

# PAVEMENT MANAGEMENT PROGRAM

Town of Sherborn

November 21, 2024



# PAVEMENT MANAGEMENT

## What is Pavement Management?

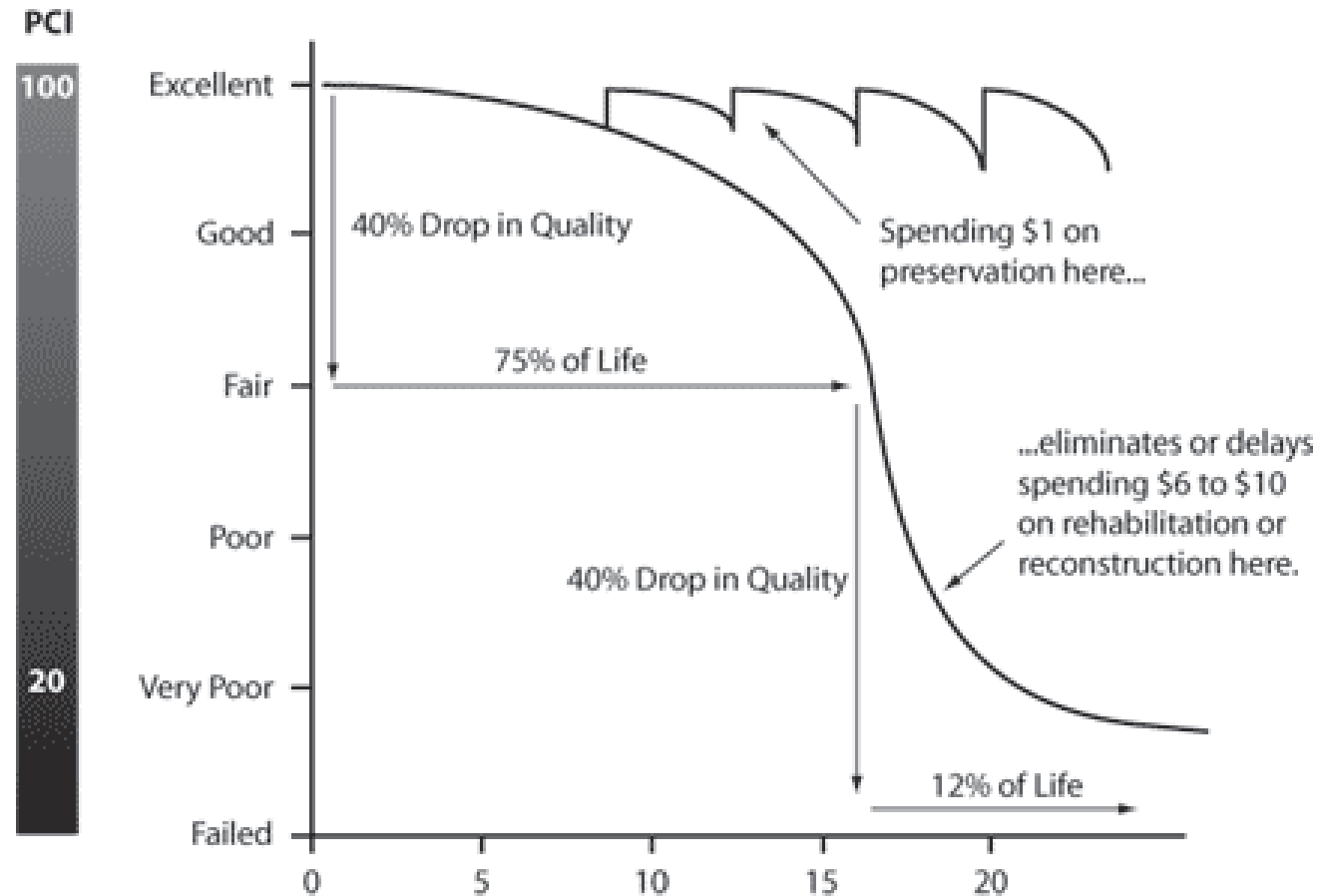
Pavement Management is the practice of planning pavement maintenance to maximize the value of the roadway network.

*Enables you to perform the  
Right Repair at the Right Time  
on the Right Road!*



# PAVEMENT MANAGEMENT

## Pavement Deterioration Curve

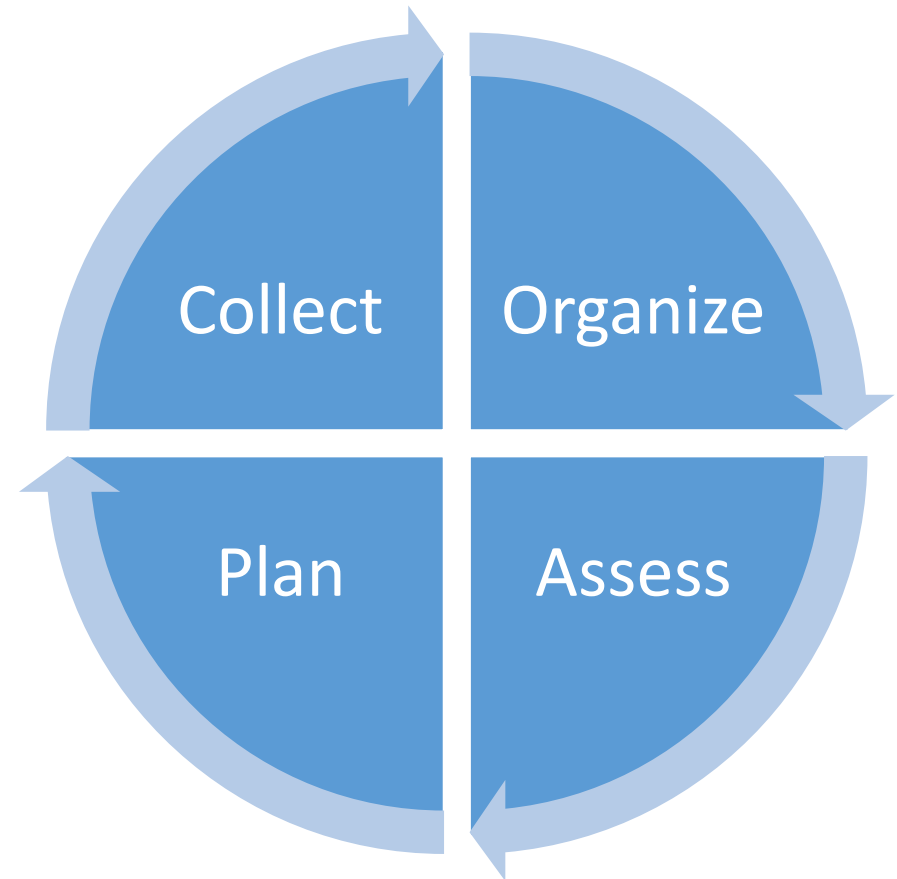


- Keep good roads good while performing rehabilitation where necessary.
- Top of curve treatments are less expensive and less intrusive.

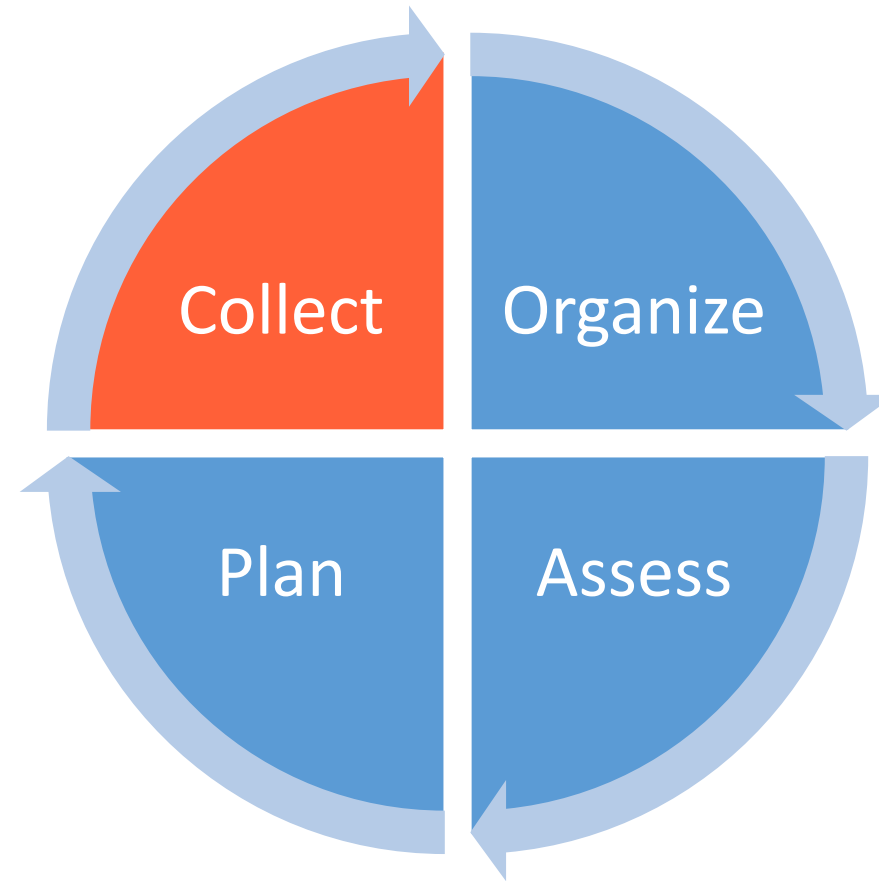
# PAVEMENT MANAGEMENT

## Four Step Project Approach

1. Network Inventory and Data Collection
2. Reporting
3. Analysis
4. Capital Planning and Action Planning



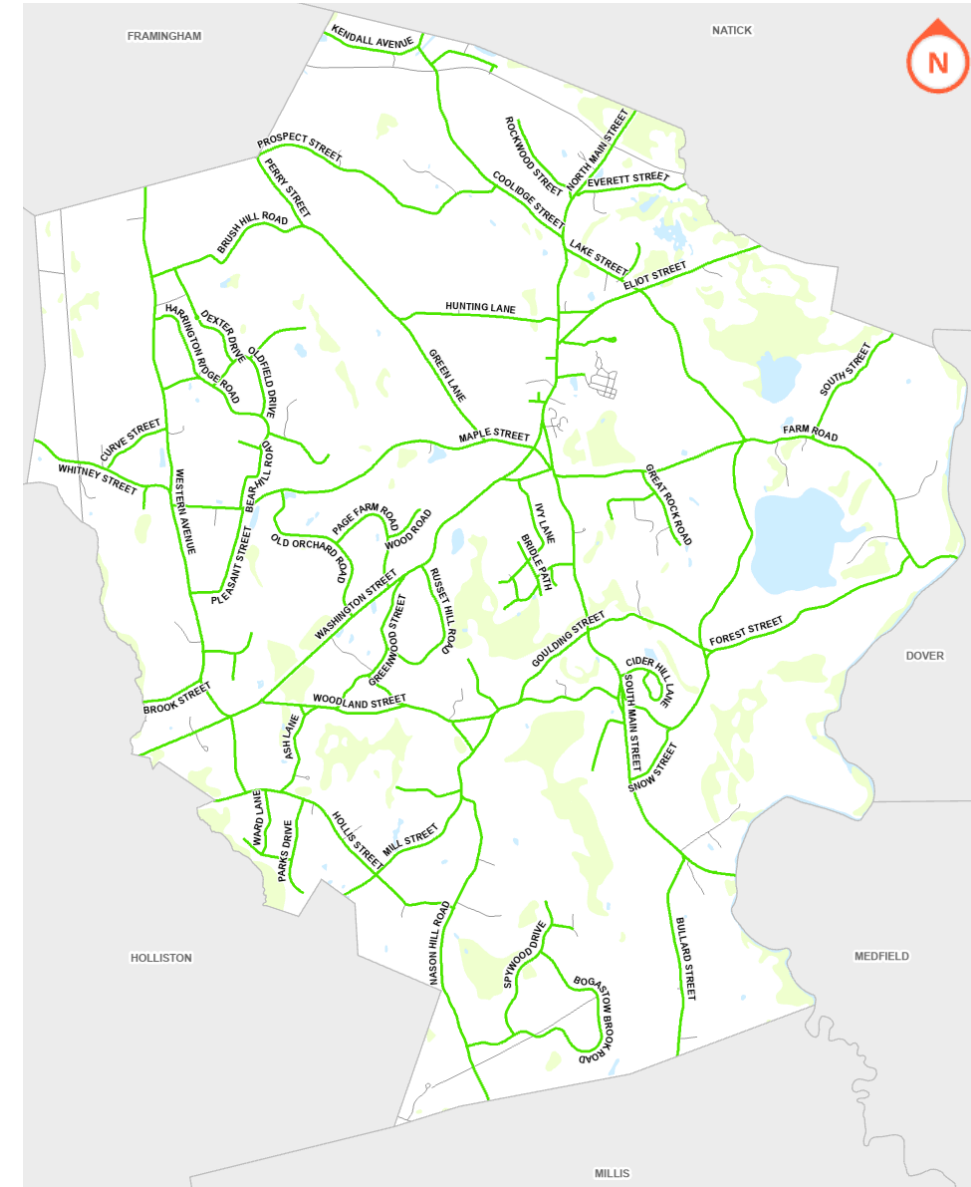
# PAVEMENT MANAGEMENT



# NETWORK INVENTORY

## Roadway Network

- **Accepted vs Private vs. State Roadways**
  - **Accepted Roadways** are streets that are designed to Town standards and accepted by Town Meeting. They are maintained by the Department of Public Works
  - **Private ways** are streets that are owned and maintained by the abutting property owners.
  - **State Roadways** are streets that are under the jurisdiction of and maintained by state agencies including MassDOT and Mass DCR

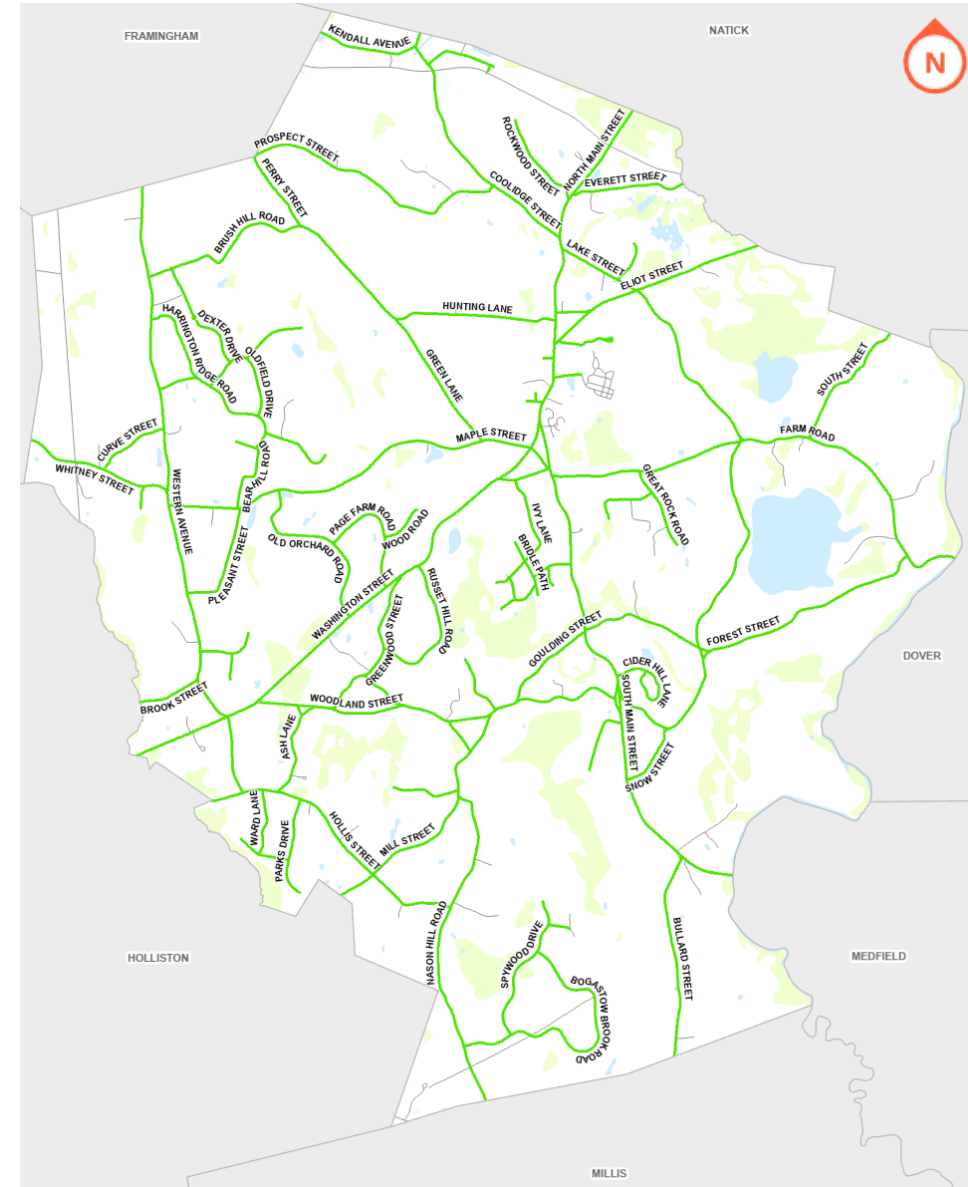


# NETWORK INVENTORY

## Roadway Network

Classification	Miles
Arterial	10.98
Collector	7.87
Local	31.02
Local – Low Volume	5.58
<b>Total Miles (accepted roads)*</b>	<b>55.45</b>

\*STUDY FOCUSED ON TOWN ACCEPTED ROADWAYS ONLY





# DATA COLLECTION

## Roadway Assessments

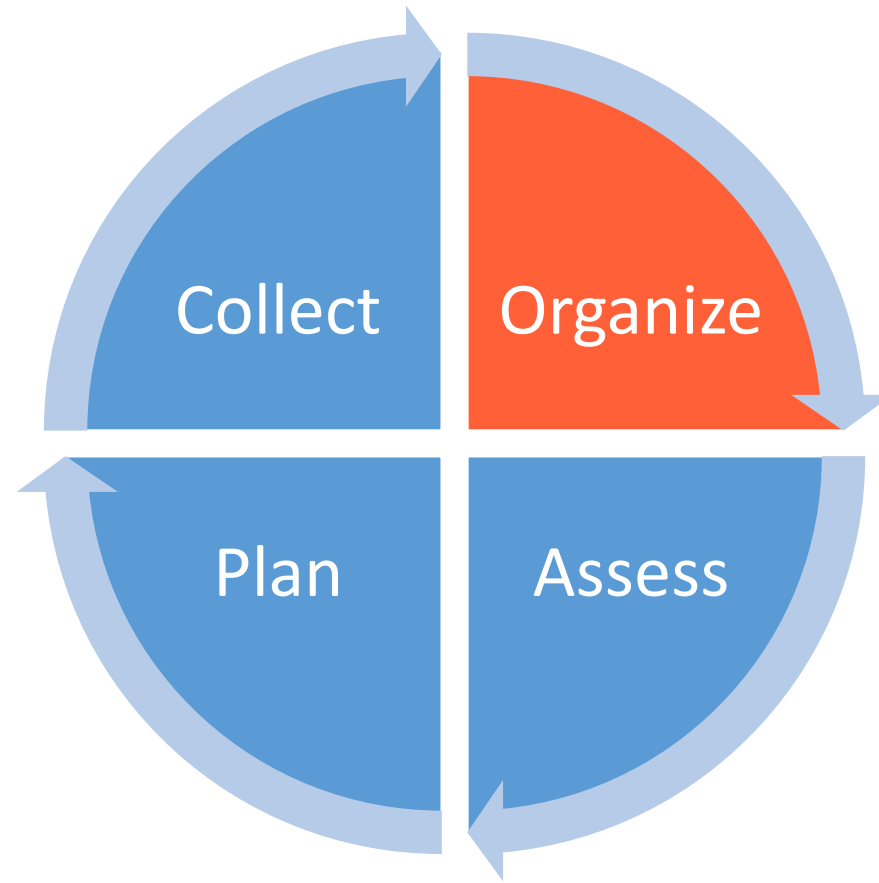
- Completed using Photo and LiDAR Capture Technology
- Provides photographs approximately every 10' along the roadway network
- Cost-effective
- Objective



Bullard Street - Sherborn

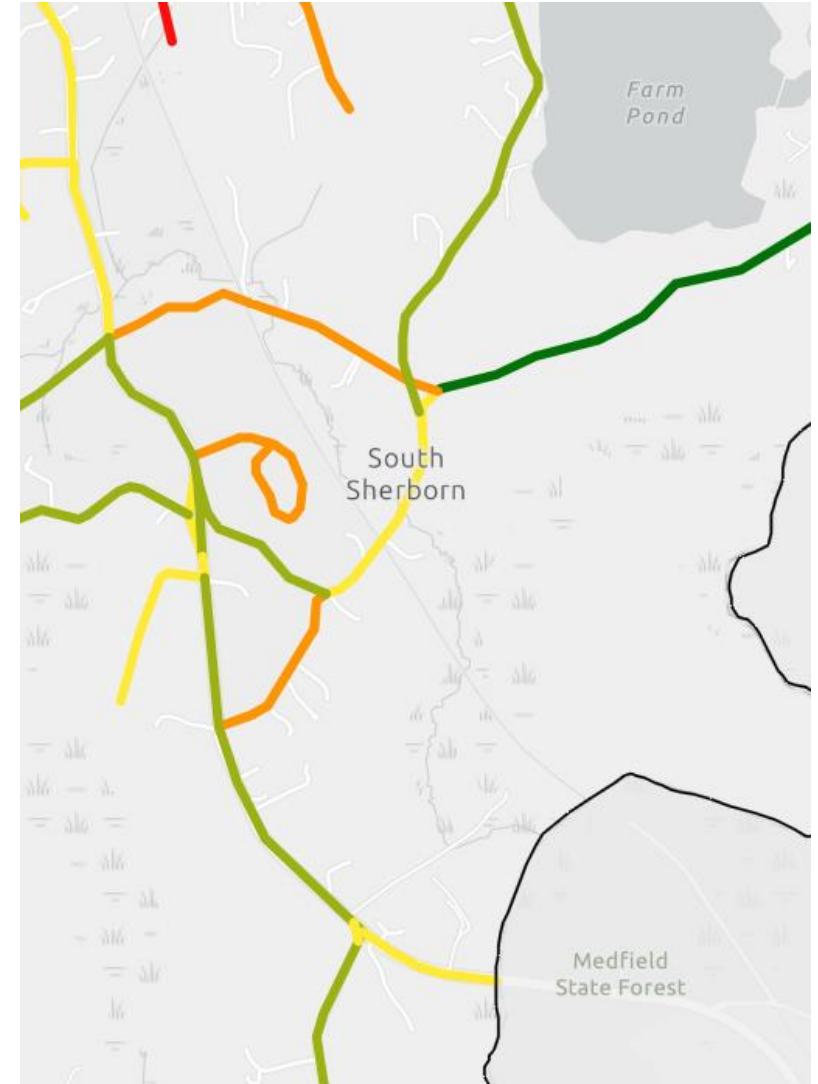


# PAVEMENT MANAGEMENT

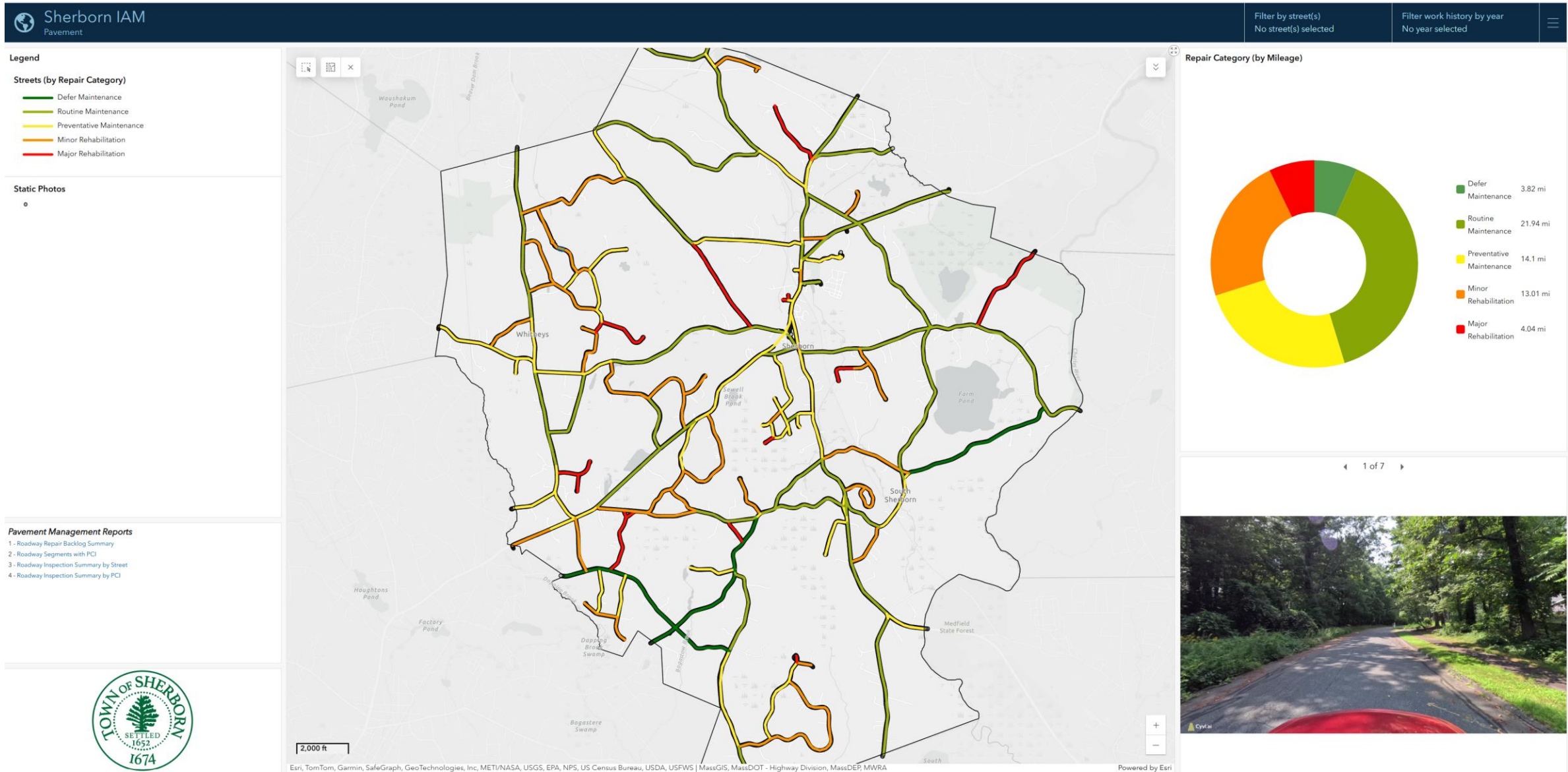


# PAVEMENT MANAGEMENT

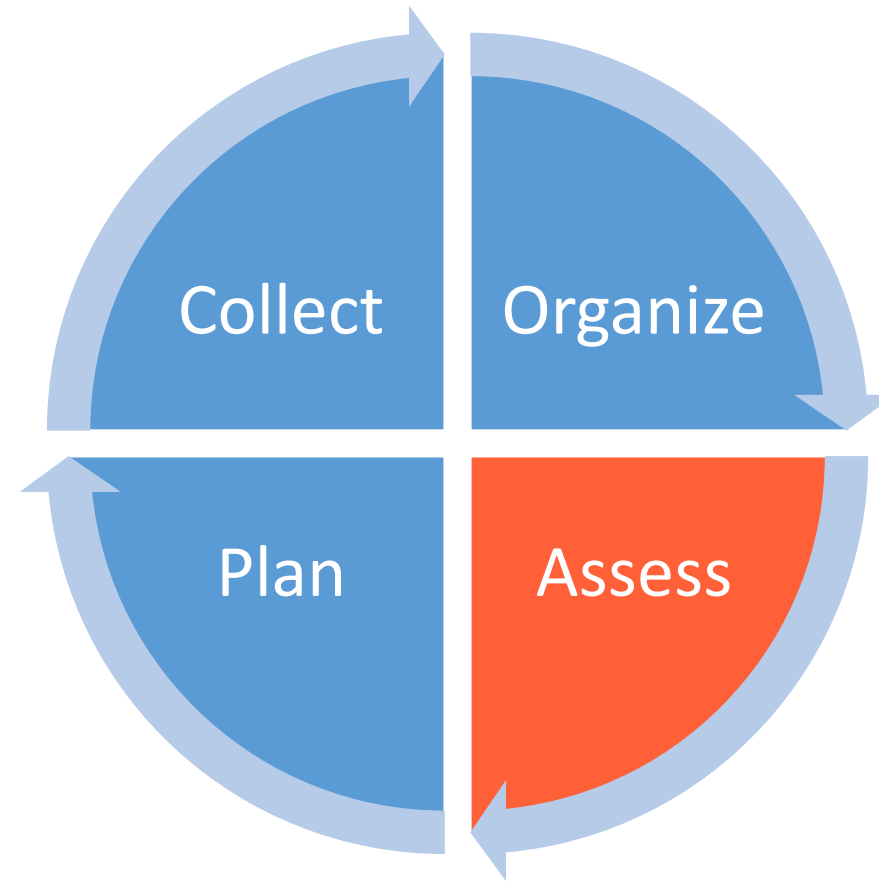
- Geographic Information System (GIS) Industry Standard
- Categorize assets
- View assets in map and tabular form
- Allow multiple assets to be added



# PAVEMENT MANAGEMENT



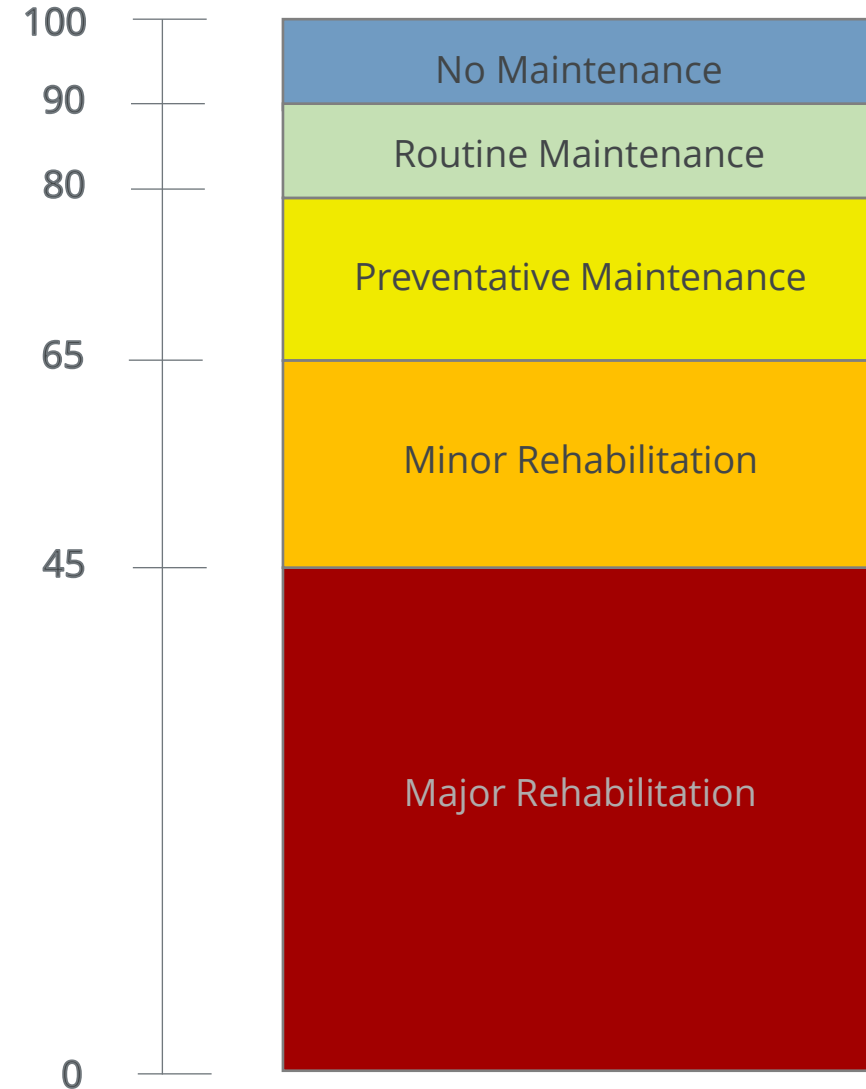
# PAVEMENT MANAGEMENT



# ANALYSIS & REPORTING

## Maintenance Categories

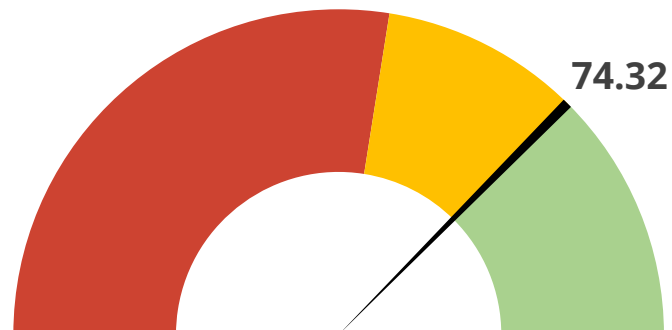
- Defer/No Maintenance Required
- Routine Maintenance
  - Fog Seal
  - Crack Seal
- Preventative Maintenance
  - Bonded Wearing Course
  - Microsurfacing
  - Shim and Overlay
- Minor Rehabilitation
  - Mill and Overlay
- Major Rehabilitation
  - Full Depth/Reclamation





# ANALYSIS & REPORTING

## Roadway Network



**Road Network Rating**

0-100 Rating Scale

REPAIR CATEGORY	LENGTH (MILES)	AREA (SY)	UNIT COST (\$/SY)	COST
Major Rehabilitation	2.58	33,990.2	\$ 45.00	\$ 1,529,561
Minor Rehabilitation	13.01	184,738.6	\$ 25.00	\$ 4,618,465
Preventative Maintenance	14.10	203,926.5	\$ 8.00	\$ 1,631,412
Routine Maintenance	21.94	305,595.1	\$ 1.00	\$ 305,595
Defer Maintenance	3.82	47,793.7	\$ -	\$ -
<b>TOTAL</b>	<b>55.45</b>	<b>776,044</b>		<b>\$ 8,085,033</b>

**Existing Conditions – Backlog**

**Western Avenue  
Routine Maintenance**



**Greenwood Street  
Preventative  
Maintenance**

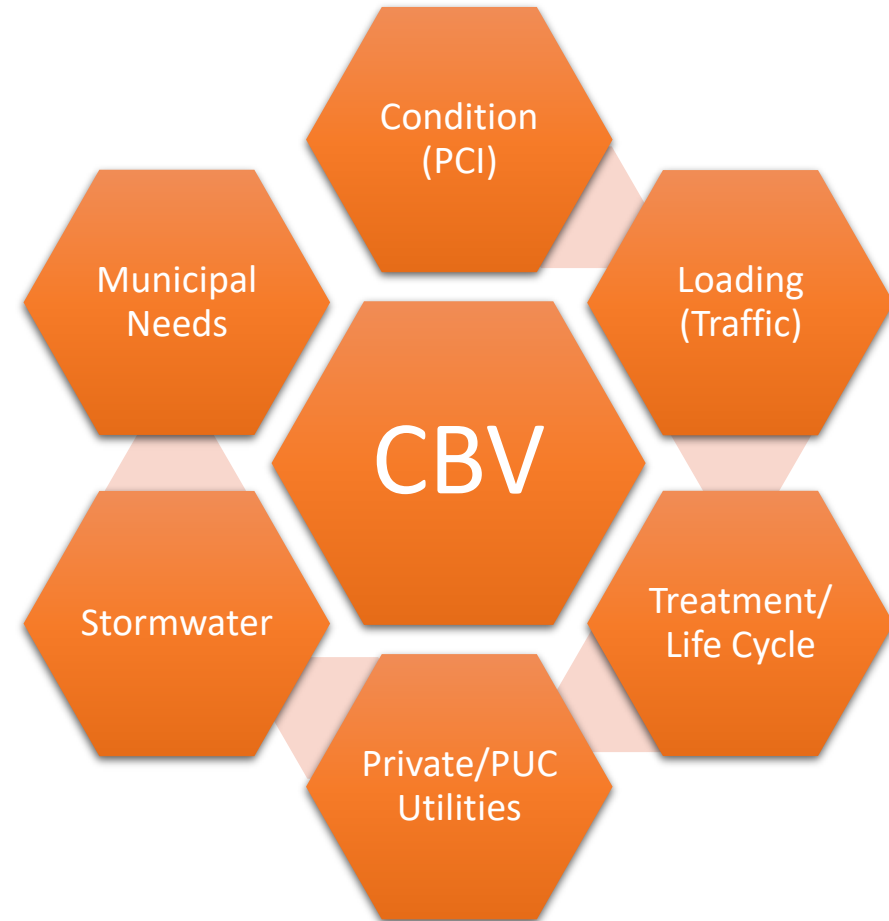


**Woodland Street  
Minor Rehabilitation**



# PAVEMENT MANAGEMENT

Condition  
(PCI)



# CAPITAL PLANNING & ACTION PLANNING

## Prioritizing Repairs

- Cost-Benefit Value
  - Average Daily Traffic
  - Cost of Repair
  - Life Expectancy of Repair
  - Roadway Rating
  - Roadway Classification
- Underground Utility Condition
- Constructability
- Design Process and Considerations
- Treatment Options
- Location & Use
  - School Zones & designated Safe Routes to School walking routes
  - Commercial Areas & areas with a concentrated Senior Population
  - Areas surrounding other public facilities or gathering places including, but not limited to, Libraries, Municipal Buildings, Parks, Playgrounds, etc.

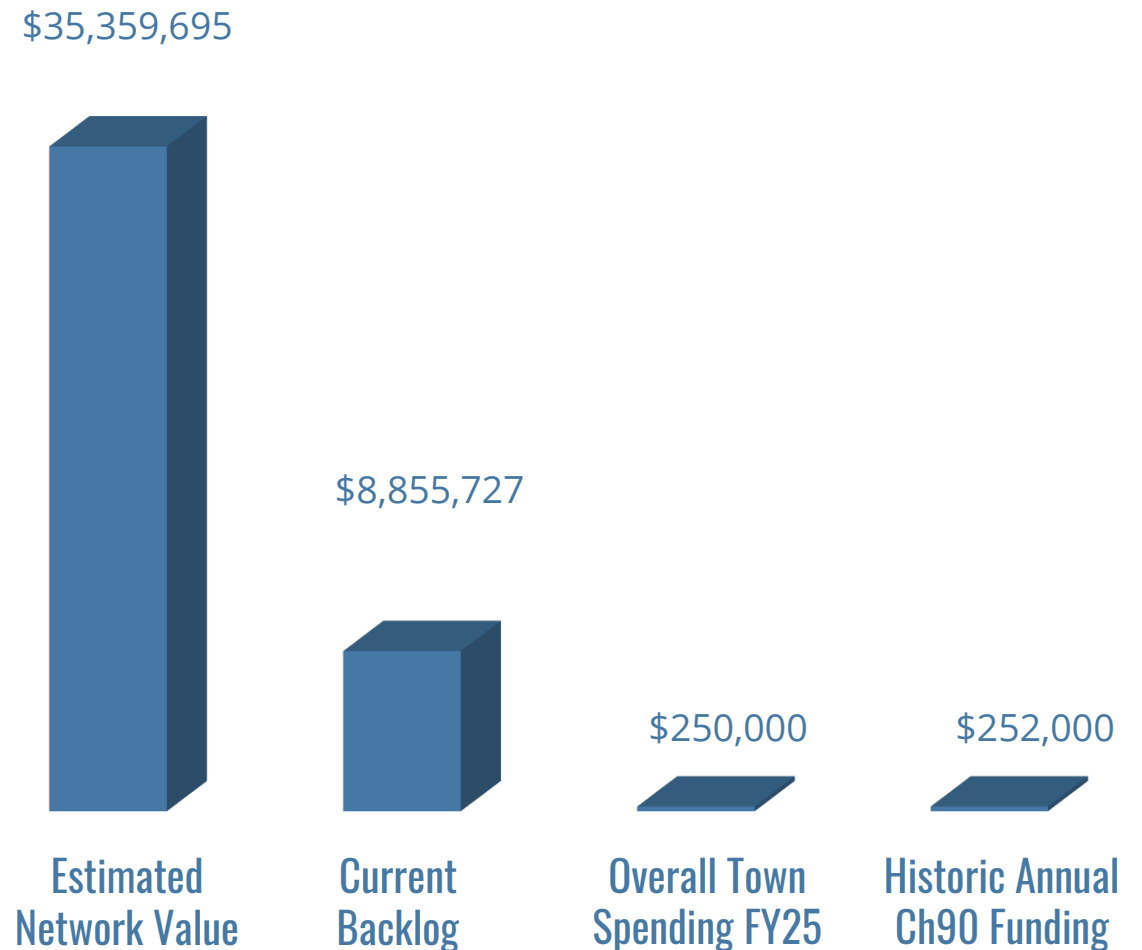




# CAPITAL PLANNING & ACTION PLANNING

## Assets vs Investments

- Estimated Network Value
  - Cost to rehabilitate all roadways
    - Does not include underground utility work or traffic signal replacements
- Current Backlog
  - Cost to complete all maintenance required
  - Snapshot in time based on roadway condition assessments
  - Includes allowances for typical sidewalk maintenance
- Overall Town Roads Budget FY25
  - Combination of Chapter 90 funding with Town allocation for roads
- Chapter 90 Funding
  - Funding provided by state to maintain accepted roadways

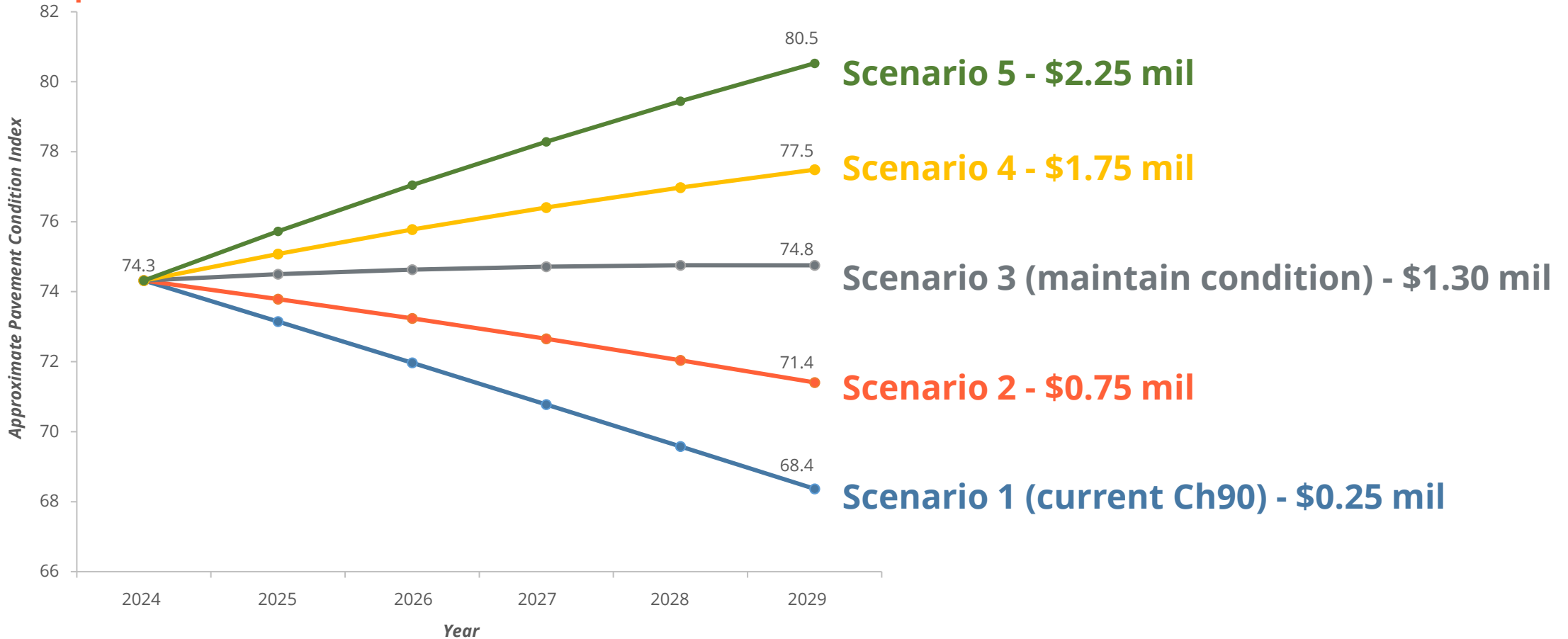


\*Estimates are for planning purposes only



# CAPITAL PLANNING & ACTION PLANNING

## Repair Scenarios





# PAVEMENT MANAGEMENT

Allows users to become

**PROACTIVE**

rather than

**REACTIVE**



# PAVEMENT MANAGEMENT

## Community 1

**2004** 2" Mill & Fill

**2017** 2" Mill & Fill  
Reclamation

**2x Cost**

## Community 2

**2004** 2" Mill & Fill

**2010** Crack Sealing &  
Microsurfacing

**2017** Crack Sealing &  
Microsurfacing

**Significant Cost  
Savings**

**PRESERVATION SUCCESS!**

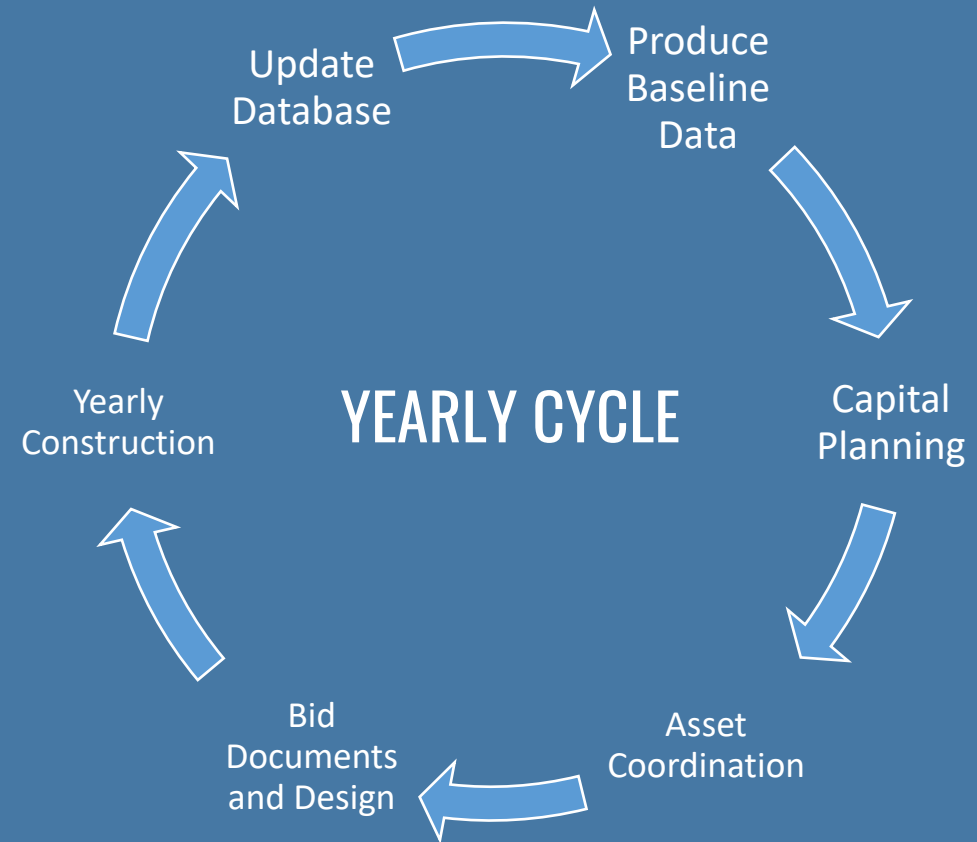
# PAVEMENT MANAGEMENT



# INVENTORY UPDATES AND MAINTENANCE

An Asset Management Platform is not meant to be a stagnant document, but rather a living, breathing document.

Consistently updating the information is imperative to minimize costs of continually re-assessing infrastructure.



# THANK YOU

