



Public Facilities Committee Report

City of Newton In City Council

Wednesday, January 3, 2018

Present: Councilors Crossley (Chair), Kelley, Danberg, Norton, Laredo; also Present: Grossman, Downs, Scibelli-Greenberg, Krintzman

Absent: Councilors Leary, Gentile, Lappin

City staff present: Commissioner of Public Works Jim McGonagle, Chief Operating Officer Jonathan Yeo

#49-18 Updates on the Accelerated Roads Program

PUBLIC FACILITIES COMMITTEE requesting periodic updates on the Accelerated Roads Program.

Action: Public Facilities Committee Held 5-0

Referred to Finance and Appropriate Committees

#63-18 Submittal of the FY 2019 to FY 2023 Capital Improvement Plan

HIS HONOR THE MAYOR submitting the Fiscal Years 2019 to 2023 Capital Improvement Plan pursuant to section 5-3 of the Newton City Charter.

Action: Public Facilities Committee Held

Note: Commissioner of Public Works Jim McGonagle and Beta Engineering Consultant Conrad Ledger presented an overview of the FY18 Accelerated Roads Program. Beta Engineering, a pavement management firm, has been working with the City to use Street Scan data to assist DPW in creating a prioritized Roads rehabilitation program which includes methods for repair and ongoing maintenance. Street Scan is a road survey system that has been employed to more accurately assess the condition of streets and sidewalks throughout the City. Mr. Ledger noted that the Street Scan data revealed an average PCI (Pavement Condition Index) of 62 (of 100). 35% of Newton streets are below a PCI of 55. The below chart demonstrates how the pavement rating corresponds to the pavement condition.

PCI Ranges

<u>Condition</u>	<u>Pavement Rating</u>	<u>Maintenance Category</u>
Excellent.....	100-92.....	Defer Maintenance
Good.....	92-80.....	Routine Maintenance
Fair.....	80-65.....	Preventive Maintenance
Poor.....	65-50.....	Rehabilitation
Very Poor.....	Below 50.....	Reconstruction

Mr. Ledger provided a diagram of the life of a conventionally repaired road and illustrated where strategic maintenance measures that could extend the life of the roadway should be taken. Mr. Ledger noted that as the type of repair becomes more invasive, the cost increases. The below chart summarizes the FY19 Roads Budget with relative costs for various methods of repairs versus maintenance procedures.

Treatment Type	Percentage	Cost	Length (FT)	Length (MI)
Concrete Overlay	12%	\$1,080,000	1,600'	0.30
Mill and Overlay	70%	\$6,500,000	54,500'	10.32
Micro/Fog/Cape Seal	16%	\$1,500,000	63,360'	12.00
Crack Sealing	2%	\$200,000	128,000'	24.24
				0.00
Total		\$9,280,000	247,460'	46.87

Mr. Ledger presented the attached PowerPoint, emphasizing the importance of planning the appropriate methods of preventive maintenance in order to maximize the value of investments in roadway rehabilitation and reconstruction. Mr. Ledger explained that as roads age, different types of maintenance become necessary in order to prolong the useful life. Mr. Ledger described a road shared by two adjacent communities to highlight the importance of preventive maintenance. After full reclamation of this shared road, Fairfield, CT applied preventive maintenance measures to preserve the integrity of their half of the roadway. However, Bridgeport, CT chose not to invest in the same measures for their half of the road. Ultimately, the portion of the road in Bridgeport, CT required another extensive road repair while the portion of the road in Fairfield, CT only required additional maintenance. Over the same time period, Bridgeport spent more than double what Fairfield, CT spent while suffering a road with poorer conditions.

Mr. Ledger reviewed methods of preventive maintenance that were used this construction season and presented new methods which DPW intends to implement during the 2018 construction season. Details of each method can be found in the "Preservation Toolbox" at <http://www.fp2.org/>. Commissioner McGonagle confirmed that lists of roadways sorted by PCI and alphabetically will be distributed to Councilors, but noted that factors like utility work can impact the schedule. The Commissioner stated that DPW has established a list of streets that will have utility work done and has been working to coordinate paving with the utility companies. The Commissioner noted that DPW expects to have Street Scan complete another full inspection after three years to compare the average PCI with the initial street scan data. DPW hopes to bring the average PCI to 80 over the course of ten years, assuming continued investment in the Accelerated Roads Program of approximately \$9.5 million dollars each year.

Committee members questioned whether bicycle accommodations including possible widening of the roadway and adjustments to curbs and sidewalks are being fully addressed during the construction. The Commissioner noted that widening of the roadway and curb and sidewalk work increases the scope of the work and takes significantly more time and money, but confirmed

that DPW will continue to design bicycle accommodations whenever possible, on major routes. He noted that the City's Transportation Director, Nicole Freedman is currently working on an additional 2.5 miles of bicycle network design.

Commissioner McGonagle confirmed that sidewalks will be replaced with the predominant material existing. Chief Operating Officer Jonathan Yeo questioned whether granite curbing on main roads should be included and noted that the administration can review betterment policies.

The Commissioner noted that DPW is collaborating with Planning to review standards and develop design guidelines that include standard sidewalk widths, a tree removal policy and ADA guidelines. He noted that they are hoping to create a standardized process with efforts from DPW, Engineering, Planning and Parks & Rec. The Public Facilities Committee is planning to review the draft Street Design Guide in early Spring. Committee members were in agreement that a long range plan with clear priorities will be beneficial to the City.

With regard to the Tree Policy, the Commissioner noted that DPW is trying to balance competing interests. The design guidelines will be helpful, but each situation may present different challenges. During the 2017 construction season, Adams Street was reconstructed to meet Complete Streets standards. Initially, DPW was hesitant to remove a number of trees on Adams Street. Based on feedback, it was determined that the community was supportive of the removal of trees, many of which impacted the sidewalks and were buckling the roadway. Since many trenches preceded the road work, in order to replace water sewer and gas lines; Adams Street required full reclamation. This meant the roadway was pulverized to a depth of about 12", which also destroyed tree roots.

However the Commissioner noted that when DPW began construction on Beacon Street, 29 trees were initially identified for removal. After significant public pressure not to remove the trees, the number was reduced to 11 and later, 3. Committee members expressed concern that the trees that remain will have a detrimental impact on new sidewalks and curbs later years and urged the Commissioner to be cognizant of the long term impacts of tree related decisions. It was noted that by leaving trees that should be removed, additional costs will accrue over time, as old trees die or further impact the public way. The Commissioner confirmed that it is better practice to remove and replace trees with proper species when redoing the roadways rather than returning at a later date. Additionally, the City's Tree Warden works with DPW to determine the appropriate types of trees and locations for replanting.

Committee members questioned whether the "hot in place" method of melting and recycling existing pavement in one operation, will have lasting damage on the trees impacted. Commissioner McGonagle noted that the "hot in place" method was performed on one of the hottest days of the year with limited wind. He noted that the circumstances were out of the ordinary but confirmed that DPW has spoken with other communities to verify that permanent damage is not done. DPW will not use the "hot in place" method again until after confirmation that the trees leaf normally this coming Spring. Additionally, the department will wait until early fall to

use the “hot in place” preventive maintenance method.

The Commissioner noted that the City has developed a strong working relationship with some utility companies and will be adding Verizon to the monthly meetings. It was noted that there remain limitations with regard to the availability of police details that thwart utilities’ ability to coordinate and complete the work according Newton’s aggressive schedule.

Committee members questioned whether residents can expect emergency work to be completed before the road is scheduled for repair, which may be in several years. The Commissioner confirmed that residents may (and should) still request repairs and the Highway Department has been working to ensure that repairs, (such as potholes) are completed within three days. He noted that safety repairs” are also included in the Accelerated Roads program. The safety repairs will include temporary solutions to roads in very poor shape, which are not scheduled for repair for several years. While the temporary repair will bring the condition of the road up to a PCI of 100, the rate of deterioration will be quicker than if the road were rebuilt.

The Commissioner noted that a binder including details of the Accelerated Roads program will be distributed to Councilors. Committee members were encouraged to help educate and share information with constituents.

Chairs Note: The Committee discussed pending agenda items we expect to take up through April.

Note: The Chair provided an overview of pending agenda items before the Public Facilities Committee and items that will be before the Committee during 2018. The complete listing of items is attached.

The Committee adjourned at 9:30 PM.

Respectfully submitted,

Deborah Crossley, Chair

Accelerated Pavement Management Program Program Update



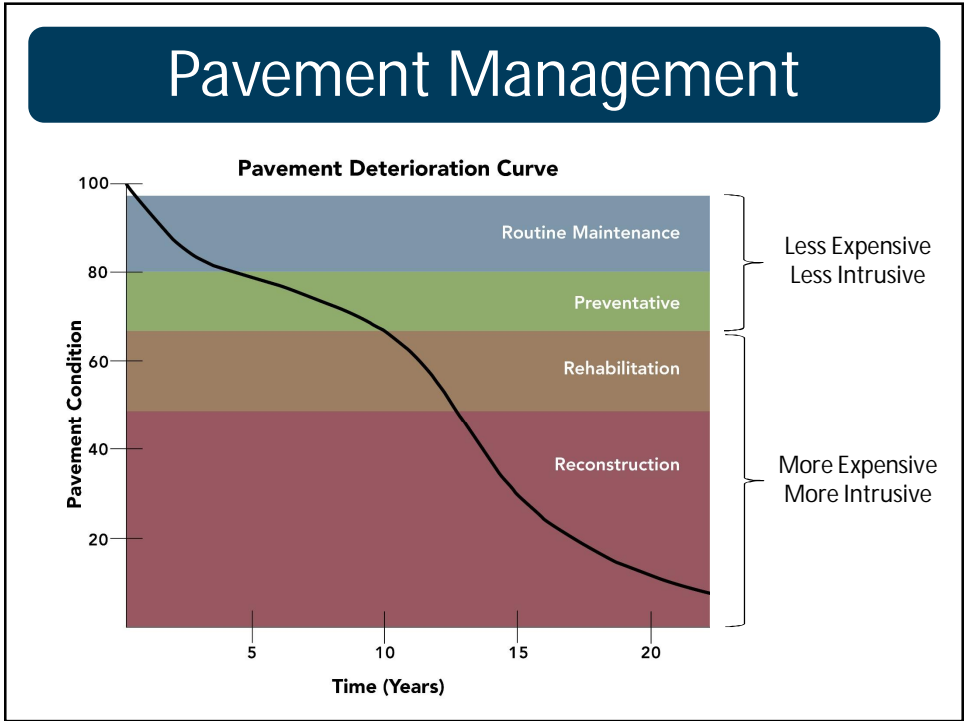
January 3, 2018



Pavement Management



- The practice of planning for pavement maintenance and rehabilitation with the goal of maximizing the value and life of a pavement network
- *The right repair at the right time!*



Location	Year	Work	Cost
Bridgeport, CT	2004	2" Mill & Fill	\$12 per sy
	2017	2" Mill & Fill Reclamation	
	Total		\$24-\$44 per sy
Fairfield, CT	2004	2" Mill & Fill	\$12 per sy
	2010	Crack Sealing & Microsurfacing	\$4.50 per sy
	2017	Crack Sealing & Microsurfacing	\$4.50 per sy
Total		\$21 per sy	

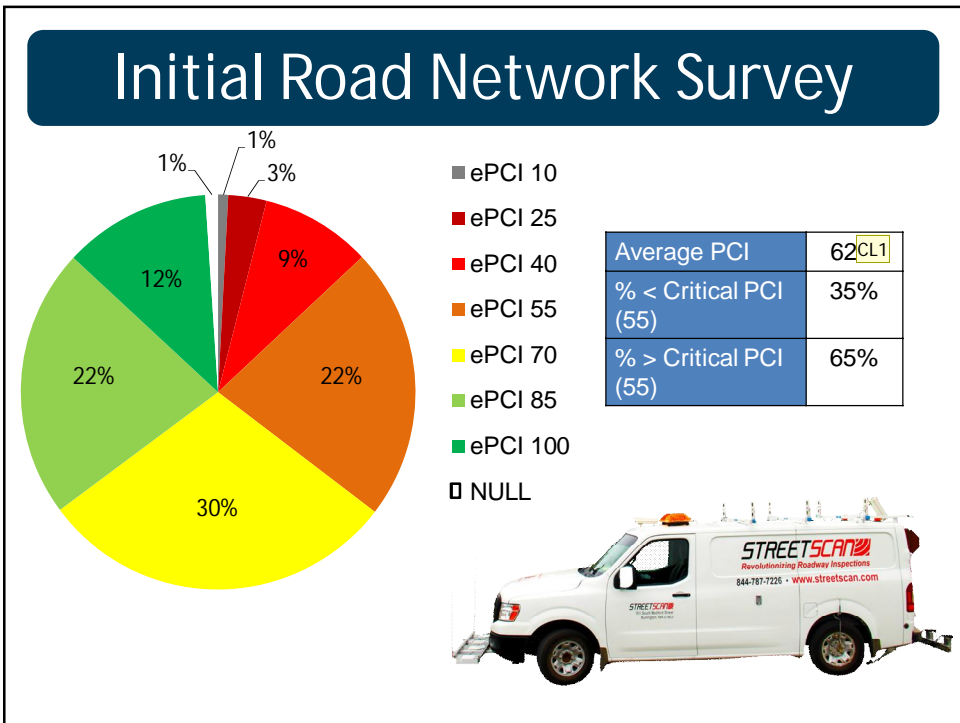
Preservation Success!

City of Newton – Roads Program

1. Create a comprehensive pavement management program
2. Coordinate utility and roadway projects
3. Communication to the community
4. Preparation of bid documents and Construction Management
5. Pavement Maintenance

PCI Ranges

Condition	Pavement Rating	Maintenance Category
Excellent.....	100-92.....	Defer Maintenance
Good.....	92-80.....	Routine Maintenance
Fair.....	80-65.....	Preventive Maintenance
Poor.....	65-50.....	Rehabilitation
Very Poor.....	Below 50.....	Reconstruction



Conclusion



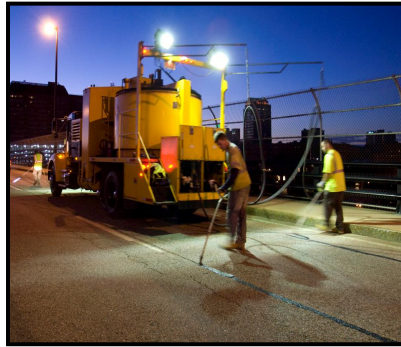
Review – Analyze - Prioritize

- Create custom reports
 - Parent/Child Report
 - Roadways by PCI
- Cost Benefit Value
 - Data driven analysis to assist with prioritizing repairs
- Initial Street Lists
 - Coordinate with Utilities
 - Assess for Trees
 - Evaluate Sidewalks



2017 Paving Program

Repair Treatments



Crack Seal



Fog Seal

2017 Paving Program

Repair Treatments



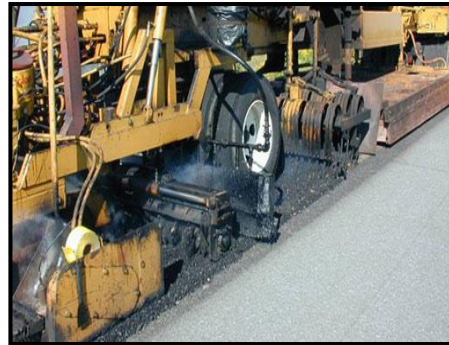
Microsurfacing



Cape Seal

2017 Paving Program

Repair Treatments



Hot In-Place Recycling

2017 Paving Program

Repair Treatments



Mill and Overlay



Full Depth Reclamation



2018 Paving Program

New Repair Treatments



Bonded Wearing Course

Concurrent Work

- Sidewalks
 - \$40 per SY
- Curb Ramps
 - \$65 per SY
- New Curbing
 - \$40 per FT
- Remove and Reset Curbing
 - \$20 per FT
- Tree Removals and Replanting Program



City of Newton 2018 Accelerated Pavement Management Program							
Mill and Overlay			PCI	Length	Width	Sq. Yds.	Total Cost
Crafts Street	Walham Street	Watertown Street	62	4,200'	38'	17,700	\$814,200
Mill Street	Walnut Street	Centre Street	51	3,900'	24'	10,500	\$483,000
Ward Street	Commonwealth Avenue	Mallet Street	51	6,300'	28'	19,500	\$897,000
Chestnut Street	Elmit Street	Collins Street	62	4,600'	24'	12,400	\$570,400
Balscon Street	Chestnut Street	Woodward Street	50	1,700'	32'	6,000	\$276,000
North Street	Farwell Street	Commonwealth Ave	65	2,800'	32'	8,500	\$391,000
Commonwealth Ave	Rowe Street	Washington Street	63	3,150'	34'	12,000	\$552,000
Central Avenue	Washington Street	Prescott Street	48	1,350'	24'	3,500	\$161,000
Beach Street	Washington Street	Court Street	47	0,320'	22'	800	\$36,800
Centre Street	Richardson Street (09)	Ward Street (28)	54	6,450'	24'	17,200	\$791,200
			6.59	34,770'		108,100	\$4,972,600
Redeem or Cold In-Place							
			PCI	Length	Width	Sq. Yds.	Total Cost
Cynthia Road	Grenwood Street	Deborah Road	9	2,150'	30'	7,000	\$402,500
Burdain Street	Winston Road	Grenwood Street	9	0,950'	25'	2,700	\$156,250
Deborah Road	Cynthia Road	Sevland Road	23	1,650'	25'	4,600	\$264,500
Court Street	Central Avenue	Washington Street	20	1,500'	22'	3,750	\$215,625
Gammons Road	Roslin Road	Byfield Road	15	1,025'	25'	2,850	\$163,875
			1.38	7,275'		20,900	\$1,201,750
Safety Repairs							
			PCI	Length	Width	Sq. Yds.	Total Cost
Drew Road	Pond Brook Road	Nickerson Road	21	0,270'	29'	1,200	\$34,500
High Rock Terrace	Dul De Sac	Rolling Lane	46	1,100'	29'	3,500	\$100,625
Newbrook Circle	Audubon Drive	Dul De Sac	32	0,750'	29'	2,400	\$69,000
Nickerson Road	Brookline Street	Dead End	35	0,750'	24'	2,000	\$57,500
Pond Brook Road	Harwich Road	Dead End	29	1,400'	30'	4,600	\$132,250
Rolling Lane	Audubon Drive	Brookline Street	41	0,660'	29'	2,200	\$63,250
Waban Park	Walnut Park	Waban Street	22	0,450'	26'	1,300	\$37,375
Waban Street	Pearl Street	Thornton Street	22	1,860'	24'	5,000	\$143,750
Winston Road	Littlefield Road	Dead End	9	1,050'	29'	3,400	\$97,750
Littlefield Road	Greenwood Street	Dead End	46	1,320'	26'	3,800	\$109,250
			1.82	9,610'		29,400	\$845,250
Concrete Panel Overlay							
			PCI	Length	Width	Sq. Yds.	Total Cost
Lowell Avenue	Washington Street	Walnut Street	29	1,650'	33'	6,000	\$1,200,000
			0.31	1,650'		6,000	\$1,200,000
Pavement Preservation							
			PCI	Length	Width	Sq. Yds.	Total Cost
Crack Seal				25,000'	30'	83,333	\$75,000
Fog Seal				8,000'	30'	26,667	\$100,000
Microsurfacing				13,000'	30'	43,333	\$200,000
Cape Seal				6,000'	30'	20,000	\$250,000
Bonded Wearing Course				12,000'	30'	40,000	\$650,000
			12.12	64,000'		213,333	\$1,275,000
TOTALS				22.22	117,305'		\$9,494,600

Questions?

**DEPARTMENT of PUBLIC WORKS
DPW OPERATIONS**

**Commissioner James McGonagle
Operations Director Shane Mark**

FLEET MANAGEMENT DPU, DPW (share with Parks)

Fleet Replacement Plan: Review coming up

'HIGHWAY' DIVISION (+- 300 miles roads)

ACCELERATED ROADS PROGRAM: Year 1 of ten: Road & Sidewalk Rehab./ Reconstruction

Heavy Road Maintenance procedures, Coordination with Public Utilities: Gas/ Electric

Street Design Guide (Engineering standards and protocols; Ordinance revisions)

MAINTENANCE, ONGOING: Street sweeping, Repairs

INTERSECTION IMPROVEMENTS and VILLAGE CENTER DESIGN

STREET LIGHTING (LED conversion 2014/15; Gas lamps remain) NOTE +-400K conduit repairs

PLAN for AN ACCESSIBLE NEWTON Coming in 2018

ADA Coordinator Jini Fairley

STREET DESIGN GUIDE: DRAFT March 2018 *with Planning Department*

WASTE "SUSTAINABLE MATERIALS" MANAGEMENT

Director Waneta Trabert

Curbside Operations, Recycling v. Trash

Hazardous waste, bulk waste, Curbside food waste pilot this spring

SNOW & ICE REMOVAL: **"Snow Plan"** (2016); Shoveling Ordinance (2017), *Fees TBD*

DPW/ DEPARTMENT OF PUBLIC UTILITIES

DPU Director Ted Jerdee

WATER: 5th year of 20 year water system Rehabilitation Plan

SEWER: 5th year of 10 year sewer system Rehabilitation Plan

Septic Elimination goal; Require point of sale service line inspections/ repair (2018)

STORMWATER:

2ND Year of 20+ year **Stormwater Infrastructure Improvement Plan (SIIP)**

Includes water quality improvement plan (in progress)

UTILITY GRANTS of LOCATION: Gas, Electric, Wireless

DPW/ Engineering

WIRELESS ATTACHMENTS TO POLES in the PUBLIC WAY

Peer review (2017), *(Set Fees, State Enabling, Design Guidelines, Ordinances by April)*

Discuss establishing a Utilities Commission

PUBLIC BUILDINGS DEPARTMENT:

Commissioner Josh Morse

Designer Selection & Design Review Committees (Charter provision/ Ordinances)

Design and Construction Guidelines for Sustainability 2017 (striving toward net zero)

SCHOOL REBUILDING PLAN: *Review/assess since purchasing Aquinas*

Projects underway: CABOT, LINCOLN-ELLIOT/ AQUINAS

FIRE STATIONS: 4 & 7 (2011) renovated; 3HQ (2017) & 10 (2015) new; two more to go.

POLICE HQ Feasibility/ site assessment study approved

DPW/ PARKS: Operations Centers @ Elliot, Crafts & Rumford

SENIOR CENTER, LIBRARY (Design review this spring), ARCHIVES, CITY HOUSING

ENERGY / SUSTAINABILITY

**Sustainability Director Ann Berwick
Energy Project Manager Bill Ferguson**

ENERGY PURCHASING – **Newton Power Choice**

CLEAN ENERGY: SOLAR Phase III *(Review this winter) ...*

Green Communities Municipal Energy Reduction Plan *(Review 2017 Report)*, Fleet plan, Zoning

Zoning Reform (Development Standards; Criterion #5; with ZAP/LU Planning – Coord.w/ Engineering)

CLIMATE ACTION PLAN *to be developed* by 2018 (+ several other departments)