

# PAVEMENT MANAGEMENT PROGRAM

Town of Wrentham

January 4, 2022



ENVIRONMENTAL  
 PARTNERS

## PAVEMENT MANAGEMENT

What is Pavement Management?

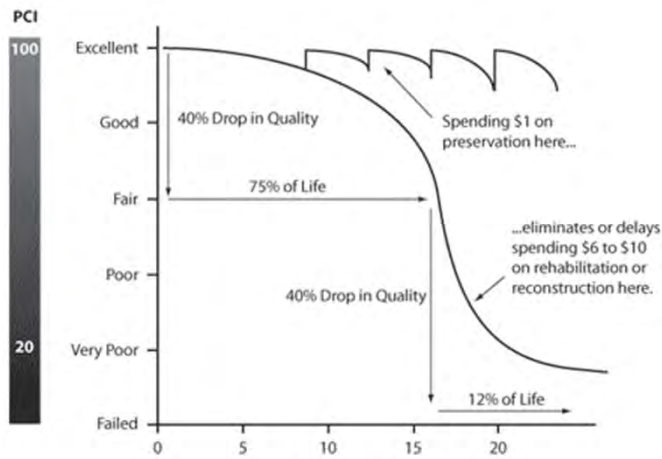
Pavement Management is the practice of planning pavement maintenance to maximize the value of the roadway network.

*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.

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Federal Highway Administration



# PAVEMENT MANAGEMENT

<p><b>Community X</b></p> <p>2004 2" Mill &amp; Fill</p> <p>2017 2" Mill &amp; Fill Reclamation</p> <p><b>2x Cost</b></p>	<p><b>Community Y</b></p> <p>2004 2" Mill &amp; Fill</p> <p>2010 Crack Sealing &amp; Microsurfacing</p> <p>2017 Crack Sealing &amp; Microsurfacing</p> <p><b>Significant Cost Savings</b></p>
<p><b>PRESERVATION SUCCESS!</b></p>	

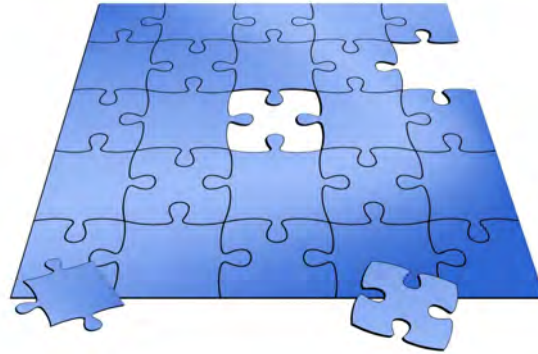
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## INFRASTRUCTURE ASSET MANAGEMENT

### 3 Step Project Approach

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



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## 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



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# NETWORK INVENTORY

## Roadway Network

Classification	Miles
Arterial	9.85
Collector	3.61
Local	39.45
Local – Low Volume	18.85
<b>Total Miles (accepted roads)*</b>	<b>71.80</b>

\*STUDY FOCUSED ON TOWN ACCEPTED ROADWAYS ONLY



# DATA COLLECTION

## Roadway Assessments

- Completed using Machine-Learning Technology
- Provides photographs every 10' along the roadway network
- Non-Biased
- Extremely cost-effective
- High resolution photographs for planning and decision making



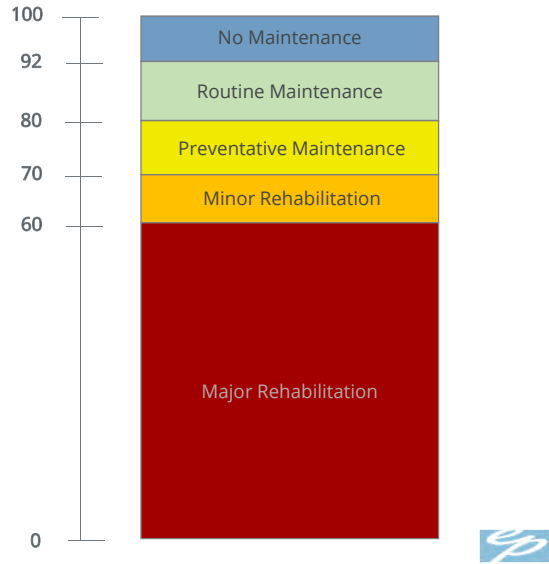
Archer Street - Wrentham



## ANALYSIS & REPORTING

### Maintenance Categories

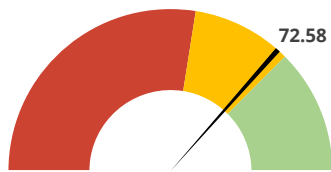
- No Maintenance Required
- Routine Maintenance - **\$1.00**
  - Fog Seal
  - Crack Seal
- Preventative Maintenance - **\$8.00**
  - Bonded Wearing Course
  - Microsurfacing
  - Shim and Overlay
- Minor Rehabilitation - **\$18.00**
  - Mill and Overlay
- Major Rehabilitation - **\$45.00**
  - Full Depth Reclamation



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## ANALYSIS & REPORTING

### Roadway Network



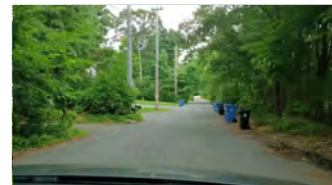
Road Network Rating

0-100 Rating Scale

Repair Category	Length (Miles)	Square Yardage	\$/SY	Cost
Defer Maintenance	12.87	179,172	\$ -	\$ 0
Routine Maintenance	22.21	103,465	\$ 1.00	\$ 103,465
Preventative Maintenance	16.96	252,606	\$ 8.00	\$ 2,020,846
Minor Rehabilitation	7.34	327,455	\$ 18.00	\$ 5,894,197
Major Rehabilitation	12.42	172,303	\$ 45.00	\$ 7,753,631
<b>Totals</b>	<b>71.80</b>	<b>1,035,000</b>	<b>\$ 72.00</b>	<b>\$ 15,772,138</b>

Existing Conditions – Backlog

LAKE STREET  
ROUTINE MAINT.



CREEK STREET  
PREVENTATIVE MAINT.



PARK STREET  
MINOR REHABILITATION

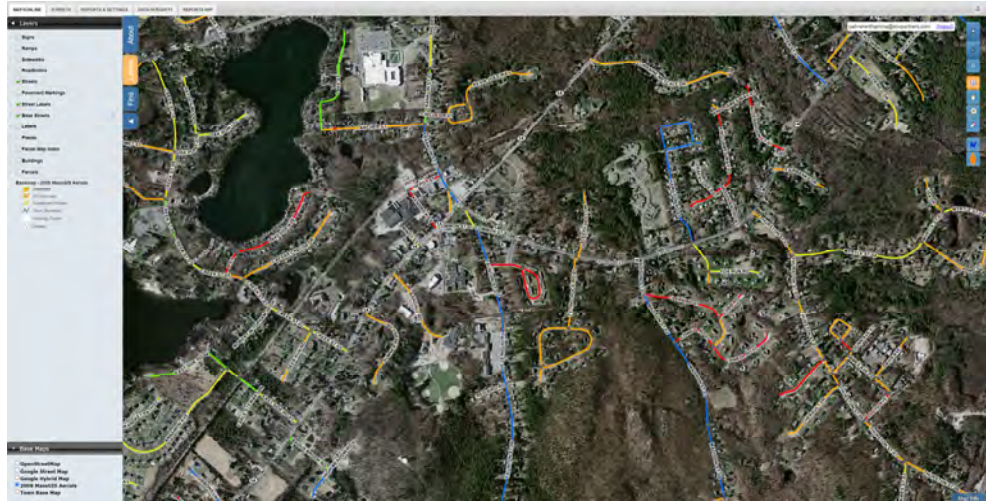


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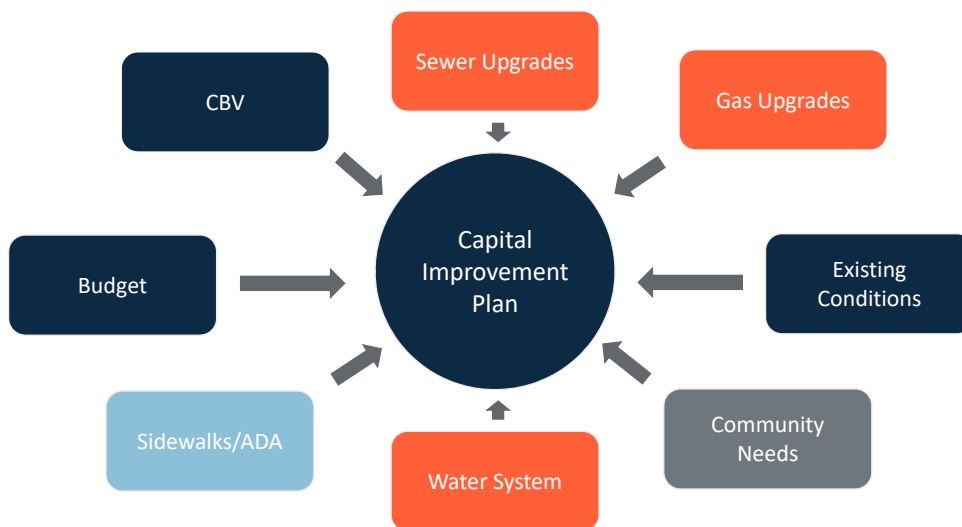
# ANALYSIS & REPORTING

## Mapping and Tracking System



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# CAPITAL IMPROVEMENT PLANNING & ACTION PLANNING

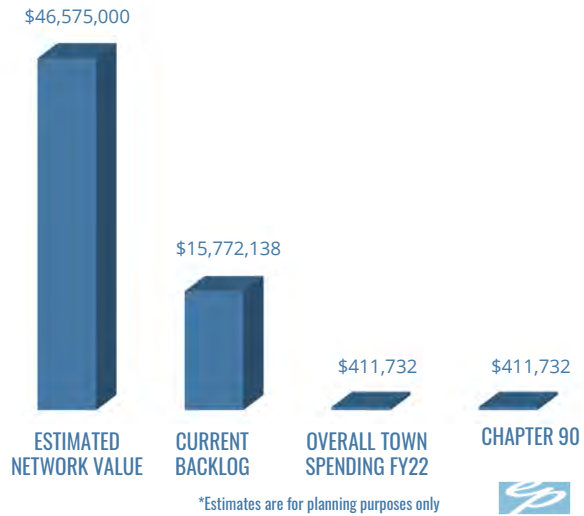


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## CAPITAL PLANNING & ACTION PLANNING

### 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 FY22
  - Combination of Chapter 90 funding with Town allocation for roads
- Chapter 90 Funding
  - Funding provided by state to maintain accepted roadways



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## CAPITAL PLANNING & ACTION PLANNING

### Prioritizing Repairs

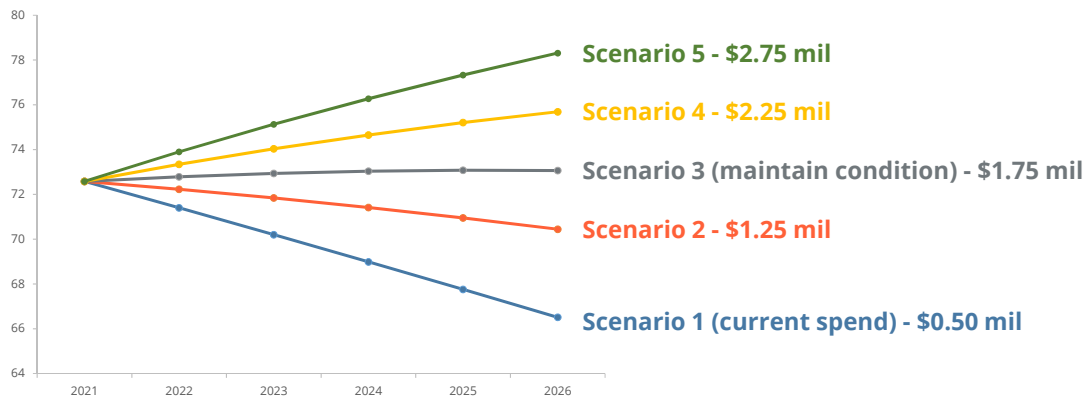
- Cost-Benefit Value
  - Average Daily Traffic
  - Cost of Repair
  - Life Expectancy of Repair
  - Roadway Rating
  - Roadway Classification
- Underground Utility Condition
- Constructability
- Design Process and Considerations
- Treatment Options
- Location & Use
  - School Zones & designated Safe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



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## CAPITAL PLANNING & ACTION PLANNING

### Repair Scenarios



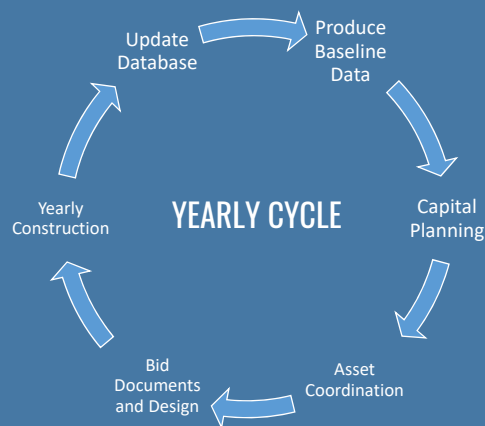
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## INVENTORY UPDATES AND MAINTENANCE

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.



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# THANK YOU

Questions?

