

CITY OF MINNEAPOLIS

Winter Walking and Biking Study

March 2024



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Introduction

The City published the [Pedestrian and Bicycle Winter Maintenance Study](#) in 2018. A significant amount of change has occurred since the completion of this study. These changes include implementation of many of the options listed in the original study, additional and extensive research on sidewalk winter maintenance, and passage of the [Transportation Action Plan](#) (TAP) in 2020 and the [Racial Equity Framework for Transportation](#) (REF) in 2023. A substantial amount of research was conducted in the first half of 2023 to complete the 2023 [Sidewalk Snow and Ice Removal Legislative Directive report](#) and subsequent [Sidewalk Snow and Ice Removal Pilot Projects Cost Analysis](#). Together, these guiding plans and research studies provide a strong foundation for this study that articulates the Department of Public Works' winter maintenance priorities for walking¹ and bicycling. This study outlines recommended action items and implementation timelines to improve winter walking and bicycling before 2030, in alignment with the TAP timeframe. These items are presented in this study for future incorporation in the TAP.

The City of Minneapolis is committed to year-round walking and bicycling as safe, accessible, and convenient options for its residents and visitors. In 2021, 31% of all trips were taken by walking, bicycling, or transit. The 2020 TAP outlines a vision for our streets in 2030 in which 3 of every 5 trips, or 60%, are taken by walking, bicycling, or transit. Improved winter maintenance practices and programs are necessary to reach our 2030 mode share goal.

Four sidewalk snow and ice removal pilots were funded in the 2024 City budget. These four pilot programs include a snow case worker pilot program, a senior clearing assistance pilot program, a snow ambassadors pilot program, and a mobile team pilot program. More details about each of these four programs are found in the section related to Winter Walking: Recommended Actions. More work is needed to finalize the details of each program, and this study will inform that work.

Purpose of the Winter Walking and Biking Study

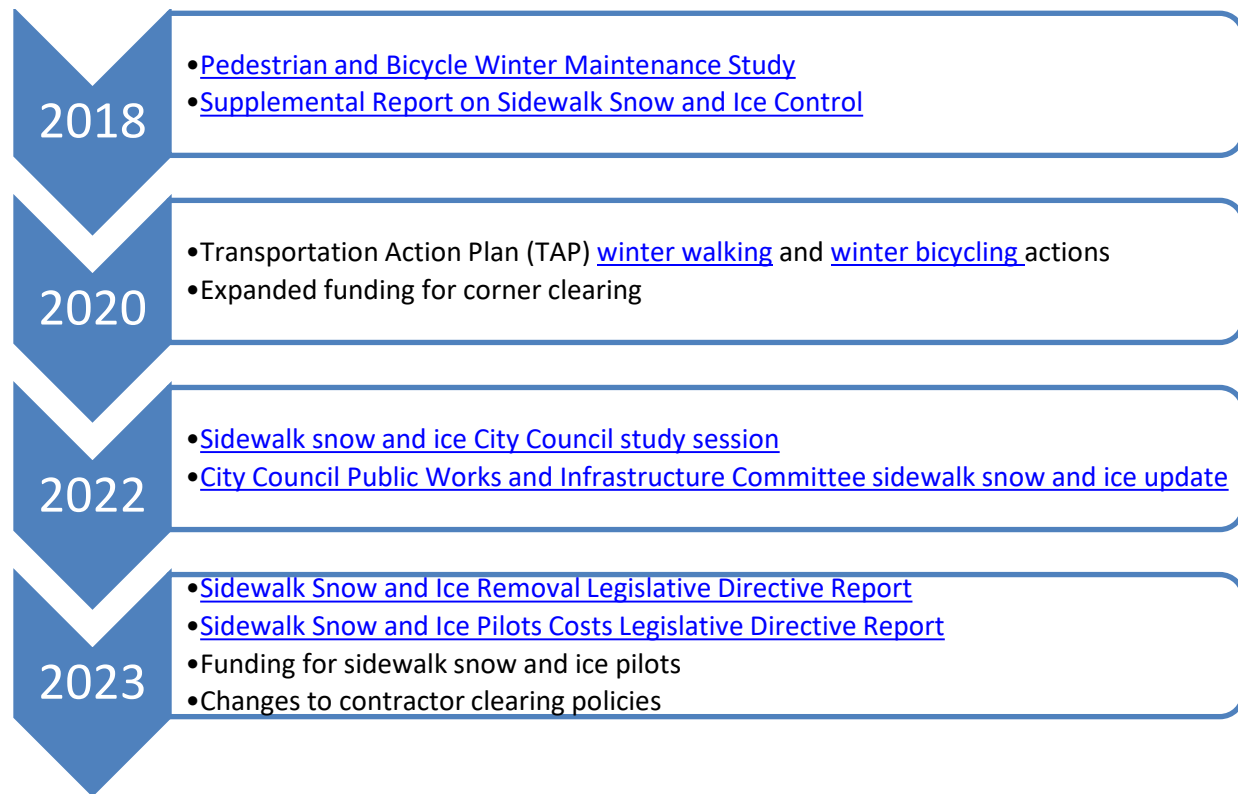
The purpose of the Winter Walking and Biking Study is to summarize research and implementation progress to date and identify actionable priorities for Public Works to implement in the coming years.

This study documents progress and changes to winter maintenance options identified in the 2018 Pedestrian and Bicycle Winter Maintenance Study and the 2018 Supplemental Report on Sidewalk Snow and Ice. This study builds upon the Transportation Action Plan associated winter maintenance Action Items listed in [Walking Strategy 4](#) and [Bicycling Strategy 6](#). The goal is for all strategies and actions to be represented in the Transportation Action Plan during the anticipated 2025 Transportation Action Plan update.

Information from the two 2023 reports on City Council Legislative Directives related to City-led sidewalk snow and ice programs, sidewalk snow and ice removal pilots, and an online tracking tool are also included in this study. This study includes additional information for previously identified options recommended for continued study and/or implementation, adds details for newly identified recommendations, and retires options that are not recommended for further study.

¹ "Walking" refers to people walking or rolling – using a wheelchair, stroller or other assistive mobility device – and "pedestrian" as a person walking or rolling.

Recent Efforts on Winter Walking and Biking



The April 2018 [Pedestrian and Bicycle Winter Maintenance Study](#) and May 2018 [presentation](#) to the Transportation and Public Works Committee provided information, data, and implementation cost ranges of improved winter maintenance options for the City to consider. The [Supplemental Report on Sidewalk Snow and Ice Control](#), published in May 2018, investigated operational challenges surrounding City ordinance and procedures to ensure clearance of snow and ice from public sidewalks, and to highlight opportunities for continued improvements. Several improvements were implemented as a direct result of this study and its supplemental report on sidewalk snow and ice control, which are documented in [Appendix C: Status of Pedestrian and Bicycle Winter Maintenance Options and Actions](#). In October of 2018, Public Works staff [presented](#) feasibility and cost estimates outlining a potential City-led sidewalk snow and ice removal project to the Transportation and Public Works Committee. A June 2019 [presentation](#) to the Transportation and Public Works Committee provided an update on the proactive sidewalk inspection pilot.

The City's [Transportation Action Plan](#) (TAP) was adopted in 2020 and includes pedestrian- and bicycle-specific actions to improve winter maintenance practices. Two of the TAP actions are a biennial update of the Pedestrian and Bicycle Winter Maintenance Study published in 2018. This Winter Walking and Biking Study documents the continued refinement of Public Works' winter maintenance practices and options for additional strategies and fulfills these two TAP actions (see [Walking Action 4.10](#) and [Bicycling Action 6.11](#)).

In October 2022, a [City Council study session](#) focused on the City's sidewalk clearing ordinance rules and enforcement processes, how the sidewalk inspection program has evolved over time, and future opportunities for Public Works to implement improvements with new strategies not yet tested in the City. A subsequent [presentation](#) at a December 2022 Public Works and Infrastructure Committee meeting focused on these future

opportunities, particularly adjusting the proactive sidewalk inspection program, targeting an outreach program to specific communities, and implementing a snow ambassador pilot program.

In February of 2023, the Minneapolis City Council’s Public Works and Infrastructure Committee issued a [Legislative Directive](#) which requested a multidisciplinary review of potential City-led sidewalk snow and ice removal programs that could be fully implemented by 2027. The main purpose of the [Sidewalk Snow and Ice Removal Legislative Directive report](#) was to outline the cost analysis and equitable implementation considerations of a City-led sidewalk clearing program phased in over three years. The report also includes research about an online interactive mapping tool, an assessment of current snow and ice removal programs, and potential snow clearing programs targeted at repeat offenders. The report was [presented](#) at the Public Works and Infrastructure Committee in June 2023.

A subsequent [Legislative Directive](#) in June 2023 directed staff to assess the budget and implementation timelines for potential sidewalk clearing pilot programs, which were [presented](#) to the Public Works and Infrastructure Committee in July 2023. In August 2023, City Council voted to [endorse](#) the inclusion of the presented sidewalk snow and ice removal pilots in the 2024 Supplemental Budget. A [staff memo](#) from November 2023 describes the process of determining four sidewalk pilot priorities and costs for the 2024 budget. In November and December 2023, [budget amendments](#) to the proposed 2024 budget included \$595,000 to fund the following four sidewalk snow and ice removal pilots: 1) snow case worker 2) seniors 3) snow ambassadors and 4) mobile team.

Status of Previously Identified Winter Maintenance Options and Actions

Winter walking and biking options have been studied and recommended in related plans, policies, reports, and studies since 2018. The following tables organize all options from the 2018 Pedestrian and Bicycling Winter Maintenance Study, the Supplemental Report on Sidewalk Snow and Ice Control, the Transportation Action Plan, and the Sidewalk Snow and Ice Removal Legislative Directive report to provide a status update of each option and action item. Additionally, more detailed information about the status of the pedestrian and bicycling options may be found in [Appendix C: Status of Pedestrian and Bicycle Winter Maintenance Options and Actions](#).

In addition to the above plans, two other City plans include winter maintenance recommendations: the 2022 [Update to the ADA Transition Plan for Public Works](#) and the 2016 [Minneapolis for a Lifetime Age Friendly Action Plan](#). The ADA Transition Plan Update includes recommendations that tie directly to options presented in the 2018 Pedestrian and Bicycling Winter Maintenance Study and the 2020 Transportation Action Plan. The Minneapolis for a Lifetime Plan includes recommendations that tie to an existing TAP action and a recently funded sidewalk snow and ice removal pilot program. The winter maintenance recommendations in these three plans are not included as separate items in the summary tables below since these options are already summarized in the studies and plans in which a recommendation originated. More detail about these plans may be found in [Appendix B: Summary of City of Minneapolis Policies, Plans, and Reports Related to Winter Maintenance for People Walking and Biking](#).

Table 1. Status of Pedestrian Winter Maintenance Options

Document	Option	Status (as of 2/2024)
2018 Pedestrian and Bicycle Winter Maintenance Study *option recommended for immediate action in Supplemental Report **option identified for further consideration in Supplemental Report	P1. Designate a Winter Pedestrian Priority Network	Complete
	P2. Implement Sidewalk Clearing Inspection & Enforcement Process Improvements*	Complete & Ongoing
	P3. Implement Snow and Ice Clearing Assistance Programs for Select Populations**	Funded to start in 2024
	P4. Develop an Expanded Sidewalk Winter Maintenance Awareness Campaign*	Complete & Ongoing
	P5. Update and Improve the City's Winter Maintenance Webpage*	Complete & Ongoing
	P6. Enhance Winter Maintenance Data Collection**	Complete & Ongoing
	P7a. Implement a Partial City-led Sidewalk Clearing Program and P7b. Implement a City-wide Sidewalk Clearing Program	Not recommended for further study
2018 Supplemental Report on Sidewalk Snow and Ice Control *option for immediate action **option for further consideration	Develop a proactive sidewalk inspection pilot*	Complete & Ongoing
	Expand direct communication with residents*	Complete & Ongoing
	Partner with existing organizations to provide snow and ice clearing assistance programs for select populations*	Funded to start in 2024
	Review the Corner Clearing Program**	Complete & Ongoing
	Explore Innovative Technologies**	Ongoing
2020 Transportation Action Plan Walking Strategy 4: Improve winter walking and rolling	4.1 Expand education and awareness efforts for residents and businesses on City's sidewalk snow and ice removal ordinance, related standards and responsibilities.	Complete & Ongoing
	4.2 Collaborate with the Neighborhood and Community Relations Department to build and share a list of community resources for clearing sidewalks to help clear snow for those who are unable.	In Progress
	4.3 Work in partnership with Metro Transit to develop enhanced winter maintenance standards and enforcement for transit stops and stations.	Not yet started
	4.4 Change 311 and related property reports language to more accurately communicate when issues are resolved in the computer system vs. on the street as snow and ice complaints are received and processed.	Started
	4.5 Consider further streamlining inspection process by eliminating sending an Order to Correct and instead proceed with authorizing snow removal or ice mitigation.	Complete
	4.6 Consider adding financial penalties to properties out of compliance with snow and ice clearing responsibilities, with an emphasis on properties with repeat issues.	Complete & Ongoing
	4.7 Evaluate feasibility of changing City of Minneapolis Ordinance 445.20 for sidewalk clearing to require clearing the sidewalks earlier.	Complete
	4.8 Continue to pilot, evaluate and implement processes that improve winter conditions for people walking; focus on equitable outcomes through coordination, sidewalk inspections, corner clearing and a willingness to test new solutions to improve snow and ice clearance.	Complete & Ongoing
	4.9 Evaluate corner clearing program and pedestrian pushbutton design guidance to improve approach to better clear snow and ice adjacent to pedestrian pushbuttons.	Started
	4.10 Conduct review of Pedestrian and Bicycle Winter Maintenance Study on a biennial basis to evaluate and suggest changes to City-led snow and ice clearing, including evaluating City-led clearing of snow and ice on the Pedestrian Priority Network.	Complete & Recommended for Adjustment

Table 1. Status of Pedestrian Winter Maintenance Options, continued

Document	Option	Status
2023 Legislative Directive Report on Sidewalk Snow and Ice Removal *options explored further in 2023 Legislative Directive on Sidewalk Snow and Ice Removal Pilot Projects: High level cost analysis	Study and analyze 3-Year phased City-led sidewalk clearing program starting with the Pedestrian Priority Network in 2024	Complete
	Web-based interactive snow plowing status mapping tool	Not recommended for further study
	Senior Snow Clearing Assistance Pilot Program*	Funded to start in 2024
	Snow Ambassadors Pilot Program*	Funded to start in 2024
	Snow Case Worker Pilot Program*	Funded to start in 2024
	Mobile Team Pilot Program*	Funded to start in 2024
	Authorized Contractor Clearing Policy and Program Changes*	Complete & Ongoing

Table 2. Status of Bicycle Winter Maintenance Options

Document	Option	Status
2018 Pedestrian and Bicycle Winter Maintenance Study	B1. Designate a Winter Bicycle Priority Network	Started
	B2. Develop a Bikeway Winter Maintenance Awareness Campaign	Not yet started
	B3. Define Standard Level of Service for Clearing Winter Bicycle Priority Network	Started
	B4. Develop a Regional Winter Bicycle Priority Network	Not recommended for further study
2020 Transportation Action Plan Bicycling Strategy 6: Maintain the All Ages and Abilities Network to provide year-round access.	6.1 Develop and implement a written All Ages and Abilities Network Maintenance Plan that is regularly updated.	Not yet started
	6.9 Prioritize clearing snow and ice on the All Ages and Abilities Network, including trails and protected bikeways within 24 hours of a snow event.	Started
	6.10 Determine best way to ensure existing and future neighborhood greenways have the same quality of snow and ice clearance as trails and protected bikeways.	Recommended for Adjustment
	6.11 Conduct review of Pedestrian and Bicycle Winter Maintenance Study on a biennial basis to evaluate and suggest changes; focus on improvements to snow and ice clearance on standard bicycle lanes.	Complete & Recommended for Adjustment



RECOMMENDED ACTIONS

(For inclusion in future
Transportation Action Plan update)

Building Off Previous Options and Action Items

This study consolidates, summarizes, and builds on previous studies, plans, and recent research to make Public Works' priorities clear. This study recommends actions for inclusion in a future update to the Transportation Action Plan, which would retire this study and future biennial study updates to focus on implementing future actions. These new recommended actions complement many options and actions that were first introduced with the 2018 Supplemental Report on Sidewalk Snow and Ice, the 2020 Transportation Action Plan, and the 2023 Legislative Directive report. A more detailed description of these new recommended actions and cost estimates are included within this section.

Each recommended action identifies an estimated level of effort it will require to complete – high, medium, or low. There are many factors which will contribute to the success of a specific recommended action – including support of partners, collaboration with other departments in the City, staff resources, funding opportunities and alignment with City policy and budget decisions. Identifying a scale of anticipated difficulty helps give perspective on when a specific recommended action might be accomplished. Anticipated timelines are also identified for each recommended action aligned with the Transportation Action Plan's action timelines: 2024-2027 or 2028-2030. The anticipated timelines make some assumptions about resources that may become available to complete the work; resource availability will have direct impacts on the success of completing all recommended actions by 2030.

Some recommended actions are noted as “ongoing,” which indicates these will be actions that we must consistently work to achieve, whereas other recommended actions are items that can be done once. The year indicated for that recommended action is when work is estimated to begin for ongoing efforts.



Winter Walking: Recommended Actions

Maintaining winter access for people walking in the city is critically important. The system in place to ensure the sidewalks are kept clear and passable involves many people and institutions throughout the city. Currently, [City ordinance](#) requires property owners of duplexes and single-family homes to clear the public sidewalk abutting their property within 24 hours of snow ending, and all other property owners to clear their sidewalks within four daylight hours of the snow ending. Clearing corners to the gutter line is the responsibility of the corner lot property owner. There is a City-led corner clearing program that works to clear corners after large storms, post-plowing of the streets, starting with corners along the [Pedestrian Priority Network](#) until all corners are cleared citywide. The eight recommended walking actions included in this section were directly influenced by winter walking options and actions previously identified in the 2023 Legislative Directive (Action 1.1, Action 1.2, Action 1.3, Action 1.4 and Action 1.5) and the 2020 Transportation Action Plan (Action 1.6, Action 1.7, and Action 1.8).

Figures 1-3. Crews clearing snow from corners.



WALKING RECOMMENDED ACTIONS

Recommended actions to improve winter walking and rolling.

Difficulty

RECOMMENDED ACTION 1.1

2024-2027 (YEARS 1-4)

Implement a snow ambassadors pilot program to continuously monitor 20 miles of Pedestrian Priority Network during the winter season.

Medium

RECOMMENDED ACTION 1.2

2024-2027 (YEARS 1-4)

Implement a snow case worker pilot program for residential renters and homeowners.

Medium

RECOMMENDED ACTION 1.3

2024-2027 (YEARS 1-4)

Implement a mobile team pilot program to provide timely and temporary assistance for residents with short-term barriers to snow and ice clearing.

Medium

RECOMMENDED ACTION 1.4

2024-2027 (YEARS 1-4); ON-GOING

Implement a senior snow clearing assistance pilot in partnership with Neighborhood and Community Relations.

Medium

RECOMMENDED ACTION 1.5

2024-2027 (YEARS 1-4); ON-GOING

Track and evaluate sidewalk snow and ice clearing assistance pilot programs, reactive and proactive sidewalk inspection programs, and authorized contractor policy changes. Present an annual report on sidewalk snow and ice clearing assistance pilot programs.

Medium

RECOMMENDED ACTION 1.6

2024-2027 (YEARS 1-4); ON-GOING

Develop a specific awareness campaign for property owners and tenants responsible for clearing adjacent bus stops located along their sidewalks.

Low

RECOMMENDED ACTION 1.7

2024-2027 (YEARS 1-4); ON-GOING

Clear all corners on the Pedestrian Priority Network within 3 days of the end of a qualifying snow event and remaining street corners within 9 days of a qualifying snow event.

Medium

RECOMMENDED ACTION 1.8

2024-2027 (YEARS 1-4); ON-GOING

Clear pedestrian safety islands and quick-build safety treatments in coordination with corner clearing.

Medium

Walking Recommended Actions: Details

[Action 1.1 Implement a snow ambassadors pilot program to continuously monitor 20 miles of PPN during the winter season.](#)

This action would allow two full-time Public Works staff to continuously monitor 20 miles of the PPN during the winter season. While monitoring, staff would clear sidewalks adjacent to non-compliant properties for free and with a warning the first time. If additional clearing of the same non-compliant property was needed, the property owner would receive the full charge for each clearing of the sidewalk. The City budgeted \$210,000 in 2024 for the first year of a multiyear pilot.

[Action 1.2 Implement a snow case worker pilot program for residential renters and homeowners.](#)

Under this program, a dedicated full-time snow case worker would work with existing sidewalk staff to engage with residents at non-compliant properties to understand why their adjacent sidewalk is non-compliant and if it is an issue of education, communication, or a challenge related to age or ability. Collecting more information about the level of demand for free and low-cost services would assist in determining potential partnerships with neighborhood organizations. The snow case worker would do direct outreach and education with residents and connect residents with existing clearing resources and services, including free or low-cost services and services for hire. The City budgeted \$145,000 in 2024 for the first year of a multiyear pilot.

[Action 1.3 Implement a mobile team pilot program to provide timely and temporary assistance for residents with short-term barriers to snow and ice clearing.](#)

The mobile team model is a proposed pilot with an approved contractor within a specific service area for clearing eligible properties with documented barriers to snow and ice clearing related to age and ability. Households identified in either the snow case worker pilot or requesting assistance from their neighborhood organization or ward representative office, would be able to receive snow clearing assistance through this program as staffing and funds are available. This highly targeted mobile team could be quickly deployed within their service area and provide cleanups until funds are exhausted. The City budgeted \$205,000 in 2024 for the first year of a multiyear pilot.

[Action 1.4 Implement a senior snow clearing assistance pilot in partnership with Neighborhood and Community Relations.](#)

A targeted program for seniors or others whose mobility is limited could be led and coordinated by neighborhood organizations, in partnership with the city's Department of Neighborhood and Community Relations, as well as the city's Snow Case Worker. With this model, a set funding amount would be directly allocated to interested neighborhood organizations. It is unknown what neighborhood organizations have the capacity to take on this work, but it is a model that has been successfully used in other cities. It is assumed the program could ramp up over time as this opportunity is discussed with more neighborhood organizations and capacity is built. The City budgeted \$20,000 in 2024 for the first year of a multiyear pilot.

[Action 1.5 Track and evaluate sidewalk snow and ice clearing assistance pilot programs, reactive and proactive sidewalk inspection programs, and authorized contractor policy changes. Present an annual report on sidewalk snow and ice clearing assistance pilot programs.](#)

In addition to tracking and evaluating the four pilot programs funded in 2024, this analysis would evaluate current and evolving Public Works activities related to snow and ice clearance, such as the proactive sidewalk inspection program described in [Appendix C: Status of Pedestrian and Bicycle Winter Maintenance Options and Actions](#). No additional costs are anticipated for data collection, analysis, and policy recommendations.

Action 1.6 Develop a specific awareness campaign for property owners and tenants responsible for clearing adjacent bus stops located along their sidewalks.

This recommended action complements existing TAP [Walking Action 4.3](#) and is responsive to challenges documented in the [Minneapolis for a Lifetime Age Friendly Action Plan](#). TAP Action 4.3 shows City commitment to support Metro Transit, as the lead agency, to develop enhanced winter maintenance standards and enforcement for transit stops and stations.

There are approximately 2,860 transit facilities in Minneapolis, including bus stops (with or without shelters), transit centers and rail platforms. Clearing snow from bus stops and any adjacent facilities is a shared responsibility of Metro Transit, US Bench Corporation, and adjacent property owners depending on the transit facility type. While Metro Transit maintains bus and rail operation facilities, transit centers, and transit stops with shelters and US Bench Corporation maintains 700 benches at bus stops without shelters, adjacent property owners are responsible for clearing bus stops that do not have a shelter or bench.

Bus stops without shelters and benches that are the responsibility of adjacent property owners comprise approximately 58% of all bus facilities. A specific awareness campaign for property owners with adjacent bus stops located along their sidewalks is recommended to educate property owners about their responsibilities, which they may or may not be aware of currently. No additional costs are associated with this task since these efforts complement completed and ongoing communication work documented in [Appendix C: Status of Pedestrian and Bicycle Winter Maintenance Options and Actions](#) and may be assigned to current staff within Public Works to coordinate with the City's communications teams.

Action 1.7 Clear all corners on the Pedestrian Priority Network within 3 days of the end of a qualifying snow event and remaining street corners within 9 days of a qualifying snow event.

This recommended action complements existing TAP [Walking Actions 4.8](#) and [4.9](#) and documents an existing practice, which has evolved over time. More about the history of the corner clearing program may be found in [Appendix C: Status of Pedestrian and Bicycle Winter Maintenance Options and Actions](#).

This recommended action formalizes the timeframe for clearing corners on the Pedestrian Priority Network within 3 days after a qualifying snow fall event. A qualifying snow fall happens when either an accumulation of 4 inches or more of snow occurs or the City declares a Snow Emergency. Corner clearing commences the first night following the completion of a 4-inch snowfall or Snow Emergency; this allows the City to remove the windrows, which are rows of snow piles that are left behind by snow plows after street plowing is completed. Clearing corners before a Snow Emergency has ended means that snow from the street will be pushed into cleared corners. If another 4-inch snowfall occurs or Snow Emergency is declared before all the corners are cleared, the City resumes corner clearing at the end of the new Snow Emergency. With more than 17,000 corners in the city, it can take crews several continuous days to clear corners depending on snowfall amount, type, and subsequent snow falls that restart the corner clearing cycle. Shortening completion times is dependent on funding for additional corner clearing capacity. No additional costs are associated with this task unless there is desire for faster corner clearing.

Action 1.8 Clear pedestrian safety islands and quick-build safety treatments in coordination with corner clearing.

Public Works has been expanding use of pedestrian safety islands and quick-build safety treatments to support Vision Zero and other Transportation Action Plan goals. Crews clear these as they do corner clearing, but baseline winter maintenance resources must scale up as more pedestrian safety islands and quick-build safety treatments are implemented across the city.

Winter Biking: Recommended Actions

Winter maintenance of bikeways is essential to supporting the City goal to increase bicycling. Public Works clears snow and ice on most trails and protected bikeways while the Minneapolis Park Board maintains trails in parks. One of the five recommended biking actions in this section is a recommended adjustment to existing TAP Action 6.10 (Recommended Action 2.1) and a second recommended biking action was inspired by research conducted as part the 2023 Legislative Directive (Recommended Action 2.2). The remaining three recommended biking actions are new, and either tie to existing efforts or the existing evaluation efforts of Public Works.

Figures 4-6. Cleared bikeways in winter.



BIKING RECOMMENDED ACTIONS

Recommended actions to improve winter biking.

Difficulty

RECOMMENDED ACTION 2.1

2028-2030 (YEARS 5-7)

Implement a pilot of improved winter maintenance of a neighborhood greenway.

Medium

RECOMMENDED ACTION 2.2

2024-2027 (YEARS 1-4)

Evaluate the development of an interactive web-based mapping dashboard that reports on the clearing and plowing status of Minneapolis-cleared trails and protected bikeways; include interface with the Minneapolis Park and Recreation Board's trail plowing status mapping portal.

Medium

RECOMMENDED ACTION 2.3

2028-2030 (YEARS 5-7)

Expand [sidewalk snow and ice incidents dashboard](#) to add 311 bikeway incidents.

Medium

RECOMMENDED ACTION 2.4

2024-2027 (YEARS 1-4), ON-GOING

Continue to evaluate and refine bikeway designs to make winter maintenance easier.

Low

RECOMMENDED ACTION 2.5

2028-2030 (YEARS 5-7)

Evaluate ways to improve winter maintenance of permanent bicycle racks and bike storage.

Low

Biking Recommended Actions: Details

Action 2.1 Implement a pilot of improved winter maintenance of a neighborhood greenway.

This recommended action builds upon the existing TAP [Bicycling Action 6.10](#) to determine the best way to ensure existing and future neighborhood greenways have the same quality of snow and ice clearance as trails and protected bikeways. Neighborhood greenways are an All Ages and Abilities bikeway type that enhances local, low-traffic streets and includes existing bicycle boulevards. Existing bicycle boulevards present the most challenging subtype of neighborhood greenways to maintain in winter because street space is shared with the movement and storage of vehicles and most existing bicycle boulevards are not located on snow emergency routes. Snow emergency routes prohibit parking on the first day of a Snow Emergency so that street clearing may commence, with on-street parking shifted to both sides of streets that are not snow emergency routes. Because the bikeway space is shared with vehicles, cars and trucks compact snow into ice and melted snow into slush, which refreezes into thicker ice patches before crews can conduct street plowing. A half-mile pilot on a bicycle boulevard (neighborhood greenway) for three seasons would explore different operational processes and the use of additional deicing materials to provide a clear pavement level of service consistent with conditions found on a plowed protected bikeway. This pilot will help Public Works identify the most cost-effective approach to improving maintenance of bicycle boulevards to inform future actions.

Action 2.2 Evaluate the development of an interactive web-based mapping dashboard that reports on the clearing and plowing status of Minneapolis-cleared trails and protected bikeways with ability to interface with the Minneapolis Park and Recreation Board's trail plowing status mapping portal.

This action will evaluate a potential interactive mapping dashboard that reports on the clearing and plowing status of trails and protected bikeways in Minneapolis. It is recommended that such a tool would also have the ability to interface with the Minneapolis Park and Recreation Board's [Trail Plowing Status Map](#) launched in late 2022. Additionally, adding clearing responsibilities by agency to an interactive map would further educate the public on which routes are maintained by different agencies, as the snow and ice clearing trails in the city is performed by a variety of agencies (see [Appendix E: Current Winter Maintenance Practices](#) for more information).

Action 2.3 Expand sidewalk snow and ice incidents dashboard to add 311 bikeway incidents.

This recommended action builds off of the existing [Sidewalk Snow and Incidents dashboard](#) to add reported 311 bikeway incidents. Uncleared driveway crossings and improper snow storage from adjacent properties impact curb-level bikeways cleared by Public Works. Including bikeway impact 311 reports in the dashboard will allow for further analysis of bikeway impact trends that can inform future actions. No additional costs are anticipated with this recommended action.

Action 2.4 Continue to evaluate and refine bikeway designs to make winter maintenance easier.

Add to and adjust the City's Street Design Guide as appropriate to help support efficient and effective maintenance. For example, recommended bikeway dimensions will be refined to ensure snow and ice clearing machinery and equipment adequate passage. No additional costs are associated with this recommended action.

Action 2.5 Evaluate ways to improve winter maintenance of permanent bicycle racks and bike storage.

This recommended action complements recommended Action 2.4 above and the [Bicycle Parking Requirements Ch. 541.320 \(Ord. 2021-023 and Ord. 2021.055\)](#) for businesses in the city. Bicycle racks and storage are not consistently maintained during winter and are often made inaccessible by snow storage and/or street plowing operations. No additional costs are associated with this recommended action.

Appendices

A. Acknowledgements

Technical Advisory Committee (TAC) *members from the City of Minneapolis' Public Works Department participated in meetings and interviews and provided guidance and feedback for the study:*

- Allison Bell, Surface Water & Sewers
- Steve Collin, Transportation Maintenance & Repair
- Ethan Fawley, Transportation Planning & Programming
- Dillon Fried, Traffic & Parking Services
- Glen Haslerud, Administration
- Aaron Johnson, Transportation Engineering & Design
- Larry Matsumoto, Transportation Maintenance & Repair
- Kadence Novak, Transportation Planning & Programming (study lead)
- Joe Paumen, Transportation Maintenance & Repair

B. Summary of City of Minneapolis Policies, Plans, and Reports Related to Winter Maintenance for People Walking and Biking

2018 Pedestrian and Bicycle Winter Maintenance Study

The 2018 [Pedestrian and Bicycle Winter Maintenance Study](#) identifies opportunities to enhance the quality and consistency of snow clearing and ice removal processes and policies to improve safety, accessibility, and mobility for those who rely on walking, biking, or transit in the winter. This study includes an evaluation of the City's (then) existing practices, a review of other peer city and agency procedures, and several alternative winter maintenance options for walking and biking.

The study explicitly states that it does not attempt to answer all questions around enhanced snow clearing and ice removal, nor does it make recommendations or prioritize one option over another. The study provides information and options for staff and policymakers to consider, including the feasibility of and resources needed for implementing each option. Some of the options are designed to be used in conjunction with each other, and some options are mutually exclusive. Additionally, some of the options are contingent upon the development of preceding options, as described in the last section of the study.

2018 Supplemental Report on Sidewalk Snow and Ice

As a follow up to the 2018 Pedestrian and Bicycle Winter Maintenance Study, Council requested a supplemental report to focus on sidewalk snow and ice control. The resulting [Supplemental Report on Sidewalk Snow and Ice Control](#) investigates operational challenges surrounding City ordinance and procedures to ensure clearance of snow and ice from public sidewalks and highlights opportunities for continued improvement. The supplemental report recommends strategies for immediate action and lists initiatives for further consideration.

With each of these strategies, Public Works' goal was to obtain more data to identify and understand issues, modify processes and take action to achieve a higher rate of sidewalk snow and ice control compliance citywide. Each of these strategies has the potential to help move the dial by educating property owners on their responsibilities, identify resources to support property owners, and by improving data to continue monitoring progress toward an improved system for all.

Transportation Action Plan (TAP)

Adopted in 2020, the City's [Transportation Action Plan](#) is a 10-year action plan to guide future planning, design and implementation of transportation projects for all people in the ways they move around. The plan is shaped by Minneapolis 2040, the Climate Action Plan, Vision Zero, and the Complete Streets policy.

The TAP details specific strategies for walking and biking. [Walking Strategy 4](#) focuses on improving winter walking and rolling with 10 actions. [Bicycling Strategy 6](#) focuses on maintaining the All Ages and Abilities network to provide year-round access with 12 actions. Not all 12 actions in Bicycling Strategy 6 are directly related to winter maintenance, although many of these actions work in tandem with wintertime maintenance activities to either prepare for winter or perform maintenance as a result of wintertime maintenance activities, such as snow plowing which may damage bollards.

[Walking actions 4.1, 4.2, 4.4, 4.5, and 4.8](#) and [Bicycling actions 6.1 and 6.10](#) align with pedestrian and bicycle winter maintenance options previously identified in the 2018 study. An additional action, [Street Operations Action 9.4](#), supports [Walking Strategy 4](#) and specifies the inspection and enforcement of non-compliance at construction sites where pedestrian walkways are not being cleared of snow and ice.

ADA Transition Plan for Public Works

The [2020 Minneapolis Americans with Disabilities Act \(ADA\) Transition Plan for Public Works](#) details how the City complies with the 1990 Americans with Disabilities Act. The TAP works in tandem with the ADA Plan; as such, all projects and programs identified in the TAP will comply with the ADA. This transition plan goes further in identifying ways the City can create greater access through improvements to our transportation network. Winter maintenance issues are cited as a major barrier for people with disabilities: in a survey administered as part of this plan, winter maintenance issues generated more comments from respondents than any other topic.

Recommendation 3.9 in the ADA Plan is to “continue to address seasonal barriers such as snow and ice on sidewalks as outlined by [Minneapolis Ordinance 445](#) and the 2018 Pedestrian and Bicycle Winter Maintenance Study; explore modifications to improve access to the public right of way through additional direction in the Transportation Action Plan.” The evaluation and update in Appendix A of the ADA Plan documents that in 2020, an additional \$300,000 was allocated annually to help speed up snow and ice corner clearing during snow emergencies, stating that these additional, ongoing funds have shortened the corner clearing completion time on Pedestrian Priority Corners from four or five days to two days following a Snow Emergency.

The City’s 2022 [Update to the ADA Transition Plan for Public Works](#) recommends enhanced snow enforcement guidelines. Many of the proposed elements have been implemented, including shortening the length of time for the enforcement process, issuing sidewalk snow removal work orders to private contractors, increasing sidewalk snow inspection activities with additional existing City staff, and coordinating with other City Departments to accomplish increased sidewalk snow inspections.

Minneapolis for a Lifetime Age Friendly Action Plan

The 2016 [Minneapolis for a Lifetime Age Friendly Action Plan](#) recommends policies and support services that promote independent living, meaningful engagement and provide resources and information to older residents so that they can remain a part of the fabric of the Minneapolis community. The Action Plan includes two actions that relate to winter walking:

- #1 Improve safety, comfort and convenience of public transportation
 - Long-term: Work with Metro Transit to a) add seating and shelters to existing bus and other public transit stops; b) ensure that all new or refurbished transit stops are well-lit and include seating and shelter; and c) ensure that all transit stops are kept free of snow and ice, with priority given to communities with greater numbers of older adults.
 - Metro Transit was identified as the potential lead
- #3 Improve the quality and safety of pedestrian travel
 - Identify and test approaches to improve substantially the quality and timeliness of snow and ice removal – including, for example, a volunteer-based program such as “Snow Buddies” that could be promoted and/or supported by the City and its partners.
 - Department of Neighborhood and Community Relations is potential lead
 - Minneapolis Advisory Committee on Aging will monitor progress and possibly assist with engagement activities
 - Community engagement of older adults is incorporated in future studies
 - Strategies developed demonstrate the incorporation of older adults voices.

Racial Equity Framework for Transportation

The [Racial Equity Framework for Transportation](#) (REF) (2023) is a document that identifies community-informed racial equity strategies and actions to implement through 2030. The REF identifies Transportation Equity Priority

(TEP) areas, which serve as the geographic equity metric for transportation plans, programs, and projects in Public Works. While the REF does not have specific strategies or actions around winter maintenance, the TEP areas help guide the design of potential programs related to winter maintenance.

Legislative Directive on Municipal Sidewalk Plowing Analysis

The [February 2023 Legislative Directive](#) requested a high-level analysis of the following items:

- potential City-led sidewalk snow and ice removal programs, including a fiscal analysis and three-year phased approach that would incorporate the entire City sidewalk network;
- evaluation of a potential web-based interactive tool that tracks winter maintenance;
- an assessment of current snow and ice removal programs including City and non-city entities; and
- recommendations on equitable implementation of potential programs using City policies and plans regarding equity.

The ensuing [Sidewalk Snow and Ice Removal Legislative Directive report](#) was published in June 2023. The report includes a detailed scope of a potential City-led sidewalk program, winter sidewalk maintenance background, overview of current winter sidewalk maintenance practices, analysis of implementation of City-led sidewalk clearing options, a phased approach scenario, recommendations on equitable implementation, an overview of online and interactive tracking tools, and proposed targeted snow clearing and ice removal programs. The report closes with next steps about the Winter Maintenance Study Update, which is this Winter Walking and Biking Study.

Legislative Directive on Snow and Ice Removal Pilot Programs Costs

The [June 2023 Legislative Directive](#) requested a high-level cost and implementation timeline of the snow and ice removal pilot programs presented as part of the Sidewalk Snow and Ice Removal Legislative Directive report. A [presentation](#) delivered to the Public Works and Infrastructure Committee in July 2023 documents the cost analysis for proposed programs, including the senior snow clearing assistance pilot program, the snow case worker pilot program, the mobile team pilot program, authorized contractor clearing policy and program changes, and a recap of the proposed snow ambassador program.

C. Status of Pedestrian and Bicycle Winter Maintenance Options and Actions

Appendix C provides detail on the status of the winter maintenance options and actions from previous plans, studies, and report. This section includes what works has been completed to date, as well as details on the future of incomplete options and actions.

Status of 2018 Pedestrian and Bicycle Winter Maintenance Study Options

This section provides a status update, as of December 2023, on walking and bicycle options presented in the 2018 study.

Table 1. Status of 2018 Pedestrian and Bicycle Winter Maintenance Study Walking Options

Walking Options	Status (as of 12/2023)
P1. Designate a Winter Pedestrian Priority Network	Complete
P2. Implement Sidewalk Clearing Inspection & Enforcement Process Improvements*	Complete & Ongoing
P3. Implement Snow and Ice Clearing Assistance Programs for Select Populations**	Funded to start in 2024
P4. Develop an Expanded Sidewalk Winter Maintenance Awareness Campaign*	Complete & Ongoing
P5. Update and Improve the City's Winter Maintenance Webpage*	Complete & Ongoing
P6. Enhance Winter Maintenance Data Collection**	Complete & Ongoing
P7a. Implement a Partial City-led Sidewalk Clearing Program	Not recommended for further study
P7b. Implement a City-wide Sidewalk Clearing Program	Not recommended for further study

*option recommended for immediate action in Supplemental Report

**option identified for further consideration in Supplemental Report

P1. Designate a Winter Pedestrian Priority Network: Complete

The Winter Pedestrian Priority Network is the same as the [Pedestrian Priority Network](#), which is identified in the 2020 Transportation Action Plan.

P2. Implement Sidewalk Clearing Inspection & Enforcement Process Improvements: Complete & Ongoing

Since 2016, Public Works has worked to improve the process for sidewalk inspection and enforcement. This means that reported non-compliant sidewalks are typically cleared several days faster than previously. Key process improvements include:

- Mailing a notice to the property owner when a complaint is received rather than inspecting before a notice is mailed; and
- Moving more quickly to contractor clearing for properties that have already received one previous complaint in a single winter, which allows for the process to move faster to clearing for properties that are regularly not in compliance.

P3. Implement Snow and Ice Clearing Assistance Programs for Select Populations: Funded to start in 2024

Since 2018, the City has shared information to residents via mail on existing organizations that provide snow clearing services to raise awareness of these options. Staff evaluated the potential of expanding capacity for these programs as part of the 2023 [Legislative Directive Sidewalk Snow and Ice Removal report](#) and the 2023 [Legislative Directive on Sidewalk Snow and Ice Removal Pilot Project Cost Analysis](#). These include a pilot program for seniors and aligns with the Minneapolis for a Lifetime Age Friendly Action Plan Transportation Action #3 to identify and test approaches to improve substantially the quality and timeliness of snow and ice removal. Action #3 includes the example of a volunteer-based program such as "Snow Buddies" that could be promoted and/or

supported by the City, in particular Neighborhood and Community Relations (NCR). In late 2023, funding was included for a senior sidewalk clearing pilot to commence during the 2024-2025 winter season.

P4. Develop an Expanded Sidewalk Winter Maintenance Awareness Campaign: Complete & Ongoing

Since 2018, Public Works has improved communications around winter sidewalk clearing. Each year, Public Works sends a letter to each resident and business highlighting the importance of clearing sidewalks, detailing the requirements for clearing, and sharing resources to support clearing. Public Works mails warning letters to each property owner after the first complaint received each winter. Since 2022, sidewalk inspectors also place doorhanger fliers at properties who are found to be violating the ordinance. The City communicates on sidewalk clearing regularly through other communications channels (social media, Newsbites, etc.) and includes sidewalk clearing reminders with messages around Snow Emergencies.

P5. Update and Improve the City’s Winter Maintenance Webpage: Complete & Ongoing

The City significantly improved its [winter sidewalk maintenance webpage](#) in 2018 and maintains the page each year. This information includes separate sections on sidewalk snow clearing rules, how to access free sand for sidewalks, and clearing snow around garbage and recycling carts. The webpage also includes [a list](#) of businesses that provide snow removal services. A direct link is provided to report sidewalk snow and ice to the City’s 311 system. Additionally, a public dashboard was created that provides information on [sidewalk snow and ice incidents](#) with over 1,600 views since launching.

P6. Enhance Winter Maintenance Data Collection: Complete & Ongoing

In recent years, Public Works has significantly expanded the amount of data collected around winter maintenance through the proactive sidewalk inspection program and has worked to further maintain and analyze the data. The expanded data are used to inform City staff where problems persist and to refine strategies to improve winter sidewalk maintenance.

P7a/7b. Implement a Partial/Citywide City-led Sidewalk Clearing Program: Not recommended for further study
[Significant research and study](#) have been conducted to understand the challenges and feasibility of a City-led sidewalk clearing program. The implementation of a local City-led sidewalk clearing program is not recommended due to high program costs, labor challenges, and the availability of several other pilot options not yet tested for efficacy in addressing the non-compliant properties. No further study of these related options is recommended.

Table 2. Status of 2018 Pedestrian and Bicycle Winter Maintenance Study Bicycling Options

Bicycling Options	Status (as of 12/2023)
B1. Designate a Winter Bicycle Priority Network	Started
B2. Develop a Bikeway Winter Maintenance Awareness Campaign	Not yet started
B3. Define Standard Level of Service for Clearing Winter Bicycle Priority Network	Started
B4. Develop a Regional Winter Bicycle Priority Network	Not recommended for further study

B1. Designate a Winter Bicycle Priority Network: Started

Work to begin designating a winter bicycle priority network has started but not been substantially completed. The informal winter bicycle priority network consists of the protected bikeways and select trails that Public Works crews currently clear under City maintenance responsibilities and as determined by interagency agreements. However, these protected bikeways and trails do not create a continuous network. Connections between protected bikes and trails are often made using on-street bicycle facilities where snow clearing follows

the timeline for the street on which the facility is located. Inconsistencies in the level of service and timeframe for clearing practices between different facilities can create patchwork conditions that are not inviting nor comfortable for riders of all ages and abilities. Designating a winter bicycle priority network would allow bicyclists to have reasonable expectations of the bicycle routes that will be cleared of snow and ice after a snowstorm and how quickly the work would be completed. Public Works plans to finalize creating a winter bicycle priority network in the near future.

B2. Develop a Bikeway Winter Maintenance Awareness Campaign: Not started

Work to develop a bikeway winter maintenance awareness campaign has not started. Such a campaign could either focus on educational messaging for property owner responsibilities for snow and ice clearing near bikeways, and/or engagement with communities to determine which communication tools may be best to share educational messaging. Part of understanding the level of private property impacts to bikeway winter maintenance could come through newly recommended action items in this study.

B3. Define Standard Level of Service for Clearing Winter Bicycle Priority Network: Started

Like B1, this work has been started but not substantially completed. Public Works crews currently strive to clear protected bikeways and trails of snow within 24 hours after a snowfall has ended, representing a defined but informal standard level of service for protected bikeways and select trails. This option dovetails with TAP [Bicycling Action 6.1](#) and [Bicycling Action 6.10](#) related to maintenance plans for the All Ages and Abilities Network and neighborhood greenways, respectively. Any work completed towards B3 will be included under efforts to work towards these two adopted TAP action items, retiring this option.

B4. Develop a Regional Winter Bicycle Priority Network: Not recommended for further study

Work to develop a regional winter bicycle priority network has not started as it builds directly off of B1, which has not yet been completed. Developing a regional winter bicycle priority network is not a near-term priority for Public Works at this time and not recommended for further study.

Status of Recommended Strategies for Immediate Action in 2018 from Supplemental Report

This section provides a status update, as of December 2023, on the recommended strategies for immediate action as presented in the 2018 supplemental report.

Table 3. Status of 2018 Supplemental Report Recommended Strategies for Immediate Action

Recommended Strategies for Immediate Action	Status (as of 12/2023)
Develop a proactive sidewalk inspection pilot*	Complete & Ongoing
Expand direct communication with residents*	Complete & Ongoing
Partner with existing organizations to provide snow and ice clearing assistance programs for select populations*	Funded to start in 2024
Review the Corner Clearing Program**	Complete & Ongoing
Explore Innovative Technologies**	Ongoing

*option for immediate action

**option for further consideration

Develop a Proactive Sidewalk Inspection Pilot: Complete & Ongoing

The proactive sidewalk inspection pilot was a top Public Works priority as an alternative to relying solely on a

complaint-based system through 311. The intent of the pilot program was to test whether proactive inspection reduces complaints and/or non-compliance and increases the rate of sidewalk clearing compliance across the city. The initial pilot was done during the 2018-2019 winter. Public Works has continued to do proactive sidewalk inspection each winter since. The inspections also provide a way to evaluate compliance levels over time.

Ahead of each winter, Public Works randomly selects grids spread across the city for proactive sidewalk inspection. City staff then proactively inspect all sidewalks in the grids after each snowfall of 1” or greater. If a property is reported for non-compliance, it follows the same process as a complaint received through 311, which includes a letter to the property owner (if it is their first complaint of the season), final inspection, and if still non-compliant, an order for a contractor to clear the sidewalk with the cost assessed to the property owner.

Proactive sidewalk inspections have found an average citywide compliance rate of 95 percent since the 2018-2019 winter season (see Figure 3 for additional details).



Figure 1. Seasonal proactive inspection compliance rates

Expand direct communication with residents: Complete & Ongoing

Refer to [P4. Develop an Expanded Sidewalk Winter Maintenance Awareness Campaign](#): Complete & Ongoing in the 2018 Pedestrian and Bicycle Winter Maintenance Study.

Partner with existing organizations to provide snow and ice clearing assistance programs for select populations: Funded to start in 2024

Refer to [P3. Implement Snow and Ice Clearing Assistance Programs for Select Populations](#): Funded to start in 2024.

Review the Corner Clearing Program: Complete & Ongoing

The City started a sidewalk corner clearing program in 1995. The budget at the time provided for some funding to cover the expenses. Over the years, due to financial strains on the budget, the program was operationally refined by re-prioritizing resources, without any additional funding to address the growing desire for more

aggressive corner clearing.

In 2015, Public Works proposed and was granted funding to enhance the corner clearing program via the City budget process, focusing on a network of pre-defined, high-priority pedestrian corners. In 2019, the Mayor and City Council approved an additional \$300,000 in funding, on-going annually, for accelerated corner clearing.

There are two circumstances that trigger the initiation of corner clearing activities: an accumulation of 4 inches or more of snow or a declared Snow Emergency. Corner clearing commences at the completion of the Snow Emergency; this allows the City to remove the windrows, which are rows of snow piles that are left behind by snow plows, after street plowing is completed. If another 4-inch snowfall or Snow Emergency is declared before all the corners are cleared, the City resumes corner clearing at the end of the new snowfall or Snow Emergency, starting with the predefined high pedestrian corridors, as defined by the established [Pedestrian Priority Network](#). After clearing corners on the Pedestrian Priority Network, crews continue to clear additional corners in the city until another snow event or until all corners are cleared. In the absence of a subsequent triggering event, it takes approximately nine days to complete all 17,000 corners in the city from start to finish.

Explore Innovative Technologies: Ongoing

The 2018 Supplemental Report did not specify which technologies to explore. In late 2022, staff explored the possibility of developing an interactive online snow clearing map and interviewed staff at the Minneapolis Park and Recreation Board. The February 2023 Legislative Directive further requested information on a web-based interactive tool, which is summarized in the recommended actions section. Public Works continues to explore innovative technologies related to winter sidewalk maintenance.

Status of Transportation Action Plan Walking Strategy 4 Actions

This section provides a status update, as of December 2023, on the Walking Strategy 4: Improve winter walking and rolling actions adopted in the 2020 Transportation Action Plan (TAP).

Table 4. Status of 2020 TAP Walking Strategy 4 Actions

Walking Actions	Status (as of 12/2023)
4.1 Expand education and awareness efforts for residents and businesses on City's sidewalk snow and ice removal ordinance, related standards and responsibilities.	Complete & Ongoing
4.2 Collaborate with the Neighborhood and Community Relations Department to build and share a list of community resources for clearing sidewalks to help clear snow for those who are unable.	In Progress
4.3 Work in partnership with Metro Transit to develop enhanced winter maintenance standards and enforcement for transit stops and stations.	Not yet started
4.4 Change 311 and related property reports language to more accurately communicate when issues are resolved in the computer system vs. on the street as snow and ice complaints are received and processed.	Started
4.5 Consider further streamlining inspection process by eliminating sending an Order to Correct and instead proceed with authorizing snow removal or ice mitigation.	Complete
4.6 Consider adding financial penalties to properties out of compliance with snow and ice clearing responsibilities, with an emphasis on properties with repeat issues.	Complete & Ongoing
4.7 Evaluate feasibility of changing City of Minneapolis Ordinance 445.20 for sidewalk clearing to require clearing the sidewalks earlier.	Complete
4.8 Continue to pilot, evaluate and implement processes that improve winter conditions for people walking; focus on equitable outcomes through coordination, sidewalk inspections, corner clearing and a willingness to test new solutions to improve snow and ice clearance.	Complete & Ongoing
4.9 Evaluate corner clearing program and pedestrian pushbutton design guidance to improve	Started

approach to better clear snow and ice adjacent to pedestrian pushbuttons.	
4.10 Conduct review of Pedestrian and Bicycle Winter Maintenance Study on a biennial basis to evaluate and suggest changes to City-led snow and ice clearing, including evaluating City-led clearing of snow and ice on the Pedestrian Priority Network.	Complete & Recommended for Adjustment

4.1 Expand education and awareness efforts for residents and businesses on City's sidewalk snow and ice removal ordinance, related standards and responsibilities: Complete & Ongoing

Refer to [P4. Develop an Expanded Sidewalk Winter Maintenance Awareness Campaign](#): Complete & Ongoing.

4.2 Collaborate with the Neighborhood and Community Relations Department to build and share a list of community resources for clearing sidewalks to help clear snow for those who are unable: In Progress

Refer to [P3. Implement Snow and Ice Clearing Assistance Programs for Select Populations](#): Funded to start in 2024.

4.3 Work in partnership with Metro Transit to develop enhanced winter maintenance standards and enforcement for transit stops and stations: Not Yet Started

City efforts related to this option have not commenced in earnest. Metro Transit is identified as the lead agency on this action, with city staff supporting their work. City staff have identified a recommendation action within this study to develop an awareness campaign for property owners and tenants responsible for clearing adjacent bus stops located along their sidewalks.

4.4 Change 311 and related property reports language to more accurately communicate when issues are resolved in the computer system vs. on the street as snow and ice complaints are received and processed: Started

The [Sidewalk Snow and Ice Incidents dashboard](#) show where people have reported snow and ice on sidewalks, and pending fees for authorized cleanups. The dashboard includes a how-to-use guide, and communicates important terms used to track the status of 311 cases at every stage, from No Enforcement Case or Order to Correct (OTC) to case closed or resolved. Staff have identified a recommendation to add 311 bikeway snow and ice incidents related to curb-level bikeways to this dashboard.

4.5 Consider further streamlining inspection process by eliminating sending an Order to Correct and instead proceed with authorizing snow removal or ice mitigation: Complete

In total, the complaint driven process used to take anywhere from 6 to 8 or more working days. The timeline resets if another snow event occurs during this timeline. This process was streamlined in 2016 to eliminate an initial physical inspection that would have occurred prior to a Notice of Violation (NOV), which is now referred to as an Order to Correct (OTC) being issued. The streamlining has reduced the amount of time between receipt of a 311 complaint and a contractor clearing the sidewalk by two to three working days. The funded sidewalk snow and ice removal pilots will provide more detail on outcomes related to proceeding with authorizing snow clearing or ice removal without sending an OTC.

4.6 Consider adding financial penalties to properties out of compliance with snow and ice clearing responsibilities, with an emphasis on properties with repeat issues: Complete & Ongoing

Staff studied the possibilities of adding financial penalties to properties out of compliance with snow and ice clear responsibilities. In November 2023, financial penalties for authorized contractor cleanups were tied to different metrics, such as linear feet of sidewalk cleared for commercial properties, to disincentive larger commercial properties from relying on a cheaper flat fee universally applied to apply properties regardless of type and length of sidewalk cleared. Public Works will be monitoring the effectiveness of these changes and evaluate potential future changes.

4.7 Evaluate feasibility of changing [City of Minneapolis Ordinance 445.20](#) for sidewalk clearing to require clearing the sidewalks earlier: Complete

Staff evaluated the feasibility of this action and no changes are recommended to the ordinance at this time.

Currently, single-family homes and duplexes are given 24 hours after a snowfall has ended to clear snow and ice, while all other properties have four daylight hours after a snowfall has ended to clear snow and ice. We do not have data on how many property owners who have four daylight hours after a snowfall to clear their sidewalks do not adhere to this timeframe, and it is challenging to enforce the four-daylight hour timeframe.

Staff do not think that shortening the existing 24-hour clearing timeframe for single-family and duplex properties would be reasonable or realistic for most residents with full-time jobs. Staff also do not think that such a change would generate significant improvements to sidewalk accessibility because there would not be an easy way to enforce a shorter timeframe.

4.8 Continue to pilot, evaluate and implement processes that improve winter conditions for people walking; focus on equitable outcomes through coordination, sidewalk inspections, corner clearing and a willingness to test new solutions to improve snow and ice clearance: Complete & Ongoing

As documented throughout this study, much work has been completed to improve winter walking conditions in the City since the 2018 study was published. Public Works continues to pilot, evaluate, and implement improvements with most recent milestones including funding for four new sidewalk snow and ice removal pilots to begin during the 2024-2025 winter season. These four pilot programs are described in detail in Walking Recommended Actions: Cost Estimates.

4.9 Evaluate corner clearing program and pedestrian pushbutton design guidance to improve approach to better clear snow and ice adjacent to pedestrian pushbuttons: Started

Additional work is needed to evaluate pedestrian pushbutton design guidance to understand if tweaks are needed to the corner clearing program to improve wintertime pushbutton accessibility.

4.10 Conduct review of Pedestrian and Bicycle Winter Maintenance Study on a biennial basis to evaluate and suggest changes to City-led snow and ice clearing, including evaluating City-led clearing of snow and ice on the Pedestrian Priority Network: Complete & Recommended for Adjustment

The completion of this 2023 Winter Walking and Biking Study fulfills the study update, with extensive evaluation of a potential City-led clearing of snow and ice on the Pedestrian Priority Network complete.

Status of Transportation Action Plan Bicycling Strategy 6 Action Items

This section provides a status update, as of December 2023, on the winter-related Bicycling Strategy 6: Maintain the All Ages and Abilities Network to provide year-round access actions adopted in the 2020 TAP.

Table 5. Status of 2020 TAP Bicycling Strategy 6 Actions

Bicycling Actions	Status (as of 12/2023)
6.1 Develop and implement a written All Ages and Abilities Network Maintenance Plan that is regularly updated.	Not yet started
6.9 Prioritize clearing snow and ice on the All Ages and Abilities Network, including trails and protected bikeways within 24 hours of a snow event.	Started
6.10 Determine best way to ensure existing and future neighborhood greenways have the same quality of snow and ice clearance as trails and protected bikeways.	Recommended for Adjustment
6.11 Conduct review of Pedestrian and Bicycle Winter Maintenance Study on a biennial basis to evaluate and suggest changes; focus on improvements to snow and ice clearance on standard bicycle lanes.	Complete & Recommended for Adjustment

6.1 Develop and implement a written All Ages and Abilities Network Maintenance Plan that is regularly updated: Not Yet Started

This action was identified as a Year 0-3 action in the TAP, but was not started as staff focused was primarily dedicated to studying pedestrian items during this timeframe. This adopted action item is a near-term priority with a focus specifically on winter maintenance practices.

6.9 Prioritize clearing snow and ice on the All Ages and Abilities Network, including trails and protected bikeways within 24 hours of a snow event: Started

Public Works crews currently aim to clear protected bikeways and trails within 24 hours after a snowfall has ended. Other facilities, such as bicycle boulevards, are not currently cleared within 24 hours given practical and capacity challenges. Bicycling Action 6.10 below focuses on examining these challenges.

6.10 Determine best way to ensure existing and future neighborhood greenways have the same quality of snow and ice clearance as trails and protected bikeways: Not started

This work has not started. More information is needed to determine the best way to ensure the same quality of snow and ice clearance through a pilot program. See new recommended biking [Action 2.1](#) for more information on a proposed pilot that would allow staff and crews to better understand best practices and possibilities related to completing this.

6.11 Conduct review of Pedestrian and Bicycle Winter Maintenance Study on a biennial basis to evaluate and suggest changes; focus on improvements to snow and ice clearance on standard bicycle lanes: Complete & Adjusted

The completion of this 2023 Winter Walking and Biking Study fulfills the study update.

D. Winter Maintenance Definitions

During an average winter, the City receives 52" of snow resulting from approximately 50 precipitation events, including events where there was only a trace of precipitation.² In addition to precipitation events, freeze/thaw cycles and blowing snow provide for the possibility of slippery sidewalk and pavement conditions throughout the winter months. When temperatures rise above freezing, snow and ice on or adjacent to sidewalks will melt and often flows onto or across the sidewalk. When temperatures drop back below freezing, the remaining water on the sidewalk refreezes and results in icy sidewalk conditions. Similar conditions will result after a freezing rain event. It is estimated that during the winter of 2016-2017, approximately 60-70% of the contractor work orders were due to ice, not snow. Therefore, even without a precipitation event, property owners need to address their sidewalks. City Ordinance 445, described in [Appendix E: Current Winter Maintenance Practices](#), allows that if ice cannot be removed due to extreme temperatures, sand may be sprinkled to provide temporary traction until conditions allow for the ice to be removed.

Snow and ice control – Includes plowing snow to the side of a street, trail, or sidewalk, where it is typically left to accumulate until it eventually melts. Ice can be controlled with chemicals to prevent bonding or promote melting, or with abrasives like sand to provide traction. These activities can be accomplished with a truck, tractor, utility vehicle, or hand shoveling. This is the broadest definition that typically covers all types of activities.

Snow clearing – pushing, plowing or removing snow in much the same manner as above within snow and ice control, but generally used to describe activities like clearing street corners or other facilities.

Snow removal – involves physically removing snow from a street, trail, or sidewalk and hauling it to another location to eventually melt. Snow is typically cleared to the side of a facility first and later collected with special procedures and equipment, before being hauled away.

Windrows – rows of snow piles that are left behind by snowplows after plowing operations.

Snow Emergency – these events are put in place when there is significant snowfall. When a Snow Emergency is declared, parking restrictions go into effect along defined Snow Emergency Routes so that plows can clear the streets. The City Public Works Director has the authority to declare Snow Emergencies.

E. Current Winter Maintenance Practices

This section describes current City ordinance and winter maintenance practices, which are also documented in detail in the 2023 Sidewalk Snow and Ice Removal Legislative Directive report.

City Ordinance for Sidewalks

[Minneapolis Code of Ordinances, Title 17, Chapter 445](#) specifies the timeframe and level of service for clearing snow and ice from sidewalks. Property owners are responsible for clearing snow and ice from sidewalks that are adjacent to the properties they own. Single-family homes and duplexes are given 24 hours after a snowfall has ended to clear snow and ice, while all other properties have four daylight hours after a snowfall has ended to clear snow and ice. Sidewalks must be cleared full width and to bare pavement. Property owners are also responsible for maintaining the full-width, bare pavement standard if the sidewalk is covered by blowing snow or freeze-thaw cycles.

² Source: 2023 [Sidewalk Snow and Ice Removal Legislative Directive report](#)

City Facilities and Responsible Parties

The City has approximately 1,910 miles of sidewalks, over 220 miles of trails and bikeways, over 1,000 miles of street, almost 400 miles of alleys, over 2,800 bus stops and light rail stations, and a variety of pedestrian, bicycle and vehicular bridges citywide. City staff, property owners, and several partner agencies work in concert to maintain these facilities throughout the winter season.

Keeping sidewalks clear of snow and free of ice is a combined effort between public partners across several agencies and thousands of private property owners. Public Works, Special Service Districts (SSD), Community Planning and Economic Development (CPED), agency partners such as Minneapolis Park and Recreation Board (MPRB) and Metro Transit, and the city's residents and property owners each have their own designated responsibilities and responses to snow and ice clearing. Regardless of the entity, property owners throughout the city are responsible for clearing snow and ice from sidewalks that are adjacent to the properties they own, although the timeframe varies for different property types.

While property owners are responsible for clearing snow and ice from sidewalks adjacent to their properties, bikeway winter maintenance is the responsibility of the respective jurisdictional owners such as the City, the Minneapolis Parks and Recreation Board (MPRB), the Minnesota Department of Transportation (MnDOT), Hennepin County, Three Rivers Park District, and the University of Minnesota (U of M). There are many roads and/or bikeways that are maintained by the City of Minneapolis through respective interagency agreements. Agreements are the tool for assigning responsibility for work completion from one agency to another, which often includes some amount of compensation.

The process for clearing bikeways depends on the bikeway facility type. Currently, Public Works crews strive to clear protected bikeways and Minneapolis-cleared trails within 24 hours after the end of a snowfall. While maintenance crews are staffed every day of the week, no nighttime work is performed over weekends without a triggering snowfall event of 2 or more inches, which may impact the timeframe for which bikeway clearing work is completed.

Shared Use Paths and Off-Street Trails

The City has 101 miles of off-street bikeways and trails. Maintenance of paths and trails throughout the city is the shared responsibility of the jurisdictional owners of each network, including the City, the MPRB, MnDOT, Hennepin County, Three Rivers Park District, and the U of M. Each maintain their facilities within their respective jurisdictions; all agencies have the same level of service goal of plowed and treated off-street paths and trails within 24 hours after a snowfall has ended. Off-street trails typically have plenty of buffer space for snow storage and snow removal is rarely necessary.

Protected Bikeways

The City of Minneapolis has 16 miles of on-street protected bike lanes. Protected bike lanes are bicycle facilities that are physically separated from vehicular traffic. Public Works provides the same winter maintenance level of service goals for protected bike lanes as the off-street path and trail system: plowed and treated within 24 hours after a snowfall has ended. In the event that snow removal is required, where snow windrows encroach on protected bike lanes, removal operations will extend beyond the 24-hour snow clearing standard. Because of the design of protected bike lanes, City crews often use special equipment, have dedicated crews, and make several return trips for snow clearing and/or removal.