

Memorandum



CITY OF DALLAS

DATE November 9, 2018

TO Honorable Members of the Mobility Solutions, Infrastructure and Sustainability Committee

SUBJECT **Infrastructure Management Program**

On Monday, November 12, 2018, Robert Perez, Interim Director of the Department of Public Works, will brief the Mobility Solutions, Infrastructure and Sustainability Committee on the Five-Year Infrastructure Management Plan. The briefing materials are attached for your review.

Please feel free to contact me if you have any questions or concerns.

A handwritten signature in blue ink, appearing to read 'Majed A. Al-Ghafry'.

Majed A. Al-Ghafry, P.E.
Assistant City Manager

[Attachment]

c: Honorable Mayor and Members of the City Council
T.C. Broadnax, City Manager
Chris Caso, City Attorney (I)
Carol A. Smith, City Auditor (I)
Biliera Johnson, City Secretary
Preston Robinson, Administrative Judge

Kimberly Bizer Tolbert, Chief of Staff to the City Manager
Jon Fortune, Assistant City Manager
Joey Zapata, Assistant City Manager
Nadia Chandler Hardy, Assistant City Manager and Chief Resilience Officer
M. Elizabeth Reich, Chief Financial Officer
Directors and Assistant Directors

Infrastructure Management Program

**Mobility Solutions,
Infrastructure and
Sustainability Committee
November 12, 2018**

**Robert M. Perez, Interim Director
Department of Public Works
City of Dallas**



Purpose of Briefing

- Provide an overview of the FY 2019-2023 Infrastructure Management Program (IMP)
- Review of the City's Pavement Condition Index (PCI) Ratings
- Present program information on:
 - Streets
 - Sidewalks
 - Alleys
- Future Actions

FY 2019-2023 IMP Overview

- City of Dallas' Public Works Department has developed a 5-Year Infrastructure Management Program (IMP)
 - Lists the streets, alleys, and sidewalks programmed for maintenance outside of the Bond Program
 - Will be utilized for program/project planning, budgeting, and coordination
 - Provides pavement condition assessment data

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FY 2019-2023 IMP Overview

- The IMP will be developed on an annual basis based upon infrastructure assessments and funding availability

<i>Proposed Five-Year IMP Program Budgets</i>						
<i>Program</i>	<i>FY 19</i>	<i>FY 20</i>	<i>FY 21</i>	<i>FY 22</i>	<i>FY 23</i>	<i>Total</i>
Streets	\$60.2M	\$50.8M	\$50.5M	\$50.5M	\$50.5M	\$262.5M
Sidewalks	\$2.2M	\$2.2M	\$2.2M	\$2.2M	\$2.2M	\$11.0M
Alleys	\$1.6M	\$4.0M	\$4.0M	\$4.0M	\$4.0M	\$17.6M
Total	\$64.0M	\$57.0M	\$56.7M	\$56.7M	\$56.7M	\$291.1M

FY 2019-2023 IMP Overview

- Over the next five years, \$531.0M of street reconstruction and maintenance is planned
- \$60.2M of maintenance/preservation projects in FY 2019

<i>Funding for Street Improvements/Maintenance - FY 2019-2023</i>						
<i>Funding Source</i>	<i>FY 19</i>	<i>FY 20</i>	<i>FY 21</i>	<i>FY 22</i>	<i>FY 23</i>	<i>Total</i>
Bonds*	\$46.5M	\$106.2M	\$56.7M	\$9.1M	\$50.0M**	\$268.5M
Maint.	\$60.2M	\$50.8M	\$50.5M	\$50.5M	\$50.5M	\$262.5M
Total	\$106.7M	\$157.0M	\$107.2M	\$59.6M	\$100.5M	\$531.0M

*Street Reconstruction and Resurfacing in 2017 Bond

**Assumes passage of new bond in 2020

FY 2019-2023 IMP Overview

- Breakdown of FY 2017 Bond Proposition A: Streets and Transportation

Resurfacing	\$145.0M ^a
Reconstruction	\$108.7M ^{a,b}
Projects with Matching Funds	\$ 55.2M ^{a,d}
Misc. Projects	\$ 50.7M
Traffic Signals	\$ 38.5M
Alley Reconstruction	\$ 38.4M
Complete Street	\$ 30.7M
Thoroughfares	\$ 26.9M
Street, Alley Sidewalk Petition	\$ 13.5M ^{a,c}
Target Neighborhood	\$ 11.6M
Sidewalk	\$ 7.2M
Streetscape	\$ 5.1M
Street Lighting	\$ 2.6M
Total Proposition A	\$534.0M

a - Used for Modeling in IMP; b - Construction costs only used in IMP development, c - \$12.5 allocated for Street Petition Projects, d - portion of funds used in IMP development

Pavement Condition Index (PCI) Ratings

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Pavement Condition Index (PCI) Ratings

- As part of the City's Pavement Management Strategy, each street segment is assigned a Pavement Condition Index (PCI) rating of 0-100
 - Score of "0" is a completely failed street and "100" would be a brand new street
- PCI data is obtained through field assessment and data modeling (consultant)
- 1/4 of the City is updated through field assessment annually

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Pavement Condition Index (PCI) Ratings

- Street conditions have been reported in Percent Satisfaction (A-C Streets; 77%)
- Moving forward, staff will be reporting the average PCI as a more comprehensive assessment
- Average PCI of Dallas' 11,775 miles of streets is 65.4

<i>City of Dallas PCI Ranges</i>	
Letter	PCI Range
A	100-85
B	70-84.9
C	55-69.9
D	40-54.9
E	0-39.9

Pavement Condition Index (PCI) Ratings

- District street condition ratings
- Takes into account all work (bond and maintenance) completed in FY 2018

<i>Street Lane Miles and Citywide and District Ratings - FY18</i>			
City	Lane Miles	Percent Satisfaction	Average PCI
1	751	69%	61.0
2	938	71%	61.8
3	992	88%	71.3
4	922	72%	62.2
5	709	73%	63.5
6	1,071	81%	66.4
7	874	77%	66.0
8	877	80%	70.0
9	909	77%	63.9
10	734	86%	69.0
11	622	82%	66.3
12	626	90%	72.4
13	1,010	77%	64.3
14	740	60%	58.2
Total	11,775	77%	65.4

Program Information – Streets

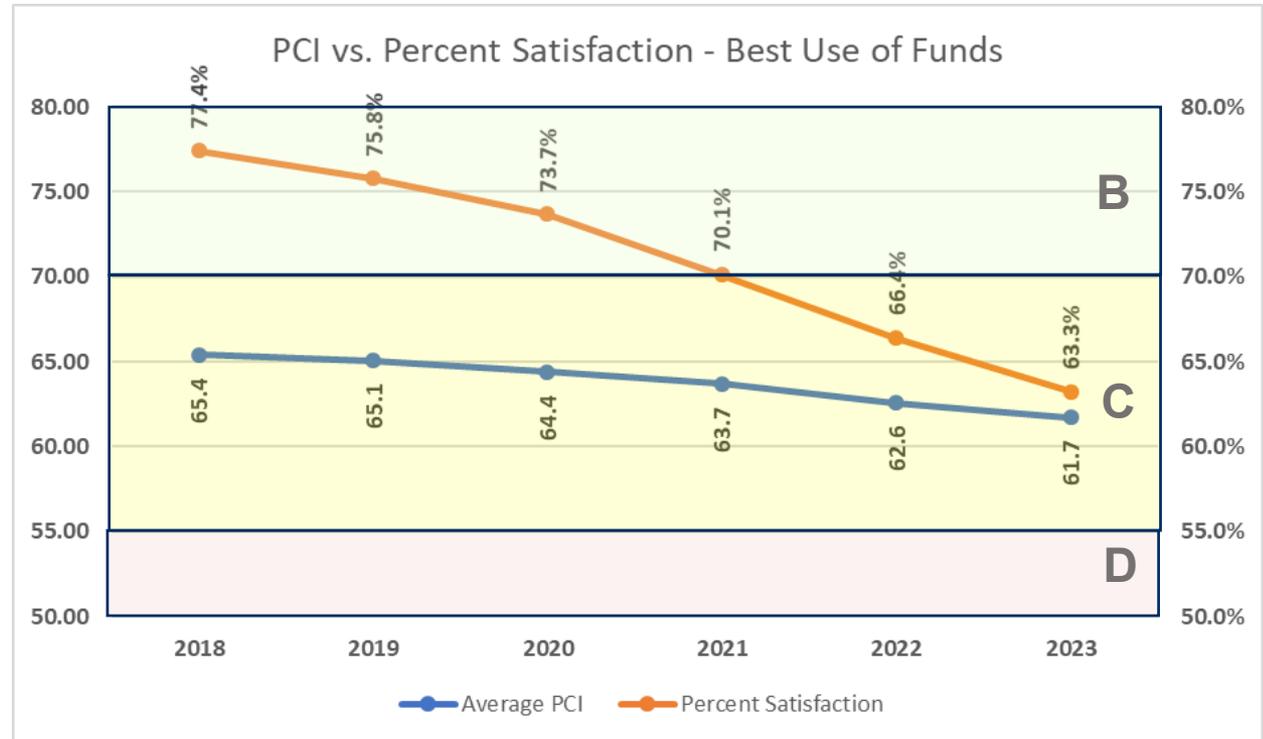
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Program Information - Streets

- Three approaches to Pavement Management
 - Maintain current programmed repairs vs. “Best Use” model
 - Achieve Zero Degradation
 - Increase PCI 1 point per year over the next 10 years to achieve average PCI of 75

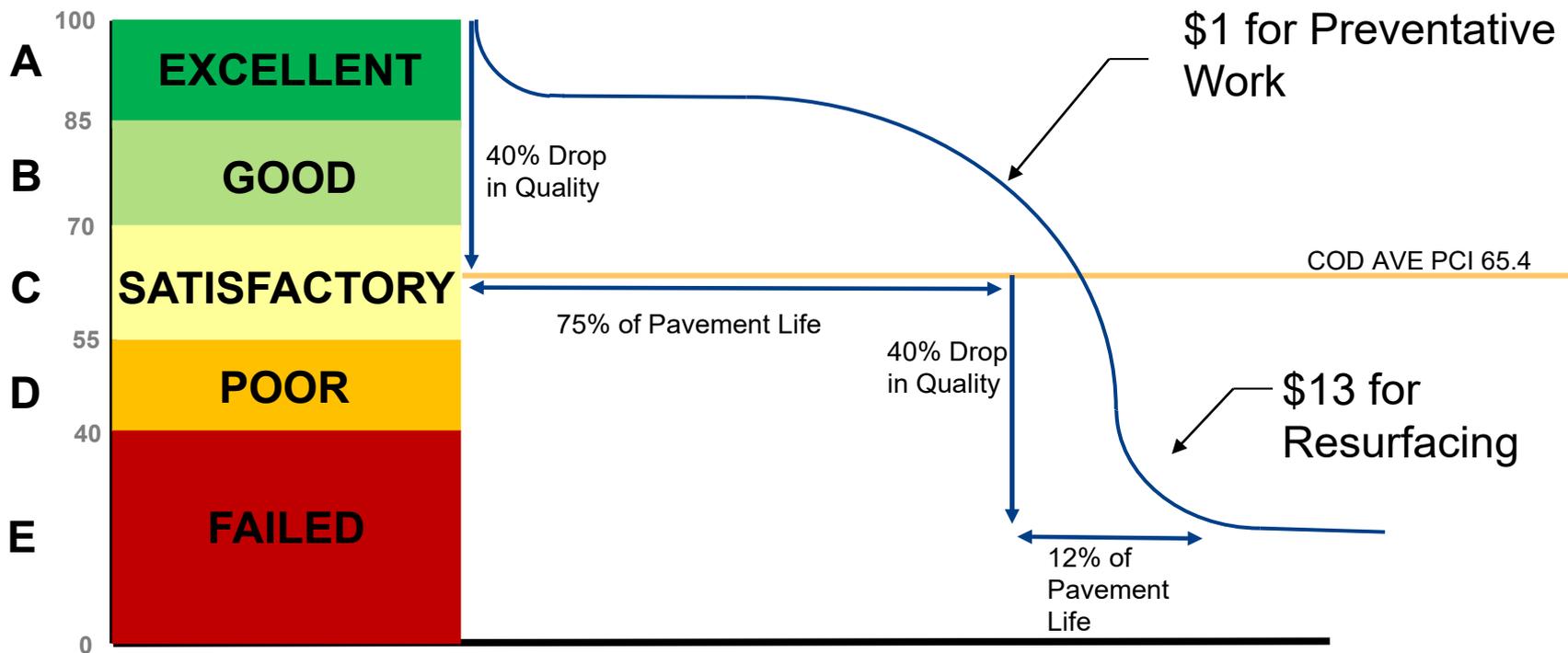
Program Information - Streets

- Maintain current budget and programmed repairs vs. “Best Use” model



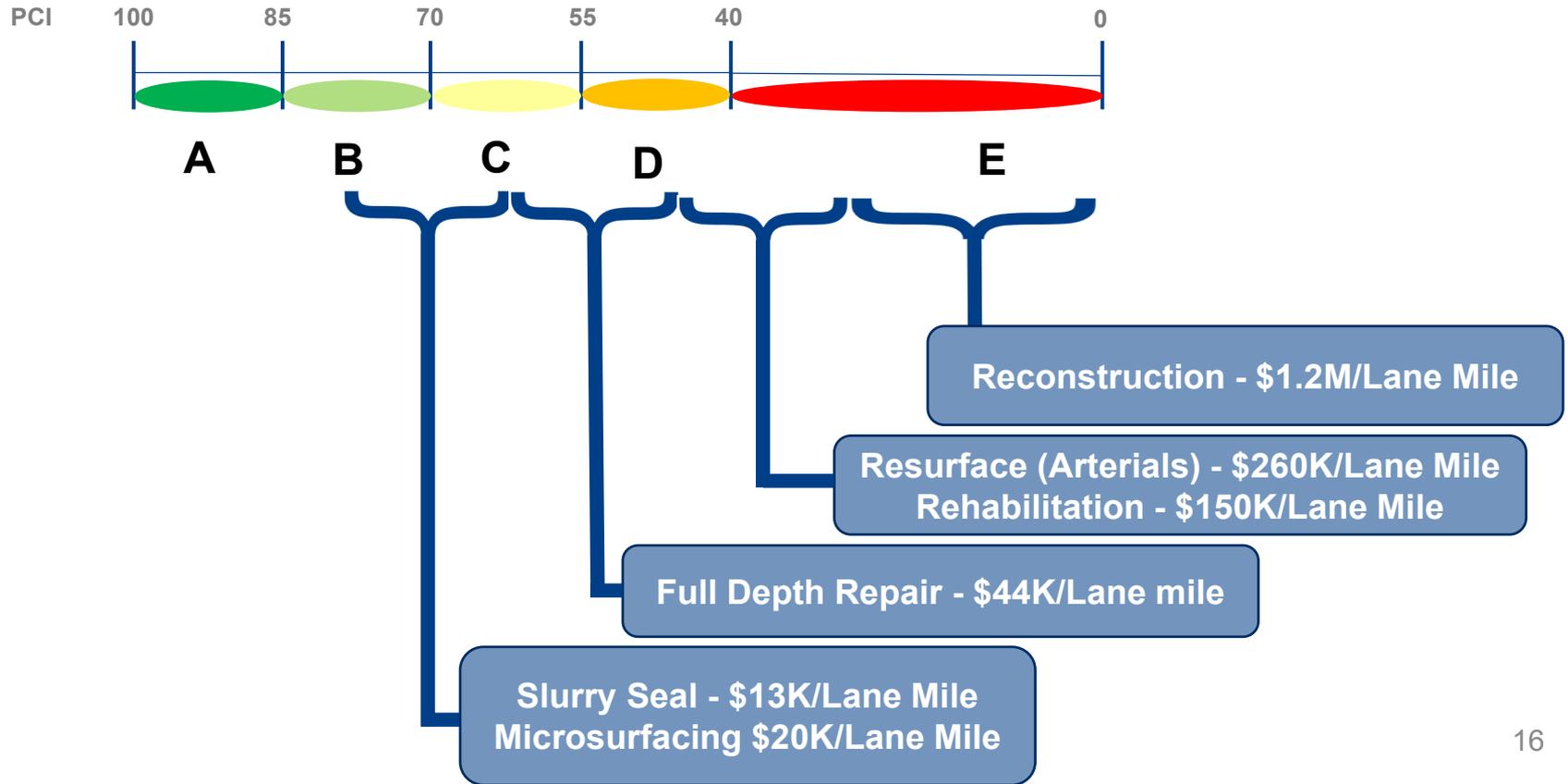
Program Information - Streets

Maintenance Cost Comparison



Program Information - Streets

Maintenance Cost Comparison



Program Information - Streets

- Zero Degradation using ‘Best Use of Funds’ approach
- Using this approach:
 - Additional funding needed beginning in FY 2021
 - Avg. annual budget need: \$269.4M

Zero Degradation Budget Needs (in millions)				
Year	FY	Budget Needed	Projected Budget	Annual Shortage
1	19	\$103.0	\$106.7	\$3.20
2	20	\$149.0	\$157.0	\$8.40
3	21	\$201.0	\$107.2	(\$94.00)
4	22	\$290.0	\$59.6	(\$229.90)
5	23	\$281.0	\$100.5	(\$180.10)
6	24	\$352.0	\$100.5	(\$251.60)
7	25	\$353.0	\$100.5	(\$252.30)
8	26	\$320.0	\$100.5	(\$219.50)
9	27	\$321.0	\$100.5	(\$220.90)
10	28	\$324.0	\$100.5	(\$223.60)
Average		\$269.4	\$103.4	(\$166.0)
Total		\$2,694	\$1,033.5	(\$1,660.0)

Program Information - Streets

- Increase PCI by 1 point using Best Use of Funds approach
- Using this approach:
 - Additional funding needed beginning in FY 2019
 - Avg. annual budget need: \$351.0M

Zero Degradation Budget Needs <i>(in millions)</i>				
<i>Year</i>	<i>FY</i>	<i>Budget Needed</i>	<i>Projected Budget</i>	<i>Annual Shortage</i>
1	19	\$132.3	\$106.7	(\$25.6)
2	20	\$199.1	\$157.0	(\$42.1)
3	21	\$310.5	\$107.2	(\$203.3)
4	22	\$367.5	\$59.6	(\$307.9)
5	23	\$460.4	\$100.5	(\$359.9)
6	24	\$429.5	\$100.5	(\$329.0)
7	25	\$406.8	\$100.5	(\$306.3)
8	26	\$402.1	\$100.5	(\$301.6)
9	27	\$401.7	\$100.5	(\$301.2)
10	28	\$400.4	\$100.5	(\$299.9)
<i>Average</i>		<i>\$351.0</i>	<i>\$103.4</i>	<i>(\$247.7)</i>
<i>Total</i>		<i>\$3,510.3</i>	<i>\$1,033.5</i>	<i>(\$2,476.7)</i>

Program Information – Sidewalks

Program Information - Sidewalks

<i>Proposed Five-Year IMP Sidewalk Maintenance Program Budgets</i>						
<i>Program</i>	<i>FY 19</i>	<i>FY 20</i>	<i>FY 21</i>	<i>FY 22</i>	<i>FY 23</i>	<i>Total</i>
Sidewalks	\$2.2M	\$2.2M	\$2.2M	\$2.2M	\$2.2M	\$11.0M
Sidewalk Miles*	5	5	5	5	5	25

- IMP has programmed \$11.0M for 49 sidewalk projects over the next five years
- Assumes an annual program budget of \$2.2M (only FY 2019 funded)

Program Information - Sidewalks

- IMP project focus on smaller scale projects to fill-in gaps of missing sidewalk and broken panel
 - Projects were identified by former City Safety Advisory Committee, Needs Inventory, and sidewalk condition
- 5,079 linear miles of sidewalks adjacent to its improved and unimproved roads
- 670 miles, or 13.2% of the City's sidewalks, are in unsatisfactory condition

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Program Information – Alleys

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Program Information - Alleys

- The proposed IMP includes \$17.6M for 544 alley maintenance projects over the next five years
- Projects in the Five-Year IMP would provide maintenance to a total of 116 miles, or 8.3%, of the City's 1,400 miles of alleys

<i>Proposed Five-Year IMP Alley Maintenance Program Budgets</i>						
<i>Program</i>	<i>FY 19</i>	<i>FY 20</i>	<i>FY 21</i>	<i>FY 22</i>	<i>FY 23</i>	<i>Total</i>
Improved Alleys Funding/Miles	-	\$2.0M/16 miles	\$2.0M/16 miles	\$2.0M/16 miles	\$2.0M/16 miles	\$8.0M/64 miles
Unimproved Alleys Funding/Miles	\$1.6M/8 miles	\$2.0M/11 miles	\$2.0M/11 miles	\$2.0M/11 miles	\$2.0M/11 miles	\$9.6M/52 miles
Total	\$1.6M/8 miles	\$4.0M/27 miles	\$4.0M/27miles	\$4.0M/27 miles	\$4.0M/27miles	\$17.6M/116miles

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Program Information - Alleys

- Unimproved Alley Program
 - \$1.6M programmed for 80 projects
 - Treatments would include brush clearing, remove and replace 6"-8" of base material, install 1" of rock, and address any known drainage issues
- Ranking of the alleys based on the following criteria:
 - Gravel Alley
 - Sanitation – currently used by Sanitation for trash pick up
 - Alleys in "C" condition

Program Information - Alleys

- Improved Alley Program
 - \$2M programmed for 16 miles of partial reconstruction (only replacement of damaged panels) of concrete alleys
- Ranking of the alleys based on the following criteria:
 - Sanitation – currently used by Sanitation for trash pick up
 - Alleys in “C” condition
 - Partial repairs make up less than 25% of entire alley
- Program would begin in FY 2020 if funded

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Future Actions

Future Actions

- Evaluate including additional City assets such as traffic signals, sidewalks, bike lanes, stormwater facilities, striping, etc.
- Proposed modification to Pavement Design Manual to include asphalt street sections
- Full City Council briefing in early 2019

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