

Memorandum



CITY OF DALLAS

DATE May 21, 2021

TO Honorable Mayor and City Council Members

SUBJECT **FY 2021-2025 Five-Year Infrastructure Management Program (IMP) Update**

Background

The purpose of this memorandum is to provide the City Council with an overview of the upcoming Five-Year Infrastructure Management Program (IMP), scheduled for City Council Briefing on June 2, 2021, and to provide follow-up on some of the comments shared at the Transportation and Infrastructure Committee meeting held on May 17, 2021.

The City's Five-Year IMP was created in FY 2019 to establish a rolling five-year forecast of infrastructure maintenance projects (outside of bond programs) for streets, sidewalks, alleys, and bridges.

Streets and Pavement Degradation

As Pavement Condition Index (PCI) rating data is used to "grade" each street segment with a range from 0-100, with "0" being a failed street and "100" representing a brand-new street,

City of Dallas PCI Ranges		
Rating	Ranking	PCI Range
A	Excellent	100-85
B	Good	70-84.9
C	Fair	55-69.9
D	Poor	40-54.9
E	Failed	0-39.9

IMP preservation or maintenance projects are targeted on streets with PCI ratings of A-C or PCIs of 55-100. Streets with PCI ratings of D and E, requiring more expensive resurfacing or reconstruction treatments are typically funded out of the City's bond programs.

The FY 2019 establishment of the IMP included analysis on the conditions of the City's street network to include a \$269.4M average annual budget to maintain zero degradation (currently modeled at \$347.0M) and it was determined that \$2.3B was needed to resurface and reconstruct all streets in "D" and "E" conditions. Since FY 2019, Public Works has developed a long-range plan to address street deterioration, procured state-of-the-art pavement modeling software and acquired the services of a pavement management consultant to determine the accuracy and sensitivity of the pavement performance and future budgetary needs. As a result, staff is currently working on the Implementation Phase of the new and enhanced paving model, which gives more objective in-depth analysis of the state of the City's pavement.

Based upon the preliminary results of the new pavement model, the City's overall PCI ratings has been adjusted showing a decrease of approximately 4 points that made the new citywide PCI Avg. to 59.4. Also, the budget needed to maintain or increase PCI levels was significantly reduced due to in-depth evaluation of street pavement condition and appropriate treatment applications to maintain or enhance the overall PCI for the City.

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Based on the City’s current budget for street pavement activities, it results in an average - 0.2 PCI annual change over next ten years. However, the new model reveals that to maintain the status quo or improve the street conditions by approximately 1 point, the estimated annual needed budget would be \$100M and \$150M, respectively. The following tables provide a ten-year forecast of the budgets needed, lane miles maintained or improved, and the resulting PCIs under those models:

Current Funding Model										
	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
Budget	\$58,752,370	\$61,733,526	\$61,718,335	\$111,702,607	\$111,511,551	\$111,619,882	\$111,519,956	\$111,412,762	\$111,560,522	\$104,737,259
Lane Miles Maintained or Improved	726.0	977.4	757.4	693.1	640.2	643.9	617.1	587.8	508.8	425.7
Overall PCI	59.4	59.4	59.0	58.9	58.6	58.4	58.2	58.1	57.9	57.6
Zero Degradation Funding Model										
	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
Budget Needed	\$58,752,370	\$99,476,121	\$99,943,240	\$99,428,127	\$99,982,815	\$99,587,008	\$99,534,107	\$99,339,359	\$99,474,107	\$92,548,476
Lane Miles Maintained or Improved	726.0	1038.2	884.1	763.8	737.8	740.6	712.8	678.9	587.9	507.8
Overall PCI	59.4	60.2	60.5	60.5	60.5	60.5	60.5	60.6	60.7	60.6
Pavement Rating Increase Funding Model										
	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
Budget Needed	\$58,752,370	\$149,612,960	\$148,768,606	\$148,975,365	\$149,283,073	\$148,923,293	\$148,708,435	\$148,888,769	\$149,436,018	\$145,471,793
Lane Miles Maintained or Improved	726.0	1204.2	1053.4	934.1	908.1	905.3	883.6	835.0	752.9	691.5
Overall PCI	59.4	60.9	62.0	62.6	63.6	64.9	66.3	67.5	69.0	70.2

The following factors contributed to the main differences in the pavement degradation or improvement costs:

- Recalculated PCIs included in new, enhanced decision tree models (now 18 decision trees versus 3 previously),
- New decision trees include varying costs for in-house vs. contractual prices,
- New PCI models allow for resurfacing or rehabilitation of streets previously shown as needing reconstruction,
- Models assume a new bond program in FY 2024,

While the revised pavement degradation models will be assumed in future versions of the IMP, the FY 2021 IMP includes 1,024 street projects and a budget of \$62.1M (1,180 projects and a total budget of \$111.7M with bond funds). Public Works is approximately 40% completed with its annual program but the highest amount of work will be completed in drier, warmer summer months. This year’s street projects also include a new In-House Onyx Pavement Preservation Program set to start in June 2021 (programmed to complete 114 lane miles and save \$600K in FY 2021).

Sidewalks and Sidewalk Masterplan

Along with the Street Maintenance and Preservation projects in the FY 2021-2025 IMP, the Public Works team is on track to complete the Sidewalk Master Plan in June 2021. The Sidewalk Master Plan, which is a collaborative effort between City Council-appointed task force members and multiple City departments, prioritizes sidewalk needs and develops a list of projects to be included in future versions of the IMP.

As identified in the Sidewalk Master Plan’s development, the City of Dallas has 4,535 miles of sidewalk with a maintenance cost of \$976.5M and there are 2,086 miles of missing sidewalks that will cost the City \$1.0B to build, which result in a \$2.0B sidewalk need. The FY 2021 IMP includes \$10.7M for sidewalk projects (the sidewalk program has a base

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budget of \$2.2M). There are 36 identified projects (17 are complete) in the FY 2021 IMP and additional projects will be added to the FY 2021 IMP upon completion of the Sidewalk Master Plan.

Unimproved Alley Program

Along with the annual Sidewalk Program, the FY 2021 IMP includes \$1.6M for 108 unimproved alley segments making up over 11.4 alley miles and Public Works is completed with approximately 68% of those projects. Unimproved Alley Program project selection is based on:

- Sanitation alley routes,
- Gravel alleys,
- Alley conditions in B-D ranges,
- No obstructions such as utility poles or gas meters.

Bridge Maintenance

In addition to the Unimproved Alley Program, the FY 2021 IMP includes \$1M for the Bridge Maintenance Program and has funded projects including the Lawther Bridge and emergency repairs on the Belt Line Road Bridge at Goff Branch. As FY 2020 was the first year of the Bridge Maintenance Program, Public Works is currently working with Wiss, Janney, Elstner Associates as a consultant to prioritize bridge maintenance projects for FY 2022 and beyond.

Given this overview and follow-up information, the Five-Year IMP update will be presented during the City Council Briefing on June 2, 2021. However, should you have questions before the briefing, please feel free to contact me or Dr. Robert M. Perez, Director of Public Works.



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