

PAVEMENT MANAGEMENT PROGRAM

Town of Sherborn

November 21, 2024

ENVIRONMENTAL
 PARTNERS

— An Apex Company —

PAVEMENT MANAGEMENT

What is Pavement Management?

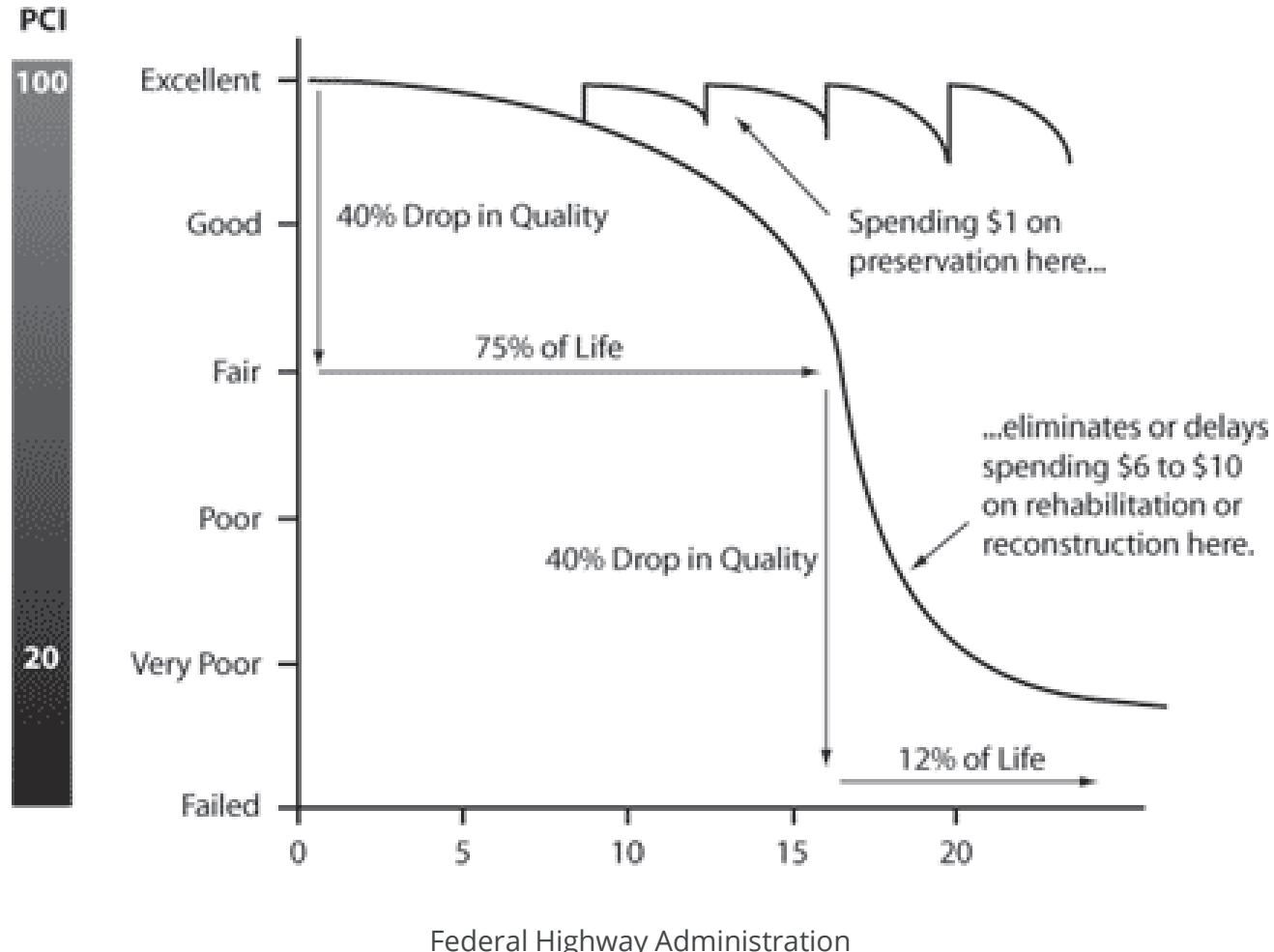
Pavement Management is the practice of planning pavement maintenance to maximize the value of the roadway network.

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



PAVEMENT MANAGEMENT

Pavement Deterioration Curve



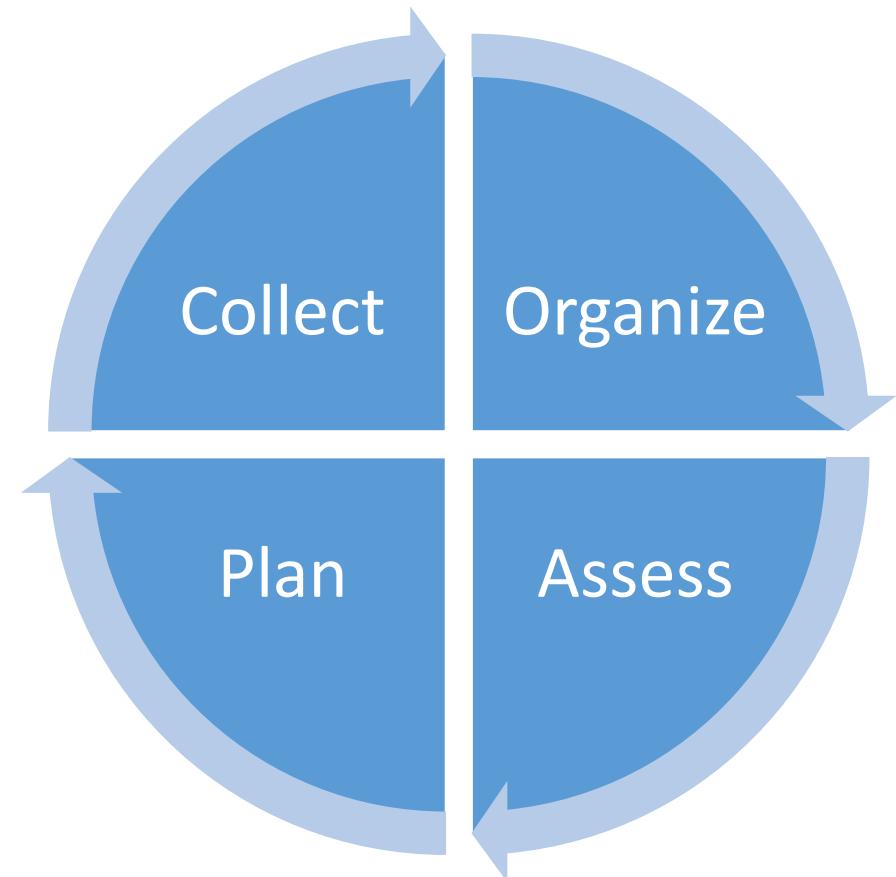
- Keep good roads good while performing rehabilitation where necessary.
- Top of curve treatments are less expensive and less intrusive.



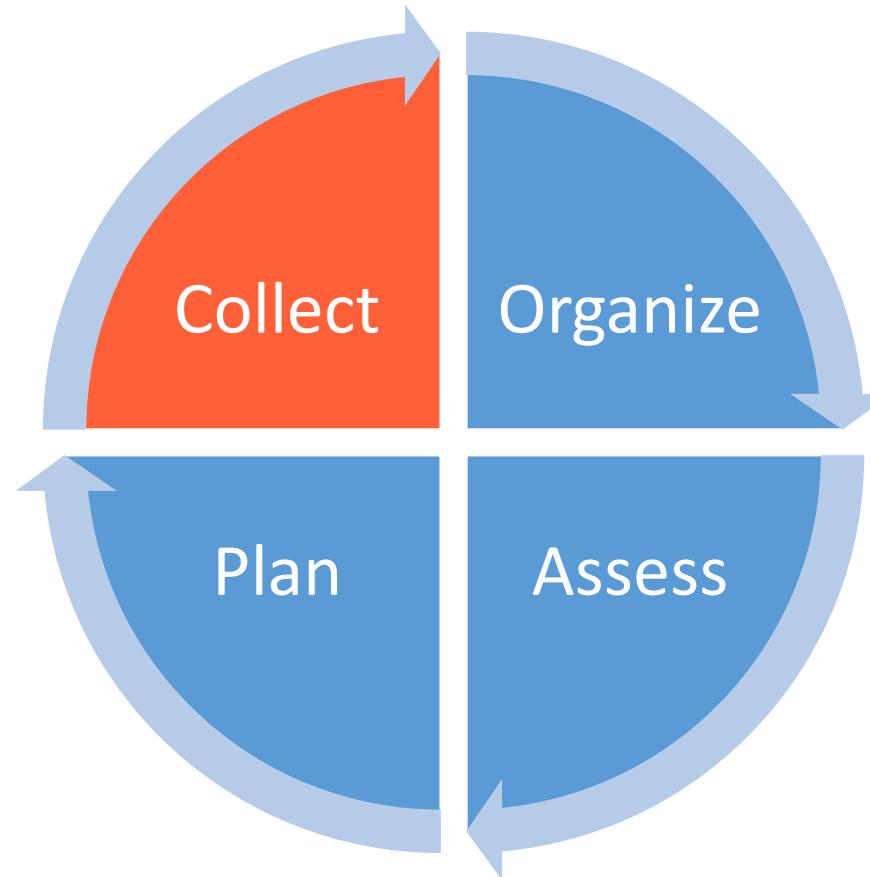
PAVEMENT MANAGEMENT

Four Step Project Approach

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



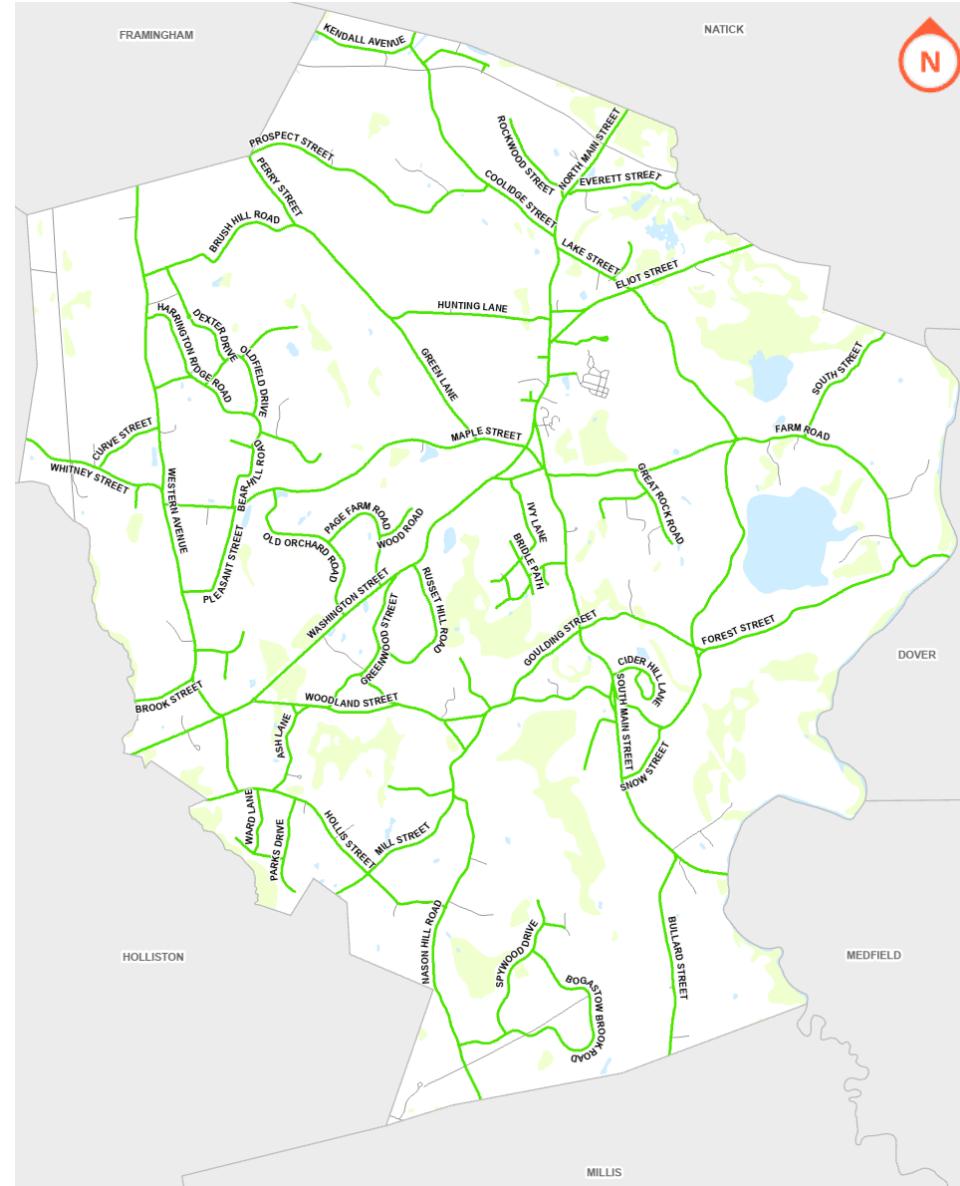
PAVEMENT MANAGEMENT



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

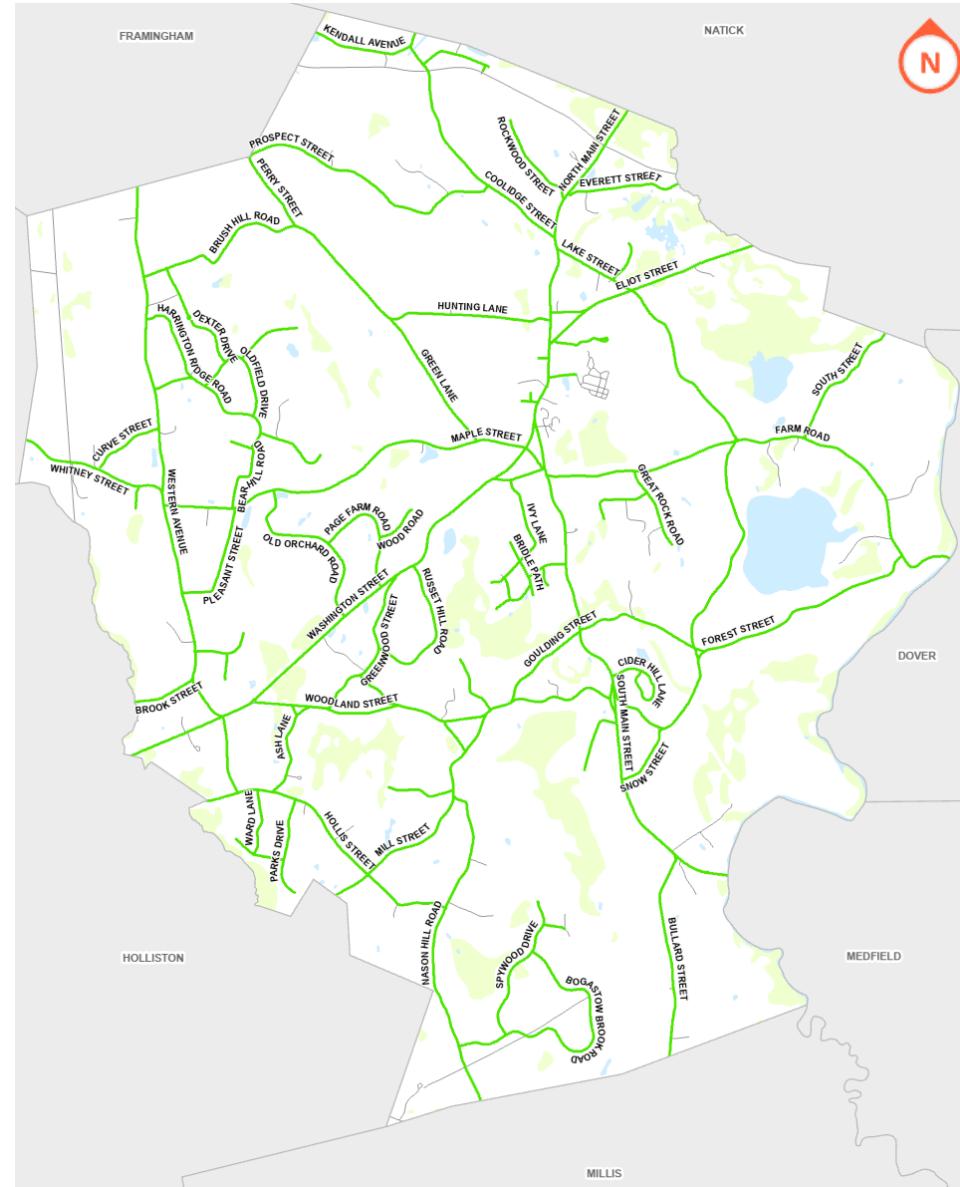


NETWORK INVENTORY

Roadway Network

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

*STUDY FOCUSED ON TOWN ACCEPTED ROADWAYS ONLY



DATA COLLECTION

Roadway Assessments

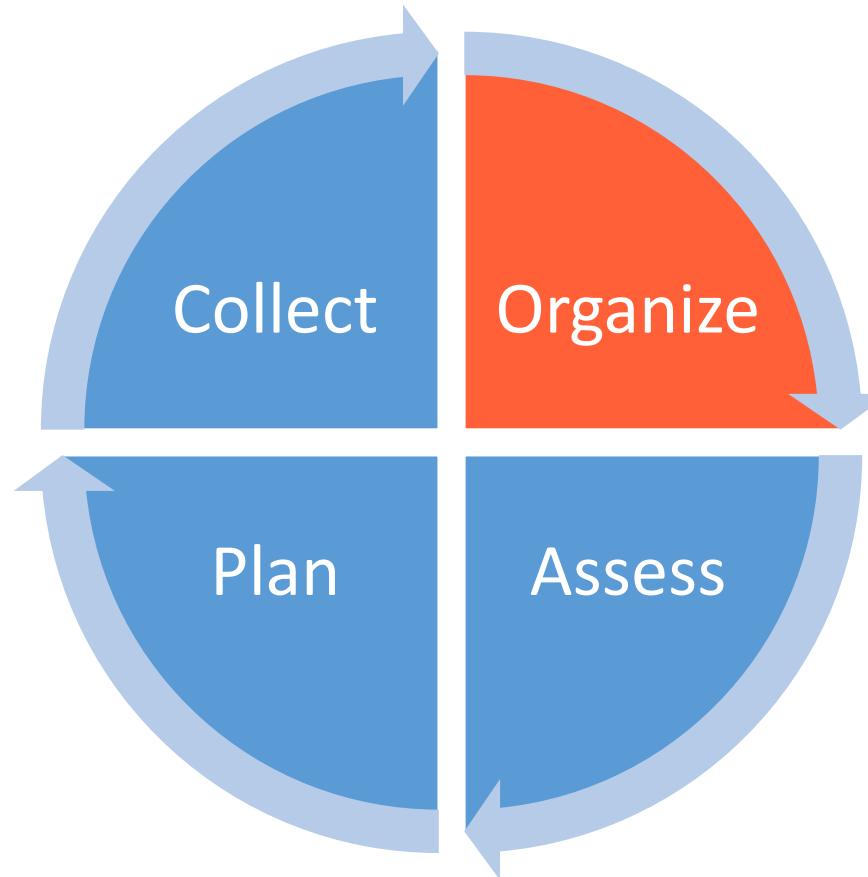
- Completed using Photo and LiDAR Capture Technology
- Provides photographs approximately every 10' along the roadway network
- Cost-effective
- Objective



Bullard Street - Sherborn

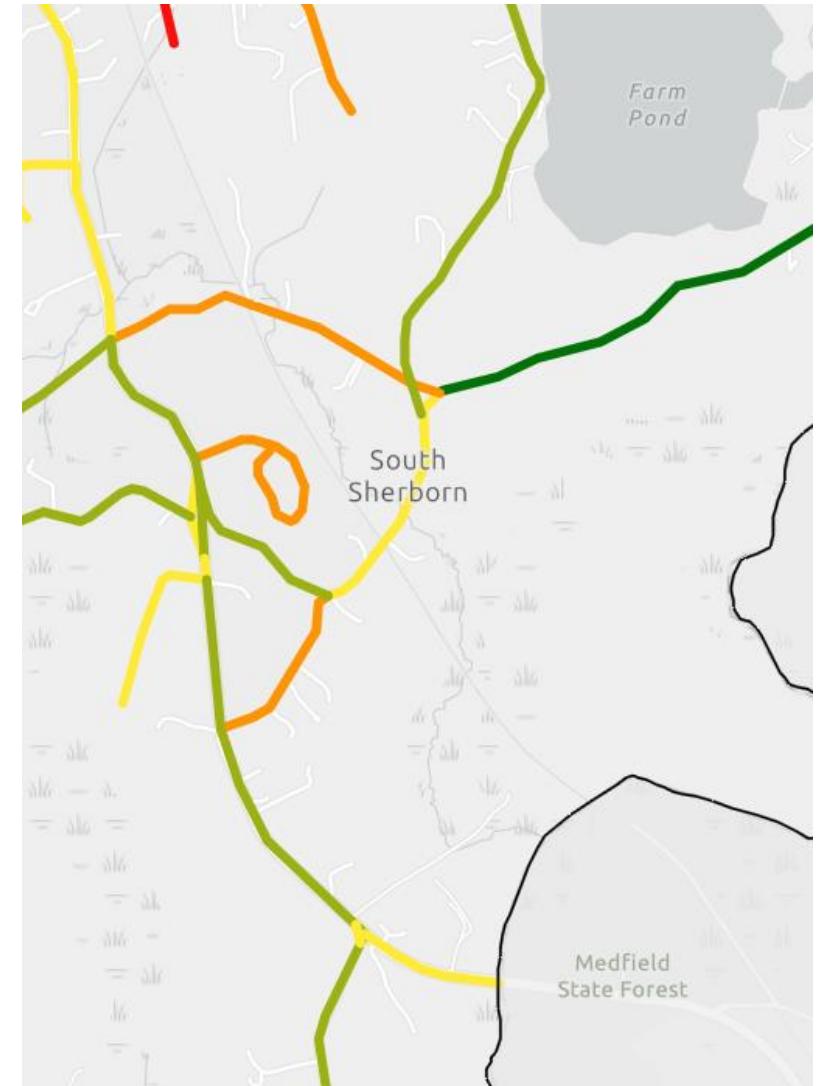


PAVEMENT MANAGEMENT



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

 Sherborn IAM
Pavement

Legend

Streets (by Repair Category)

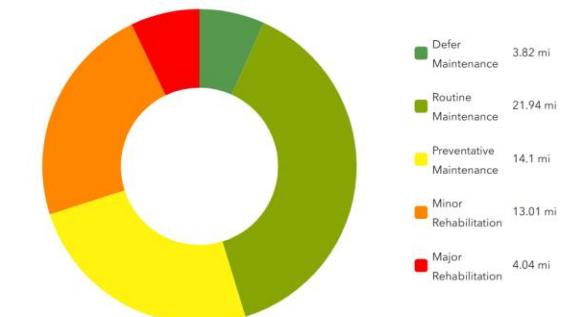
- Defer Maintenance (Green)
- Routine Maintenance (Yellow)
- Preventative Maintenance (Orange)
- Minor Rehabilitation (Dark Orange)
- Major Rehabilitation (Red)

Static Photos

Filter by street(s)
No street(s) selected

Filter work history by year
No year selected

Repair Category (by Mileage)



Repair Category	Mileage
Defer Maintenance	3.82 mi
Routine Maintenance	21.94 mi
Preventative Maintenance	14.1 mi
Minor Rehabilitation	13.01 mi
Major Rehabilitation	4.04 mi

1 of 7



Pavement Management Reports

- 1 - Roadway Repair Backlog Summary
- 2 - Roadway Segments with PCI
- 3 - Roadway Inspection Summary by Street
- 4 - Roadway Inspection Summary by PCI

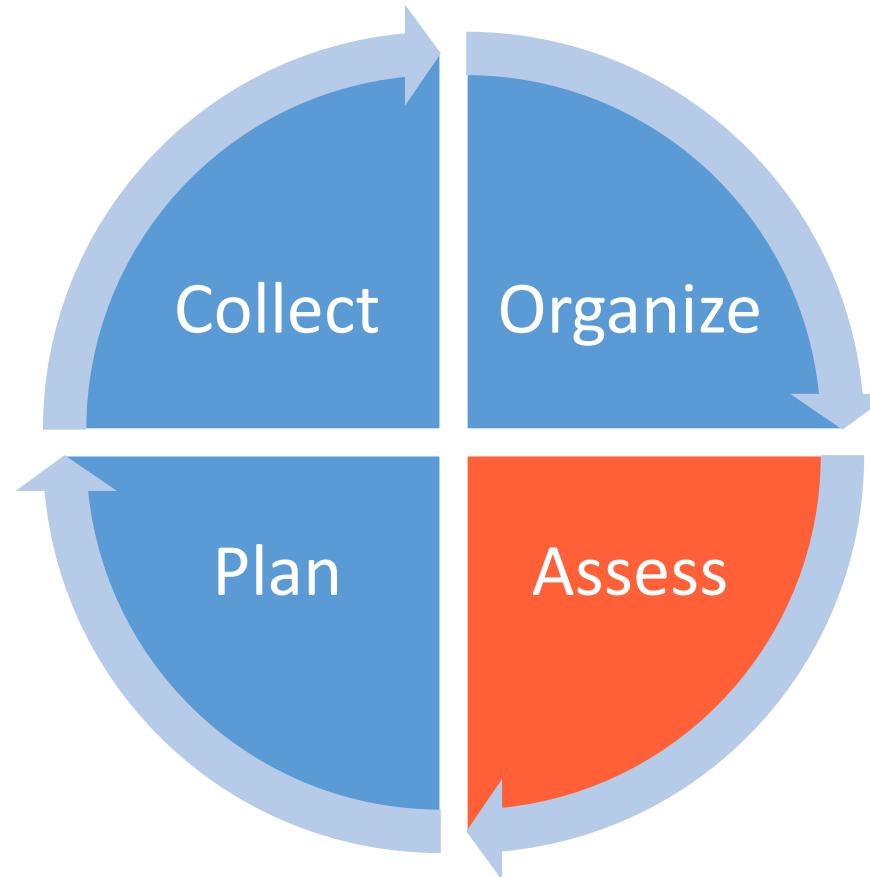
 TOWN OF SHERBORN
SETLED 1652
1674

2,000 ft

Powered by Esri

Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS | MassGIS, MassDOT - Highway Division, MassDEP, MWRA

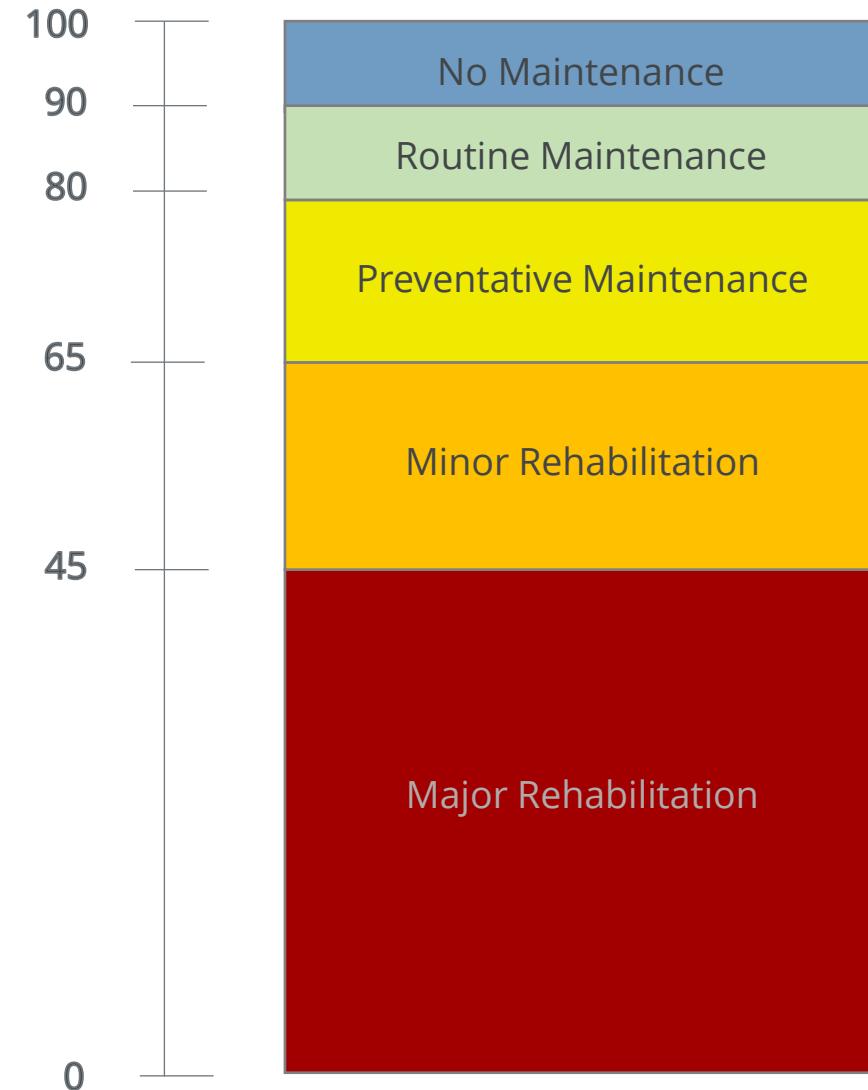
PAVEMENT MANAGEMENT



ANALYSIS & REPORTING

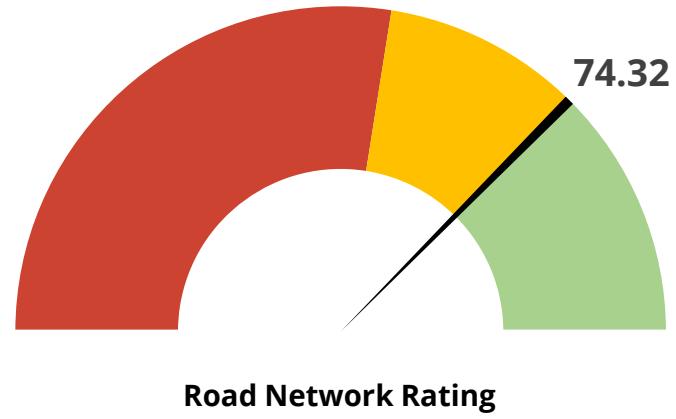
Maintenance Categories

- 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



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	\$ -	\$ -
TOTAL	55.45	776,044		\$ 8,085,033

Existing Conditions – Backlog

Western Avenue
Routine Maintenance



Greenwood Street
Preventative
Maintenance

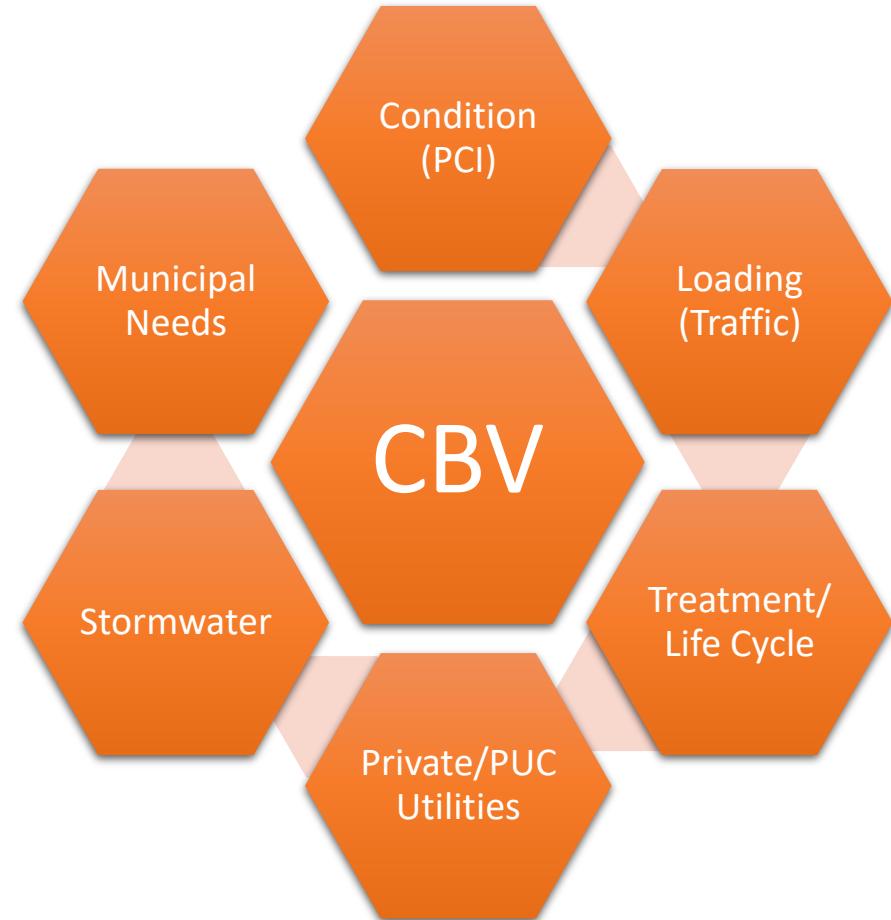


Woodland Street
Minor Rehabilitation



PAVEMENT MANAGEMENT

Condition
(PCI)



CAPITAL PLANNING & ACTION PLANNING

Prioritizing Repairs

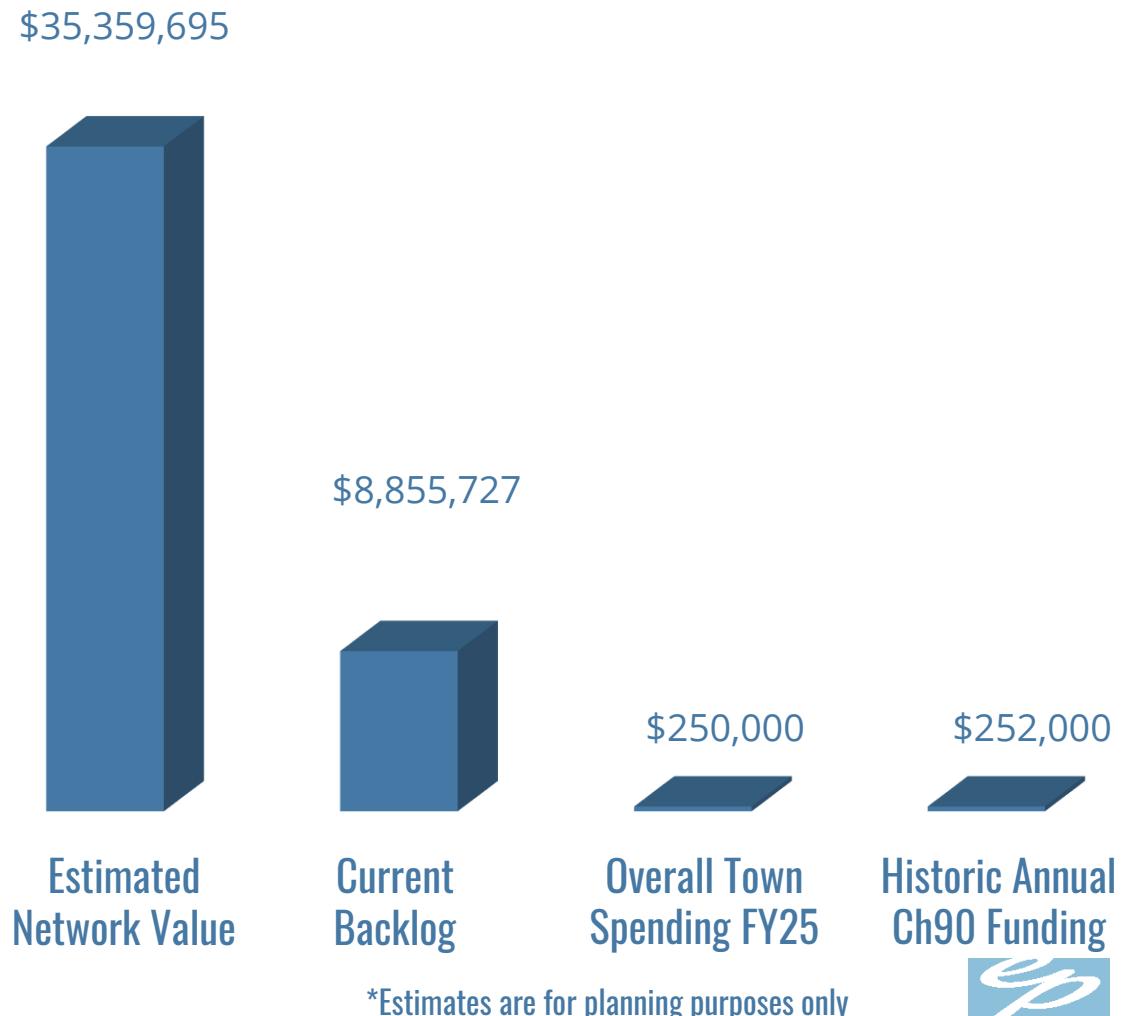
- Cost-Benefit Value
 - Average Daily Traffic
 - Cost of Repair
 - Life Expectancy of Repair
 - Roadway Rating
 - Roadway Classification
- Underground Utility Condition
- Constructability
- Design Process and Considerations
- Treatment Options
- Location & Use
 - School Zones & designated Safe Routes 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

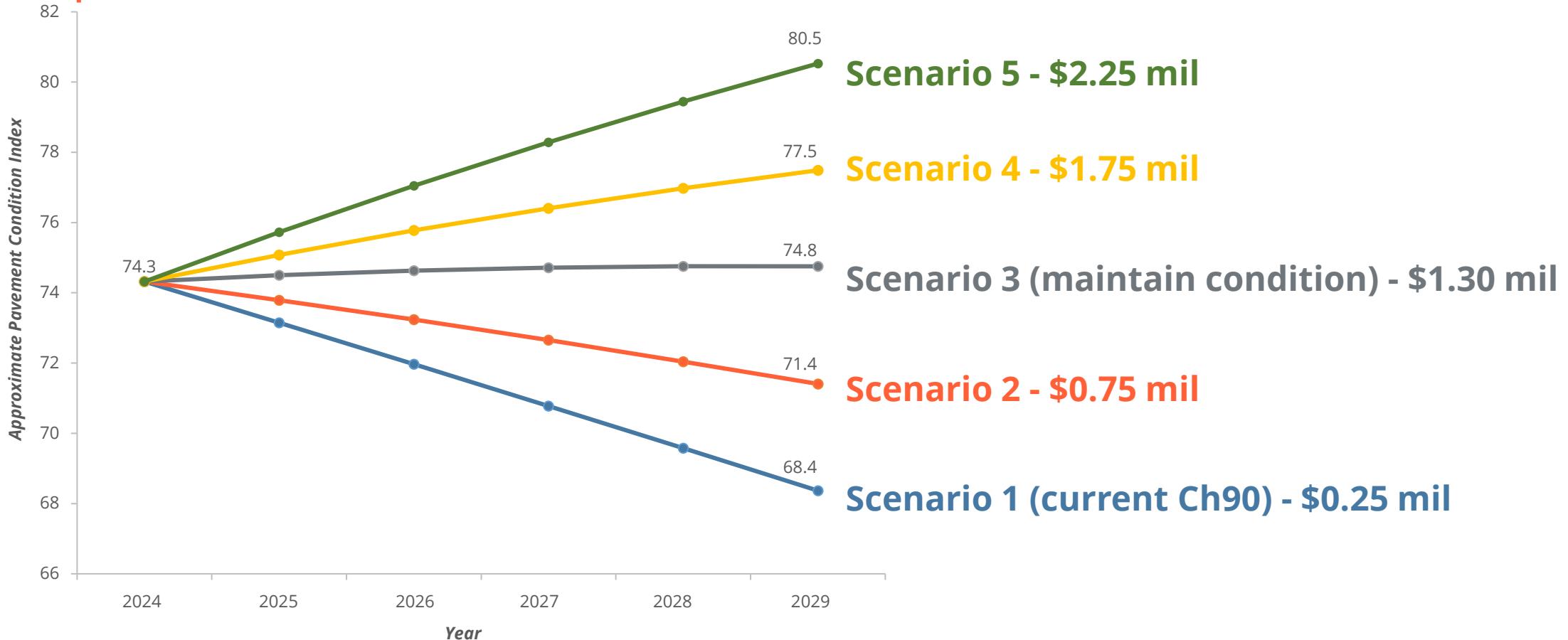
Assets vs Investments

- 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



CAPITAL PLANNING & ACTION PLANNING

Repair Scenarios



PAVEMENT MANAGEMENT

Allows users to become

PROACTIVE

rather than

REACTIVE



PAVEMENT MANAGEMENT



PRESERVATION SUCCESS!



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 **RoadResource.org™**

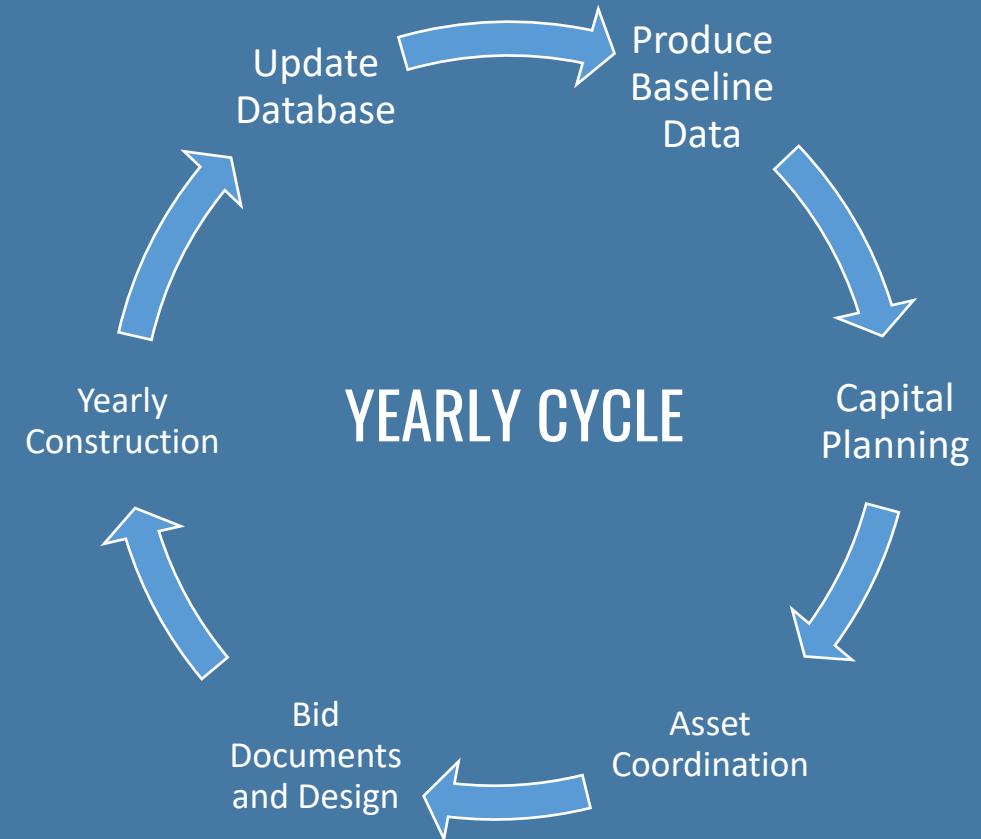
Provided By:  PPRA



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

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