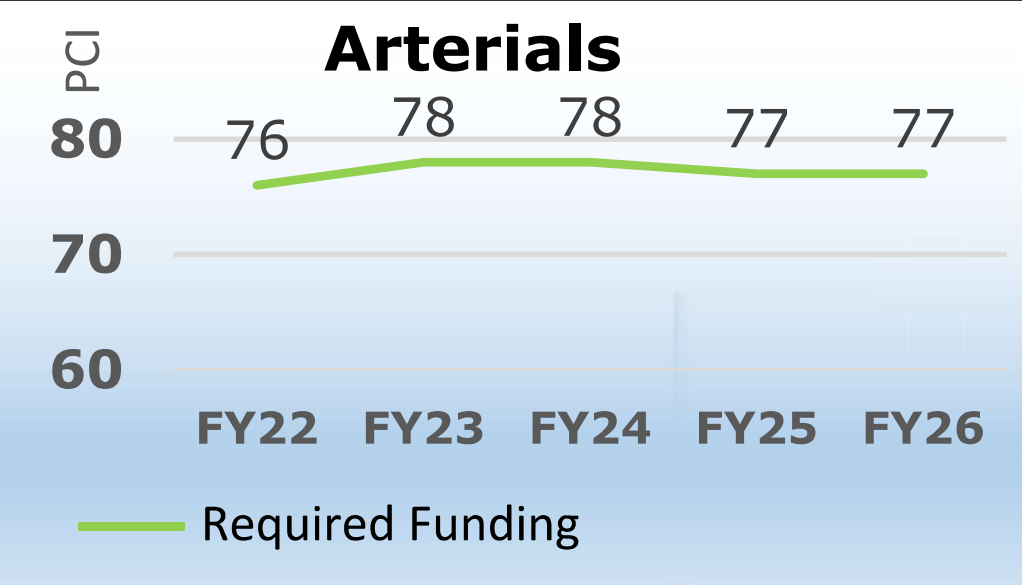


Functional Class	Current Funding
Arterial	\$1,000,000
Residential	\$1,200,000
<b>Totals</b>	<b>\$2.2M</b>



Source: Transmap PCI Report 2022

# 5-Year PCI Projection - Recommendation

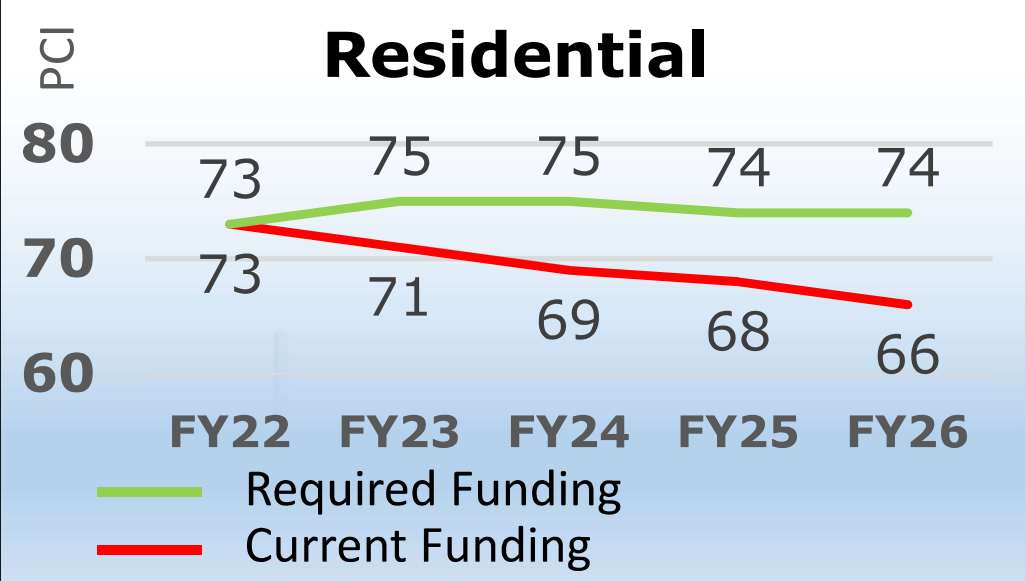
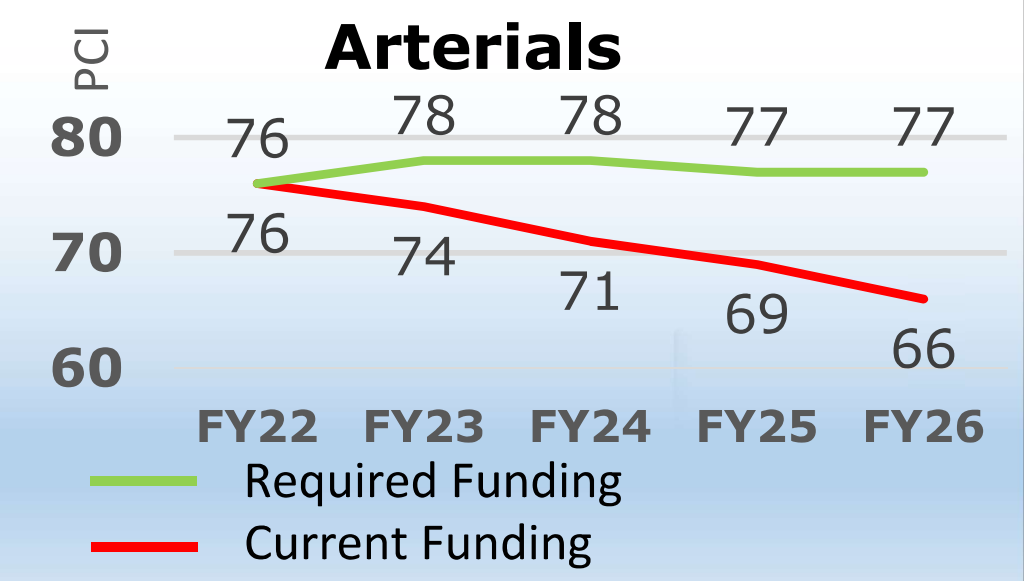


Functional Class	Required Funding
Arterial	\$4,500,000
Residential	\$7,700,000
<b>Totals</b>	<b>\$12.2M</b>



Source: Transmap PCI Report 2022

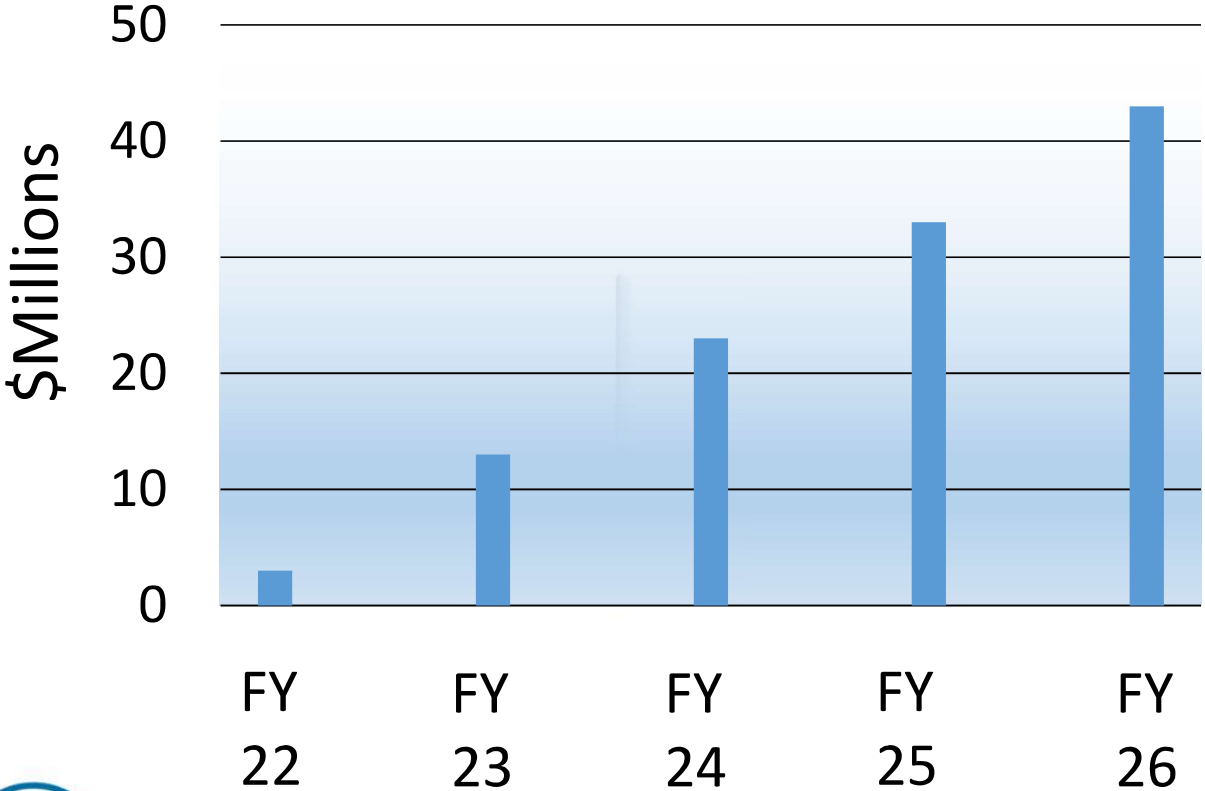
# Pavement Management – Funding Need



Functional Class/ Paver Designation	Lane Mile Percentage	Current Funding	Required Funding	Difference
Arterial/Collector	21.9%	\$1.0M	\$4.5M	<b>\$3.5M</b>
Residential	78.1%	\$1.2M	\$7.7M	<b>\$6.5M</b>
<b>Total</b>	100%	<b>\$2.2 M</b>	<b>\$12.2M</b>	<b>\$10.0M</b>

Source: Transmap PCI Report 2022

# Roadway Impact – Funding Shortfall



Bars show additional Cost of Damage absorbed into roadway network annually. Sum of bars is “catch-up” cost to return to the average 75 PCI.

After 5 Years	
Unfunded Milling And Resurfacing	<b>\$43 M</b>
Accumulated Repair Cost	<b>\$52 M</b>



Source: Transmap PCI Report 2022



# Funding Options for Consideration

## Electric Franchise Fee

Applicable to commercial, residential and industrial

State allows a fee 3% to 6%

Amount and use is at the sole discretion of City Council

Added to FPL Bill

## Public Service (Utility) Tax

Can Include electric, natural or propane gas & water

State allows up to a 10% tax (can exempt first 500KW)

Rate and use determined by City Council

Added to Utility Bills

## Ad Valorem (Property Tax)

Dedicated Millage

