

PEDESTRIAN ACCESSIBILITY STUDY

EXECUTIVE SUMMARY

The City of Medford, in November 2020, retained Nitsch Engineering and Stantec, to develop and implement an inventory and assessment of its sidewalks and pedestrian ramps in effort to increase accessibility in the City.

This inventory and assessment was conducted to develop a comprehensive sidewalk and ramp database describing ramp locations and conditions, and to better understand Medford's pedestrian accessibility infrastructure. Using the database, City-wide repair policies and priorities can be developed and established. This inventory and assessment should be used in tandem with pavement network conditions to provide Medford with a more complete picture of overall conditions to assist with long-term capital improvement planning. The report is designed to be a network level planning tool and intended to provide a foundation for managing the City's pedestrian accessibility resources by combining technology, local knowledge, and professional engineering input.

The Nitsch/Stantec Team inventoried 2,662 sidewalk block-to-block sidewalk segments throughout the City of Medford. The predominant material used for sidewalks in Medford is Portland Cement Concrete (81%). A sidewalk condition index or SCI value 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 the count of Hard Obstructions, Tree Roots, Curb conditions and Visual Sidewalk Observations. The result is then subtracted from 100 to produce an SCI value.

Three broad category ranges were used to group the calculated SCI numbers into three major treatment bands:

- Band #1 (89-100 SCI) Do Nothing,
- Band #2 (50-88 SCI) – Localized Repair, and
- Band #3 (0-49 SCI) – Full Reconstruction.

The average based SCI in Medford is 76.6, which puts average conditions at the border of fair/good condition, with 75% of the sidewalk network in the 'Localized Repair' treatment band.

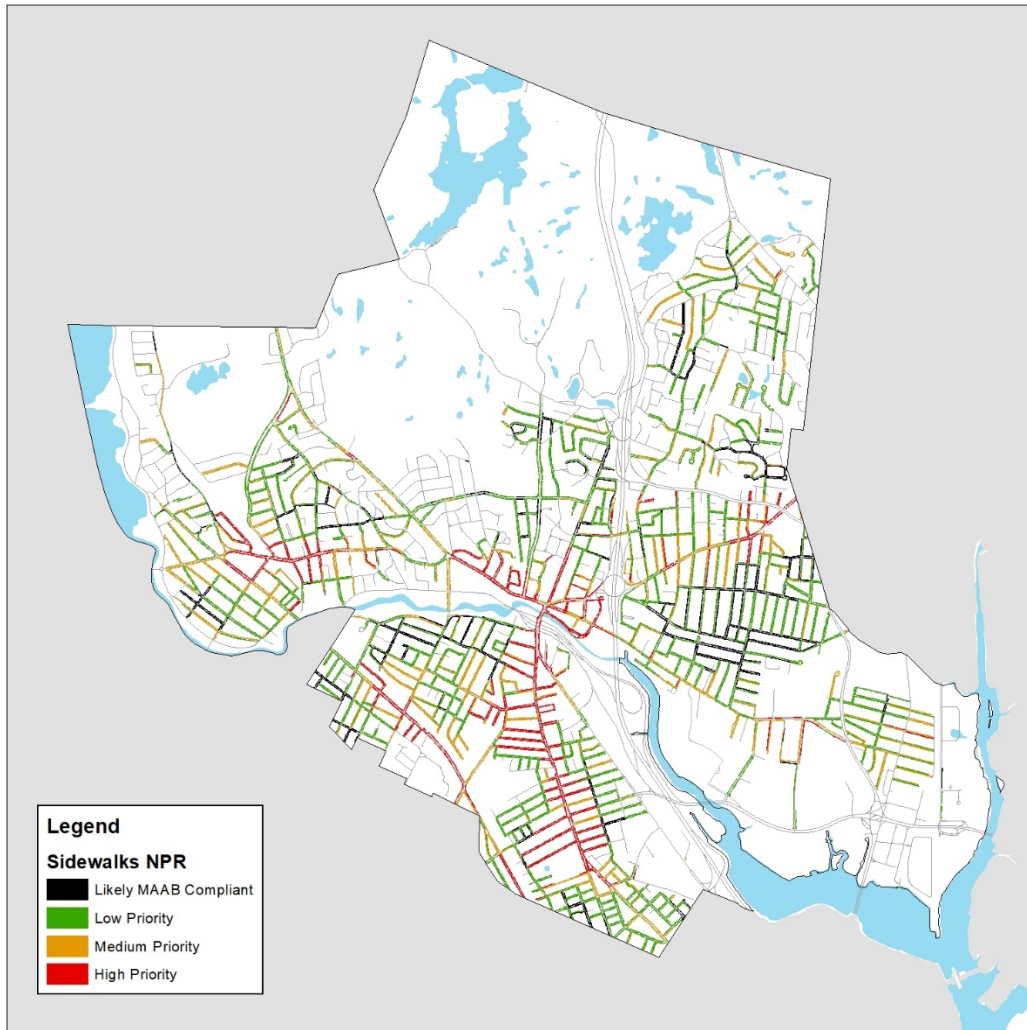
In order to determine the likelihood of meeting the minimum Massachusetts Architectural Access Board (MAAB) requirements for accessibility, cross-slope and sidewalk width values were examined, it was determined that approximately 17% of sidewalks in Medford are fully compliant. With predominantly Portland cement concrete sidewalks, the sidewalks are in overall good physical condition but lack the required slopes to be considered compliant to Americans with Disabilities Act (ADA) standards. Based on the sidewalk condition index, it was determined that as of April 2021, the current backlog of Medford's sidewalk repair work is \$30,817,570. To determine the necessary funding to keep the network in good condition, an equilibrium scenario utilizing \$2.5M annually for the sidewalk network was evaluated for (3)

three years. This scenario maintains the SCI while lowering the backlog. The sidewalk network maintains an SCI around 76.6, while the backlog decreases to \$26.4M over a 3-year period.

The Nitsch/Stantec Team inventoried 2,811 public accepted pedestrian ramps throughout the City of Medford, including ramps that were classified as "missing" where existing crosswalk markings led to vertical curb face(s) with no curb cut to access the sidewalk. The ramps are predominately made from cement concrete (92.6%). It was determined that 96% of the existing ramps in Medford (excluding missing ramps) are likely not compliant with MAAB standards. In most cases, ramps failed because there was no adequate size landing or landing slopes greater than 2%. This study shows that future diligence with respect to MAAB

standards will be necessary to improve City-wide ramp conditions.

To effectively manage Medford's pedestrian accessibility backlog, a systematic Network Priority Ranking (NPR) was developed for both sidewalks and ramps. The NPR value reflects the comparative merit of repairing a sidewalk or a ramp over



another, using variables other than simple observed deficiencies.

The sidewalk NPR prioritizes sidewalk repair using the following six (6) criteria:

- Sidewalk Condition (SCI)
- Proximity to Schools
- Proximity to Bus & Train stops/stations
- Proximity to – Business Districts
- Proximity to Parks and Recreational Areas
- Proximity to Medford "High use Facilities"

The ramp NPR prioritizes ramp repair using the following seven (7) criteria:

- Ramp Existence
- Proximity to Schools
- Proximity to Bus & Train stops/stations
- Proximity to Business Districts
- Proximity to Parks and Recreational areas
- Proximity to Medford “High use Facilities”
- Slope severity of Ramp apron & landing

The Nitsch/Stantec Team recommends that the City consider a sidewalk capital improvement program for at least \$2,500,000 per year using the NPR strategy as outlined in this study to address priority ramp locations and large construction of critical areas around schools, business districts, transit stop locations and high use facilities.

The Nitsch/Stantec Team recommends that the City assemble an ADA Task Force that includes members from different City departments, as well as members from the physically challenged and disabled communities. Review and feedback from the accessibility community can vastly benefit the City's efforts towards improving pedestrian accessibility throughout the City. The ADA Task Force should be tasked with maintaining and expanding upon the database assembled as part of the Sidewalk Inventory prepared by the Nitsch/Stantec Team.

Asset management is a systematic process that needs the long-term commitment and support of City practitioners and decision-makers to maintain the asset management database system, which will serve as a valuable tool to the City of Medford and its decision-makers in their proactive approach to managing sidewalk assets.