



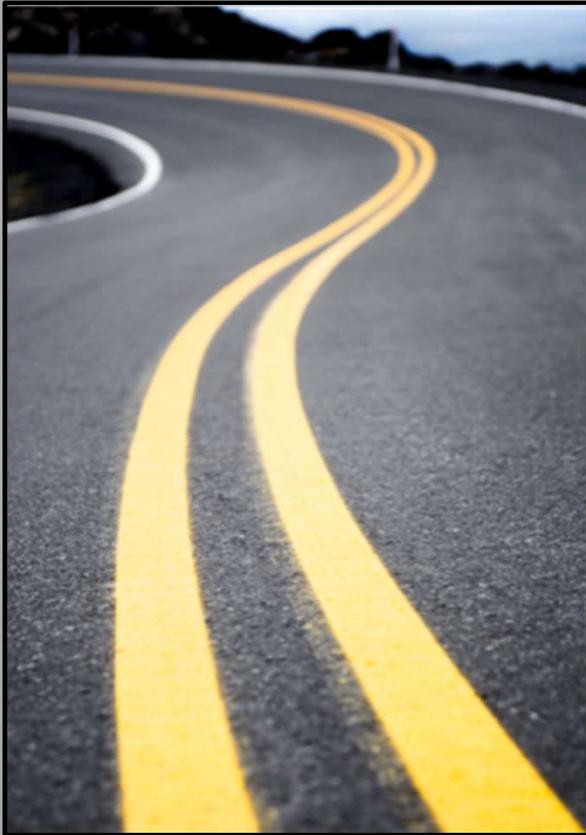
City of Sanford Department of Public Works

PAVEMENT MANAGEMENT PROGRAM



February 7, 2017

Pavement Management



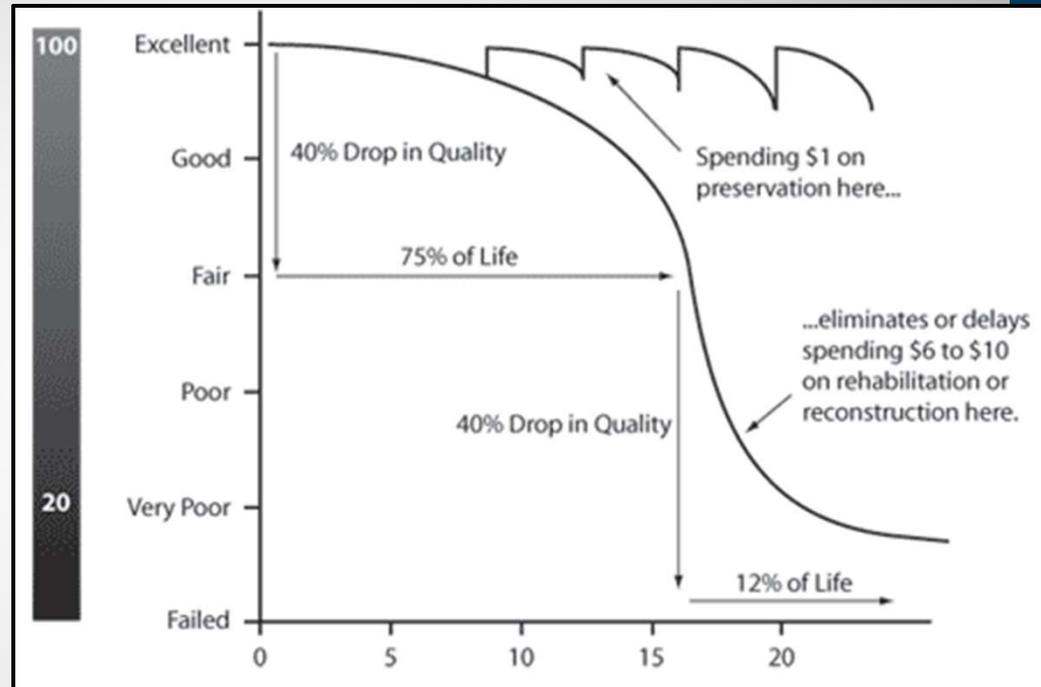
- The practice of planning for pavement maintenance and rehabilitation with the goal of maximizing the value and life of a pavement network

***Perform the right repair
at the right time!***



Pavement Management

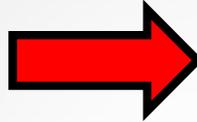
- ◉ Asset Management & Forecasting Tool
- ◉ It is more cost effective to keep good roads in good condition



Source: Federal Highway Administration



Pavement Management



Maintenance

- *Crack Seal*
- *Fog Seal*
- *Pothole/Utility Patching*

Surface Treatment

- *Chip Seal*
- *Microsurfacing*
- *HMA Overlay*

Structural Repair

- *Mill and Overlay*
- *Reclamation*
- *Reconstruction*



Comprehensive 5-Step Approach

1. Roadway Inventory & GIS Mapping

2. Field Inspection Program

3. Existing Conditions Summary

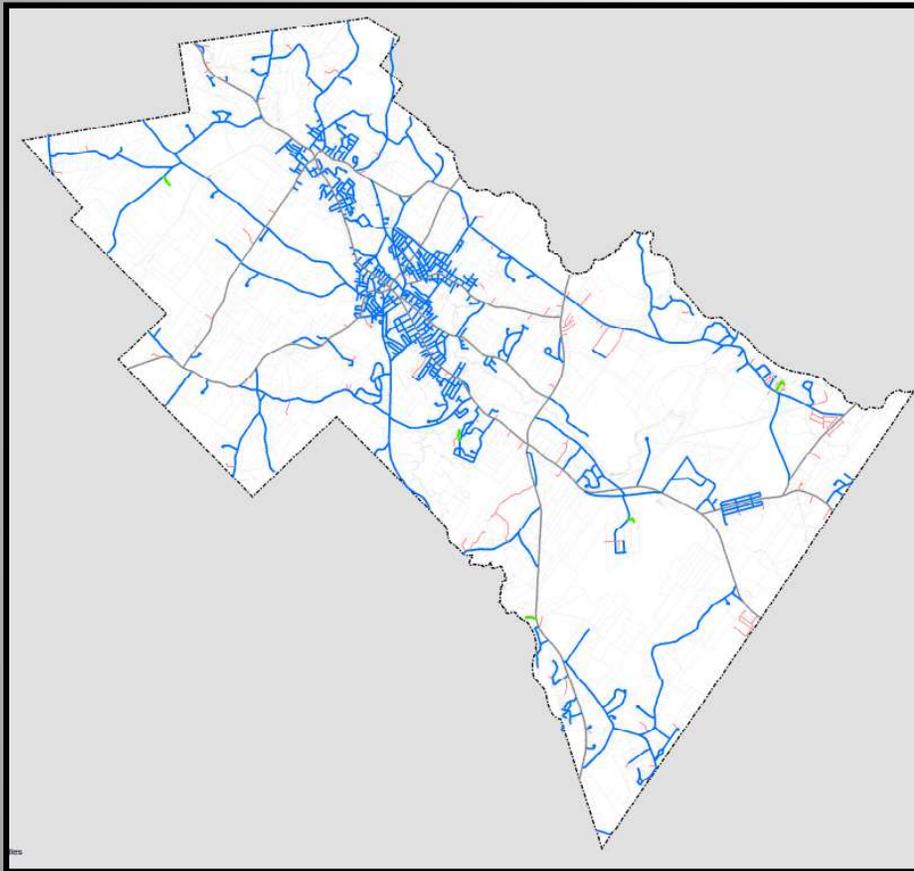
4. Capital Improvement Planning

5. System Maintenance



Roadway Inventory & GIS Mapping

Sanford Roadway Profile



Type	Miles
City Accepted	136.83
City by Prescription	0.80
Private	15.73
State	37.30
Total	190.66

* Inspected road miles does not include gravel roads



Road Surface Rating

Pavement Inspection Form



Inspection Form

Location

GIS ID: 1062
Street Search: ALLENSON STREET
Segment Name: ALLENSON ST
From Street: WEBSTER ST
To Street: WEEMAN ST

Status

Owner: City
Acceptance Status: Accepted
DOT Owner: City
DOT Acceptance Status: City
Inspection Area: 3

RSR

RSR: 68
Refresh RSR
Historic RSR

Roadway Inspection

Inspector: BETA
Inspection Date: 4/27/2016
Pavement Material: BC
Length Feet: 400.55
Length Miles: 0.08
Width: 36.00

Other Data

Utility Cuts: No
Existing Crack Seal: No
Delamination: No
Longitudinal Joint: No

Striping Data

Centerline: No
Edgeline Odd: No
Edgeline Even: No

Distress Data

Distress	Severity	Extent (%)
Linear Cracking	Moderate	40
Alligator Cracking	Moderate	20
Potholes	None	0
Edge Cracking	None	0
Patching	Moderate	10
Roughness	None	0
Drainage	Moderate	10
Rutting	None	0

Curb Data

Odd Curb Type: None
Even Curb Type: None
Alt. Reveal: 0

Sidewalk Data

Exists Odd Side: No
Exists Even Side: No
Material Odd Side: None
Material Even Side: None

Notes

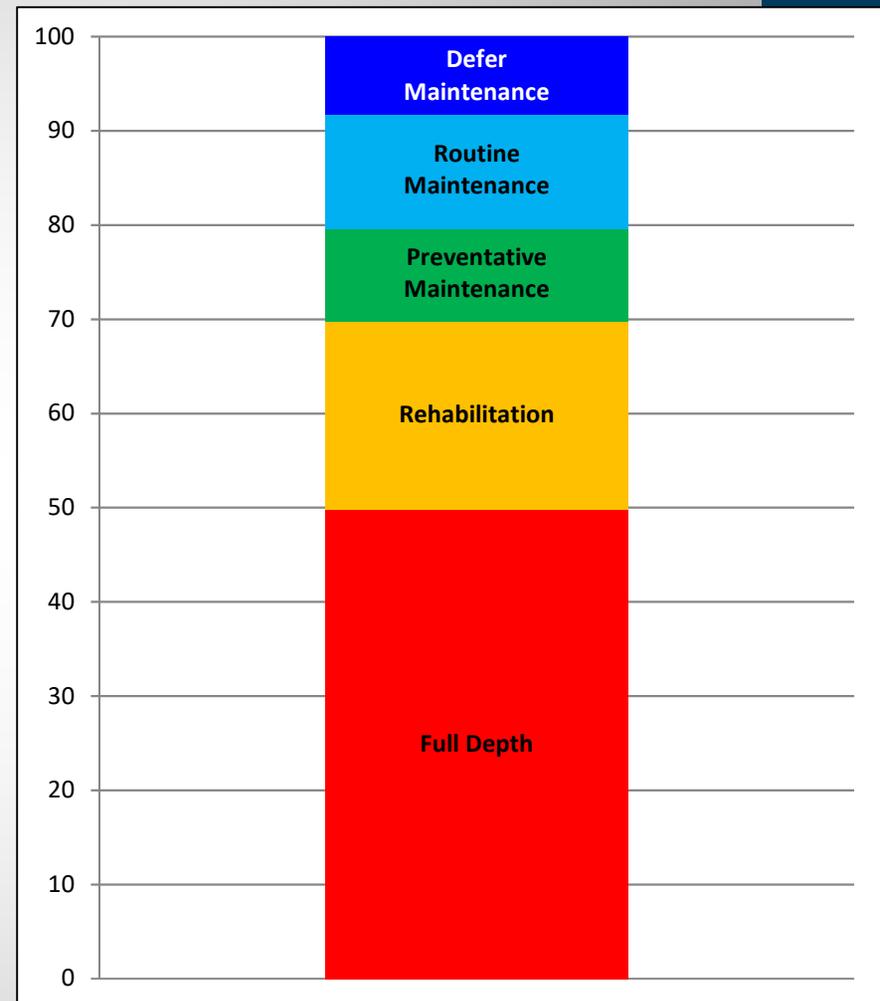
- Calculate Road Surface Rating (RSR) based on existing distresses
- Ratings are 0 to 100 (Worst to Best)
- Line striping, curb and sidewalk information identified



Repair Methods & Unit Costs

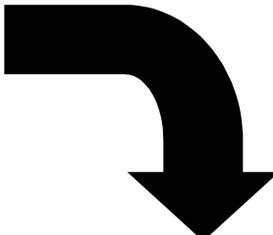
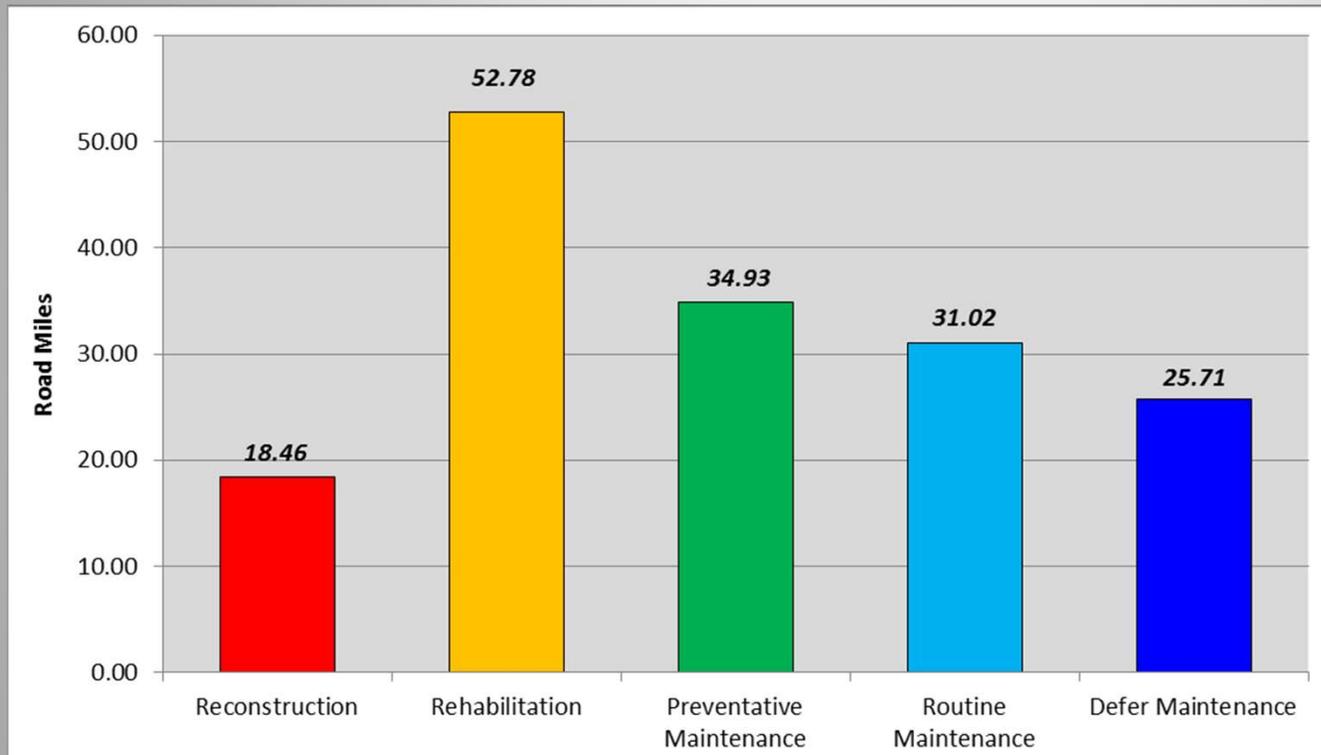
- Defer Maintenance - \$0 SY
- Routine Maintenance - \$0.50 SY
 - Crack Sealing
 - Fog Seal
- Preventative Maintenance - \$6.00 SY
 - Chip Seal
 - Microsurfacing
 - HMA Overlay
- Rehabilitation- \$14.00 SY
 - Mill & Overlay
- Reconstruction - \$45.00 SY

* Please note that unit prices reflect curb to curb improvements only



Existing Conditions Summary

REPAIR BREAKDOWN & CURRENT RSR



**Approx. 163
Road Miles
RSR = 69.21**



***City Maintained Paved Roadways Only**



Field Inspection Program

REPRESENTATIVE CONDITIONS – FULL DEPTH



RSR = 20



Field Inspection Program

REPRESENTATIVE CONDITIONS – REHABILITATION



RSR = 57



Field Inspection Program

REPRESENTATIVE CONDITIONS – PREVENTATIVE



RSR = 79



Field Inspection Program

REPRESENTATIVE CONDITIONS – ROUTINE



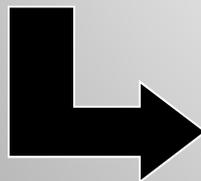
RSR = 85



Existing Conditions Summary

BREAKDOWN BY REPAIR METHOD (CITY MAINTAINED)

Backlog Summary				
Repair Method	Length (Miles)	Square Yards	Percent Repair	Estimated Cost
<i>Reconstruction</i>	18.46	285,446	11.33%	\$10,381,363
<i>Rehabilitation</i>	52.78	883,102	32.40%	\$10,597,228
<i>Preventative Maintenance</i>	34.93	583,452	21.44%	\$3,500,712
<i>Routine Maintenance</i>	31.02	529,889	19.04%	264,944.27
<i>Defer Maintenance</i>	25.71	410,885	15.78%	\$0
Total	162.90	2,692,774	100.00%	\$24,479,303
Network Level RSR	69.21			



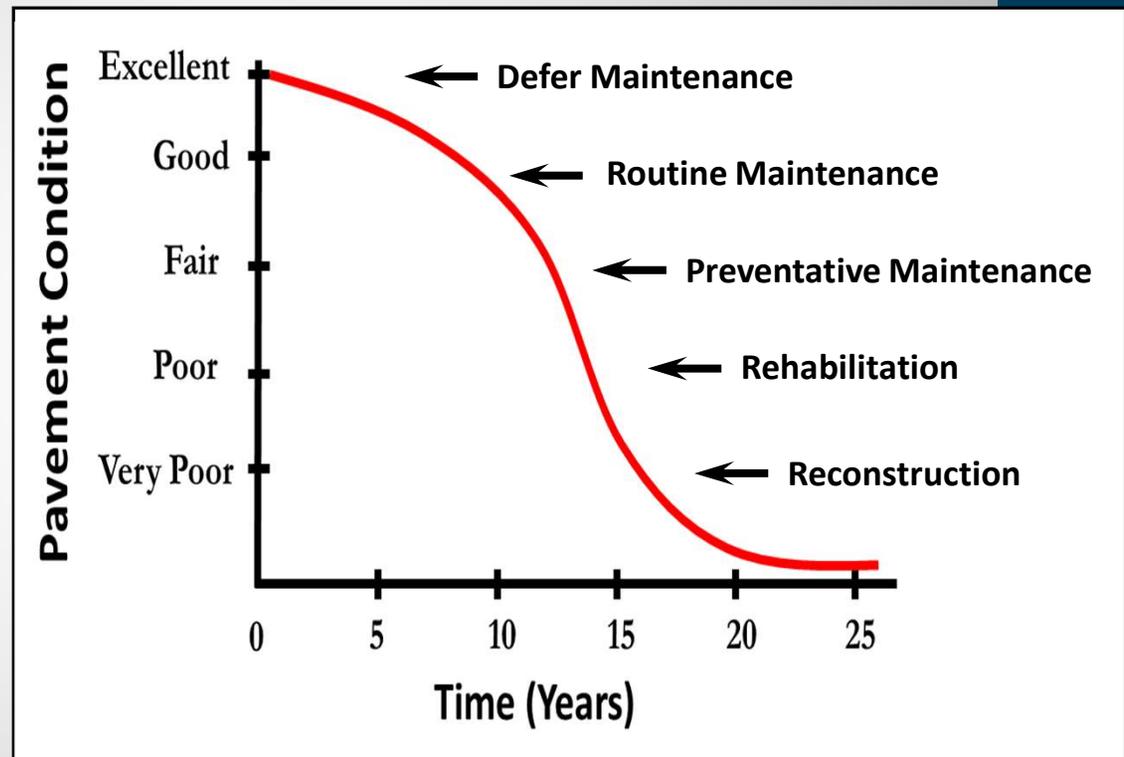
Backlog = Approx. \$24.5 Million

*Curb to Curb Improvements Only
Does Not Include Drainage, Sidewalks, Ramps



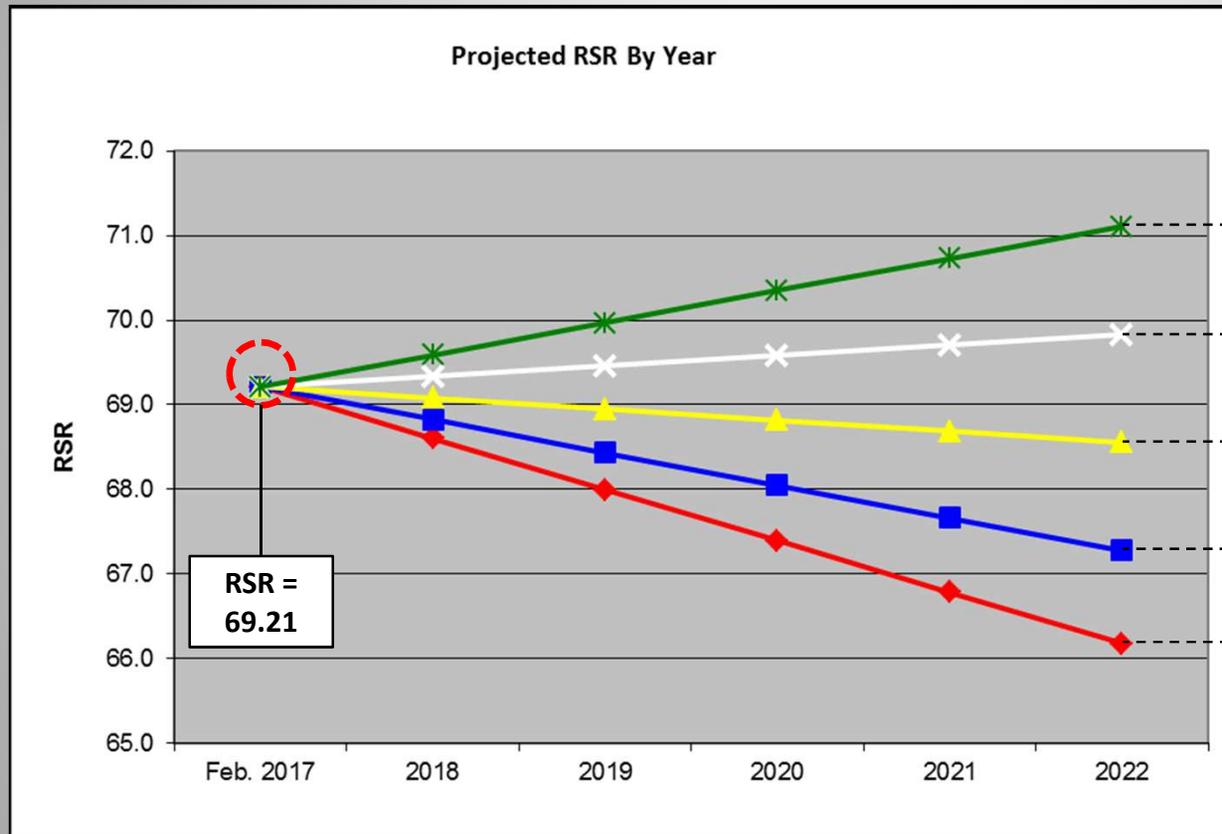
CIP Development

- Target RSR & Budget Requirements
- Refine Repair Methods Unit Costs
- Prioritization Strategies (CBV)
- ADA & Utility Coordination
- Deterioration Rates



CIP Development

RSR FORECASTING – 5 YEARS (STANDARD MODEL)



Amount Spent
Per Year (Present
Day Dollars)

\$2.7M

\$2.2M

\$1.7M

\$1.2M

\$700K

Roadway Forecast Model Percentage Breakdown:

- Crack Seal – 10%
- Preventative – 20%
- Rehabilitation – 40%
- Reconstruction – 30%

*City Maintained Paved Roadways Only



CIP Development

2017 PAVEMENT MANAGEMENT PROJECTS

Repair Method	Length (Miles)	Square Yards	Cost
<i>2017 Construction Season</i>			
Routine Maintenance	11.72	210,723	\$165,158
Preventative Maintenance	1.12	17,752	\$177,053
Reconstruction	0.69	13,210	\$437,548
TOTAL:	13.52	241,684	\$779,759



CIP Development

PROPOSED CIP

Year	Repair Method	Length (Miles)	Square Yards	Est. Cost
FY2018	Preventative Maintenance	11.15	168,746	\$362,489
	Rehabilitation	1.23	18,895	\$226,735
	Reconstruction	0.17	4,213	\$189,603
	YEAR TOTAL:	12.54	191,853	\$778,827
FY2019	Preventative Maintenance	11.37	175,229	\$430,670
	Rehabilitation	3.15	17,752	\$177,053
	YEAR TOTAL:	14.51	227,489	\$1,174,832
TOTAL:		27.05	419,342	\$1,953,659

Supplemental Funding:

- **\$200,000** will be allocated on a yearly basis for Future MaineDOT Reconstruction of Route 202/Cottage Street (Expected Project Start Date: 2021)
- **\$125,000** will be allocated on a yearly basis for drainage repairs



System Maintenance

- ◉ Update data as improvements are completed
- ◉ Monitor and update actual costs
- ◉ Re-assess assets periodically
- ◉ Add new subdivisions and newly accepted roads to database





City of Sanford Department of Public Works

PAVEMENT MANAGEMENT PROGRAM

Thank You
February 7, 2017

