



March 6, 2026

Owen Wartella, PE, CPESC, LEED
City Engineer
85 George P. Hasset Drive
Medford, MA 02155

Subject: **FY2026 Pavement and Sidewalk Conditions Report**

Dear Mr. Wartella,

Please find City of Medford's FY2026 Pavement, Sidewalk and Ramp Management Summary enclosed. This memorandum is intended to summarize Stantec's most recent Asset Management System (AMS) update. Below are some key takeaways.

1. Since Medford's AMS was implemented in 2021, Stantec provided an update to maintaining its AMS for pavements and sidewalks to monitor several important performance metrics.
2. In December 2025, Stantec re-surveyed pavements in the southerly and southeasterly parts of the City and field surveyed previous city-wide pavement and sidewalk repair work outside these limits. Stantec updated Pavement Condition Index (PCI), Sidewalk Condition Index (SCI) and curb ramp inspection records.
3. Today's average PCI, which is a measure of pavement surface condition, in Medford is 49.7, which increased from the 2023's value of 48.5. The current City-wide pavement backlog is approximately \$67.3 million dollars, which is a decrease from the 2023's backlog of \$67.5 million dollars.
4. We have provided four (4) different pavement budget scenarios projected over the next five to ten years for your consideration:
 - i. \$0/year for five years – to illustrate the impacts of pavement degradation and not funding infrastructure
 - ii. \$3.5M/year for five years – PCI increases to 54.0 and backlog increases to \$91.0M in 2030
 - iii. \$6.0M/year for five years – PCI increases to 63.1 and backlog increases to \$72.4M in 2030
 - iv. \$9.5M/year for five years, then \$3.0M/year for five years – PCI increases to 80.6 and backlog decreases to \$38.5M in 2035
5. Today's average SCI, which is a measure of sidewalk surface condition, in Medford is 78.2, which increased from the 2024's value of 76.8. The current City-wide sidewalk backlog is approximately \$28.5 million dollars, which is a decrease from the 2024's backlog of \$29.9 million dollars. It should be noted that curb ramp ADA compliance increased by 4% since 2024.
6. Since 2021 Medford has been slowly improving their average city-wide PCI and SCI, indicating DPW's pavement management approach is effective, yet slow to reach their desired city-wide condition goals. While the City has kept up with repaving roadways and could easily do more crack sealing and pavement patching, there remains not only a base rehabilitation backlog that goes up with inflation, but even a larger costly structural improvement backlog on the verge of dropping into the more expensive repair category.
7. At minimum, the City of Medford should spend \$6.0M in 2026 on its pavement network to counter the large mileage of deterioration and seriously consider a front-loaded spending strategy, in which \$9.5M per year is spent in the first five years of a 10-year program, followed by return to historical funding levels of \$3.0M per year over the following five years.
8. The City should spend a minimum of \$2.5M in 2026 on its sidewalk network, continuing neighborhood sidewalk improvements, creating more accessible connections and ADA compliant crossings.

If you have any questions or comments pertaining to this report, please don't hesitate to contact me.

STANTEC CONSULTING SERVICES INC.

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FY 2026

Pavement Management Summary



Medford Road Condition Survey



Legend

Inspection Year

- 2020
- 2023
- 2025



Prepared for:
City of Medford
Department of
Public Works

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Existing Conditions

Medford's roadway network is comprised of 94.2 public road miles.

Since implementing its Pavement Management System (PMS) in 2021, Stantec has been working with the City in providing new pavement condition surveys and updating its Pavement Management System. In December of 2025, Stantec completed a re-survey of approximately 39% (36.7 miles) of the City's public roadway network. For this surveyed area Stantec determined today's average road network Pavement Condition Index (PCI), developed a roadway repair backlog, and modeled four (4) future funding scenarios based on today's estimated construction costs.

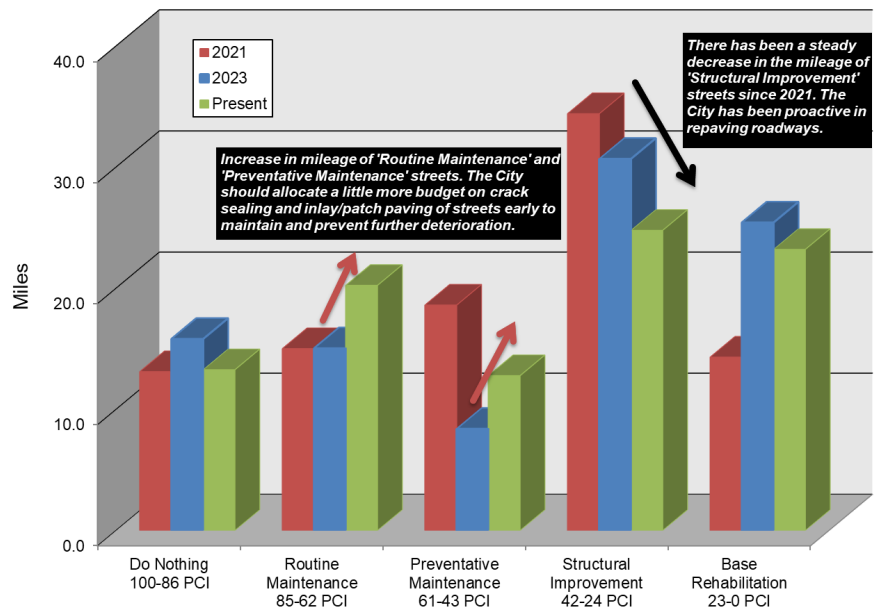
Stantec identified 572 public-accepted pavement segments and determined the City's average road network PCI in December 2025 was a 49.7, placing Medford's typical road conditions in the middle of the Preventative Maintenance treatment band (PCI range from 43 to 61), as seen to the right.



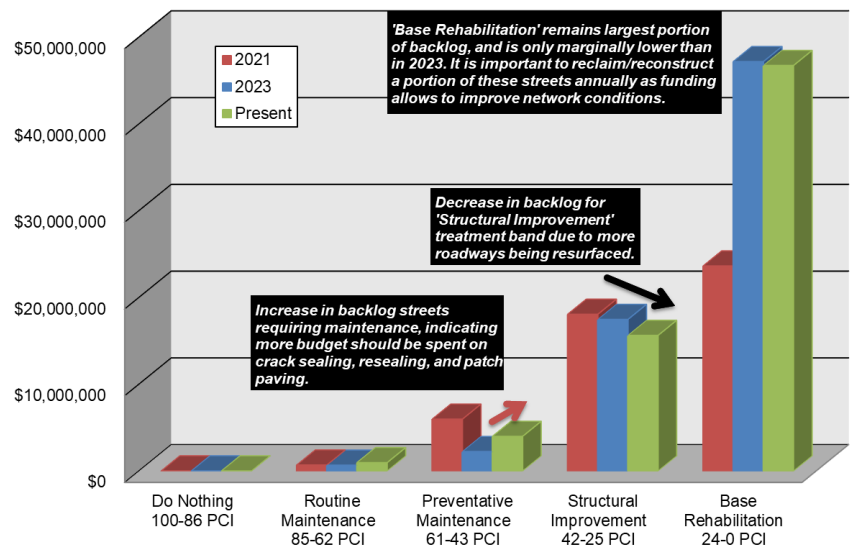
49.7 AVERAGE PAVEMENT CONDITION INDEX (PCI)

Dexter St from City Limit to Joseph St

Current PCI Distribution in Miles By Treatment Band



Current Backlog Distribution By Treatment Dollars



Current Backlog of Outstanding Repairs (\$67,295,066)

The backlog is defined as the cost of repairing all the roads within one year and bringing the average PCI to a near perfect 100. Backlog is a "snapshot" or relative measure of outstanding repair work. The backlog not only represents how far behind Medford's roadway network is in terms of its present physical condition, but it's cost value also serves as a benchmark to measure the impact of various funding scenarios. The current backlog offers a basis for comparison to future and/or past year's backlog(s). Backlog dollars account for the pavement structure only; they do not include related repair costs for drainage, sidewalk, curbing, signals, or signs. Medford's backlog as of December 2025 is \$67,295,066. The figure to the right summarizes the backlog repair costs by PCI treatment bands for the last five years.



Budget Analysis

Using the City's pavement management data, Stantec modeled four, five-year future funding scenarios

The analysis software of the PMS is where financial determinations and projections are made. Consideration is given to the required budget, by repair type, based on previously supplied information from meetings with DPW and Stantec, for overall desired roadway network conditions. Various scenarios were analyzed to measure the effects of alternative funding levels and to determine the funding needed to avoid deteriorating pavement conditions. Today's backlog cost and future funding scenarios are based on Medford's current unit bid prices for roadway construction.

Using the City's pavement management software, Stantec modeled three (3) five-year future funding scenarios, and one (1) 10-year future funding scenario:

1. \$0 per year for 5 years
2. \$3,500,000 per year for 5 years
3. \$6,000,000 per year for 5 years
4. \$9,500,000 per year for first 5 years, then \$3,000,000 for next 5 years, for a total of 10 years

Each scenario, as depicted in the line charts on the right, results in a projected average network PCI and backlog. All scenarios incorporate a 4.0% annual inflation rate. Therefore, where the annual road appropriation appears to remain level, it actually represents a net budget decrease due to the impact of inflation.

The five-year \$0 per year scenario represents a worst-case event, as seen by the blue line, that shows the backlog increasing significantly to \$130,704,798 while the network average PCI dramatically decreases to 36.1, in the year 2030. This scenario sees the network drop from "fair" to "poor" condition, while creating an unsustainable future backlog.

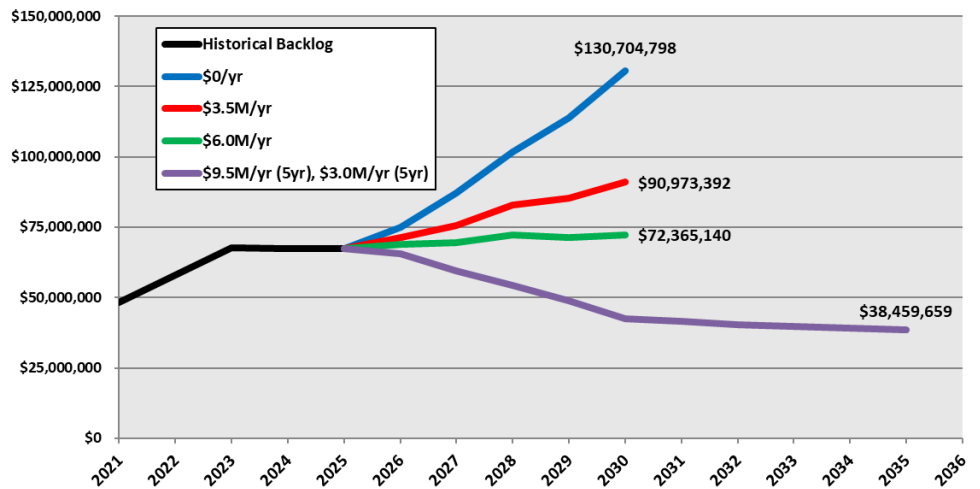
An equilibrium funding scenario was analyzed. This five-year \$3,500,000 per year scenario, as seen by the red line, shows the backlog increasing to \$90,973,392 while the network average PCI increases to 54.0, in the year 2030. This scenario maintains the network at "fair" condition, while increasing the future backlog.

Next, a five-year \$6,000,000 per year scenario was evaluated as the minimum funding required to stay the course of

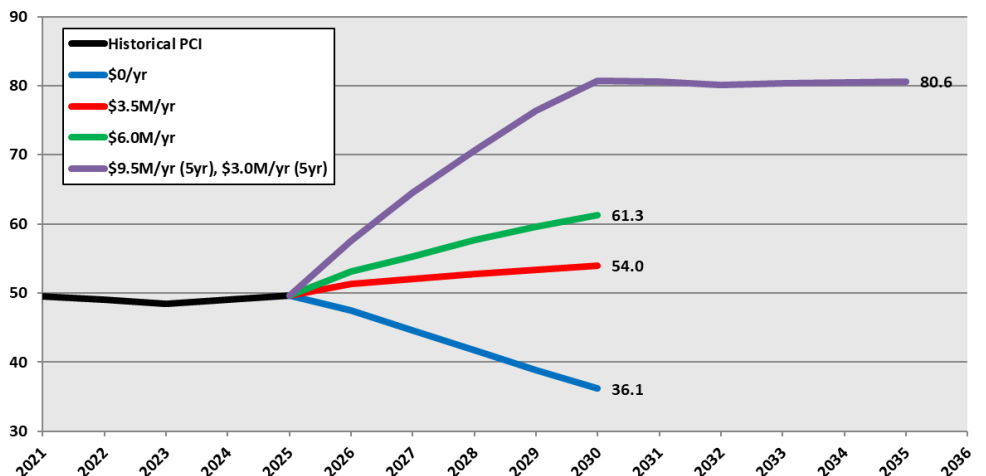
improving city-wide conditions and reducing the backlog to a more sustainable level for the future. As shown by the green line, the backlog slightly increases to \$72,365,140 and the network average PCI increases to 63.1, in the year 2030. This budget nearly brings the network to a "good" condition.

Finally, a front-loaded 10-year scenario was evaluated. Over the course of 10 years, this scenario looks to invest heavily at a rate of \$9,500,000 per year for the first five years to aggressively improve roadways, then decrease funding to \$3,000,000 per year for the next five years to maintain conditions. As seen by the purple line, the backlog decreases dramatically to \$38,459,659, and the PCI increases substantially to 80.6 by the year 2035. This budget brings the network to "good" conditions at five years and maintains those conditions throughout the following five years.

Future Backlog Projection



Future PCI Projection





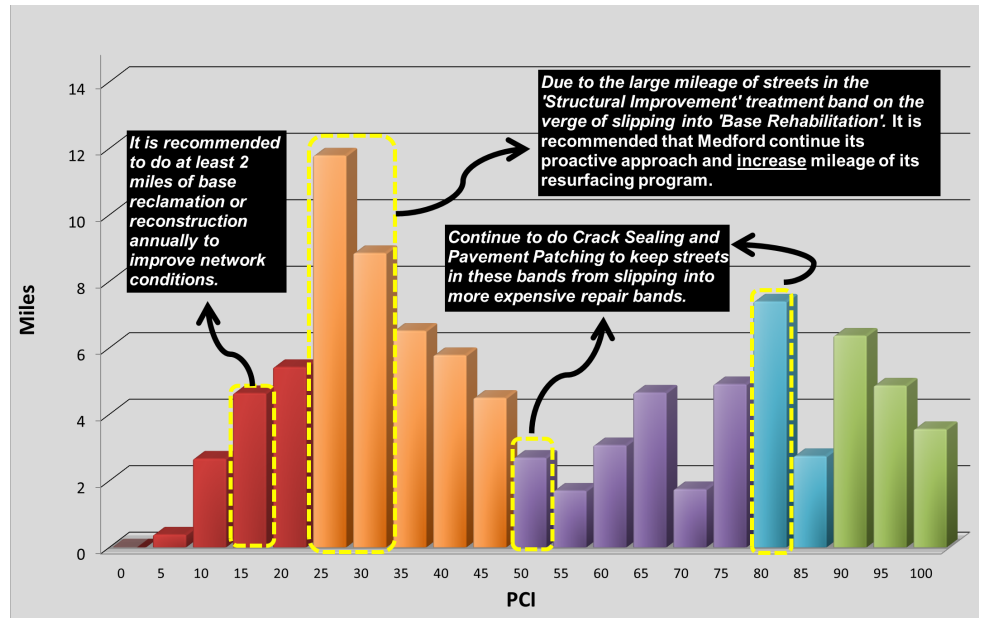
Concluding Remarks

Over the past several years, the City of Medford has maintained relatively stable average roadway conditions, reflecting a continued shift toward a more proactive pavement management strategy. While the City currently allocates funding through a balanced mix of preservation and capital repair projects, substantially increased investment will be necessary to sustain existing conditions and improve overall citywide pavement performance. Previous studies have demonstrated that communities with higher average Pavement Condition Index (PCI) values typically experience lower long-term annual roadway repair costs.

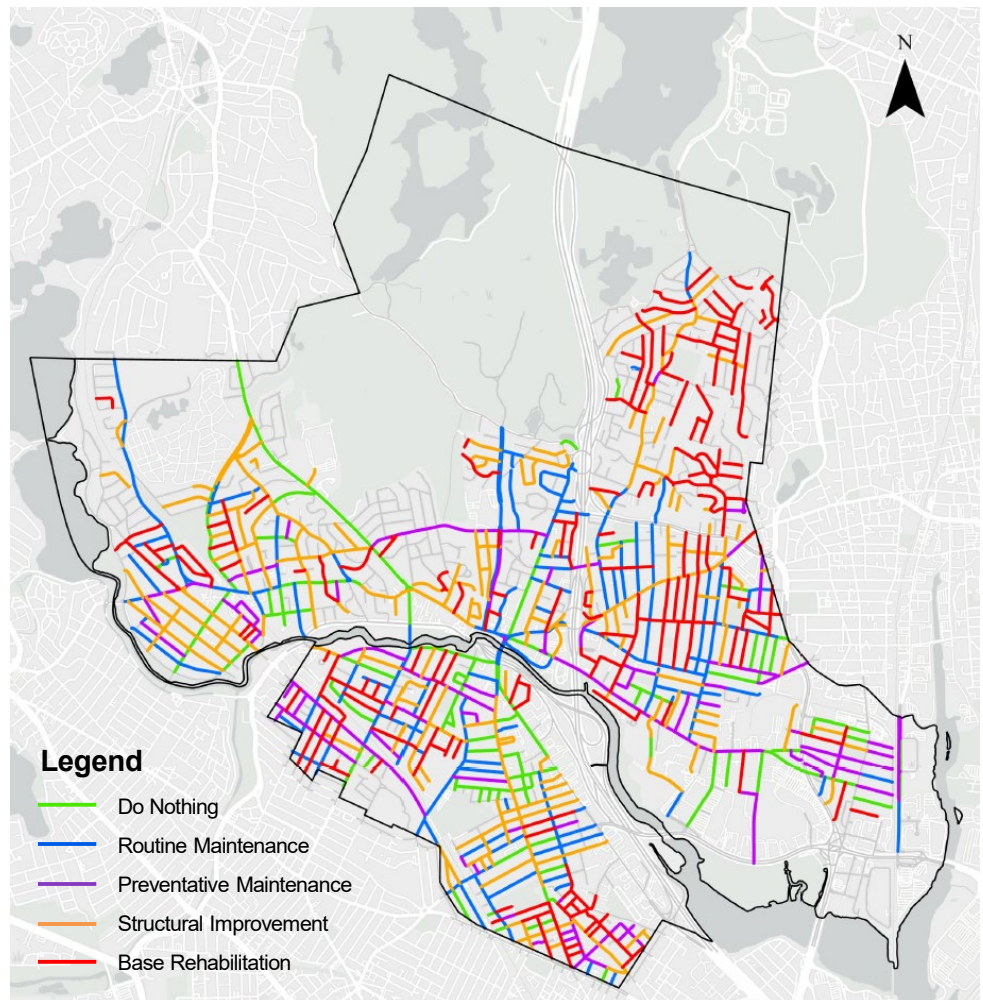
Since the inception of Medford’s pavement management program, the City’s average PCI has increased by 1.2 points, and the overall roadway backlog has remained relatively stable. However, the PCI distribution indicates a high proportion of roadway mileage within the “Structural Improvement” PCI range, which is trending toward more costly repair category. Additionally, more than two-thirds of the City’s current roadway backlog, measured by total dollar value, falls within the “Base Rehabilitation” category. These signs underscore the need for more aggressive funding and programming of capital projects to prevent further deterioration.

To address existing deficiencies and near-term needs, it is recommended that the City implement a consistent annual pavement management program with a minimum investment of \$6.0 million per year over the next three years. The City should also consider an early, front-loaded funding strategy, in which a larger investment of \$9.5 million per year is made during the first five years of a ten-year program, followed by a return to historical funding levels of \$3.0 million per year over the remaining five years. This approach would help reduce the backlog more effectively while improving long-term pavement performance and cost benefit.

PCI Histogram



2025 PCI Treatment Conditions

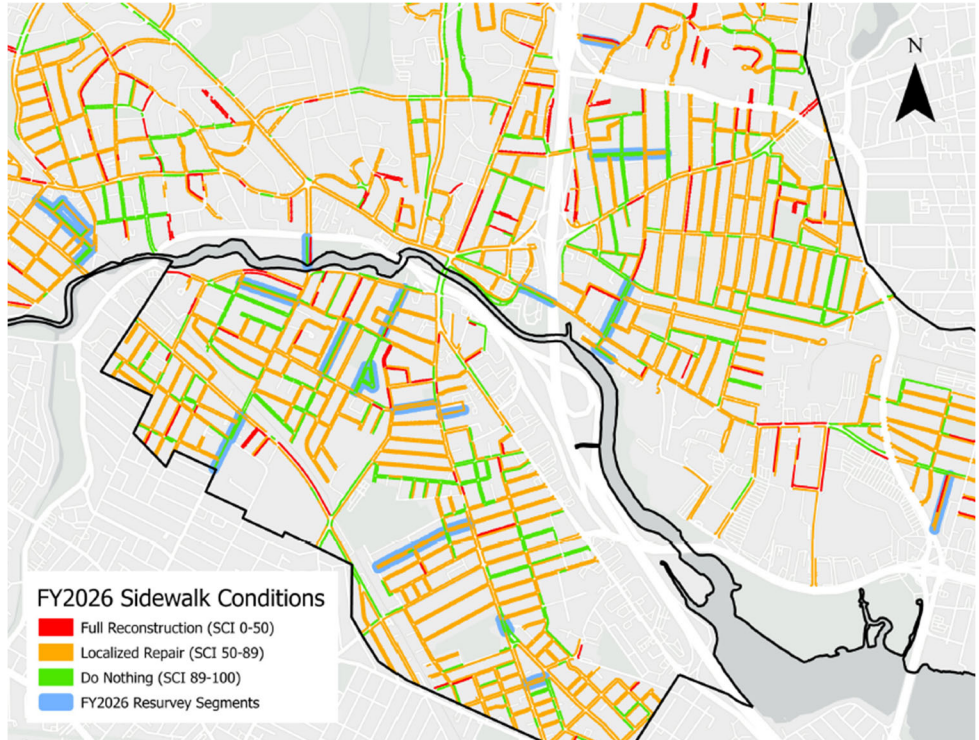


Sidewalk Conditions

A total of 72 out of 2,664 block-to-block sidewalk segments were re-inspected (5 sidewalk miles) in FY2026.

For each sidewalk segment Stantec quantified the sidewalk conditions into sidewalk condition bands. A sidewalk condition index or SCI was established to categorize sidewalk conditions into a repair strategy scheme. This index is based on a 0 to 100 scale which is calculated using count of Hard Obstructions, Tree Root Damage, Curb conditions, and Visual Sidewalk Condition. Below is the formula used to calculate an SCI value:

$$SCI = 100 - (Hard\ Obstruction\ Score + Tree\ Root\ Score + Distress\ Score + Curb\ Condition\ Score + Visual\ SCI\ Score) / (Highest\ Total\ Score)$$

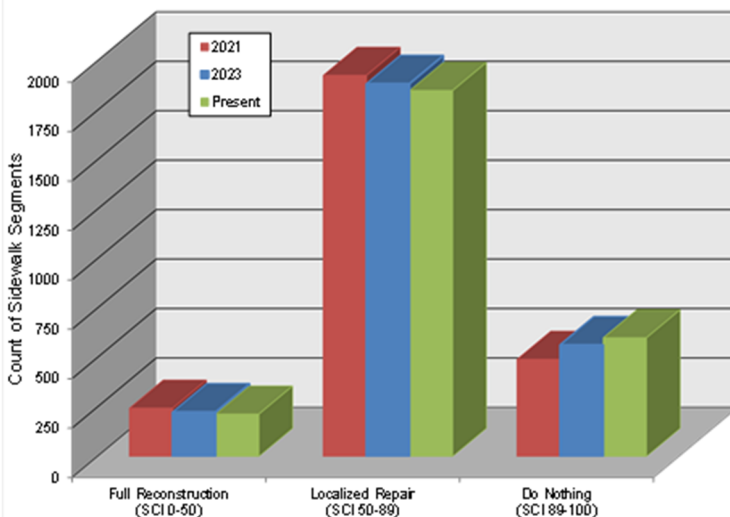


The current network average SCI for sidewalks in Medford is 78.2 points. This is an increase of 1.4 points from 2024's average SCI of 76.8 points.

Stantec categorized individual segments into three treatment repair bands, shown on the map to the right:

- 0 - 50 = Full Replacement/ Reconstruction
- 50-89 = Localized Repair/ Panel Replacement
- 89-100 = Do Nothing

Below is a chart comparing current and past sidewalk conditions.



As illustrated in the sidewalk conditions chart above, network conditions have been improving since the initial assessment in 2021. This indicates that the City has done good work maintaining its sidewalks and keeping up with repairs. In addition, the City has made the appropriate investment in neighborhood sidewalk reconstruction.

Sidewalk Backlog

Backlog is defined as the cost of repairing all sidewalks, localized repair and full reconstruction, within one year bringing the sidewalk network to a near perfect condition. The backlog not only represents how far behind Medford is in terms of its condition, but it also provides a comparison of future and/or past year's backlog(s) to determine if the City is improving sidewalk conditions or falling behind.

The City's current sidewalk backlog is \$28,462,155. This is a decrease from the backlog in 2024, which was \$29,862,921.

The table below shows the current unit costs used to determine backlog.

Sidewalk Material	FY2026 Unit Cost
Portland Cement	\$19.5 per SF
Bituminous	\$16 per SF
Brick	\$35.5 per SF
Portland Cement w/ Brick Accent	\$27 per SF

Ramp Conditions

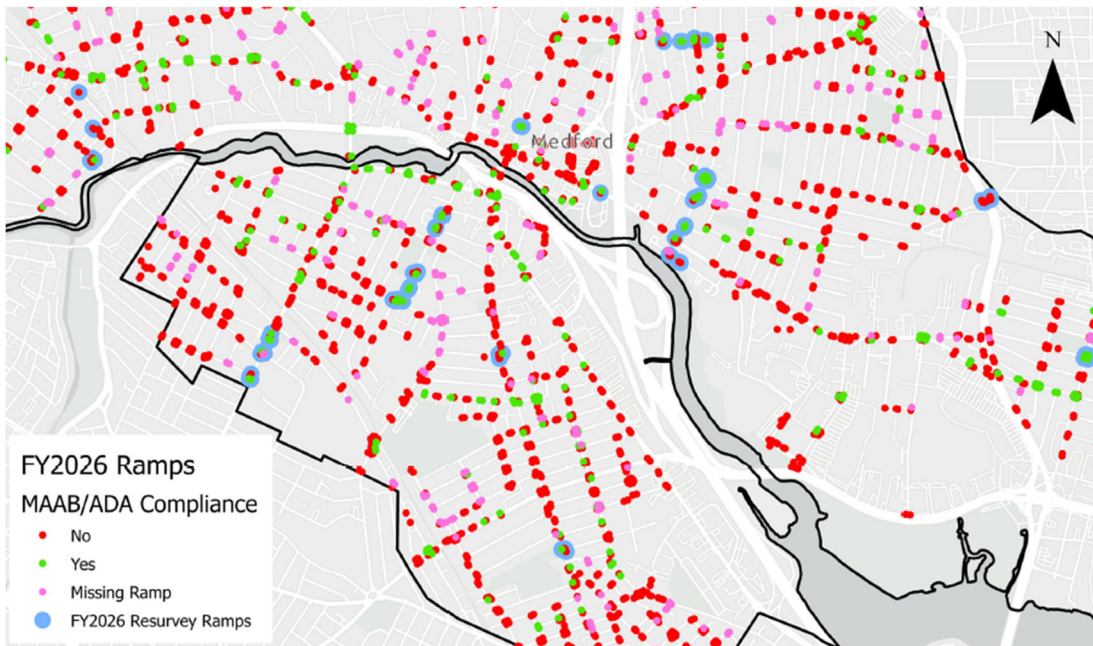
A total of 80 out of 2,878 ramps were re-inspected and 8 new ramps were inventoried in the City of Medford in FY2026. Along with general ramp attributes, Stantec collected specific attributes to determine the likely compliance of each ramp.

Of the 88 ramps which were assessed, 26 of these ramps had an insufficient Detectable Warning Panel (DWP) width. This is where the DWP does not extend to within two inches of the edge of the ramp threshold. To the right is a picture of a DWP width issue on Main St and Willard Ave intersection.



Ramp with insufficient DWP width at the intersection of Main St and Willard Ave

Of the 2,886 city-wide ramps, 563 are “missing” ramps which hinder accessibility greatly. These include situations where driveways act as ramps, sidewalks end abruptly with no ramp, or crosswalks lead directly into a curb.



As of today, 389 ramps are MAAB/ADA compliant, while 1,934 ramps are non-compliant (excluding missing ramps). The map to the left shows the locations of the compliant ramps, non-compliant ramps, and missing ramps surveyed.

Of the 2,886 city-wide ramps, approximately 83% of ramps (excluding missing ramps) are likely not MAAB/ADA compliant. This is an improvement from 2024, in which 87% of ramps were deemed to be likely not MAAB/ADA compliant.

Conclusion

The overall sidewalk network in the City of Medford is in good to fair condition. As outlined in the Sidewalk Conditions and Sidewalk Backlog sections, the overall sidewalk network conditions have improved, indicating the City has performed necessary maintenance or reconstruction keeping up with its sidewalk repairs.

Stantec recommends that the City continue to implement a baseline of \$2.5M to maintain current network conditions. Asset management is an important process that requires the long-term support and commitment from City practitioners and decision-makers to maintain the asset management database. This database system serves as a valuable tool to the City in their proactive approach to managing sidewalk and ramp assets.