



Date: March 31, 2020
To: Seattle City Councilmembers
From: Sam Zimbabwe, Director, Seattle Department of Transportation (SDOT)
Ross McFarland, Sidewalk Repair Program Manager
Trevor Partap, Pavement Engineering Manager
Liz Sheldon, Street Use Division Director
Subject: **Response to Section 1 of Resolution 31908 re: Sidewalk Repair**

In October of 2019, Council passed [Resolution 31908](#), sponsored by Councilmember Herbold, which requested that the Seattle Department of Transportation (SDOT):

1. Develop policy options for maintenance of existing sidewalks;
2. Create a public education program on snow and ice removal; and
3. Develop a program to enforce snow and ice removal requirements on private property owners.

SDOT responded to Sections 2 and 3 of the resolution in January. This memo provides an initial response to Section 1 of the resolution regarding sidewalk maintenance, which read as follows:

The City Council requests that the Seattle Department of Transportation (SDOT) prepare a report of options for new sidewalk maintenance policies and programs. The report shall include, but is not limited to; an assessment of strategies to implement an equitable cost sharing program including an evaluation of the City of Denver's program; options for do-it-yourself maintenance and hiring an approved contractor; point of sale and lien options; a policy scan of other options; and a plan for community outreach. The report should include a recommended course of action and any proposed legislation necessary to implement the recommendations. The City Council requests that SDOT submit the report in writing to the City Council by March 31, 2020 for review and subsequent legislative action.

This initial response describes Seattle's current approach to sidewalk repair and provides a preliminary evaluation of the City of Denver's policy. To fully assess other potential strategies for an equitable cost sharing program, along with recommendations for possible new policy direction in Seattle, we have asked for assistance from the University of Washington Evans School of Public Policy & Governance. The Evans School has assigned a group of students from its Master of Public Administration program to work with us to provide a thorough and independent analysis of alternative policy pathways. Due to the academic calendar, as well as the time necessary to provide a thorough analysis, we are requesting an extension for the final response to Section 1 of the resolution until June 30, 2020.

This memo, in addition to describing current practices and a discussion of Denver's policy, also includes the scope of work and the schedule for our work with the Evans School.

Current Seattle sidewalk repair approach

Like many American municipalities, sidewalk repair in Seattle is generally held by code ([Seattle Municipal Code 15.72](#)) to be the responsibility of the abutting property owner. Property owner responsibility for sidewalk maintenance is authorized under state law ([RCW 35.69.020](#)) and is standard practice for cities across Washington. Cities also have a responsibility to provide transportation infrastructure that is reasonably safe for ordinary travel and SDOT's current sidewalk repair approach attempts to maximize safety with limited resources for repair or enforcement.

SDOT's Sidewalk Repair Program oversees the maintenance of the City's sidewalks and curbs and attempts to provide safe and accessible sidewalks by:

- Investigating concerns of ADA inaccessible sidewalks.
- Implementing temporary mitigation measures, as needed. These include painting the sidewalks to alert users to existing issues, placing asphalt shims, beveling sidewalk uplifts, or closing sidewalks as a last resort.
- Determining repair responsibility (i.e. adjacent property owner, City, utility, or other entity with permitted infrastructure in the right-of-way).
- Permanently repairing sidewalks when it is determined to be the City's responsibility (such as when sidewalks are damaged by city-owned trees) and budget is available.
- Issuing notice to property owners or other entities when it is their responsibility. Due to limited staff resources, prioritizing notices for locations with the most damage and highest pedestrian demand.

Under SMC 15.72, SDOT can direct the property owner to repair sidewalk distress along their frontage. If the property owner does not make the repair, the city can make the repair and place a lien on the property to recover its costs, which requires council action for each property. This lien option has not been used in recent memory.

Seattle has over 2,300 miles of sidewalk (34,000 blocks of sidewalk) with a total replacement value of over \$5.6 billion (in 2015 dollars). The current sidewalk repair backlog is estimated to range from \$500 million to \$1.3 billion. Sidewalk maintenance funding varies from year to year but typically ranges between \$1.5 and \$5 million per year.

Initial overview of City of Denver's approach

Per the [City of Denver's ordinance](#), sidewalk repair and maintenance is the responsibility of the adjacent property owner. Through their Neighborhood Sidewalk Repair Program, Denver offers extended repayment assistance and "affordability discounts" (i.e., cost sharing) for property owners who qualify, based on income and household size. Denver also authorizes less expensive repair methods, including grinding and crack filling. However, Denver is struggling to manage the inspection, enforcement, and administrative load of this approach, which, at the current pace, could take them [more than 150 years to reach all neighborhoods](#).

Currently, the City of Seattle has no similar provision or authority to subsidize the cost of repairing sidewalks for low-income property owners. In addition, Seattle only allows full sidewalk panel replacement when a property owner must repair their sidewalk, rather than temporary mitigation measures such as asphalt shims or grinding/beveling.

Scope and schedule for policy report

As SDOT prepares our report in response to Section 1 of Resolution 31908, we are partnering with a team of Evans School public administration graduate students on the following deliverables:

- A review of sidewalk repair policies and funding practices in major North American cities—including cost sharing strategies like in Denver
- Direct outreach to municipal staff in select cities to better understand how other cities fund, prioritize, and enforce responsibility for sidewalk maintenance
- An analysis of Washington State law and Seattle Municipal Code related to the regulation of sidewalk repair and what limitations or opportunities our legal, policy, and permitting frameworks may present for changes to Seattle’s approach to sidewalk repair
- An evaluation of enforcement options for sidewalk repair, including point of sale and lien options
- A draft policy report, which will include recommendations related to:
 - Equitable enforcement of property owners’ sidewalk repair responsibility
 - Whether the City should assume greater responsibility for sidewalk maintenance (which would have budget implications)
 - Changes to state law, municipal code, and funding necessary for each recommended policy change

All of these deliverables will be considered within the context of access for people with disabilities and compliance with the Americans with Disabilities Act.

The Evans student project duration is from January 2020 through early June 2020 with a final report expected by the end of June. At this point, we do not expect the current Coronavirus public health emergency to significantly impact our timeline. However, we will notify Council if future developments affect this schedule.



Memo

Date: June 30, 2020
To: Seattle City Councilmembers
From: Sam Zimbabwe, Director, Seattle Department of Transportation (SDOT)
Ross McFarland, Sidewalk Repair Program Manager
Trevor Partap, Pavement Engineering Manager
Susan Byers, Pavement Engineering and ROW Crew Construction, Division Director
Subject: **Response to Section 1 of Resolution 31908 re: Sidewalk Repair Policy Report**

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SDOT responded to Sections 2 and 3 of the resolution in January. This memo and attached report provide our response to Section 1 of the resolution regarding sidewalk maintenance, which reads as follows:

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Over the last six months, SDOT worked with a team of graduate consultants from the University of Washington Evans School of Public Policy & Governance to provide a thorough and independent analysis of alternative sidewalk repair policy pathways, potential strategies for an equitable cost sharing program, and recommendations for possible new policy direction in Seattle. The Evans team's final report is attached. The report contains six primary recommendations which would require action from Council and SDOT, and in some cases would require staffing and funding resources, to effectively implement. Below is an overview of Seattle's current sidewalk repair approach, followed by a summary of the report recommendations and key findings.

Current Seattle sidewalk repair approach

Like many American municipalities, sidewalk repair in Seattle is generally held by code ([Seattle](#)

[Municipal Code 15.72](#)) to be the responsibility of the abutting property owner. Property owner responsibility for sidewalk maintenance is authorized under state law ([RCW 35.69.020](#)) and is standard practice for cities across Washington. Cities also have a responsibility to provide transportation infrastructure that is reasonably safe for ordinary travel, and SDOT's current sidewalk repair approach attempts to maximize safety with limited resources for repair or enforcement.

SDOT's Sidewalk Repair Program oversees the maintenance of the City's sidewalks and curbs and attempts to provide safe and accessible sidewalks by:

- Investigating concerns of ADA inaccessible sidewalks.
- Implementing temporary mitigation measures, as needed. These include painting the sidewalks to alert users to existing issues, placing asphalt shims, beveling sidewalk uplifts, or closing sidewalks as a last resort.
- Determining repair responsibility (i.e. adjacent property owner, City, utility, or other entity with permitted infrastructure in the right-of-way).
- Permanently repairing sidewalks when it is determined to be the City's responsibility (such as when sidewalks are damaged by city-owned trees) and budget is available.
- Issuing notice to property owners or other entities when it is their responsibility. Due to limited staff resources, prioritizing notices for locations with the most damage and highest pedestrian demand.

Under SMC 15.72, SDOT can direct the property owner to repair sidewalk distress along their frontage. If the property owner does not make the repair, the City can make the repair and place a lien on the property to recover its costs, which requires Council action for each property. This lien option has not been used in recent memory.

Currently, the City of Seattle has no provision or authority to subsidize the cost of repairing sidewalks for low-income property owners. In addition, Seattle only allows full sidewalk panel replacement when a property owner must repair their sidewalk, rather than temporary mitigation measures such as asphalt shims or grinding/beveling.

Seattle has over 2,300 miles of sidewalk (34,000 blocks of sidewalk) with a total replacement value of over \$5.6 billion (in 2015 dollars). The current citywide sidewalk repair and obstruction removal need is estimated to range from \$500 million to \$1.3 billion. Sidewalk maintenance funding varies from year to year but typically ranges between \$1.5 and \$5 million per year. SDOT has prioritized installing shims and bevels to address trip hazards, which does not address the underlying sidewalk replacement need. More capital-intensive sidewalk repairs are done on a spot basis and in conjunction with other SDOT capital projects.

Key report findings

- Sidewalk construction in Seattle has historically been privately financed through Local Improvement Districts or through redevelopment of adjacent parcels. The City has never had adequate funding or a workable enforcement mechanism to manage ongoing sidewalk repair after initial sidewalk construction.
- Property owners are often unaware of their sidewalk maintenance responsibility and trip/fall liability exposure. Even when aware, the sidewalk repair cost usually exceeds the incentive for private property owners to make the necessary repairs. In addition, current permitting

processes and external contractor procurement can be complex and difficult to navigate for a typical property owner.

- Cities in North America typically take one of two primary approaches to sidewalk maintenance:
 1. City-managed repairs with a dedicated funding source (e.g. Boston; Vancouver, BC)
 2. Property owner repair responsibility with City-led enforcement (e.g. Seattle, Denver)
- The COVID-19 pandemic has demonstrated how critical safe sidewalks are for everyone to be able to walk and roll around Seattle to access basic services and maintain physical and mental health.

Sidewalk repair policy report recommendations

1. Implement a citywide 5-year sidewalk shim/bevel plan as a first step to mitigate existing sidewalk uplifts and other deficiencies that can create accessibility barriers or trip/fall risks. This would require **an additional \$3 – \$4 million per year**, on top of the current annual sidewalk shim/bevel budget (which is a subset of the aforementioned SDOT sidewalk maintenance budget).
2. Increase property owner awareness and education about sidewalk responsibilities, through citywide mailers, a social media campaign, and sidewalk contractor resources for property owners
3. Simplify the sidewalk repair permitting process, through online permitting portal implementation and more upfront repair guidance at the time a warning notice is issued
4. Institute an income-based cost-sharing program for lower-income property owners
5. Implement clearer enforcement methods, including amending existing RCW and SMC sections that require Council approval to enforce sidewalk repair liens on non-compliant property owners
6. Seek increased and stable funding for long-term maintenance of Seattle's existing and growing sidewalk network

Next Steps

Through improved private property owner enforcement and permitting, along with greater City commitment to sidewalk repair funding and administrative resources, the ultimate goal is to improve the accessibility and state of good repair of our sidewalks so all Seattle residents and visitors can more fully participate in community life and equitably access opportunity and resources through walking and rolling.

Funding for these recommendations in the context of the City's COVID-19 response and related revenue shortfalls will be a near-term challenge as SDOT seeks to address infrastructure challenges across the city. Seattle and many cities across the country face the daunting task of repairing existing sidewalk networks and maintaining accessible and safe pedestrian infrastructure. While often overlooked, sidewalks are one of the most fundamental parts of our built environment. We want to ensure Seattle sidewalks are accessible to all, well maintained for future generations, and provide the backbone of an equitable, climate-conscious, and resilient multimodal network. **We look forward to both budgetary and policy support from Council that will allow us to move forward with the recommendations contained in this report.**

POLICY RECOMMENDATIONS FOR SIDEWALK REPAIR IN SEATTLE

Advancing Equity and Accessibility Through Improved Approaches
to Sidewalk Maintenance and Regulatory Enforcement



A policy report by the Evans School of Public Policy & Governance prepared for
the Seattle Department of Transportation

30 June 2020



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Seattle Pedestrian Advisory Board

MEDIA CREDITS

All photos, figures, maps, and charts are courtesy
of the City of Seattle, except where otherwise
noted.

GLOSSARY OF TERMS

Americans with Disabilities Act (ADA) – Federal civil rights legislation prohibiting discrimination based on a disability and requiring state and local governments to provide access to government services.

Beveling/Grinding – the process of cutting or grinding down the edge of an uplifted sidewalk slab(s) to achieve a more level slope and reduce tripping potential.

Client Assistance Memo 2208: Sidewalk Maintenance and Repair (CAM 2208) – an SDOT guidance document for property owners detailing their responsibility for sidewalk repair and how to get a sidewalk repair permit.

Lien – a financial obligation placed on property to satisfy a debt.

Pavement Engineering & Management Section (PEMS) – the team within SDOT charged with assessing and overseeing maintenance of Seattle streets and sidewalks.

Race & Social Justice Initiative (RSJI) – a City of Seattle initiative to dismantle institutionalized racism and race-based disparities in City government.

Real Estate Excise Tax (REET) – a tax imposed on the sale of real estate, usually paid by the seller of the property.

Revised Code of Washington (RCW) – the collection of all active laws governing Washington State.

Right of Way (ROW) – the area of land legally available for public travel and utilities – on most streets, this typically includes the sidewalks, planting strips, and roadway.

Right-of-Way Opening and Restoration Rules (ROWORR) – City of Seattle regulations regarding the opening and restoring of right of way, including pavement specifications.

Seattle Department of Transportation (SDOT) – City of Seattle department overseeing Seattle’s transportation system, including roads, bridges, sidewalks, and bike lanes.

Seattle Municipal Code (SMC) – the collection of all active ordinances governing the City of Seattle.

Seattle Sidewalk Repair Program (SSRP) – a subprogram of SDOT’s PEMS group specifically focused on sidewalk maintenance and repair in Seattle.

Shim – temporary asphalt patch installed over sidewalk cracks or uplifts to smooth the walking surface (can also be referred to as an “asphalt wedge”).

EXECUTIVE SUMMARY

The City of Seattle has grown significantly over the past two decades, and with that growth comes an increasing need for pedestrian infrastructure. With nearly 46% of Seattle's 2,300 miles of sidewalk determined to be in "fair" to "very poor" condition, the Seattle Department of Transportation (SDOT) needs new approaches to repair and ongoing maintenance to address this fundamental need. In 2019, Seattle City Council passed [Resolution 31908](#) directing SDOT to present a range of policy alternatives to improve sidewalk repair and address the large volume of observations recorded in prior assessments. SDOT hired our team through the Evans School Consulting Lab to prepare this report.

The current legal framework attempts to place primary responsibility on the abutting property owner to undertake and pay for sidewalk repairs, but the law imposes requirements that heretofore have not been acted upon. If a property owner is served notice to repair a damaged sidewalk and fails to complete the work, the Revised Code of Washington (RCW) allows the City to make the repairs and assess the cost to the owner via a lien. However, in order to do this, the Seattle City Council must approve of the "assessment roll" and then pass a resolution holding the property owner responsible. Based on a review of City records, this mechanism has not been used by Seattle City Council in historical memory. Since there is little incentive for a property owner to take on significant sidewalk repair, many of Seattle's sidewalks remain broken, unfixed, and in some cases, impassable. This is particularly true in lower socio-economic parts of the City, where the sidewalk repair costs may be prohibitive and raise concerns under the City's Race and Social Justice Initiative (RSJI). However, when it comes

to sidewalk trip and fall claims, property owners share liability with the City for injuries sustained on damaged sidewalks adjacent to their property. This can end up being even more costly, but ultimately the property owner does not pay to settle claims and lawsuits, it is their homeowner's insurance policies that cover the judgments. Thus, there is little incentive for the homeowners to proactively pay to repair the sidewalk in front of their home.

Accessibility concerns are another key limitation of the current system. The combination of an inability to enforce property owners to make sidewalk repairs and a lack of city budget for sidewalk repairs has resulted in a network of broken sidewalks across the city, which reduces or even precludes sidewalk access to pedestrians, particularly those with limited mobility. Many sidewalks in advanced stages of disrepair are impassable for pedestrians using mobility devices such as wheelchairs, canes, walkers, or scooters.

This report analyzes four sidewalk repair policy structures compiled from a review of internal SDOT operating procedures, peer city case studies from around North America, and discussion with local pedestrian advocacy groups and City of Seattle staff. Based on this analysis, the Evans School Consulting Team recommends the following strategies for the City of Seattle:

- 1. Implement a five-year shim/bevel plan |**

SDOT should carry out temporary mitigatory shim and bevel fixes on a planned, rotating, five-year grid plan across the City's entire sidewalk network as a short-term measure to reduce sidewalk hazards and improve accessibility. This measure helps quickly address mobility and liability issues but larger full panel replacement is still needed

- 2. Increase property owner awareness and education about sidewalk responsibilities** | Include messaging on property owner responsibilities of sidewalk maintenance in citywide mailers (such as utility bills and property owner/renter notices), launch a social media campaign on these responsibilities similar to the awareness efforts around snow and ice clearing, and provide information about sidewalk repair contracting to aid property owners in the repair process.
- 3. Simplify the sidewalk repair permitting process** | Provide more information to property owners when issuing a notice to repair, implement an online step-by-step sidewalk repair permitting portal and maintain a list of qualified sidewalk licensed repair contractors. This recommendation aligns well with the current transition to the Accela permitting system.
- 4. Institute an income-based cost-sharing program for lower-income property owners** | Aid lower-income private property owner repairs through City sponsored cost sharing or financing.
- 5. Implement clearer enforcement methods** | Increase the rate of sidewalk repair enforcement and notices to repair, particularly in urban villages and higher pedestrian volume areas. Increase SDOT crew capacity to perform needed sidewalk repairs and work with legislators on amending RCWs and Seattle Municipal Code to create a system where the City would be able to assert a lien on non-compliant property owners' property.
- 6. Seek increased and stable funding sources** | Enacting the preceding recommendations will require additional staffing and funding for cost-sharing administration, enforcement, and crew-delivered sidewalk repair. Additionally, beyond facilitating improved property owner sidewalk maintenance, many of Seattle's

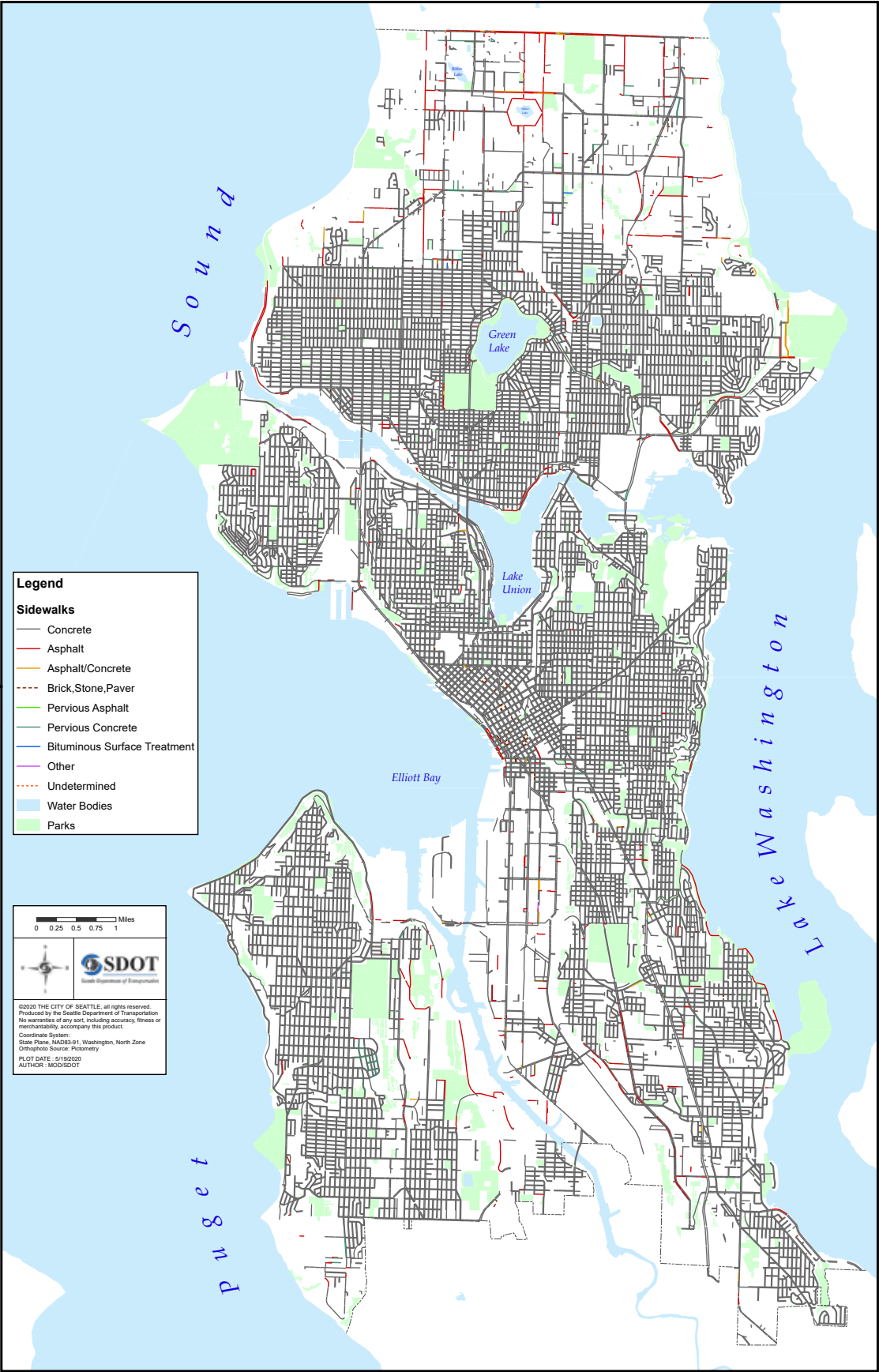
damaged sidewalks are solely the City's responsibility to repair, due to City-owned street trees or adjacent City property, which SDOT currently lacks resources to address.

These recommendations are intended to be enacted sequentially, building on top of each other—increased enforcement should not be done without first increasing property owner awareness of right of way responsibilities or implementing cost-sharing to alleviate the burden on lower-income property owners.

Further, we recognize the City's and SDOT's budgets and priorities will be dramatically impacted by COVID-19 for years to come. However, the pandemic has also shown the necessity of safe, accessible sidewalks for increased pedestrian use. The analysis and recommendations included in this report are provided for consideration when future funding and administrative capacity become available and may need to be gradually phased in as resources allow.



CURRENT MAP OF SEATTLE SIDEWALKS



SECTION 1: INTRODUCTION AND BACKGROUND

The Seattle Department of Transportation Sidewalk Repair Program is seeking to improve the way sidewalk repair is conducted and financed in Seattle. The current legal framework places the burden of sidewalk repair and safe passage¹ primarily on property owners² with little opportunity for financial assistance, resulting in insufficient levels of sidewalk repairs. Moreover, this structure has resulted in widespread noncompliance and raises issues of inequity for lower-income property owners. Other American and Canadian cities take different approaches—often due to differences in legal responsibilities—such as providing cost-sharing options, financial assistance for property owners, loan financing, and using more stringent enforcement techniques than Seattle.

At the heart of this issue of adequate sidewalk maintenance is a tension between the perception of sidewalks as public spaces and public goods, and the requirement that they be privately maintained.

This policy report, prepared as part of SDOT's response to Seattle City Council [Resolution 31908](#) (October 2019) to “develop policy options for the maintenance of existing sidewalks,” includes an analysis of pertinent Washington State laws and Seattle Municipal Code (SMC) provisions, provides a case study analysis of six peer cities' sidewalk repair strategies, and offers policy options for how Seattle sidewalk repair policies and procedures could be reformed to maximize pedestrian accessibility and equity.

¹“Safe passage” includes sidewalk maintenance and repair, along with clearing snow and ice, and removing overgrown vegetation.

²Except when damage is caused by City-owned street trees or assets, is on City property, and other such exceptions.

1.1 THE PROBLEM

- Damaged sidewalks injure users and limit mobility.
- Maintenance and repair need far exceed SDOT budgeted repair pace.
- Property owners are unaware of responsibility and liability exposure.
- Cost exceeds incentive for private property owners to fix sidewalks.
- Complex sidewalk repair processes further impede property owner compliance.
- Repairs are overly burdensome for low- and fixed-income property owners.

There are nearly 2,300 miles of sidewalk in Seattle.³ According to a 2017 SDOT assessment, 46% of Seattle's sidewalks were considered to be in “fair” to “very poor” condition, and there were an estimated 155,000 recorded observations of obstructions or sidewalk issues.^{4 5} However, Seattle has only budgeted \$2 to \$5 million per year for sidewalk repair in recent years, fixing 20 to 40 blocks per year, a pace dwarfed by current and future repair and maintenance needs. Current funding levels are higher than in the earlier 2010s, as a result of increased attention to sidewalk maintenance needs by Seattle City Council due in part to efforts and advocacy by community organizations and advisory groups, mobility advocates, and SDOT staff. Their

³This includes walking surfaces on medians.

⁴These obstructions and issues range from removal of vegetation (trees, bushes, etc.) impeding the sidewalk to significant damage requiring wholesale replacement of the sidewalk.

⁵Sidewalk Assessment Project. (2018). Seattle Department of Transportation. Retrieved from www.seattle.gov/transportation/about-sdot/asset-management/sidewalk-assessment-project

efforts have helped direct SDOT and the City Council to better address sidewalk repair and maintenance, including increased employment of temporary mitigatory fixes, installing 3,464 shims, and performing 8,805 bevels in 2019. Table 1 below shows that sidewalk repair spending was significantly higher in 2018 and 2019 than in previous years. In the past few years these temporary measures have been provided at no cost to the property owner. Still, sidewalk repair and maintenance needs remain vast.

**TABLE 1: SEATTLE SIDEWALK REPAIR FUNDING
2000 TO 2019**

Year	Historic Repair Funding Levels ⁶	Majority Funding Source
2000	\$236,703	n/a
2001	\$297,828	n/a
2002	\$237,375	n/a
2003	\$342,540	n/a
2004	\$282,171	n/a
2005	\$313,178	n/a
2006	\$360,433	n/a
2007	\$1,508,825	Bridging The Gap Levy
2008	\$1,866,090	Bridging The Gap Levy
2009	\$1,645,558	Bridging The Gap Levy
2010	\$2,616,170	Bridging The Gap Levy
2011	\$1,641,141	Bridging The Gap Levy
2012	\$1,461,740	Bridging The Gap Levy
2013	\$2,503,479	Bridging The Gap Levy
2014	\$2,342,838	Bridging The Gap Levy
2015	\$1,703,619	Bridging The Gap Levy
2016	\$1,703,451	Move Seattle Levy
2017	\$1,945,880	Move Seattle Levy
2018	\$4,072,382	Move Seattle Levy
2019	\$6,193,059	Move Seattle Levy

⁶Not adjusted for inflation.

Sidewalks are essential for accessing homes, businesses, schools, and parks. When sidewalks are in disrepair, it is harder for residents and visitors to access the places they are trying to get to. This is especially pronounced for people with limited mobility. More walkable, rollable,⁷ and easily navigable cities have a wide range of positive benefits for all community members (see Section 3 for more details).

Sidewalks are a fundamental piece of transportation infrastructure, yet laws and regulations proscribe private maintenance and upkeep of them. Both the Revised Code of Washington (RCW) 35.68 et seq. and 35.69 et seq. and Seattle Municipal Code (SMC) Chapter 15.72 et seq. states that property owners are responsible for maintaining the sidewalks adjacent to their property. In the event a sidewalk is deemed unsafe, the SMC allows SDOT to direct the property owner to repair the sidewalk. This begins with a warning to property owners notifying them that they need to fix the sidewalk, which can escalate to a lien being placed on the property if the owner fails to repair the sidewalk in a timely manner. However, the lien process requires City Council approval for each individual case, which is politically unpopular and, as a result, has not been used in recent memory. Without following the proscribed procedure in the RCW and the SMC, SDOT cannot recoup the costs of the repairs.

In theory, the City only pays for and conducts repairs to sidewalks if the sidewalks are adjacent to City-owned property or if City-owned assets (SDOT street trees, Seattle Public Utilities sewer lines, etc.) have caused damage to a sidewalk adjacent to private property. In practice, SDOT does perform repairs on private property where customer service complaints or claims are made. SDOT also funds some additional sidewalk repair in conjunction with larger capital corridor projects. Private developers must also repair sidewalks damaged or destroyed by construction on adjacent property. When prioritizing which

⁷Meaning accessible to wheelchairs, strollers, walkers, and other mobility devices.

sidewalks to fix with its limited budget for repairs, SDOT mainly focuses on the severity of damage and level of use of the sidewalk. This means most of the sidewalks that are repaired are along larger arterial streets with higher pedestrian use, within larger SDOT development plans and capital infrastructure projects, or are repaired or replaced during construction of a private development project.

The current system presents multiple equity issues, the first being the lack of financial assistance or cost-sharing options for low- and fixed-income property owners. These property owners are already more likely to be struggling with the rapidly rising costs of owning property in Seattle. The cost of repairing a sidewalk adjacent to their property may be more than many are able to afford, at an estimated replacement cost of \$76 per square foot, or \$456 per linear foot of a typical six-foot wide concrete sidewalk.⁸ An additional equity issue is that the areas of the City most likely to have their sidewalks repaired under the current system are those already undergoing significant development. When redeveloping a site, developers are in most cases required⁹ to replace the sidewalks adjacent to their site that become torn up, damaged, nonconforming, unsafe, or ADA noncompliant during the development process. Thus, areas of the City already undergoing growth and redevelopment are the ones with the newest sidewalks. This represents a significant disparity in access to safe, accessible sidewalks because access is in part contingent upon proximity to areas undergoing redevelopment.

⁸Based on SDOT asset management current estimated concrete sidewalk replacement value.

⁹SDOT's Right-of-Way Opening and Restoration Rules (Director's Rule 01-2017) allow for waivers to restoration requirements on a case by case basis, and must be requested by the contractor or party who made an opening in the right of way.

Messages from the Community

What sort of pedestrian infrastructure problems do you come across?

"As a hard of hearing and legally blind pedestrian who navigates the city using public transportation and sidewalks. Problematic sidewalks can be dangerous or simply hard on one's body from frequent minor injuries and repetitive use injury."

- 98117 Resident

1.2 THE NEED FOR NEW OPTIONS

In 2015, a class action lawsuit on behalf of individuals with mobility disabilities was brought against the City of Seattle for alleged violations of the Americans with Disabilities Act (ADA). The lawsuit alleged that "the City has systematically failed to ensure that its pedestrian right of way contains curb ramps that are necessary to make its pedestrian right of way accessible to individuals with mobility disabilities."¹⁰ Well-marked curb ramps are essential to individuals who use wheelchairs, canes, or walkers, those who are blind, and others who are not able to step down from a full curb. As part of the settlement reached in 2017, Seattle agreed to fix or repair 22,500 curb ramps over the following 18 years.^{11 12} By analyzing the City's current practices and reviewing policies and challenges in other cities, the Evans School Consulting Team has aimed to find more effective and equitable options to make Seattle more accessible for all. This report provides the City of Seattle with practical and feasible recommendations it can undertake to significantly improve sidewalk maintenance and resulting accessibility.

¹⁰Reynoldson v. City of Seattle [2017], Section 1-C www.disabilityrightswa.org/wp-content/uploads/2017/10/ReynoldsonConsentDecree.pdf

¹¹Reynoldson v. City of Seattle [2017]

¹²The City of Los Angeles entered into a similar consent decree settlement that included not only curb ramps but also sidewalks. Further information and context about this decree is included in Section 5.6 of this report.

1.3 THE PATH AHEAD—THE STRUCTURE OF THIS REPORT

In Section 2 of this report we provide a brief overview of methodologies used in our research, information gathering, and interviews with staff at SDOT and peer cities.

Section 3 reviews the historical and legal context of sidewalks and policies for their maintenance in the United States, academic literature covering how and why sidewalks are damaged, and innovative ideas cities are implementing for sidewalk repair. We also focus on constraints cities face in providing sidewalk infrastructure and accessibility.

In Section 4, we put the report into the context of present-day Seattle. We examine the legal context required under the SMC and RCW, show how Seattle approaches sidewalk repair and maintenance in practice, and provide a review of our discussions with internal City of Seattle staff and advocacy groups.

We follow this by expanding our search and providing case studies of peer cities' approaches in Section 5. Cities across the United States and Canada are dealing with crumbling infrastructure which includes sidewalks. By looking across the country and region—to Portland, OR; Vancouver, BC; Denver, CO; Boston, MA; Ithaca, NY; and Los Angeles, CA—we gain an understanding of how Seattle's approach is similar to and different from those of peer cities in order to apply that insight to develop possible solutions.

Section 6 explores four broad sidewalk repair policy structures that could be applied in Seattle. Not all strategies, policies, and practices seen elsewhere may be feasible in the Seattle context due to differences in liability, funding, and administration, but some incorporation of different elements may be possible and beneficial.

In Section 7 we make recommendations for what SDOT and the City of Seattle can do to increase the accessibility of City sidewalks given constraints it realistically faces. We also include community outreach strategies designed to help SDOT better inform and listen to residents and community groups regarding sidewalks and their maintenance. We conclude the report with final thoughts and additional considerations of the COVID-19 pandemic that are relevant to the issue but fall outside the scope of this report.

Throughout the report, we include stories from the Seattle community gathered by Rooted in Rights detailing how broken sidewalks impact pedestrian mobility and quality of life. These stories appear in the form of boxes titled "Messages from the Community" and are made up of direct quotes from community members.

SECTION 2: METHODOLOGY

This report presents information from various stakeholders in sidewalk repair throughout North America. Also, with the help of SDOT staff, we were able to directly interview internal team members across the broad spectrum of departmental functions that intersect with sidewalk repair activities. We used guiding questions to structure interviews with SDOT staff, peer cities, and advocacy organizations.

SDOT INTERNAL INTERVIEWS

We conducted six, in-person conversations with internal stakeholders at SDOT during February and March of 2020. We provided interviewees guiding questions in advance, with our team looking to gather candid feedback from staff members. Our team prepared questions regarding SDOT's standard operating procedures, budgeting and funding, communication, and challenges related to sidewalk repair. Much of the administrative process information gathered by our team is not in formal written policy, but instead based on personal understandings generously shared by stakeholders. Notes from these meetings provide the foundation for the vast majority of our research reported in Section 4.

PEER CITY CASE STUDIES

We conducted a set of comparative case studies to analyze the differences between sidewalk repair programs in multiple cities and develop a theory of what makes a successful sidewalk repair program. This format allowed us to explore the ways in which different cities have approached sidewalk repair, which of those strategies evidently were successful or unsuccessful, and why.

Our comparative case studies cover sidewalk repair programs in: Denver, CO; Boston, MA; Portland, OR; Vancouver, BC; Ithaca, NY; and Los

Angeles, CA. The case cities were chosen based on the following criteria:

1. Two cities that are considered similar to Seattle in terms of size, climate, geography, and culture: Vancouver and Portland.
2. Two cities that have sidewalk repair programs where the City maintains responsibility for and performs most repairs: Boston, which has long maintained City responsibility for its sidewalks, and Los Angeles, which has been required to take greater responsibility for sidewalk repair as by a Department of Justice Consent Decree.
3. Two cities with more unique alternative systems: Denver and Ithaca. Denver was chosen by the charge of Seattle City Council in Resolution 31908 to evaluate its recently implemented income-based cost-sharing program for sidewalk repair. Ithaca was selected due to its unique property fee structure and large volume of repairs completed for a city of its size.

We conducted semi-structured telephone interviews in four of the six cases. In two cases, Denver and Ithaca, we sent the interview questions to sidewalk repair program staff via email at their request and were provided with written responses.

ADVOCACY ORGANIZATIONS

To ensure we included perspectives from stakeholders outside of SDOT, our team contacted three local advocacy groups that have historically promoted sidewalk improvements: Feet First, Rooted in Rights, and Seattle Neighborhood Greenways. We received feedback from Rooted in Rights, which we have included throughout this report.

SECTION 3: LITERATURE REVIEW

3.1 HISTORICAL CONTEXT

The first sidewalk-like walking paths appeared over 4,000 years ago in Anatolia, in what is modern day Turkey. The Romans and the Greeks later had similar such paths, which disappeared after these peoples were conquered, and would not reemerge in Europe until reconstruction following the 1666 Great Fire of London. Sidewalks became commonplace in most European cities by the late 1800s, as well as on most busy streets in United States cities during the same period. These early sidewalks were most often made of wood or gravel, with concrete coming into common use in the 1890s.¹³

The means of funding and eventual regulation of these 19th century sidewalks has left a lasting legacy that this report—not to mention cities across the country and world—continues to grapple with. Business owners and entrepreneurs were the primary funders of early sidewalks, mainly as a means of increasing their property's value and to attract customers. Though privately funded, these sidewalk projects were administered through local governments. As automobiles and standardized roads gained prominence, sidewalks did as well.¹⁴

With increased pedestrian activity came more regulation of and restrictions on different modes of travel and uses of public space. These policies sought to encourage efficient movement and transportation along roads and sidewalks alike, limiting street vendors and commercial and storefront activity. The rise of the automobile in the early 1900s resulted in even more laws concerning pedestrian activity, with codes put in place against jaywalking and similarly “obstructive” walking. This history laid the groundwork for what

we think of as common sidewalk use and the regulatory framework that exists today.¹⁵

As this new status quo of sidewalk usage and law cemented itself, municipalities and the courts in the United States primarily placed the responsibility of maintaining sidewalks on property owners, while local governments assumed responsibility for maintenance of streets. While sidewalks are within the public right of way, the installation costs were imposed upon the property owners in most cases. Sidewalks throughout the United States were often funded through the use of local neighborhood tax assessments via Local Improvement Districts (LIDs). LIDs were used extensively in Seattle to fund sidewalk installation. According to a 1938 Seattle Engineering Department Annual report, Seattle had 1,682 miles of sidewalk. The 1,682 miles of concrete and wood sidewalks were funded almost entirely by property owners through LIDs, with the City paying less than 1% of the \$9.7 million in construction costs to that date.¹⁶

ANNUAL REPORT DECEMBER 31, 1938

SIDWALKS

	MILES OF WALK			C O S T		
	Concrete	Wood	Total	Property Portion	City	Total
Previous to 1938	1,427.23	254.77	1,682.00	9,629,664.66	72,557.62	9,602,000.00
Seattle's Work, 1938	1.23	—	1.23	7,627.52	608.62	8,236.14
Total to Date	1,428.46	254.77	1,683.23	9,637,292.18	73,166.24	9,700,458.42
Approximate Amount Incurred	27.32	253.53	280.85			687,307.35
Balance to Date	1,401.14	0.24	1,401.38			9,013,151.07
Completed Portion of Work Under Contract	0.00 Miles					0.00
Work under Contract	0.27 Miles					2,584.00

Includes Work Aided by WDA, PWA and WPA.

1938 City of Seattle Engineer Department Annual Report showing private and public share of sidewalk construction costs

¹⁵Ibid.

¹⁶Seattle Municipal Archives (1938) City Engineer Department Annual Report. Retrieved from: http://archives.seattle.gov/digital-collections/media/collectiveaccess/images/1/6/2/5/27001_ca_object_representations_media_162542_original.pdf

¹³Loukaitou-Sideris, A., and Ehrenfeucht, R (2009). Sidewalks: Conflict and Negotiation over Public Space. MIT Press.

¹⁴Ibid.

However, municipalities did not escape all responsibility for sidewalks, as courts across the country charged cities with maintaining a minimum level of safety for sidewalk usage and held some cities liable for accidents on sidewalks. As discussed in the Legal Context section, much of this framework—property owners responsible for maintenance, but cities still liable in lawsuits stemming from accidents due to poorly maintained sidewalks—remains commonplace today.¹⁷

This fundamental tension between the perception of sidewalks as largely a public space and public good, and the laws providing that they be privately maintained, is the crux of the issue addressed in this report. In major U.S. cities, roads, bridges, and parks are all publicly funded and maintained, but responsibility for sidewalks is largely private.

3.2 LEGAL CONTEXT OF SIDEWALKS IN AMERICAN CITIES

Sidewalks are a crucial piece of infrastructure for any city. There are federal, state, and local legal requirements and guidelines in place to ensure the accessibility and safety of sidewalks. The presence of sidewalks along roadways has been shown to reduce pedestrian-vehicle crashes where pedestrians were walking along roadways by 50-90%.¹⁸ When sidewalks are in significant disrepair, it can force pedestrians to walk or roll in the street instead, which presents a safety hazard. Pedestrians, especially those with mobility limitations, can also injure themselves while trying to navigate over a sidewalk in disrepair. In either scenario, broken sidewalks present a liability issue for the party in charge of fixing sidewalks (be it the city, the property owner, or both).

¹⁷Loukaitou-Sideris, A., and Ehrenfeucht, R (2009). *Sidewalks: Conflict and Negotiation over Public Space*. MIT Press.

¹⁸Zegeer, C., Stutts, J., Huang, H., Cynecki, M. J., Van Houten, R., Alberson, B., ... & Hardy, K. K. (2004). *A guide for reducing collisions involving pedestrians*. NCHRP Report, 500.

Americans with Disabilities Act (ADA) Compliant Sidewalks in Seattle

The Americans with Disabilities Act (ADA), originally signed into federal law in 1990, provides civil rights protection for people with disabilities and outlaws discrimination on the basis of disability status.¹⁹ Discrimination includes failing to provide accommodations for people with disabilities.²⁰ The ADA covers rights related to employment; access to local and state government services, “places of public accommodation,” and transportation; and additional rights to ensure access to meet the needs of day-to-day life.²¹ As part of the Act, newly constructed or renovated state and local government facilities, commercial facilities, and places of public accommodation must comply with ADA standards. The design guidelines under the ADA call for a basic level of “universal design,” with the intention that public spaces will be designed to be accessible for people of all ability levels.

As public entities, the City of Seattle and SDOT adhere to Title II of the ADA, which requires public entities to provide and maintain access to City programs, services, and activities.²² Accessible sidewalks are a critical component for people to reach in-person programs, services, and activities; thus enforcement of repairs to sidewalks to meet ADA compliance is part of SDOT’s responsibilities under Title II.

¹⁹U.S. Department of Justice, Civil Rights Division. (2010). *The Americans with Disabilities Act : Title II Regulations*. [Washington, D.C.]: U.S. Dept. of Justice, Civil Rights Division, Public Access Section. Retrieved from: www.ada.gov/2010_regs.htm

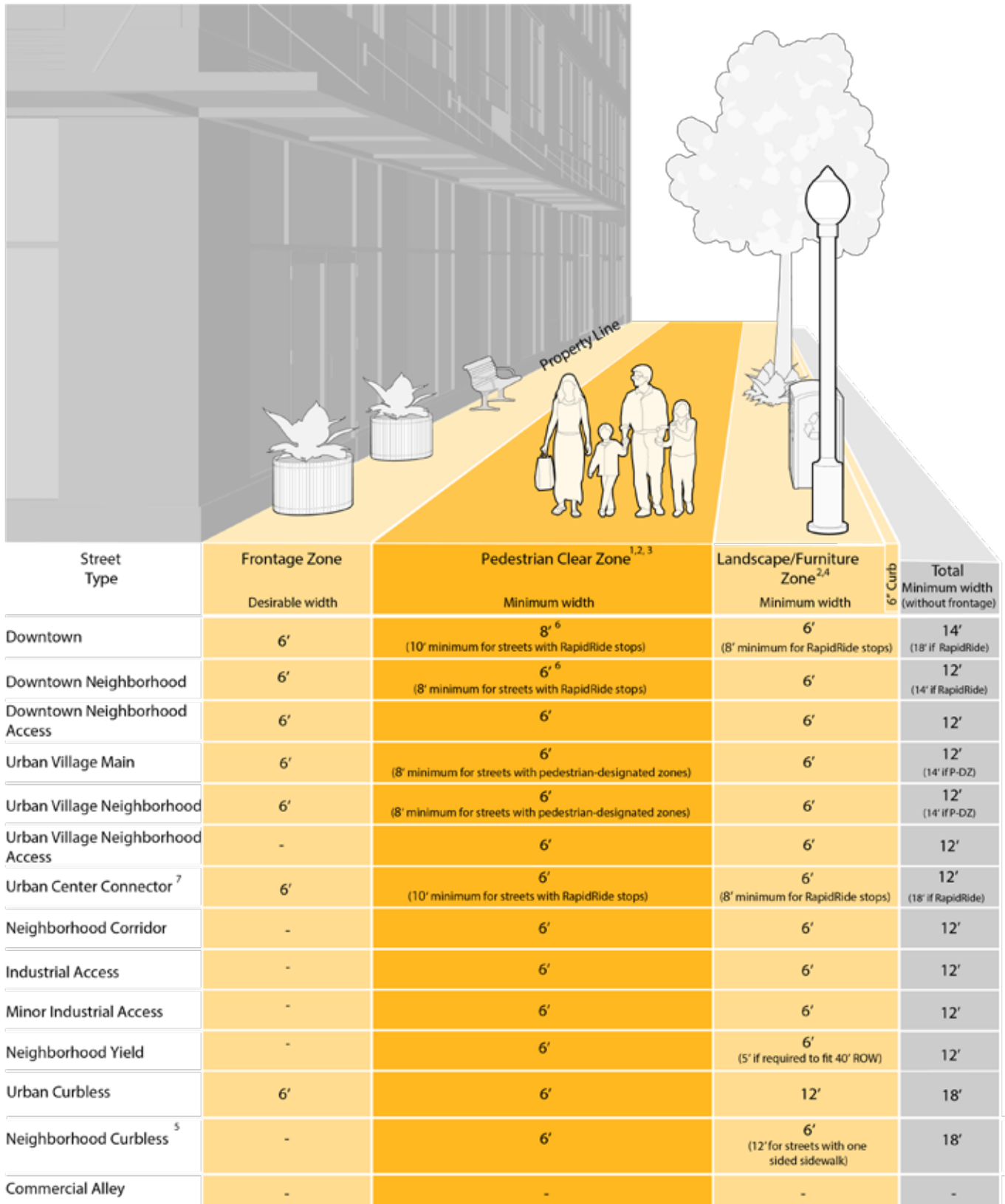
²⁰Emens, E. F. (2012). *Disabling attitudes: US disability law and the ADA Amendments Act*. *The American Journal of Comparative Law*, 60(1), 205-234.

²¹U.S. Department of Justice, Civil Rights Division. (2010). *The Americans with Disabilities Act : Title II Regulations*. [Washington, D.C.]: U.S. Dept. of Justice, Civil Rights Division, Public Access Section. Retrieved from: www.ada.gov/2010_regs.htm

²²Ibid.

FIGURE 1: MINIMUM WIDTH OF SIDEWALK AND PLACEMENT OF STREET FIXTURES FOR NEW CONSTRUCTION.

Source: Seattle Streets Illustrated (SDOT)



Department of Justice ADA Consent Decrees

The U.S. Department of Justice (DOJ) and private plaintiffs have entered into a variety of consent decrees in recent years related to municipalities or transportation departments not meeting minimum ADA standards. While the ADA requires state and local governments to ensure all new facilities are adhering to accessible design standards, the law provides no funding for retrofitting previously built infrastructure. Governments have struggled to make required improvements in a timely manner and thus are sometimes sued for being out of compliance with the ADA. Entering into a consent decree does not implicate the government entity as being at fault but does serve to indemnify the organization from future lawsuits—as long as the government complies with its decree commitments. Lawsuits under the ADA provide for attorneys’ fees and costs, which can be significant. The extent and context of ADA-related lawsuits and settlements relating to sidewalk repair vary across the country. Most claims concern curb ramps, as many cities installed sidewalks without curb ramps in the nearly 30 years since the ADA was passed. Thus, these streets remain inaccessible for many with mobility limitations. Recent settlements have required jurisdictions to commit to an agreed-upon level of annual progress on such matters as building curb ramps and repairing sidewalks.²³

Seattle is currently under a DOJ consent decree as a result of the class action settlement in *Reynoldson v. City of Seattle* reached on November 1, 2017 (see further discussion in Section 4). This decree mandates the City of Seattle to fix or install over 22,500 curb ramps through 2035.²⁴ Seattle is not alone in facing such a hurdle. Honolulu, Hawaii entered into a 1997 consent decree to construct curb ramps on over 6,000 different intersections, which ended in 2019.²⁵ The California Department of Transportation, Caltrans, agreed to a 30-year settlement in 2009, at an estimated cost of \$1.1 billion.²⁶ The agreement requires 2,500 miles of sidewalk, 300 park and ride facilities, and additional pedestrian overpasses and walkways be upgraded to comply with ADA standards. Jackson, Mississippi entered into a consent decree in 2010 to install wheelchair lifts and ensure public transportation users with disabilities are able to access service.²⁷ Massachusetts entered into a consent decree in 2017 to improve system-wide transit accessibility measures.²⁸

²³US Department of Justice, Civil Rights Division, Disability Rights Section: The ADA and City Governments (2020, February 24) retrieved from www.ada.gov/comprob.htm

²⁴*Reynoldson v. City of Seattle* (2017) www.disabilityrightswa.org/wp-content/uploads/2017/10/ReynoldsonConsentDecree.pdf

²⁵Harlow, C. “Honolulu Completes ADA Requirements from Federal Consent Decree”. (2019, February 15). Hawaii Public Radio. Retrieved from www.hawaiipublicradio.org/post/honolulu-completes-ada-requirements-federal-consent-decree#stream/0

²⁶Weikel, D “Caltrans settles lawsuit over disabled access”. (2009, December 23) LA Times. Retrieved from www.latimes.com/archives/la-xpm-2009-dec-23-la-me-caltrans23-2009dec23-story.html

²⁷Justice Department Resolves Americans with Disabilities Act Lawsuit with Jackson, Mississippi, Public Transportation System (2014). Retrieved from: www.justice.gov/opa/pr/justice-department-resolves-americans-disabilities-act-lawsuit-jackson-mississippi-public

²⁸Transition Plan For The Public Right of Way. (2018) Massachusetts Department Of Transportation. Retrieved from: www.mass.gov/files/documents/2018/04/02/ADA_TransitionPlan_101017.pdf

Messages from the Community

What sort of pedestrian infrastructure problems do you come across?

"My 14-year-old son has developmental and physical disabilities and earlier this year (2019) he had foot reconstruction surgery that required him to be in a wheelchair whenever we left the house. Wanting to maintain as much as of our regular weekend activities as possible, I assumed taking the bus would be easy. The bus was never a problem...The problems were all with the sidewalks and access curbs. In some places where they existed--and our NE Seattle street is missing two houses worth of sidewalk to get to our closest bus stop--both were in horrible shape. The stretch of Lake City Way south of 125th was the worst we encountered. I don't know how someone manages a wheelchair solo on that sidewalk. On that trip alone there were two time where he would have been thrown out of the chair if the seat belt wasn't latched. (I didn't know wheelchairs had seat belts.) The curb cuts along that stretch were bumpy and difficult to use. Even with my experiences with my son and his friends who have more significant physical disabilities, I didn't realize how difficult it is to navigate many sidewalks in my (affluent, politically engaged and apparently bike lane hating) Wedgwood neighborhood. Pisses me off that it's so much worse along Lake City Way.

On the positive side, my son's biking (he uses an adult three-wheel bike) has become easier thanks to the many, many new curb ramps the city is rapidly installing. I'm thankful to the lawsuit that brought that about."

- 98115 Resident

3.3 ASSET MAINTENANCE

Building Materials

Depending on the material a sidewalk is built from or repaired with, its total lifespan can vary significantly. Concrete sidewalks, the material used in the vast majority of Seattle's sidewalks, have an average lifespan of 80 years under ideal conditions, while asphalt lasts only 40 years at best.²⁹ Seattle has some neighborhoods with sidewalks over 100 years old. However, due to a variety of aggravating factors, the average expected lifespan of a concrete sidewalk in most cities is actually about 25 years.³⁰ These aggravating factors can include, but are not limited to: the presence of improperly planted street trees in proximity to the sidewalk due to narrow street width; unstable soil underneath the sidewalk; climate and weather conditions; failing utility components, and whether the sidewalk has to bear vehicular weight (such as delivery trucks parked on sidewalks or a sidewalk adjacent to a driveway).³¹

Sidewalk Specifications

The average thickness of concrete sidewalks in the United States ranges from 3.5 inches to 6 inches, depending on the climate, soil composition, and whether or not the sidewalk needs to be able to bear vehicular weight.³² City of Seattle Standard Plans and Specifications require a minimum thickness of 3.5 inches for concrete sidewalks, and 6-8 inches where the sidewalk intersects with a driveway (6" in residential zones, 8" in commercial zones and at alleys).³³

²⁹United States Department of Transportation: Federal Highway Administration. (2013). Guide for Maintaining Pedestrian Facilities for Enhanced Safety Research Report. Retrieved from: https://safety.fhwa.dot.gov/ped_bike/tools_solve/fhwas13037/research_report/chap2f.cfm

³⁰Ibid.

³¹Ibid.

³²Ibid.

³³City of Seattle Standard Plans and Specifications (2020) Seattle Public Utilities. Retrieved from: www.seattle.gov/Documents/Departments/SPU/Engineering/2020_Standard_Plans.pdf



A Seattle sidewalk damaged from tree roots (1917)

Street Trees

The presence of street trees substantially increases the cost and complexity of sidewalk repair and the sidewalk repair permitting process. Street trees are classified as standard infrastructure in the City of Seattle Rights of Way (ROW) as represented in the ROW Manual *Streets Illustrated*,³⁴ in the City of Seattle Standard Plans for Municipal Construction,³⁵ and in the Street

Tree Management Plan. Seattle currently has a canopy cover of 28% with a goal of reaching 30% by 2037.³⁶ Seattle has approximately 4.35 million trees, with an estimated worth of \$4.9 billion.³⁷ Street trees are of great benefit to any city, providing reduced heating and cooling costs, increased property value, increased quality of life and other social, economic, health, and aesthetic

³⁴Seattle Rights-of-Way Improvements Manual: <https://streetsillustrated.seattle.gov/>

³⁵City of Seattle Standard Specifications for Road, Bridge, and Municipal Construction (2020 Edition): www.seattle.gov/Documents/Departments/SPU/Engineering/2020_Standard_Specifications.pdf

³⁶Dunne, J. O. N. 2016 Seattle Tree Canopy Assessment, 2016 Seattle Tree Canopy Assessment (n.d.). Retrieved from: www.seattle.gov/Documents/Departments/Trees/Mangement/Canopy/Seattle2016CCAFinalReportFINAL.pdf

³⁷Trees and Sidewalks Operations Plan (2015) Seattle Department of Transportation. Retrieved from: www.seattle.gov/Documents/Departments/SDOT/Trees/TreeSidewalksOperationsPlan_final215.pdf

benefits.³⁸ Mature street trees in both commercial districts and residential neighborhoods are highly valued by many Seattleites. Residents expect the City to manage walkable conditions, which include safe, accessible sidewalks as well as street trees, all of which encourage walking.

Despite these benefits, street trees are a common source of sidewalk damage and an even larger reason people submit damaged sidewalk complaints. While the majority of sidewalk complaints are related to trees, only 12% of observed damage can be attributed to trees. Of these tree-related conflicts with sidewalks, 72% are related to trees which are either on private property or are classified as privately maintained street trees.³⁹ In order for trees to grow properly, they need soil that retains enough moisture, drains sufficiently to ensure aeration, and can be refilled by rain, in addition to sufficient space to permit root growth.⁴⁰ The City maintains a list of approved street trees species suitable for planting in the ROW.⁴¹ Common issues with the management of both street trees and sidewalks are primarily caused by the lack of ROW width to accommodate optimal space for either one.

The Tree and Sidewalks Operations plan was developed to establish standard parameters to minimize and resolve conflicts.⁴² However, these conflicts still abound.

The largest sidewalk issue related to street trees is caused by root growth in areas where water accumulates, such as under concrete sidewalks, if there is insufficient subgrade installed. This continued root growth under concrete results in sidewalk uplift and cracking. In order to resolve this conflict, municipalities are trying alternative building materials for sidewalks that are more conducive to tree growth. The largest concerns with these materials are their cost, durability, and conflict with underground utilities such as side sewers, water lines, gas lines and other utility equipment. Although the City of Seattle has been exploring these alternatives, the current default option is to completely replace the sidewalk with concrete.

In Section 4, next, we review how Seattle applies these concepts, policies, and procedures in practice.

³⁸Roy, S., Byrne, J., & Pickering, C. (2012). A systematic quantitative review of urban tree benefits, costs, and assessment methods across cities in different climatic zones. *Urban Forestry & Urban Greening*, 11(4), 351–363. doi: 10.1016/j.ufug.2012.06.006

³⁹SDOT Sidewalk Condition Assessment Report (2018). Seattle Department of Transportation.

www.seattle.gov/Documents/Departments/SDOT/About/SidewalkAssessExecSummary_4_6_2018R5.pdf

⁴⁰Randrup, T. B., & McPherson, E. G. (2003). A review of tree root conflicts with sidewalks, curbs, and roads. *Urban Ecosystems*, 209–225. Retrieved from www.researchgate.net/profile/Thomas_Randrup/publication/226585348_A_review_of_tree_root_conflicts_with_sidewalks_curbs_and_roads/links/544d0cb00cf2bcc9b1d8e598/A-review-of-tree-root-conflicts-with-sidewalks-curbs-and-roads.pdf

⁴¹Approved Street Tree List (2011) Seattle Department of Transportation. Retrieved from: www.seattle.gov/Documents/Departments/Trees/PlantingAndCare/YardTrees/2011_street_tree_list.pdf

⁴²Trees and Sidewalks Operations Plan (2015) Seattle Department of Transportation. Retrieved from: www.seattle.gov/Documents/Departments/SDOT/Trees/TreeSidewalksOperationsPlan_final215.pdf

SECTION 4: SEATTLE SIDEWALK REPAIR CURRENT CONDITIONS AND PROCESSES

To understand Seattle sidewalk repair policy, our team interviewed 30 SDOT staff members across the Department with direct knowledge of the sidewalk repair process. Our interviews included team members within Pavement Engineering Management, Legislative and

Government Relations, Street Use, Finance and Administration, Urban Forestry, Transportation Equity, and Communications. We supplemented SDOT interviews with input from local pedestrian advocacy groups to gain insight from the community's side.



A damaged sidewalk prior to repair and after



Shim addressing uplift from tree root



Beveled sidewalk

4.1 PAVEMENT ENGINEERING MANAGEMENT SECTION (PEMS)

The Pavement Engineering Management Section (PEMS) at SDOT oversees the maintenance of Seattle streets and sidewalks. The Seattle Sidewalk Repair Program (SSRP) is a subprogram of PEMS.

Sidewalk Repair Process Prior to 2017

Prior to 2017, the sidewalk maintenance process was primarily driven by customer complaints. Sidewalk maintenance needs were also identified by City work crews calling in reports of broken sidewalks adjacent to their work sites and in capital projects throughout the Bridging the Gap levy. Under this system, performance measurement goals aimed for a PEMS engineering specialist to visit the site for an evaluation within five days of receiving the complaint.

2017 Sidewalk Condition Assessment

In 2017, SDOT received funding from the City Council to conduct a Sidewalk Condition Assessment to assess the condition of almost all 79,143,531 square feet of sidewalk in the City. The 2017 Assessment followed up on sidewalk and curb ramp spot assessment work conducted in 2007, which formed the basis for SDOT's sidewalk and curb ramp asset management database. The 2017 Assessment was carried out by SDOT's Asset Management team with the help of a team of undergraduate interns. They walked 99% of sidewalks in the City and recorded observations of uplifts, obstructions, cross slopes, cracks, and overgrown vegetation.⁴³ The data gathered during this assessment gave PEMS detailed information to show where sidewalk issues are, rather than relying solely on anecdotal or complaint-based information. From a legal standpoint, as will be discussed further in Section 4.2, it also created "notice" of potential issues. Prior to the Sidewalk Condition Assessment, the City Attorney's Office

would often use a "notice defense" in cases where someone was injured on an allegedly hazardous sidewalk, but can no longer use this defense.

Current Sidewalk Repair Process for SSRP Repairs

PEMS has moved to a proactive sidewalk maintenance process primarily driven by the repair prioritization Geographic Information System (GIS) tool that the Asset Performance & Maintenance Division helped develop using data from the 2017 Sidewalk Condition Assessment. Secondary drivers of repair priority include collaborating with capital projects, repairs related to claims and/or litigation, and customer requests.

When a site is identified for potential repairs, the PEMS engineering specialist visits the site and evaluates whether the sidewalk damage needs minor repairs (bevels and shims) or major repairs (full replacement). The engineering specialist also examines whether the damage may have been caused by City assets (such as street trees). If a needed repair is adjacent to City-owned property, the site is added to PEMS' list of sidewalks to be repaired. If the site is adjacent to private property, the engineering specialist issues a notice to the property owner that they need to repair the sidewalk (see Appendix A: "Enforcement Materials"). Included with the repair notice is a copy of SDOT Client Assistance Memo 2208: Sidewalk Maintenance and Repair (CAM 2208).⁴⁴ CAM 2208 is a guide for property owners detailing their responsibility for sidewalk repair and how to get a sidewalk repair permit. Repair notices are only sent out in English. The notice must be sent to the mailing address as listed by the King County Assessor's Office, which may be out of state or out of the country if the property owner does not live on or work at the property.

⁴³Seattle Department of Transportation. (2018). SDOT Sidewalk Condition Assessment Report. www.seattle.gov/Documents/Departments/SDOT/About/SidewalkAssessExecSummary_4_6_2018R5.pdf

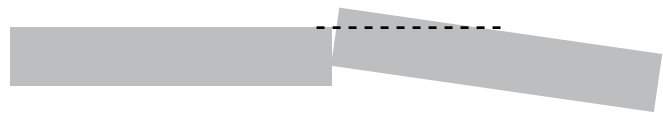
⁴⁴Seattle Department of Transportation. (Revised 2017). Client Assistance Memo 2208: Sidewalk Maintenance and Repair. www.seattle.gov/Documents/Departments/SDOT/CAMs/CAM2208.pdf

Historically, property owner response rates to notices have been low. In 2017, the same year the sidewalk condition assessment was carried out, 92 repair notices were sent out and only 28% of property owners responded. In 2018, 126 notices were sent out and 30% of property owners responded. Staffing shortages in 2019 resulted in only 15 notices being sent out, which received a 46% response rate. Prior to the closures related to the COVID-19 pandemic, 33 notices were sent out in the first three months of 2020, of which 48% received responses. Of the cases where notices were sent out and no property owner response was received, the SSRP performed beveling and shimming work to temporarily address the issue on the majority of sites (75% of non-responses in 2017, 50% in 2018, and 100% in 2019).

SSRP performs temporary fixes such as beveling or shimming at no cost to, or at request of, the property owner. These temporary fixes, which only the City may perform under current rules, are the most cost-effective method for SSRP to limit the City's liability for trips and falls. While only a few major sidewalk repairs can occur within a given year because of capacity constraints, in 2019 12,269 spot improvements were performed, specifically including 8,805 bevels and 3,464 shims. SSRP has a proactive mitigation program for shims and bevels that is equitably distributed on a grid across the City and prioritizes improvements based on both ADA and Seattle Race and Social Justice Initiative (RSJI) guidelines. The effectiveness of temporary fixes depends largely on whether the damage to a sidewalk is a one-time occurrence, or an ongoing problem (e.g. caused by adjacent tree roots that will continue to grow). PEMS employees estimate temporary sidewalk fixes typically last between one and five years.

FIGURE 2: BEVEL AND SHIM

Bevel: the uplifted edge of the sidewalk is cut off* with a concrete saw



*No more than half of the thickness of a concrete sidewalk should be removed when beveling, otherwise the panel would become too thin and break apart.

Shim: a wedge of asphalt is applied on top of the sidewalk to mitigate the uplifted edge.



Current Sidewalk Repair Process for Property Owner Repairs

As outlined in CAM 2208, property owners must go to SDOT's Street Use Permitting Counter or email a completed, scanned permit to SDOT to obtain a permit for full sidewalk repairs. Sidewalk repair permits are often accompanied by additional required permits, such as tree permits, traffic control plans, temporary no parking permits, and others as needed for the specific repair job. Permit costs are separate from the costs of repair charged by the property owner's concrete contractor. There is also the possibility that sidewalk repairs can "trigger" a curb ramp. For example, if the sidewalk repair work impacts the landing of a curb ramp, then they would be required to install a compliant curb ramp, which can also add to the costs. Property owners often experience difficulty finding concrete contractors to do work on relatively small projects like sidewalk repair. Additionally, property owners are often surprised by the quoted cost of repair.

Once a property owner starts repair on their sidewalk, PEMS has no additional oversight of the project. The PEMS specialist just requires a good faith acknowledgement via phone or email from the property owner that the repair process has started.

The pictures below depict a newly replaced curb ramp adjacent to a stretch of cracked sidewalk in the residential Sunset Hill neighborhood.



Curb Ramp Interaction with Sidewalk Repairs

Following the ADA curb ramp consent decree, there is now annual City funding dedicated to repairing curb ramps. One curb ramp typically costs \$15,000-\$25,000 to survey, mobilize crews and construct and around \$16,500 to design.. Constructing an intersection with eight curb ramps (two per corner) would cost \$120,000-\$200,000. While curb ramp repair may include repair to some damaged adjacent sidewalks, there is typically not enough funding to repair sidewalks for the entire block although nearby sidewalks in disrepair can reduce accessibility to curb ramps for individuals with limited mobility. There are many programs and priorities at work, all trying to make city streets and sidewalks safe for pedestrians but competing for limited resources. In 2020, a significant part of the PEMS Sidewalk Repair budget is dedicated to sidewalk work associated with capital projects that other teams are carrying out, such as paving work on major arterials. However, the percentage is not necessarily consistent from year to year.

Repair Prioritization

Sidewalks are prioritized and selected for mitigation work or repair by the City based on the following criteria:

Asset Condition Prioritization

1. Severity of Damage
2. Mobility Impairment
3. Cost
4. Usage/Proximity

Selection Process for Prioritization

1. Leveraging opportunities with other capital projects
2. Within an urban village
3. Adjacent to an arterial street
4. High Priority Project Areas as identified in the Pedestrian Master Plan⁴⁵
5. Within three blocks of a community or healthcare facility such as a school, park, library, clinic, hospital, or senior housing
6. On a block with a transit stop
7. Geographic and social justice distributional equity
8. Constructability and cost

In addition to the above criteria, mitigation work prioritization also considers the density of sidewalk issues in a certain area. Multiple repairs within the same few blocks increases the efficiency of repair projects.

The prioritization process is not absolute; there are no projects that are ranked first, second, third, and so on. Once a work order is written, inputted into the tracking system, and added to the repair schedule, PEMS does not fully control the timeline of when the work gets done. Repairs are completed based on SDOT repair crew availability and priorities, which include PEMS and all other SDOT groups, as well as possible emergency fixes. Curb ramps are currently the crew's first priority because of the consent decree. For sidewalks, urban villages and urban centers are prioritized as those sidewalks get the most use.

⁴⁵Seattle Master Pedestrian Plan, 2018-2022 Implementation Plan and Progress Report (2017). Seattle Department of Transportation. www.seattle.gov/Documents/Departments/SDOT/About/DocumentLibrary/PedMasterPlan/2018_2022_PMP_ImplemPlan_v13.pdf

Vegetation

PEMS also handles complaints related to vegetation overgrowth on sidewalks and sending out enforcement notices to property owners. PEMS works with SDCI to follow up on vegetation complaints by inspecting the site and sending out notices to property owners when their vegetation presents a sidewalk obstruction (see Appendix A: “Enforcement Materials”). This can include both living vegetation growing over the sidewalk as well as fallen leaves or other desiccated vegetation. Sidewalk maintenance requires a holistic approach that covers both physical damage and more temporary obstructions like vegetation. In some cases, proactive removal of vegetative obstructions can prevent physical sidewalk damage at a later date. Vegetation notices are unrelated to the work of the Urban Forestry team (described in more detail below) as “vegetation” refers to smaller plants like bushes, grasses, and moss rather than trees. Overlapping responsibility will require coordination with SDCI to comprehensively address this issue.

As part of the 2017 Sidewalk Condition Assessment, interns also recorded vegetation overgrowth and obstructions that made sidewalks inaccessible or created potential safety issues to pedestrians. The SSRP prioritization model includes a plan to follow up on all of the locations with vegetation issues identified in the 2017 assessment. PEMS has designed door hangers that are distributed at the recorded sites explaining to property owners that they need to clean up their vegetation. Regular follow-up inspections will follow the door hangers at a later date.

Challenges

PEMS employees explained that Seattle was one of the first cities to develop a prioritization model for sidewalk repair, but it could use modification and revision. Prioritization is sometimes rearranged depending on how many community

members the work will affect. Sometimes projects may need to coordinate construction with multiple businesses, and that project may become delayed in favor of a project that has less administrative burden. Some projects require coordination between multiple entities, including other SDOT divisions (such as Urban Forestry), Seattle Public Utilities, Seattle City Light, King County Metro, historic preservation boards, and business/property owners, which is also challenging. Adding an element of coordination between groups to the prioritization scoring mechanism was one suggestion from PEMS employees in addition to adding street tree data to the prioritization model.

The warning process for damaged sidewalks involves sending two warnings to property owners. If there is no response from the property owner, SDOT could fix the site and then seek reimbursement from the property owner through a lien placed on their property. However, the lien enforcement mechanism is not used because it requires City Council to approve of the costs and adopt a resolution to charge the private property owners. As a result, if PEMS performs repairs on a sidewalk adjacent to private property and does not receive payment, the City ends up paying the repair cost.

If enforcement were to increase, employing just one Sidewalk Enforcement Specialist to process complaints, prioritize repair notices and interact with property owners, would cause a bottleneck in the process of getting repairs done promptly.

Working with contractors can be quite difficult for property owners and can be a barrier to the repair process. For small amounts of sidewalk like those in front of the average residence, it is typically not worth a private contractor’s time to do the work especially if a tree is involved.

Before and after vegetation trimming and removal.



Before and after leaf vegetation removal



Property-owners want to be told exactly what they need to do to fix their sidewalk, but it is not always clear what the exact process will be across different sites, each facing unique causes and conditions. Division of responsibilities between SDOT teams may create additional complexity and duplicative processes when navigating the repair process.

PEMS does not currently provide a list of licensed contractors or typical repair estimate costs. The costs can vary widely, and staff are hesitant to give cost estimates that could vary too greatly from the private contractor bids a property owner might receive. In addition, the presence of tree roots or other complicating factors can make providing estimates difficult. It is frustrating for property owners, because they have no sense going in as to how much the repair process will cost.

Street Use staff are often not included in the initial sidewalk repair notice process. When property owners contact Street Use to pursue a construction use permit and to better understand their repair responsibility, Street Use staff may not be able to answer all of the property owner's questions and subsequently refer them back to PEMS. Once again, this is a consequence of the lack of understanding, prior to receiving the notice, that it is their legal responsibility to fix the sidewalk adjacent to their property.

A recurring theme from PEMS and the SSRP is that they have inadequate funding. The citywide need for roadway and sidewalk maintenance is enormous, and PEMS' budget is too small and can be inconsistent from year-to-year, to be able to address the need effectively in the long term. Indeed, in many jurisdictions, smaller maintenance work can often struggle to receive resource allocation priority compared to larger capital projects, but it is still a crucial part of any city's infrastructure asset management.

After the 2017 Sidewalk Condition Assessment sidewalk inventory and subsequent analysis was completed, the Pedestrian Advisory Board⁴⁶ wrote to the City Council requesting more funding, resulting in a \$2 million increase in funding for the 2018 budget. Due to the increased legal exposure for trip and fall cases because the City is now "on notice" of issues with the sidewalk, it is important to have sufficient funding to reduce the risk of falls. It is difficult for PEMS to plan for long term maintenance priorities when funding is unpredictable from year-to-year, with recent budgets fluctuating from between \$3 and \$5 million per year.⁴⁷ If PEMS had a steady and reliable budget for sidewalk repair, they could plan more efficiently for future repairs, which would also provide a defense in the typical trip and fall cases.

At the beginning of each year, SDOT publishes a Move Seattle Levy Planned Accomplishments document, that outlines annual performance and spending targets. SSRP's planned accomplishment targets are based on square footage of sidewalks repaired. If the sidewalks are repaired as part of another project or program's work (without SSRP contributions), then SSRP does not get to include that square footage in their annual count. There can also be conflicting priorities and needs for resources between departments and programs, which is influenced by the requirement to deliver on Move Seattle levy commitments, resulting in funds diverted away from sidewalk repair.

⁴⁶The Pedestrian Advisory Board is composed of 11 residents who advise the City on pedestrian issues, give input on the planning process for pedestrian-related projects, and evaluate and recommend changes to City policy when needed for pedestrian safety.

⁴⁷Move Seattle Levy 2019 Annual Report

Messages from the Community

What sort of pedestrian infrastructure problems do you come across?

“Both [my husband] and I have issues when sidewalks are uneven, (or non-existent.) We both have uneven equilibrium. We trip, sprain, and fall often. For me, uneven sidewalks can also flare up chronic pain issues like my right hip sciatica. Curbs without cut outs, especially those that are a high step up or down can also flare or trigger chronic pain issues.”

- 98133 Resident

4.2 SDOT LEGAL DEPARTMENT AND THE SEATTLE CITY ATTORNEY'S OFFICE

Summary of Legal Responsibilities in Sidewalk Repair

As noted above, property owners can be charged for repairs to the sidewalks adjacent to their property under both state and local law. Most property owner's insurance policies do not cover proactive sidewalk repair, yet it is the insurance company who would ultimately defend the home owner if a lawsuit is brought due to injuries sustained on the sidewalk.

Revised Code of Washington

Revised Code of Washington Chapter 35.68 outlines the legal authority for cities to collect payment for private sidewalk repair. RCW 35.68.010 states that cities have authority to “require the abutting property owner to construct the improvement at the owner's own cost or expense, or, [...] to assess all or any portion of the costs thereof against the abutting property owner.” RCW 35.68.020 through 35.68.070 describe how a local city council must pass a resolution outlining repairs to made, provide hearing and opportunity for appeal, and how to collect payment. It is because of this state law requirement that the SMC follows the same requirements.

Seattle Municipal Code 15.72

Seattle Municipal Code (SMC) Chapter 15.72 deals with sidewalk repair. Under SMC 15.72, SDOT has the power to issue notices to property owners for sidewalk repair, perform repairs if property owners fail to do so, bill property owners for the work, and place liens on their property if the bills are not paid. However, the liens must pass through City Council and require a public hearing before they are approved. Moreover, the City Council must adopt by resolution the charge to the private property owner. There is no record of this ever having occurred, which leaves SDOT with no enforcement mechanism.

Rivett v. Tacoma

The Washington Supreme Court's decision on the 1994 Rivett v. Tacoma case specified that even though property owners are responsible for repairing sidewalks adjacent to their property per Washington State Law, the City still has responsibility due to the fact that sidewalks are in the public right-of-way. There are practical implications to the Rivett decision when a property owner and/or the City are sued when someone is injured on a damaged sidewalk. Because the City has a non-delegable duty to maintain sidewalks in a reasonably safe condition for ordinary travel, it cannot be dismissed from an action involving a sidewalk adjacent to private property. Moreover, if both the City and the private property owner are found liable for the damages, but the private property owner (or its insurer) could not pay the full amount of damages, then the City would be required to pay the full amount under the legal principle of joint and several liability.

If someone injures themselves on a broken sidewalk and wants to hold the City partially liable, they must first file a claim against the City. The City has 60 days to respond to a claim, but if those 60 days pass with no response then the claimant can file a lawsuit. From 2003 to 2019, the City has paid out 861 claims, totaling \$4,406,003 for an average of \$259,176.65 per year. However, since 2014, The City has only paid out \$168,819 per year in claims possibly showing the impact of increased funding

for sidewalk repair. Personal injury torts have a statute of limitations of three years from the day from which the claimant knew the injury occurred.

Since SDOT's repair program operates with a limited and variable budget, they focus on how to best use the budget for the greatest risk reduction. The highest risk reduction is generally secured by limiting uplifts. The most cost-effective way to use these resources is to bevel and shim uplifts to increase pedestrian safety. When someone trips and falls on an uplifted or broken sidewalk and files a claim or lawsuit against the City, any payout to the plaintiff is taken out of the City's general fund. SDOT's general fund allocation is then reduced by this amount on a rolling five-year basis. Since there is already only modest maintenance funding, this becomes a self-reinforcing issue.

The RCW and the SMC would have to be amended to change the enforcement process. There could be a different type of enforcement mechanism set up whereby City Council would not have to approve and adopt a resolution regarding the private property owner's responsibility for the costs of sidewalk repairs. A system similar to the current code enforcement process where notice is provided, there is an opportunity to appeal, a process for a hearing, and costs can be assessed without any action required by City Council. However, there is not currently sufficient staffing or funding for the additional attorneys and paralegals needed to handle this workload if created.

4.3 STREET USE & PERMITTING

The Street Use Division of SDOT is closely intertwined with sidewalk construction, repair, and maintenance. If a construction project touches sidewalks in any way, the property owner must get a permit to move forward with any part of the project. Street Use both reviews project plans and inspects private work in the right-of-way to ensure sidewalks are restored to ADA standards and comply with City of Seattle standards. Property owners who get a sidewalk repair notice are directed to Street Use to obtain

the permits necessary to complete the repairs and work with the Street Use team on code compliance, and field inspections. The following section is a summary from our interviews with division staff of the property owner's experience and the role of this division, as well as commonly felt pain points by staff and property owners.

Current Process

When property owners receive a notice to repair their sidewalk, they are given CAM 2208⁴⁸ detailing the sidewalk repair process and directing them to the Street Use permit counter/web page. Customers apply for a construction use permit, for which the cost and scope of review varies based on the square footage area in need of repair. They are required to bring the filled-out permit, plans, and a start and end date to the Street Use permit counter (or submit the materials online) to obtain a permit. When issuing a sidewalk repair notice, the full possible area of sidewalk repair is not initially specified, due to uncertainty of the scope of repair that may be triggered during permit review and inspection. The property owner is however alerted to the location of the damage and potential contributing factors, such as tree root uplift and vehicular damage to the sidewalk.

Once the permit(s) is approved and paid for, construction can begin. If a tree is suspected of causing the sidewalk damage, a District Arborist must be scheduled to look at the tree after the old sidewalk is removed to determine whether it caused the damage or not, to oversee pruning or possible removal. A tree is only approved for preemptive removal if there is a structural or health issue that is such that, coupled with the impact of sidewalk repair, precludes the feasibility of retention. Once the construction is complete, a Street Use District Inspector is supposed to visit the construction site to review the repairs and ensure they adhere to the submitted plan, though resource and staffing limitations may affect availability of such visits. See Figure 3 below for a visual representation of the permitting process.

⁴⁸Client Assistance Memo 2208, referenced in Section 4.1

Pain Points

The largest issue comes in deciding the size and scope of the needed sidewalk repair, both from the administrative and customer sides. Using enforcement notices triggers a required repair, which must be up to all relevant codes, and applying for a permit and starting construction may result in required repairs that go well beyond the intended project. This could happen because the repairs need to be expanded to make sure they are stable, or if the repairs trigger the need for construction of curb ramps due to proximity to the ramp or street corner, among other possibilities. A repaired sidewalk should connect to a sidewalk in compliance with ADA standards. Due to these complications, the Sidewalk Repair Program avoids telling the customer how much they need to fix at the time of notice, which often frustrates the property owner.

An additional pain point is the complex and time-consuming nature of the permit application process. Customers must go into the permit counter or get a Street Use staff member on the phone to help walk them through the permit process unless their contractor does it for them. Some permits may require more than four or five different documents that become difficult to secure and work through. Customers for whom English is not a primary language may have even more difficulty completing this process as the Client Assistance Memos are not in any other language. These challenges, in addition to high repair costs, sometimes discourage property owners to the point where they just give up and leave their sidewalks unrepaired.

4.4 SIDEWALK REPAIR FINANCE & BUDGETING

SDOT has a number of in-house financial analysts who coordinate with the City Budget Office (CBO) and various SDOT teams to develop and manage budgets. Sidewalk repairs are funded by a variety of sources, the amounts of which can vary from year to year, totaling about \$2 to \$5 million in recent years. These funding levels have increased since 2017 following the Citywide sidewalk

assessment, before which the annual budget was typically around \$1.7 million, during the lifespan of the Bridging the Gap levy years. Prior to Bridging the Gap, annual funding for sidewalk repair was only around \$300,000 per year. The fluctuations in funding present challenges both in planning projects and in trying to keep controls on costs to stay within variable budgets.

Funding Sources

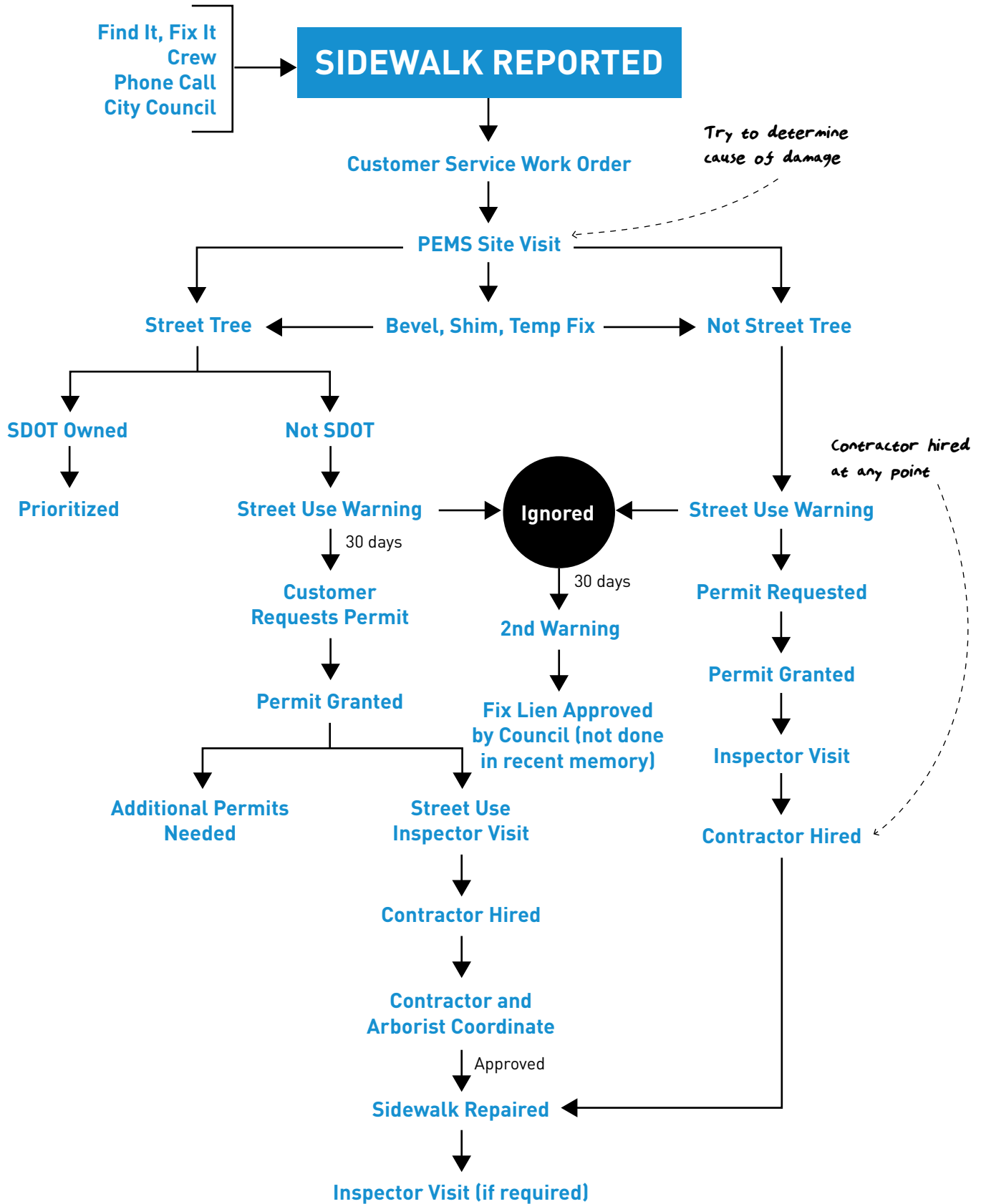
SDOT receives sidewalk repair funds from a patchwork of different sources, each varying from year to year. These sources include:

Levy to Move Seattle (~\$1.6 million) — A portion of the 2015-2024 Levy to Move Seattle (“Move Seattle”) goes toward a planned 225 blocks (minimum) of sidewalk repair over the life of the levy. Sidewalks may be repaired by multiple Move Seattle programs depending on the scope of their projects, but SSRP is the primary program tasked with delivering the levy goal of 225 blocks repaired by 2024. To date (2016-19), these funds have repaired 107.13 block equivalents of sidewalk across the city.⁴⁹ These critical funds will expire in 2024 unless voters approve a new levy. Along with the Real Estate Excise Tax (REET), this is SSRP’s primary source of funding.

Real Estate Excise Tax (REET; ~\$2 million per year) — A portion of the REET—a tax at the point of sale of real estate—goes toward sidewalk repairs. In recent years, the sidewalk repair program has received about \$2 million per year from this source, but the funding is not controlled by SDOT. As many City projects seek REET revenue for discretionary funding, these dollars are competitive and increasingly constrained. These funds are also dependent on real estate sales volume, which has been trending lower and may be further reduced by the effects of the recent COVID-19 shutdown on the economy.

⁴⁹Levy to Move Seattle 2019 Annual Report (2020). Seattle Department of Transportation. www.seattle.gov/Documents/Departments/SDOT/About/Funding/2019Annual_Report_0106_2020_FINAL.pdf

FIGURE 3: SIDEWALK REPAIR PERMITTING PROCESS FLOW CHART



School Zone Camera Traffic Tickets — Traffic cameras in school zones generate revenue for improvement projects in “school areas” surrounding educational facilities. SSRP has only received funds from this source once, \$1.7 million in 2019, to repair sidewalks within ¼ mile of schools. While SSRP may receive these funds again, they are not a consistent source of funding for the program and have significant geographical use limitations.

Motor Vehicle Fuel Tax & Commercial Parking Tax — Increases in the number of drivers and gasoline usage, along with growth in parking—especially in the downtown core—have increased motor vehicle fuel tax and commercial parking tax revenues in recent years. Some of these funds have been allocated to sidewalk repairs, though amounts vary depending on other SDOT projects and priorities. A general caution with regard to reliance on these funds, and automobile-based taxes in general, is that by policy Seattle expects to see fewer cars relative to the population long-term.

General Funds — The Move Seattle levy requires that SDOT receive base level funding support from the City’s General Fund. This is SDOT’s most flexible funding source and can create variable funding levels in projects from year to year based the department’s needs, which can include sidewalks. The City’s General Fund source is likely to be considerably constrained in the wake of the COVID-19 pandemic, and the effect on SDOT and sidewalk funding is not yet known.

Cost Controls

Responsibility for controlling costs to stay within budgets falls on the Sidewalk Repair Program and crew teams directly. Sidewalk maintenance is technically a capital project, even though it would appear to fall under the operations and maintenance umbrella, because it lengthens the life of the asset for longer than one year.

Pain Points

The variety of funding sources results in yearly fluctuations in annual funding, constraining longer term planning. More stable financing of repairs from a dedicated funding stream could help alleviate the issues with the status quo, although difficulties abound with securing and maintaining such a stable structure.

4.5 URBAN FORESTRY



Mature tree roots uplifting a sidewalk, including shims that have succumbed to uplift.

With the moniker “Emerald City”, Seattle is well-known for its dense tree canopy. While providing many benefits, these trees cause a variety of infrastructure issues. The SDOT Urban Forestry team employs arborists, landscape architects, and others to collaborate with other SDOT teams and keep the balance between accessibility of infrastructure and all the benefits trees can bring.

Process

If a tree is causing damage to the sidewalk, the Urban Forestry team is often not able to fully assess the impact of the tree root system until the existing sidewalk has been removed. In order to maintain a healthy tree, roots must have enough space to grow and gain nutrients, so arborists work with design engineers to assist in design review, project coordination, and implementation with the health of people and trees in mind. Some of the options include pruning the tree roots back, changing the design (e.g. narrowing the sidewalk, realigning the sidewalk closer to the property line, adjusting the grades, reducing the spacing between joints, etc.) or, if no other options exist that are harmonious with a safe sidewalk, removal of the tree. Pruning tree roots involves cutting into the root system to remove the roots underneath and near the edge of the sidewalk. Root pruning is a delicate process that can negatively impact the health and stability of the tree even when performed correctly.

If property owners are in charge of the sidewalk repair and hire a contractor, they have to root prune or apply for a permit to remove an impacted street tree, which triggers the arborist to come look at the tree. If the owner wants the tree removed, there is pressure placed on Urban Forestry to move quickly with their alternate plan or to remove the tree entirely. A recent change has been to require a sidewalk repair permit if a person is requesting a tree removal permit, whereas previously property owners may have removed a tree without fixing the adjacent sidewalk. Sometimes a temporary asphalt shim may be requested to make the sidewalk passable while Urban Forestry works with the owner to try to save the tree. If SDOT is in charge of the tree or the sidewalk repairs, it may be easier to save the tree because of the communication between teams within SDOT and a common City goal of maintaining extensive canopy cover.

Pain Points

The overarching conflict is between tree roots and concrete—some trees planted near concrete sidewalks risk causing sidewalk uplift. Working with a variety of different contractors and design styles makes it difficult to quickly come up with on-the-spot solutions that maintain both sidewalk integrity and existing canopy cover. Beyond that, there is a small window of time arborists have to do their jobs. Demands from concrete and asphalt crews and pressure to complete the projects quickly may cause stress and force quick decisions, resulting in fewer trees saved. This time pressure is exacerbated if Urban Forestry staff receives little notice, only finding out about sidewalk repairs once they are needed for inspection when construction begins.



A new sidewalk rebuilt to meander around a mature street tree in order to reduce the likelihood of future uplift and impact to the existing root system

Alternative Sidewalk Materials

Our interview with Urban Forestry included a conversation on alternative building materials for sidewalks that may be more compatible with tree growth and retention of mature trees. The Urban Forestry team provided a variety of different options to try and maintain the balance of sidewalks and trees. One option is to build with flexible porous surface treatment or asphalt sidewalks. Asphalt is more expensive if used in one-off scenario, but can be cheaper if planned for. In addition, it is not a standard option, which could be easily fixed as it is ADA compliant. Flexible porous surface treatment does have cost and ADA issues, but would be better for the trees. We also do not know how this material stands up to the test of time. A second option is to use alternative building materials in the original building of sidewalks like Stratavault and Silva Cell.⁵⁰ More information about these alternatives from additional studies could provide a long-term solution for better tree and sidewalk interaction, although there are concerns about stability when it comes to supporting the weight of vehicles that may go up on the sidewalk. In the short-term, having a pre-arranged process to make sure Urban Forestry is notified and integrated during design of all sidewalk repairs, including those done by private property owners would be helpful in allowing for a more thorough review process regarding each tree. Urban Forestry employees also highlighted the need for further education for property owners and local contractors to make them aware of the requirements of the protection and retention of street trees so that it can be included in their original designs.⁵¹ This would cut down on the need to adjust design work part-way through the process if the tree is in the way. Finally, allowing for more space between trees and sidewalks, and making sure to plant the right tree in the right place would be the best alternative.

4.6 COMMUNICATION AND PUBLIC ENGAGEMENT

Sidewalk Repair Complaints

Some external requests are initially routed through a customer service request database if submitted via the Find It, Fix It app or online web-form. These requests are then copied into the work order management system, where inspection and temporary repair is managed. Other requests received via phone or email are entered directly into the work order management system and are not captured by the customer service request system. The two systems are not connected, and when the status of a work order changes there are no updates to the customer service request database. When a customer reports a damaged sidewalk, they receive a generic response about the City's sidewalk repair

policies but will not typically receive additional follow-up with a timeline for repair or notification once an inspection or repair has been completed. This is due to the lack of connection between the customer service request system and the work order management system.

Communication

There has been little public outreach or engagement around sidewalk repair or maintenance in the past. Most property owners are surprised that they are responsible for repair. Typically, communication from SDOT is on a project by project basis, tailored to those living in the immediate project area. More recently, SDOT has put an emphasis on general educational campaigns, such as snow removal. Recent snow events have increased awareness of property owner responsibility to shovel/maintain

⁵⁰These materials are alternative building materials that have space between supportive columns that allow for loose soil. This soil is better for root growth and water retention, so the tree roots remain in the ground rather than crack through concrete.

⁵¹The City of Seattle approved street tree list can be found at: www.seattle.gov/Documents/Departments/SDOT/PublicSpaceManagement/2015-Street_Tree_List.pdf.

sidewalks. Communication has included warnings that a fine can be imposed on those who do not clear sidewalks of snow and ice, but enforcement has not been necessary as most property owners comply. This suggests that more property owners may comply with notices or proactively fix their sidewalks with greater communication and education about their responsibilities.

Pain Points

It can be common for constituents to “complaint shop” and pass around the same question to different City representatives looking for the answer they want to hear. This causes customers to become frustrated with the different messages and time-consuming process. The official policy is to send all requests that constituents send to City Council through the same route as all other customer service requests, which may annoy some customers. SDOT staff then respond to these requests like other requests to prevent preferential treatment.

4.7 COMMUNITY ORGANIZATIONS

Messages from the Community

“Disabled folks need safe, reliable, and accessible environments as much as anyone else does to live a full life, and sidewalks play a crucial role as what we rely on most to get wherever it is we need to be. When sidewalks are compromised, so is our ability to navigate our community safely. Damaged/obstructed pavement can be a huge fall/trip hazard for those of us with all kinds of disabilities - blind and low vision, users of wheelchairs and other mobility devices, other impaired mobility, etc.”

-Rooted in Rights Representative

We reached out to a number of community organizations including Rooted in Rights, Feet First, and Seattle Neighborhood Greenways to gain insight into how the issue of sidewalk repair impacts Seattle residents and visitors, especially those with limited mobility. We were able to connect with Rooted in Rights,⁵² and they sent feedback from community members about their experiences with Seattle sidewalks. A common theme from this feedback was a concern for

safety, especially from those who use mobility devices like wheelchairs or walkers. Many respondents mentioned that even if the sidewalks can be navigated, that doing so when a sidewalk is in disrepair causes flare ups in chronic pain or injuries. Specifically, it forces people who have limited mobility or are blind or low vision to traverse unsafe street crossing conditions, or leads to unexpected falls and injuries. When asked what types of benefits they would gain from improved pedestrian infrastructure, many respondents mentioned safety, but some mentioned increased independence or the ability to conserve energy. In a more detailed response, one Seattle resident shared:

I also would like to emphasize the importance of the evenness of sidewalks. I have a bar on the bottom of my power wheelchair to lock myself into my wheelchair accessible van. If the sidewalk is too uneven, my wheelchair can bottom out on the sidewalk and get stuck. Tree roots are a common cause of uneven sidewalks. I have been stuck multiple times in the City of Seattle because the sidewalk wasn't even and my wheelchair's bar bottomed out.

Rooted in Rights continues to try and collect stories to show the impact of uneven or broken sidewalks on movement for those who are mobility or sight impaired.

⁵²Rooted in Rights is an organization that collects and tells stories to change stigmas around disability, mental health and chronic illnesses. See <https://rootedinrights.org/> for more information.

SECTION 5: PEER CITY CASE STUDIES

In February and March of 2020, the Evans School Capstone Consulting team working with SDOT spoke with sidewalk repair staff in six peer cities: Portland, OR; Denver, CO; Ithaca, NY; Los Angeles, CA; Vancouver, BC; and Boston, MA (see Appendix B for interview guides). Each of these cities (except Ithaca and Los Angeles) also have populations near Seattle’s size, although miles of sidewalk and their

repair program structures vary. Differences in maintenance policies, structures, responsibilities, and practices abound, but staff from each city reported two issues throughout—lack of funding and conflicts between trees and sidewalks. The table below provides an overview of the cities across a handful of relevant metrics and criteria:

TABLE 1: COMPARISON OF SEATTLE AND PEER CITIES

City	Population ⁵³ (thousands)	Sidewalk miles	Annual Spending	Spending per resident ⁵⁴	Spending per sidewalk mile ⁵⁵	Average Annual Repairs by City	Property Owner Responsible	Cost Sharing/ Discount
Seattle, WA	745	2,293 ⁵⁶	\$3-\$5 million	\$6.71	\$2,180	1-2.5 miles	Yes	No
Portland, OR	653	2,500	\$1.5 million	\$2.29	\$600	N/A ⁵⁷	Yes	Financing
Vancouver, BC	631	1,345	\$3-\$4 million CAD (~\$2.1-\$2.8 USD) ⁵⁸	\$4.44 (USD)	\$2,082	8-9 miles ⁵⁹	No	N/A
Denver, CO	716	3,000	\$210 -\$780 thousand ⁶⁰	\$1.09	\$260	N/A ⁶¹	Yes	Yes
Boston, MA	696	1,600	\$4.5-\$6 million	\$8.62	\$3,750	10-15 miles	No	N/A
Ithaca, NY	30	100	\$860 thousand	\$28.67	\$8,600	1 mile	Indirectly	No
Los Angeles, CA	3,990	9,000	\$31 million ⁶²	\$7.77	\$3,444	22 miles	Yes	Yes

⁵³American Community Survey Data [2018]. United States Census Bureau. Retrieved from https://data.census.gov/cedsci/table?q=seattle&g=1600000US5363000&hidePreview=false&tid=ACSDT1Y2018.B01003&vintage=2018&layer=VT_2018_160_00_PY_D1&cid=DP05_0001E

⁵⁴Where spending is a range, the higher dollar amount was used in the calculation.

⁵⁵Where spending is a range, the higher dollar amount was used in the calculation.

⁵⁶City of Seattle Comprehensive Annual Financial Report. [2018]. City of Seattle Department of Finance and Administrative Services Retrieved from www.seattle.gov/Documents/Departments/FAS/FinancialServices/CAFR/CAFR%202018%2010-28.pdf

⁵⁷The City of Portland typically does not fund repairs as the city only takes responsibility for street corners and city owned land.

⁵⁸About \$1 to \$1.4 million for Street Operations’ Sidewalk Maintenance Programs; \$1.4 to \$1.7 million for Utility Cut Repairs; and ~\$1 million for Capital Project repairs (all CAD)

⁵⁹Includes all types of repairs (Sidewalk Maintenance Program, Utility Cut Repairs, Capital Projects)

⁶⁰Denver’s Neighborhood Sidewalk Repair Program is funded through a Sidewalk Repair Revolving Fund that was initially given \$4 million from the General Fund in 2018 and budgeted to spend that full amount that year. 2018 and 2019 actuals have only used up approximately \$1 million combined from the Revolving Fund, so no additional funds have been added.

⁶¹Denver is only 1.5 years into the new Neighborhood Sidewalk Repair Program, so they do not have the data currently to report an average.

⁶²Includes all types of repairs (Sidewalk Maintenance Program, Utility Cut Repairs, Capital Projects)

5.1 PORTLAND, OREGON SIDEWALK REPAIR

Background

The Portland Bureau of Transportation (PBOT) currently administers sidewalk repair almost entirely through strict complaint enforcement. Portland faces many similar challenges to Seattle: large portions of the city are lacking sidewalks on one or both sides of the street; the city historically planted street trees that now uplift or damage the sidewalk network; and private property owners are responsible for maintaining the abutting sidewalk. We gathered much of this information from an interview on March 6, 2020 with PBOT staff.

The municipal legal structure in Portland is similar to Seattle's in that it places responsibility upon the abutting property owner (See Appendix C for sidewalk repair legal code). Should the property owner not make repairs in a timely manner, the City has legal authority to conduct the work and place a lien upon the property for the cost of the work plus 10% to account for administrative costs. Unlike Seattle, Portland does not assume maintenance responsibility for City-planted street trees and expects property owners to make repairs for any damages caused by these trees.

Funding and Administration

Previously Portland required property owners to appear in person to obtain a sidewalk repair permit. Now the permit is available entirely online, and the repair notice sent to property owners contains directions to apply online along with a repair cost estimate and permit cost estimate. Permits cost \$0.99 per square foot for sidewalk and driveway (4-6 inches of poured concrete) and \$1.47 per lineal foot of curb. Customers apply online, a Portland engineering technician sends out an invoice for the work, the customer pays, and then they get the permit. Turnaround time for this process is about two days.

If repairs are made by the City for assessments of up to \$2,500, financing for 5 or 10 years is available through the City of Portland. Anything over \$2,500 is eligible for financing up to 20 years. City financing requires that the repairs be conducted by the City. Repair financing is made available to all property owners. Once the liens are paid off in the future, the City recoups the cost of repair.

Procedure and Prioritization

Most reports of sidewalk damage come in through a smart phone application (PDX Reporter) that has different categories (similar to Seattle's Find It, Fix It application). The city also maintains a website where people can make complaints directly.

If a given sidewalk damage site is reported as a trip and fall risk, or it is impassable to wheelchairs, or if there are multiple complaints, they try to prioritize inspection within approximately three business days. Other complaints are inspected as they are received. PBOT sends an inspector and will issue a notice to repair hazards, to the property owner when deemed justified. The inspector creates a specific drawing of the hazards and mails the notice to repair to the property owner at the address listed in county property tax records. This notice to repair includes the specific area of repair needed, and the estimated cost of repair based upon a formula. By City code, the property owner has 60 days to respond to the request to make repairs. The property owner can then apply for a repair permit via an online permit portal administered by the city.

Private property owners are eligible to make the repairs themselves, or they can pay the City to hire a contractor for them. Privately contracted crews conduct all repair work on behalf of the City of Portland. Currently only one contractor is under contract with the city. Since 2012, Portland issues on average 1,843 total citations per year. Of that, the average is about 245 that go to assessment or lien (13.3%).

Currently the City of Portland does not conduct any public outreach regarding sidewalk conditions or repair responsibility and options. It seems that awareness of repair responsibility is not much of an issue (from PBOT's perspective) as most people cited realize they are responsible for the sidewalk. PBOT's online repair portal serves as a quick and effective means for City inspectors to communicate with property owners about repairs. This system has increased permitting speed and reduced costs.

Challenges and Successes

The online permit process is simple and has improved the accessibility of the system. Similar to Seattle, permits were previously issued only in person during limited weekday business hours. Per our interview with PBOT, shifting to an online process increased the amount of permits they were able to issue and sped up response times.

Location is not used as a criterion to prioritize repairs. The PBOT team acknowledges that a complaint driven system is inherently inequitable. It is likely that more complaints are received from wealthier areas, and lower-income areas may be underserved. The City does not currently maintain an asset inventory of sidewalk conditions and relies entirely on complaints for prioritization. With no formal hierarchy in place, the system is largely first-come first-served.

City residents have used the City's reporting system to submit massive amounts of repair requests and overwhelmed the system. Per our interview, most property owners were thought to be aware of their need to maintain the sidewalk even though the City does not conduct regular messaging about private property owners' responsibility.

Portland requires that private property owners take responsibility for repairs even when the City has planted a tree along the street in private property. PBOT staff acknowledged this policy places undue burden on property owners who had street trees planted adjacent to their property and are now forced to foot the bill for maintenance.

5.2 DENVER, COLORADO SIDEWALK REPAIR

Background

Like many cities, Denver places the responsibility for sidewalk repair upon property owners. In 2018, Denver implemented a new system designed to increase the number of sidewalks repaired in the City: The Neighborhood Sidewalk Repair Program (NSRP). The NSRP is the result of a Denver City Council push to comprehensively address broken sidewalks in Denver. Prior to the NSRP, Denver only issued notices based on complaints, and provided little enforcement, resulting in systematic lack of compliance. To implement the NSRP, the Denver Department of Transportation and Infrastructure (DOTI) divided the City into 11 regions and created a plan to inspect all the sidewalks within each region for hazardous sidewalks, issue repair notices to property owners, and provide qualified property owners with financing options.

Funding and Administration

The NSRP's budget comes from the Sidewalk Special Revolving Fund which helps front the costs of repairs for noncompliant property owners and to pay for income-based affordability discounts. In 2018 (NSRP's first year of operation), the City allocated \$4 million to the Sidewalk Special Revolving Fund from the General Fund.⁶³ Any funds leftover at the end of the year will rollover into the next year. Once the Sidewalk Special Revolving Fund is depleted, City Council will approve additional funding, taking into consideration program revenues. Revenue generated through property owners paying the City for repair work goes back into the Revolving Fund.

⁶³City of Denver. (2018). City and County of Denver Mayor's 2018 Budget. www.denvergov.org/content/dam/denvergov/Portals/344/documents/Budget/2018/Document_BudgetBookVolume1_2018.pdf

The NSRP staff include: 1 Finance Administrator, 1 Project Manager, 1 Inspector, 1 Administrative Support, and 4 Grinding Utility Workers. The in-house grinding crew performs smaller repairs

that only require grinding, while full sidewalk replacement is performed by one awarded outside contractor working for the City who performs residential sidewalk repairs.

TABLE 2: CITY OF DENVER 2019-2020 AFFORDABILITY PROGRAM

Household Size								Discount	Repayment
1	2	3	4	5	6	7	8		
Total Household Income									
\$0-\$31,499	\$0-\$35,999	\$0-\$40,499	\$0-\$44,949	\$0-\$48,549	\$0-\$52,149	\$0-\$55,749	\$0-\$59,349	100%	Not applicable
\$31,500-\$40,949	\$36,000-\$46,799	\$40,500-\$52,649	\$44,950-\$58,434	\$48,550-\$63,114	\$52,150-\$67,794	\$55,750-\$72,475	\$59,350-\$77,154	75%	Up to 5 years
\$40,950-\$50,349	\$46,800-\$57,549	\$52,650-\$64,749	\$58,435-\$71,899	\$63,115-\$77,699	\$67,795-\$83,449	\$72,475-\$89,199	\$77,155-\$94,949	50%	Up to 5 years
\$50,350-\$62,999	\$57,550-\$71,999	\$64,750-\$80,999	\$71,900-\$89,899	\$77,700-\$97,099	\$83,450-\$104,299	\$89,200-\$111,499	\$94,950-\$118,699	25%	Up to 5 years
\$63,000-\$94,499	\$72,000-\$107,999	\$81,000-\$121,499	\$89,900-\$134,849	\$97,100-\$145,649	\$104,300-\$156,449	\$111,500-\$167,249	\$118,700-\$178,049	0%	Up to 5 years
>\$94,500	>\$108,000	>\$121,500	>\$134,850	>\$145,650	>\$156,450	>\$167,250	>\$178,050	0%	Not eligible

The NSRP offers affordability options which include an extended payment plan and affordability discounts up to 100% subsidization of repair costs for qualifying lower-income property owners. Only owner-occupied residential properties qualify for the affordability program. The household must have received a sidewalk repair notice from the City, designate the City's repair crew to perform the repairs (either City grinders or City contractors), and meet the necessary household income criteria. The application process for the affordability program requires property owners to provide their most recent federal tax returns and proof of occupancy of the repair site through either their tax return, utility bill, or driver's license address. The NSRP's finance team sees the clear communication of requirements, the ease of the application process for the affordability program, and the speed of response to inquiries as their primary strengths. The main area in need of improvement is better invoicing technology through an Accounts Payable system.

Denver's new sidewalk repair plan was developed following community outreach done through a consulting group as part of Denver's 2017 Mobility Action Plan. They utilized town hall meetings and mailers to establish the community's needs and priorities.

The permitting process typically takes about five days. In order to repair a sidewalk, a property owner needs a Street Occupancy Permit to close the sidewalk, a Parking Lane Permit (if applicable), and a Construction Permit for the replacement itself. All repairs must be compliant with current ADA standards.

When dealing with street trees, the NSRP coordinates with the City Forestry Department to protect trees throughout the repair process. The NSRP and the Forestry Department have developed a Memo of Understanding that outlines costs related to trees, responsibility for the tree, and alternative options for safeguarding trees during sidewalk repair. If a tree causes dangerous sidewalk damage, the first priority is to try to

reconstruct the sidewalk to meander around the tree. If this is not possible, then the tree is removed. The City of Denver is committed to replacing any lost tree canopy with another tree in the surrounding area.

Procedure and Prioritization

The NSRP prioritizes repair locations through the following points system:

1. Roadway Classification as a Proxy for Safety issues:
 - a. Arterials: 25 points
 - b. Connectors: 15 points
 - c. Residential: 5 points
2. Connectivity: Proximity to Generators of Pedestrian Traffic
 - a. Schools (accredited K-12) within 2 blocks: 10 points
 - b. High capacity transit (light rail) within 2 blocks: 6 points
 - c. Transit (bus, bike share) within 2 blocks: 4 points
3. Target User Population
 - a. Lower auto ownership in census tract than city average: 5 points
 - b. Higher disability rates in census tract than city average: 5 points
 - c. More than 15% seniors or 25% youth in census tract: 5 points
 - d. More low-income housing in census tract than city average: 5 points

The NSRP's goal is to inspect all the sidewalks in the city and issue repair notices for all unsafe sidewalks. Notices are delivered to the property by the inspector and also mailed first class to the property owner. Residential property owners have the option to either hire their own contractor or use the City grinding crew for the needed sidewalk repairs. Commercial property owners must hire their own contractor. The NSRP has a list of licensed contractors on hand to provide to property owners upon request.

Following the issuance of a repair notice, the NSRP will perform follow-up inspections to evaluate whether the repair work has occurred. If the sidewalk is still not in compliance and is adjacent to a residential property, the NSRP will bring in a contractor to do the repairs and will bill the property owners after the fact. If residential property owners fail to pay their City repair bill, the repair cost is treated as delinquent on their property taxes. If the sidewalk remains noncompliant following a notice and is adjacent to a commercial property, the property owner has to hire their own contractor and will receive an administrative citation.

While they do not have an exact count, NSRP staff shared that most property owners seem surprised to find out that it is their responsibility to fix the sidewalk adjacent to their property.

Challenges and Successes

The NSRP is only two years old, but it has already run into some challenges. Most significantly, the process of inspecting all the sidewalks within a region and notifying property owners is extremely time consuming. With 11 regions and over 3,000 miles of sidewalk to inspect, inspecting every sidewalk in the city and issuing citations for hazardous sidewalks is an enormous undertaking. Staffing resources are a big challenge—there is currently only one inspector on staff, and they are still in the process of inspecting the first few blocks in the first zone. Other challenges to timely repair of sidewalks include dealing with street trees, the amount of time given for property owners to complete owner-coordinated repair (45 days), dealing with flagstone⁶⁴ sidewalks, weather constraints, issues with contractors, and scheduling.

⁶⁴Some sidewalks in historical neighborhoods in Denver were built with local sandstone flagstones instead of concrete. Replacing flagstones is more time-consuming and costly than concrete sidewalks. The City of Denver does not include flagstone sidewalks in repairs done by the City's discount program.

While there are evident advantages to Denver's new system, NSRP staff still emphasized that the ideal choice for Denver would be regulatory change allowing for a system in which the City does all repair work, either through increased general funding or through a fee-based system where all property owners pay into a fund that the City uses to repair and maintain sidewalks.

5.3 VANCOUVER, BRITISH COLUMBIA SIDEWALK REPAIR

Background

The City of Vancouver, BC, Canada is responsible for all sidewalk construction and maintenance, carrying out this work primarily with City crews. A 2018 inventory records that the City is responsible for 2,165 km (1,345 miles) of sidewalks, with a replacement value of \$1.5 billion (CAD). Over 80% of Vancouver's sidewalks in this inventory were assessed to be in "good" or "fair" condition. On an annual budget of about \$3.4 to \$3.8 million (CAD), the City completes an average of 8 to 9 miles of sidewalk repair per year. These figures cover both general repairs and upkeep, as well as repairs made through its utility repair program, which restores sidewalks damaged by utility servicing, and capital projects. In an interview with Vancouver staff, we learned the City shares similar challenges to other cities we spoke with—street trees and funding—and spoke of successes around long term planning, cross-departmental coordination, and strong internal communications practices.

Funding and Administration

Vancouver primarily funds construction and general repairs of sidewalks through property taxes as part of its sidewalk maintenance programs. Repairs carried out through the utility cut repair program are funded by utility user fees, while those related to capital projects are funded through debenture—a bond-like financing instrument. Sidewalk maintenance funds comprise about \$1 million of the City's annual sidewalk repair budget, utility cut repair funds about \$1.4 to \$1.7 million, and capital funds about \$1 million (all CAD).

Like all cities we spoke with, Vancouver experiences challenges related to funding and limited resources. To address these resource constraints, the City is seeking out additional revenue sources. One such avenue is TransLink, the region's transportation authority, which operates buses, rail, and ferries. TransLink has a Walking Infrastructure to Transit program (WITT) to fund new sidewalks to help link transit users to stops. Other sources include adding repairs to community-specific improvement projects, supplementing otherwise unrelated rehabilitation projects, and curb ramp installations.

Another way Vancouver seeks to save costs and stretch their dollars is by contracting out some repair work. At present, City crews carry out the majority of sidewalk repairs in Vancouver, with up to 80 staff assigned to concrete work. About a dozen of these staff members carry out quicker spot repairs such as beveling and shimming, and all staff are supported by administrative staff. Some of the capital projects utilize pre-qualified contractors, but those tend to be larger renewal projects. The City is currently exploring a hybrid method of delivering sidewalk repairs by expanding their workforce capacity through additional staff hiring and use of contractors to meet the increasing demand on internal capacity.

Procedure and Prioritization

Vancouver is responsible for construction, maintenance, and repairs of its sidewalks, while property owners are responsible for clearing snow and ice, and ensuring the path is clear, as well as being responsible for "connector walks" connecting the house to the sidewalk or road.

The City receives repair requests from a number of different streams of referral. These include a 311-call center, public engagement committees, an online request portal, and a Find It, Fix It-like app called VanConnect. Initial assessments are performed by Street Operations superintendents or maintenance coordinators within five business days of requests.

If the repair is utility cut related, the cut program coordinator will determine the extent of sidewalk replacement required, flag it, and a crew is assigned to carry out the repair. If the repair is not utility cut related, the project coordinator facilitates the initial assessment and develops a series of recommendations including quick fixes and long-term fixes. The project coordinator then scopes out the costs of the recommendations and, based on a multi-factor decision making criteria including damage severity and funding, the program managers prioritizes the repairs. In each of these cases, long-term, substantial repairs typically take two to three years from referral to completion of repair depending on location and urgency of the repairs, as well as where field staff are working around the City.

In their prioritization of repairs, Vancouver does not explicitly factor in equity considerations. However, other criteria play into priorities, including pedestrian volume and current usage of the sidewalk, demographics of surrounding areas, whether the repair location is near community assets serving more vulnerable populations like schools or senior centers, and the general condition of the asset.

Challenges and Successes

City staff we spoke with took pride in the quality of work the City crews carry out, and the ability to coordinate across multiple teams, various government entities, and multiple projects. This collaborative environment has resulted in a high level of service given the budget for repairs, with communication across City staff being key. The City employs a “Dig-Once” policy to help coordinate and streamline water, sewer, electrical, and other infrastructure work to minimize impact and inconvenience to members of the public. In order to integrate all this work, staff has to plan out for up to 10 years in advance to ensure as little disruption as possible.

This policy helps save money for the projects themselves and prolongs the asset lifecycle by

minimizing the need for repeated demolition and repair of sidewalks and streets.

On the other hand, Vancouver experiences the two main challenges other cities consistently mentioned—street trees causing sidewalk uplift and lack of funding for repairs and maintenance. As stated above, the City is exploring avenues for additional funding and ways to lower costs, but street tree uplift remains a problem with less apparent solutions.

5.4 BOSTON, MASSACHUSETTS SIDEWALK REPAIR

Background

Boston has roughly 800 miles of streets, which equals about 1,600 miles of sidewalks. At an average of seven feet wide, this totals just over 59 million square feet of sidewalk. The City of Boston maintains all roads, curbs, curb ramps and sidewalks on public roads and streets under their jurisdiction. Privately-owned streets or those under various state agencies are not maintained by City funds. The Department of Public Works oversees construction and maintenance of all the aspects and is given a pool of money from the State Department of Transportation, supplemented by city capital funding, which they use to do all the work. On average, they are able to repair anywhere from 10-15 miles per year depending on other City priorities.⁶⁵ Since all road, curb, and sidewalk repair funding comes from these sources, the renewed focus on curb ramp installation has lowered that number to around 9 miles.

Massachusetts State Law states that the municipal legislative body has the option to assign costs of sidewalk replacement to the abutting property owner, but is not required to. Boston Municipal Code does not explicitly state that the abutting property owner holds any financial responsibility (see Appendix C).

⁶⁵The 10-15 miles includes even small repairs to a section of sidewalk, not complete replacement.

Multiple cases have been brought to court to determine responsibility and liability for sidewalks in the City of Boston. In *Halbach vs. Normandy Real Estate Partners* (2012)⁶⁶, it was decided that “in the absence of evidence that the defendants created or contributed to the conditions of the sidewalk, they owed no duty to either repair it or warn pedestrians or the city of the hazard” citing a case from 1860 where abutting landowners “are not responsible to individuals for injuries resulting to them from defects and want of repair in the sidewalk”⁶⁷. Since that case in 1860, Boston has always taken the responsibility to maintain and repair sidewalks.

Funding and Administration

In 2020, Boston budgeted \$6.5 million for sidewalk reconstruction⁶⁸ of which, \$4.5 million came from grants. This came out of the almost \$15 million that Boston is appropriated by the state through the Chapter 90 program.⁶⁹ The state’s funding is parsed out among different cities across the state as well as transportation organizations like MASSDOT (state transportation agency) based on size and need for funding. In addition, a recent overhaul of City parking policies and fees created an additional \$1 million that is being re-invested into sidewalk repair.⁷⁰

The maintenance division of Public Works has a supervisor, and three to four inspectors. The City contracts almost all their sidewalk repair out with local contractors who meet criteria set by the City, including having at least 51%

Boston residents on staff. Since most concrete workers and businesses lie outside city limits, this severely limits what contractors they can hire to do the work. Although the City has a team that can occasionally replace a sidewalk panel if necessary, most of the work is contracted out because it is considered more efficient than ramping up staffing. Public Works also maintains lists of approved material sellers that can be found on their main website.

Procedure and Prioritization

The City of Boston has four major ways that broken sidewalks get reported and fixed. These are through a recurring sidewalk survey, private construction projects that impact sidewalks, constituent complaints, and public capital projects.

According to City employees, the sidewalk survey is done every couple of years, the City is broken up into three sections for inspection, and the data is stored publicly in a GIS database. Private construction that affects sidewalks is set up with a sidewalk deposit system that is run through Public Works. Contractors pay anywhere between \$7 and \$17 per square foot for asphalt, concrete or brick and an additional \$4000 for each sidewalk ramp that is affected⁷¹. The contractor then performs their work and restores the sidewalk up to code requirements. If they do not, the City completes the restoration and keeps the entire deposit.

The City of Boston gets broken sidewalk complaints from constituents through the City’s 311 system that serves as the residents’ biggest access point to their city government. Currently the more hits a sidewalk gets through complaints, the higher the priority the sidewalk takes on the repair list. This creates equity concerns as disadvantaged communities have historically not used the 311 system as often as other neighborhoods. This, in combination with the lack of private construction normally found in poorer

⁶⁶*Halbach v. Normandy Real Estate Partners*. 90 Mass. App. Ct. 669 2016. Retrieved from <http://masscases.com/cases/app/90/90massappct669.html>

⁶⁷*Kirby v.. Boylston Market Association*. 14 Gray 249, 80 Mass. 249 1859. Retrieved from <http://masscases.com/cases/sjc/80/80mass249.html>

⁶⁸Streets Cabinet Overview. [2020] City of Boston. Retrieved from www.boston.gov/sites/default/files/embed/file/2019-09/v3_13-_20_a_streets-cabinet.pdf (pg. 272)

⁶⁹Chapter 90 apportionment. State of Massachusetts. Retrieved from www.mass.gov/service-details/chapter-90-apportionment

⁷⁰Major Transportation Initiatives Announced as Part of the FY20 Budget. [2019]. City of Boston. Retrieved from www.boston.gov/news/major-transportation-initiatives-announced-part-fy20-budget

⁷¹Sidewalk Deposits. City of Boston Department of Public Works. Retrieved from www.boston.gov/departments/public-works/sidewalk-deposits

neighborhoods, means that the sidewalks in these areas are not fixed as often.

Boston does not have a set prioritization model but includes a variety of factors when deciding where to fix sidewalks. Factors mentioned in our interview included: the previously mentioned complaints, clumping repairs together in order to lower costs, severity of repair needed and safety issues, whether it is in front of a school or not, and trying to serve all districts equitably. Although we were unable to get the exact number of sidewalks fixed through each category, our interview indicated that the major aspect of the prioritization is customer complaints.

Challenges and Successes

The biggest success of Boston's sidewalk repair program is its ability to respond to customer complaints and achieve sidewalk repair, even if it takes 18-24 months to get non-safety hazard repairs finished. Anyone can call and report a sidewalk, it will be fixed if needed, and the city will take on the financial and physical repair responsibility. City of Boston Public Works employees believe the system works well and identifies necessary streets and sidewalks that need to be repaired, but it does not go far enough. Their current focus on equity shows that Boston is taking their biggest challenge head on. Boston applied for a Bloomberg Philanthropies grant in order to gain funding to bring an equitable repair approach to Boston's streets. They identified that some areas use the 311 line to report broken sidewalks over twice as much as other neighborhoods, many of which have very underserved sidewalks. This program is hoping to infuse equity data with the prioritization model to make the City's repair approach more equitable. Related to sidewalks, an additional identified weakness is the lack of curb ramps throughout Boston. They are currently trying to catch up on this but still have a way to go.

5.5 ITHACA, NEW YORK SIDEWALK REPAIR PROGRAM

Background

Ithaca is significantly smaller than the other five cities we are examining, with only 100 miles of sidewalk compared to Seattle's 2,293. Despite Ithaca's much smaller size, we chose to include them in our analysis because of their unique approach to sidewalk repair. Ithaca runs their sidewalk repair program through Sidewalk Improvement Districts (SIDs). Similar to local improvement districts in Washington, Ithaca's SIDs fund sidewalk installation and maintenance through an annual fee assessed to all property owners within each district. Ithaca is split into five SIDs and the funds raised in a district must be spent in that same district.

The SID system was implemented in 2014 upon the recommendation of a task force convened by the Mayor in 2013 to address the issues with Ithaca's former sidewalk repair system. Prior to 2014, Ithaca's sidewalk repair policy was similar to Seattle's in that the burden of financing and facilitating sidewalk repair fell on property owners. The primary motivator to change policies to a SID approach was the cumbersome nature of the old approach. The old system required Ithaca's Department of Public Works to collect complaints from residents on sidewalks in need of repair, issue a repair notice, and track individual properties for compliance with repair notices. The tracking process and the property owner appeal procedures were administratively burdensome for the Department of Public Works, and funding and hiring contractors to repair sidewalks was financially and logistically burdensome for property owners.

Ithaca decided to model their new sidewalk repair policy on other property benefit area assessments, such as lighting districts, fire districts, or water or sewer utility user fees. The Sidewalk Repair Program Manager explained that SIDs help solve the problem of giving the government access to a steady and dedicated source of revenue for sidewalk construction and

maintenance, while allowing property owners to have a regular maintenance fee built into their annual expenses rather than a larger one-time expense to fix the sidewalk outside their property.

The only situation in which property owners are still individually responsible for directly paying for and facilitating sidewalk repair is when they undertake new construction or significant property renovations, make alterations to their driveways, or upgrade underground utilities (such as water pipes, sewer pipes, or telecom wiring) that results in damage to existing sidewalks. The property owner is in charge of remedying any damage caused by these activities on their own.

Funding and Administration

The average annual funding for Ithaca's Sidewalk Repair Program is \$860,000. This comes from a combination of the fees from the SID and external funding sources pursued by the Sidewalk Program Manager. The Sidewalk Program Manager actively seeks out grants and collaborations to increase the program's funding and reach. In the past, these alternative funding sources have included Federal Department of Housing and Urban Development grants, State of New York environmental grants, and collaborations with Ithaca's Streets & Highways crews working on repaving roads adjacent to sidewalks.

There is a flat SID fee for single-family homes of \$70 per year. The SID fee for multi-family housing or commercial properties is a combination of usage-based fees and a flat charge of \$140 annually. The usage-based fees are calculated by the frontage, or length of the sidewalk adjacent to the building, and the gross square footage of the building, as a proxy for pedestrian volume. Frontage fees are \$30 for every 50 feet of frontage and the square footage fee is \$0.015 per square foot of any buildings on the property. This system is designed to be more equitable than a flat fee because it ensures that larger property owners pay more since their properties usually have higher foot traffic. Tax exempt properties such as schools,

religious buildings, and nonprofits, still have to pay the SID fee because of the usage-based charge.

There are no alternative financing options for low-income property owners—everyone must pay into the SID system based on the criteria outlined above. However, if a property owner would like to get their sidewalk repaired before the SID repair cycle reaches their property, they can hire a private contractor to do the work and receive a credit on their SID assessment fee. The sidewalk repair credits allow property owners to pay reduced SID assessments if they have personally paid to replace their sidewalk within the past 20 years. The credit is valid for 20 years following the time of repair.

The Sidewalk Repair Program has two full-time staff members, the Program Manager, and an Engineering Technician. They manage all public requests for repair, applications and reporting for grants, contracts for design and construction, sidewalk design, construction inspection, and other duties. Almost all sidewalk repairs are performed by outside contractors. City crews are typically busy with other projects, although they are used occasionally when it is cheaper for the SID, such as when City crews are already mobilized near a site. Contractors are chosen through the New York State low-bid process for qualified contractors, in which the lowest , qualified bidder is chosen.

Procedures and Prioritization

On average, the Sidewalk Repair Program fixes one mile of sidewalk annually through the SID funding. Some years, the Program is able to fix additional sidewalks using funding from grants. Sidewalks are prioritized for replacement based on a condition assessment and an algorithm that aids in ranking sidewalks in need of repair. The algorithm prioritizes sites by each sidewalk and street block based on the severity of any damage to the sidewalk, the sidewalk's proximity to transit stops, schools, and highly trafficked areas. The algorithm helps prevent bias in the prioritization process.

When street trees are present, the SRP works with the City Forester to determine the best course of action. Roots can be cut, bridged over, or in some cases the sidewalk will be reinstalled to veer around a large root critical to the structure of the tree. Contractors need to obtain a Tree Permit when working around a tree.

A sidewalk condition assessment of all sidewalks in Ithaca occurs as needed via inspections by Sidewalk Repair Program staff. The most recent assessment occurred in 2018. When individual sidewalk repair requests are called in, those are added to the sidewalk condition database. The database tracks repair requests and is what the prioritization algorithm uses to make its assessments.

In June of each year, the Sidewalk Repair Program Manager gives three public presentations and feedback sessions to help develop the construction schedule for the following year, known as the Work Plan. The Work Plan is then drafted and released for public comment. In the Fall, the Work Plan is revised based on public comments, voted on by City officials, and approved. The public review process also helps bring to light accessibility issues related to certain stretches of sidewalk that might not otherwise be noticed.

Challenges and Successes

Ithaca's Sidewalk Repair Program staff point to their sidewalk database and prioritization algorithm as key to their Program's efficient work. They also point to the individualized nature of the construction engineering plans and contracts for each sidewalk repair project, which they say helps tailor the repairs to the needs of the community. Finally, they highlight the advantage of having enough dedicated staff to handle all the construction quality control measures and grant submissions. In terms of improvements, staff said that more funding could help them be more efficient at finishing more repairs. They also expressed a desire for more cost saving measures to lower the costs of each

construction project and allow more projects to occur. Finally, they said it would be helpful if the City of Ithaca had a dedicated sidewalk construction crew that could handle emergency repairs in a timely manner.

5.6 LOS ANGELES, CALIFORNIA SIDEWALK REPAIR PROGRAM Background

Los Angeles has an estimated 9,000 miles of sidewalk, the most of any city in our analysis. Similar to most US cities, sidewalk repair responsibility falls upon the private property owner (See Appendix C). The City historically did not conduct robust maintenance or enforcement of property owner responsibility to repair. The Department of Public Works would preform minor mitigation with asphalt shims and beveling. In 2015, Los Angeles settled a class action lawsuit (Willits v. City of Los Angeles) filed on behalf of those with mobility disabilities. This \$1.37 billion settlement is the largest disability access class action settlement in U.S. history.⁷² Unlike the Reynoldson case in Seattle, the L.A. case involved both curb ramps and sidewalks.

Funding and Administration

The City agreed to set up an Access Request program for all class action members to be able to submit a request to remove barriers and repair them to ADA compliance. When receiving an Access Request, the City is expected to make repairs within 120 days, to the extent feasible. This settlement also prescribed that the City repair the sidewalk adjacent to all municipal facilities to remove barriers and add features needed to bring them up to ADA compliance. Per the settlement agreement, the City agreed to spend \$1.37 billion over 30 years, starting at \$31 million annually in years one through five and \$63 million annually in years 25 through 30.

⁷²Willits v. City of Los Angeles, Settlement Announcement. (April 1, 2015) Retrieved from: www.lamayor.org/willits-v-city-la-sidewalk-settlement-announced

Los Angeles also operates a sidewalk repair incentive program for all private property owners with sidewalks in the public right-of-way adjacent to their property.⁷³ Private property owners are still legally responsible for maintenance, however the City's "Fix and Release" policy defers repairs by the property owner until a Certificate of Sidewalk Compliance has been issued that certifies that the entire sidewalk on a lot meets standards under ADA. The program initially started out as a three-year pilot. However, because of the popularity of the program, the Mayor's Office and City Council continue to fund it. If a private property owner wants to voluntarily make repairs the City will contribute a portion of the cost up to \$10,000 dollars, typically around 40% of the total.⁷⁴

The sidewalk repair incentive program aims to make permitting and repairs easy and affordable. Property owners apply for a rebate, a City inspector visits the site and provides a rebate amount for a share of the cost via email. The property owner has 14 days to accept or decline the rebate. If accepted by the property owner, they then must hire a licensed contractor. The property owner can hire a licensed contractor of their own choosing to perform the work or use the list of sidewalk contractors with the appropriate license provided by the City, for their convenience. After a contractor has been hired, the property owner can apply for a no-fee permit and construction can begin after a pre-construction meeting involving the City, property owner and contractor.

Once work is completed and inspected by the City, a Certificate of Sidewalk Compliance is issued to the property owner. After a Certificate of Sidewalk Compliance is issued, the work is under full City warranty for 20 years for residential property and five years for commercial and industrial

property. The program operates on a first come, first served basis and at times was on hold due to large backlogs. Since December 2016 they have issued 420 rebates totaling over \$2.2 million dollars and repaired about 8.6 miles of sidewalk. About 10 sites per month are completed.

The City uses both public and private crews to perform sidewalk work. For Access Requests, the Department of Public Works has typically 5 crews for sidewalks and 2 crews for curb ramps. For repairs to publicly owned facilities, the work is put out for bid by private contractors. The Department of Public Works performs the design.

The settlement agreement does not define where repair funding shall come from. Currently, the sidewalk and curb ramp repair budget receives \$15 million from the Sidewalk Repair Fund, \$12 million from state and local transportation levies, and additional funding from proprietary City departments such as the LA Department of Water and Power, LA World Airport and the Port of Los Angeles. Design, program management, and administrative costs are allocated to the Sidewalk Repair Fund with contractors and a portion of the labor being funded primarily through state and local transportation funds. Funding of the sidewalk repair incentive program comes primarily through discretionary allocation of the Sidewalk Repair Fund.

Procedure and Prioritization

In 2016 a new repair request intake system was created utilizing MyLA311, an application to request popular services, including graffiti removal, pothole repair, and bulky-item pickup. Per the Willits settlement agreement, the City has created a dedicated repair request system for those who have a mobility disability, defined as "any impairment or medical condition that limits a person's ability to walk, ambulate, maneuver around objects, or to ascend or descend steps or slopes." This group may file an Access Request, that is subject to repair within 120 days. These requests are reviewed but operate under good faith that only those with mobility disabilities may

⁷³Safe Sidewalks LA FAQ. Retrieved from: <https://sidewalks.lacity.org/rebate-program-frequently-asked-questions>

⁷⁴City of Los Angeles Sidewalk Repair Rebate Schedule of Values. Retrieved from: https://sidewalks.lacity.org/sites/g/files/wph661/f/UPDATEDRebate%20schedule_of_values%202017-08-01_0.pdf

apply for an Access Request. The Access Request applicant cannot be anonymous and may require follow-up to get clarity on what the barrier is.

When the new intake system began in December 2016, there were approximately 400 requests that had been previously received through various City entities. Over 1,000 requests were made in the first 6 months of the new system.

In 2018, the Los Angeles City Council established the sidewalk repair prioritization methodology for city properties and other pedestrian access improvements in the public right-of-way.⁷⁵ A scoring matrix is used to determine how to prioritize what locations are in most need of repair, with those in transportation corridors and adjacent to critical or high use facilities scoring the highest. Higher priority is given to requests in areas with higher rates of injury, in LA Metro's priority network, and in areas with previous legal claims or frequent complaints. A second criterion is applied based on the estimated severity and cost of sidewalk damage, with the most damaged sidewalks being highest priority along with lowest estimated cost prioritized over more expensive repairs.

All communities seem to be generally aware of the private property rebate program, but the challenge the program faces is that residents in higher income neighborhoods are better able to pay for costs not covered by the rebate. Most with mobility disabilities are aware of the Access Request program. The requests received are widely distributed throughout the city. City leaders have made a large financial commitment towards fixing sidewalks and improving mobility in LA, so

these sidewalk programs are well known. The City has also created the publicly accessible Safe Sidewalks LA website for its constituents. By having the MyLA311 reporting system in place, outreach initially was done via press releases, but now there is a robust outreach effort including the Mayor's Office, City Council offices, Department of Public Works – Public Affairs Office and various advocacy groups. Council Offices and City staff can submit requests on behalf of constituents or help direct constituents to do so. Within each Council district, there are neighborhood councils made up of residents where outreach occurs as well.

Challenges and Successes

Due to the strict reporting requirements of the Willits settlement agreement, Los Angeles has developed a robust tracking system. Reporting of repairs is updated daily and publicly accessible on the Safe Sidewalks LA website.⁷⁶ This makes it easy to update policymakers and inform the public about the program's work. Project delivery progress has been successful in staying in compliance with the terms of the settlement agreement. The Sidewalk Repair Program has implemented a hybrid design, that can work for a variety of locations, to reduce time and cost of designing sidewalks. While the goal is to reduce time in designing repair projects, this process is still being updated to ensure that it results in high quality repairs.

In the following section, we discuss policies from these peer cities that could be utilized in Seattle, analyze the steps necessary to implement these policies, and assess their projected impact on several key metrics.

⁷⁵Los Angeles Budget and Finance Committee Action File 14-0163-S3 (2018). Retrieved from: <https://cityclerk.lacity.org/lacityclerkconnect/index.cfm?fa=ccfi.viewrecord&cfnumber=14-0163-S3>

⁷⁶Safe Sidewalks LA, Reporting and Mapping. Retrieved from: <https://sidewalks.lacity.org/reporting-and-mapping>

SECTION 6: SIDEWALK REPAIR POLICY ALTERNATIVES

Drawing upon the preceding review of sidewalk repair policies in six North American peer cities, we analyze how the City of Seattle could implement four possible alternative systems for sidewalk repair:

1. Maintain the status quo;
2. Strictly enforce property-owner funded sidewalk repair, but provide medium- and long-term financing options;
3. Implement a needs-based discount system for lower-income property owners in which the City performs repairs and charges property owners on a tiered basis, while providing medium- and long- term financing options for all but the wealthiest property owners; and
4. Full City responsibility for sidewalk maintenance and financing of repairs.

We analyze each of these options based on the following criteria:

- *Effectiveness*: Whether these options would result in more sidewalk miles repaired.
- *Equity*: Whether these options will promote a more equitable process and distribution of sidewalk repairs. Equity factors include: the disparity between income groups, disparity among geographic areas of repair, access to transportation services, and ease of understanding requirements and navigating the process.
- *Feasibility*: Whether these options would require legislative changes to implement, how much administrative support would be needed to implement, and additional upfront costs.

Section 7 will provide recommendations for a new system of sidewalk repair based on the analysis presented below and provide specific action items to reach this recommended structure.

6.1 MAINTAIN THE STATUS QUO Key Features/Takeaways

- Will not deliver needed improvements to sidewalks at an adequate pace.
- Uneven financial burden of repair.
- Sidewalk repair need continues to grow.

Seattle's current sidewalk repair enforcement is, in effect, a pseudo-voluntary program where abutting property owners are notified of sidewalks that are out of good repair and are given basic educational materials on how to remedy the situation. The City essentially bears the cost of property owner noncompliance due to a lack of suitable enforcement tools, and funding constraints limit the pace at which it can respond to a large volume of unmet repair needs. If the damage can be mitigated by a lower cost fix like a bevel or shim, the SDOT Sidewalk Repair Program completes the repair until the sidewalk damage is beyond what can be beveled or shimmed.

Effectiveness

The current Seattle Sidewalk Repair Program is unable to repair the large stretches of damaged and inaccessible sidewalk necessary for complete accessibility across the city if the sidewalk does not fall within the area of a pre-planned capital project, abuts new construction, or is repaired by a property owner complying with a notice.⁷⁷

⁷⁷Occasionally, there is funding for large projects, but not enough to catch-up with the citywide sidewalk repair need.

This program can only complete a small number of long-term fixes with the current policies and structure, which forces the program to try and play catch-up with short-term fixes that may only last a year or two. These short-term fixes, usually by beveling and shimming are a significant improvement to reduce trips and falls, but funding would need to massively increase in order to catch up. A clearer permitting process could increase the number of sidewalks that get fixed by private property owners, but will not solve the problem completely because owners would still have little financial incentive to comply with notices of repair. Also, contractors may still choose not to bid on small sidewalk repair jobs, making it difficult for property owners to make the fixes, even if they want to.

Equity

The current status quo is a mixed bag when it comes to equity concerns. Many of the extremely damaged sidewalks are in wealthier neighborhoods due to the presence of large, mature street trees. However, property owners are still liable if someone trips and falls on a broken sidewalk, so this problem cannot be ignored. Since the cost is the same for everyone, this disproportionately puts strain on property owners that have low or fixed incomes. In addition, although the Seattle Housing Authority has redeveloped many communities in low-income areas, our conversations with SDOT staff kept bringing up the point that much of the city's residential construction is happening in wealthier neighborhoods. These large construction projects make sure that sidewalks are built to code and safe, while under-invested areas don't have the same resources to construct new sidewalks.

Feasibility

If SDOT maintains the status quo approach in the short-term, no changes would be required to current code, and some internal process improvements could be made. However, in the long-term, the problem will only get worse with the volume of sidewalk repair and replacement need increasing, which could lead to even more resident

concerns over the growing issue. The status quo has been difficult to administer in the past, as the disconnect shown in Section 4 among different SDOT divisions and contradictory City goals has made the sidewalk repair process complicated and burdensome for all. Private property owners currently have no incentive to comply in the status quo environment and many do not.

6.2 STRICT SIDEWALK REPAIR ENFORCEMENT WITH LIMITED FINANCING OFFERED FOR PRIVATE PROPERTY OWNERS TO PERFORM REPAIRS

Key Features/Takeaways

- Strictly enforce requirements for property-owner funded sidewalk repair with medium- and long-term financing options provided by the City.
- Would generate a large increase in private property-owner repairs while providing options for low income property owners.
- Requires increase in SDOT funding and staffing, and municipal code revisions.

This option would require that property owners make repairs to their sidewalk to meet City specified standards within 60 days of notice. Sidewalk repairs requirements would be based on the severity or type of damage, with sidewalk repair notices providing property owners with the specified level of required repair: Shim or bevel the sidewalk if the damage is minor; full concrete replacement of the sidewalk where shim or bevel is not appropriate; in select cases where mature trees are present, as determined in partnership with Urban Forestry, require flexible porous surface treatment, root bridging, or other non-standard sidewalk reconstruction methods. If repairs are not made in a timely fashion, City hired contractor crews would complete the repairs and charge the property owner for the cost of the repairs via a lien placed on the property administered by SDOT, without Council action. In order to conduct repairs and legally place a lien, a public hearing would be provided for the property owner if they chose to appeal the notice to repair.

This strict enforcement policy could be complemented with financing options to alleviate the acute financial burden of often costly repairs on property owners, similar to what is done by Portland, Oregon. When complaints are received, or using existing asset inventory information, the City would notify property owners who are not in compliance with sidewalk standards. The property owner would then have the opportunity to make repairs on their own within the specified time period, hire a private contractor, or use City-provided financing (with subsidies based on income to conduct repairs). Should the property owner not make repairs in a timely manner, a public hearing would be held, and authority would be granted to the City to complete repairs on behalf of the property owner. The costs of the materials, labor, and administration for repairs would be reimbursed to the City via a lien on the property.

Effectiveness

Strict enforcement, with a meaningful means of collection for noncompliance, would increase the current rate of private property owner sidewalk repair. Many private property owners are currently unaware of their responsibility to make repairs to the sidewalk. If an official notice to repair was sent to the property owner, action could be guaranteed to fix the sidewalk within 60 days, from either the property owner or the City, assuming availability of City crews to conduct the repairs and Urban Forestry for inspection of trees. These notices could be prioritized by existing repair criteria to ensure areas of greatest need are fixed first. Enforcement staffing, permit processing capacity, hearing examiner staffing, and contractor availability would limit the pace of repairs. There would also be a need for more funding up front since it would take some time to recoup costs from non-complying owners.

Equity

This policy would place a greater burden on people of lower income, including those who utilize City provided financing. The cost of repair can be substantial in some cases, which would be particularly onerous on people on a fixed income, such as retirees or small business owners who are low-income. It is reasonable to expect that repair costs may be passed down to current tenants by property owners in the form of rent increases given the tight Seattle rental market. Property owners who are non-English speakers face many barriers interacting with SDOT inspectors, permit staff, and contractors as well. Implementation of this policy approach could still be challenging, as SDOT must evaluate where to send inspectors. This could be done using existing inventory data, but the rate of compliance will likely vary in different areas of the city. It can be expected that more property owners would have the means to comply in higher income areas. Enforcement might be challenging when unrepaired sidewalks under City responsibility are next to a private property owner who is being forced to fix their own.

Feasibility

Additional staffing would be needed to conduct increased inspections resulting from stricter enforcement practices, issue notices, and permits to process. Most challenging would be establishing the political will to place liens on non-compliant property owners. Implementing a strict enforcement policy would require municipal code updates to remove language that requires City Council approval of liens and designate the new lien approval process. This new process would, at a minimum, require a public hearing opportunity to give property owners the chance to appeal the notice to repair and, after consideration, presumably in most cases formally approve the City conducting the work.

To provide property owner financing, a revolving fund could be established that would in time be self-sufficient, requiring less additional funding once repayments begin. This financing could be limited to lower-income property owners to maximize the equity impact of the program. Ensuring that staff are able to properly communicate financing options could be challenging, particularly with non-English speakers. These funds would presumably be capped, so an annual process would need to be established to ensure the level of enforcement is always matched with available financing.

Messages from the Community

How would your life be different if these problems were fixed?

I would feel so much safer! My baby would be so much safer! It would put less strain on my wrists and body and I'd be able to think about more important things than "How are we going to get over there safely?"

- 98112 Resident

6.3 CITY CREW-DELIVERED REPAIR PARTNERSHIPS WITH A NEEDS-BASED DISCOUNT SYSTEM FOR PROPERTY OWNERS

Key Features/Takeaways

- Implement a needs-based discount system for lower-income property owners, while providing medium- and long- term financing options for all but the wealthiest property owners.
- Generates significant increase in private property owner sidewalk repairs.
- Provides relief for low income property owners.
- Implementation has large administrative and funding hurdles.

A needs-based discount system would allow lower-income property owners to pay for City of Seattle crews to repair their broken sidewalks at a discounted cost from what they would incur if they worked with a private contractor. This system would be similar to Denver's discount system discussed in Section 4. Seattle property owners with incomes below certain thresholds based on household size would be eligible for a tiered discount program to assist them with the costs of repairing their sidewalk. Property owners below a certain income threshold (higher than that of eligibility for a discount) would also be eligible to participate in an extended repayment plan, giving them up to five years after the completion of the repair work to reimburse the City. The City would have to allocate additional budget to pay for the increased administrative costs of the program as well as for the upfront costs of the repair materials and labor.

Effectiveness

This policy option would likely increase the compliance with repair notices for low-income property owners. It would not change the status quo significantly for non-low-income property owners. Overall, more square feet of sidewalk would be repaired annually compared to the status quo.

Equity

This system would provide a more equitable approach to sidewalk repair while still placing repair responsibility on the property owner (except for very low-income property owners who would be fully subsidized). The burden is lessened for lower-income property owners and remains the same for property owners above certain income thresholds. This system will also likely result in higher instances of sidewalk repair in neighborhoods where incomes are lower. This system would also make the sidewalk repair process easier for lower-income property owners because it would allow them to work directly with the City on repairs rather than having to find and hire an external contractor.

Feasibility

A low-income discount program would also be politically feasible, as there is precedent for this type of system in other City programs such as the City of Seattle's Utility Discount Program. The alterations to Seattle Municipal Code to implement this system would involve authorizing the city to do repair work for property owners and adding authorization for a low-income discount program. After revisions to RCW Chapter 35.68, SMC 15.72 would need to be altered to allow the City of Seattle to do repairs upon request of a property owner (instead of work being done only when a property owner fails to perform repairs as authorized under 15.72.040). An additional section would also need to be added describing how the cost of repair would be assessed following voluntary repair. Section 15.72.050, which authorizes liens to be put on property if the owner does not pay for repairs the city performed could be altered to include work requested by the property owner that they subsequently failed to pay for. Second, a section of code could be added to SMC 15.72 similar to SMC 21.49.040, which authorizes the City to provide income-based discounts to residents on their utility bills on a tiered basis based on household size and income.

The City Attorney's Office noted that further analysis should be conducted as to the cost sharing models to ensure it would not be considered a gift of public funds. It is likely that the City would be able to implement this type of a program because of the joint liability held by the City and private property owners for the sidewalk. The main thing to be aware of with cost sharing programs is the implications for Seattle's Race and Social Justice Initiative (RSJI) as to which residents and neighborhoods are receiving the benefits of the program. There is also legal precedent for property owners to pay the City to do work, so the City should be able to serve as the "contractor" for fixing private property owners' sidewalks as part of a cost-sharing or discount program.

Administratively, this system would require

additional staff to process applications to the program, verify income and sidewalk condition requirements, interface with property owners, and schedule repairs. Seattle could model Denver's user-friendly online portal for applications to the repair discount program. An online portal for discounted repair program applications would help expedite the repair process in Seattle. This policy option would require additional budget for the administrative FTEs and the materials and labor for fixing the sidewalks. Eventually, some of the latter costs would be repaid by property owner repayments, however.

6.4 FULL CITY RESPONSIBILITY AND FUNDING

Key Features/Takeaways

- Completely removes private property owners from the sidewalk repair process.
- Rate of repairs is limited only by funding level.
- City controls which repairs are made.
- Requires unprecedented levels of legal changes, staffing and program funding.

Several cities maintain full responsibility for sidewalk repair, assuming all construction, maintenance, and repair work, including Boston and Vancouver, BC, as detailed in this report. These municipalities carry out this work in different ways. For instance, some finance repairs through general funds, which comes from property taxes, as in Vancouver. Others, like Boston, receive their budget from state-level gas tax revenue, with funds divided among state municipalities. Ithaca, NY, on the other hand, levies flat property fees, the proceeds of which flow into a pool to finance repairs across districts within the City. Some of these cities carry out almost all work with city crews, like Vancouver, while others rely heavily on use of private contractors, like Boston.

A prime benefit of full City responsibility is the relative simplicity of operation and administration. Unlike the other systems described in this Section, there is no patchwork

of responsibility between property owners and the City, with City-owned street trees providing further complications. This system also removes potentially burdensome permitting processes and additional bureaucratic pain points for residents trying to carry out repairs. However, a full City responsibility system would be more costly to operate at the outset, but might reduce the payment of settlements and judgments related to trip and fall cases in the long run. This system would also require full responsibility for all sidewalk-adjacent trees.

Effectiveness

Because the onus for repair and maintenance of sidewalks would be entirely on the City, the effectiveness of this approach would be the direct result of the City budget allocated to sidewalk repair. This option would reduce administrative complexities found in the status quo and cost-sharing options, allowing for centralized planning of all repairs by SDOT, with greater potential for long-term planning. On the other hand, given the size of Seattle's sidewalk network—and that the 2017 estimated cost of needed replacements and repairs ranged from \$500 million to \$1.3 billion—unless significant funds were allocated to such a program, the City would be unable to keep pace with current and future needs.⁷⁸

Equity

The City assuming responsibility for all sidewalk maintenance would allow expanded planning of repairs with respect to mobility and accessibility considerations, as well as fairer geographic distribution of repairs. A full responsibility system would give SDOT greater ability to plan repairs with a goal of equitable outcomes for communities of color in Seattle, in line with the City's Race and Social Justice Initiative (RSJI). While SDOT utilizes the RSJI Toolkit under the existing system, full City responsibility for maintenance—and the increased funding this

would entail—would allow for more intentional repair planning, which is currently limited by repair needs far in excess of available resources. Mobility and transit justice, too, could be factored into decision-making and planning, with greater priority given to areas near transit hubs, community centers, facilities for people who may have mobility issues such as schools and senior centers, and areas with higher pedestrian traffic.

This approach has its downsides, though. Because of the regressive nature of state and local taxes, any funding of such a program would by definition be regressive. To achieve equitable outcomes, it would be imperative to counteract this fact with a higher prioritization of repairs in areas with fewer resources and greater numbers of lower-income residents. Further, Seattleites with more income and wealth often have more time and resources to advocate for their own interests. Here again, a focus on equitable distribution of repairs would be needed as a possible counterweight.

Feasibility

This option is the least feasible of all those analyzed in this section. Assuming full responsibility for maintenance and repairs would likely require wholesale rewriting of SMC 15.72 (Sidewalk Repair). This section of the SMC details the responsibility of property owners for “clearing, cleaning, repair or renewal” of sidewalks adjacent to their property.⁷⁹ These City laws would need to be rewritten to detail that responsibility for sidewalk repair and renewal is to be placed on the City, with “clearing” and “cleaning” still the adjacent property owner's responsibility, as well as further code changes relating to processes, procedures, funding, and so on of this hypothetical repair and maintenance system. This new code would then need to be adopted by City Council and the Mayor.

⁷⁸Sidewalk Assessment Project. [2018] Seattle Department of Transportation. Retrieved from www.seattle.gov/transportation/about-sdot/asset-management/sidewalk-assessment-project

⁷⁹SMC 15.72.010 (A): https://library.municode.com/wa/seattle/codes/municipal_code?nodeId=TIT15STSIUS_SUBTITLE_IIIMACO_CH15.72SIMA

The RCW appears to allow such a system to be adopted without changes at the state level. RCW 35.68.010 states any city may repair sidewalks and “pay the costs thereof from any available funds, or to require the abutting property owner to construct the improvement at the owner’s own cost or expense.”⁸⁰ While RCW 35.69.020 states “first class” cities like Seattle shall require adjacent property owners to repair damaged sidewalks, RCW 35.69.050 stipulates this does not “limit or repeal any existing powers of cities with reference to the construction or reconstruction of sidewalks”⁸¹ such as those aforementioned in 35.68.010. As such, under existing state code Seattle should be able to assume full responsibility for sidewalks with changes to the SMC, though challenges to this interpretation may arise.

In addition to these policy changes, adopting full responsibility for maintenance would require a restructuring or expansion of SDOT’s Sidewalk Repair Program, increased funding, administrative changes, and a public awareness campaign to let residents know of the new policy.

⁸⁰RCW 35.68.010: <https://app.leg.wa.gov/RCW/default.aspx?cite=35.68.010>

⁸¹RCW 35.69: <https://app.leg.wa.gov/RCW/default.aspx?cite=35.69>

SECTION 7: RECOMMENDATIONS & CONCLUSION

Based on our analysis and with consultation from SDOT staff members, **the Evans School Consulting Team recommends SDOT:**

1. Implement a five-year shim/bevel plan
2. Increase property owner awareness and education about sidewalk responsibilities
3. Simplify the sidewalk repair permitting process
4. Institute an income-based cost-sharing program for lower-income property owners
5. Implement clearer enforcement methods
6. Secure increased and stable funding sources

Recommendations one through five are intended to be enacted sequentially, building on top of each other—increased enforcement should not be done without first increasing property owner awareness of right of way responsibilities or implementing cost-sharing to alleviate the burden on lower-income property owners. However, each of these first five recommendations will require increased and stabilized funding, our sixth recommendation. Further, some recommendations may require changes to both RCW and SMC regarding how the City enforces payment by private property owners.

7.1 IMPLEMENT A FIVE-YEAR SHIM/ BEVEL PLAN

In recent years SDOT has begun implementing temporary mitigatory shim and bevel fixes. SDOT, via the SSRP, should develop a systematic process to carry out shims and bevels on a planned, rotating, five-year grid plan across the City's sidewalk network (see Appendix D: "Sidewalk Safety Repair Program: Proactive Maintenance Assessment"). While this is not a long-term solution for damaged sidewalks, it would help reduce hazards and injury risks across the City while providing some accessibility improvements

at relatively low cost. While performing this work, SDOT staff should track mature trees adjacent to uplifted sidewalks. Per our research, do-it-yourself options for temporary fixes were not recommended by peer cities.

7.2 INCREASE PROPERTY OWNER AWARENESS AND EDUCATION ABOUT SIDEWALK RESPONSIBILITIES

A common refrain in meetings with staff across SDOT was how there is little awareness among property owners that they are responsible for repairs to sidewalks adjacent to their property. In response to snow events in recent years, the City has worked to increase awareness that clearing sidewalks of snow and ice is the responsibility of property owners. Making headways on property owner-driven repairs will require efforts like these—not only so enforcement does not come as a surprise, but to help increase the rate of proactive repairs.

Both SDOT and other agencies of the City currently send citywide mailings, which could include messaging on property owner responsibilities of sidewalk and right-of-way maintenance, tree pruning clearance, and tree protection responsibilities. Further, if cost-sharing is implemented, income-related and other programmatic requirements could be included in this resource. This kind of information regarding property owner responsibilities in the public right-of-way is already available online,⁸² but there does not appear to be a consolidated

⁸²Property Owners' Responsibilities. Seattle Department of Transportation. Retrieved from www.seattle.gov/transportation/projects-and-programs/programs/maintenance-and-paving/property-owners-responsibilities

list of responsibilities across City departments. In addition to physical mailers, SDOT could also:

- launch a social media campaign similar to recent awareness efforts around snow and ice clearing
- host community outreach events on sidewalk maintenance, enforcement, and proposed cost-sharing program
- provide informational door hangers to property owners while beveling and shimming
- obtain community feedback on the future of sidewalk repair and maintenance

Along with this, SDOT should provide information about sidewalk repair contractors to aid property owners navigating the repair process. SDOT could create a list that includes Women and Minority-Owned Business Enterprises (WMBEs) that do such repairs, as well as creating informational materials to help property owners understand how to protect themselves through the Better Business Bureau, licensing, and bonding. The City could also suggest property owners partner with neighbors on repair projects to share and lower costs. Information about additional services, like arborists or sewer line repair, could be included as a resource for property owners undertaking sidewalk repairs.

While efforts like these would be a substantial lift involving many actors, any expansion of enforcement or implementation of cost-sharing will need accompanying communications to build awareness.

7.3 SIMPLIFY THE SIDEWALK REPAIR PERMITTING PROCESS

Even with the implementation of a cost-sharing mechanism, it could still be difficult for customers to navigate the process of repairing the sidewalk. Either by training or hiring, PEMS should be allocated two additional FTEs to inspect possible repairs and estimate the size of repair needed. This information should be provided to the customer on the enforcement notice, so they are aware of the size and range of costs of repairs. Included with the notice should be a checklist of

steps of action that a property owner must take to remain in compliance. The property owner would then provide it to a contractor for their estimate, choose a contractor, and the both the contractor and property owner would only have to obtain the permit with Street Use to begin work. This will give both the Street Use permit reviewers and the customer more information at the start of the process and will make each step more efficient.

Secondly, SDOT should implement an online sidewalk repair permitting process to allow customers to access and submit the required documentation through a portal, rather than visiting the permitting counter or submitting by email. This could be implemented as part of Street Use's transition to the new Accela permitting system, already in progress. This will allow customers more accessibility and can provide step-by-step assistance to limit time wasted due to different iterations of applications.

Thirdly, SDOT should interpret repair guidelines included in CAM 2208 into additional languages including, but not limited to, Cantonese, Korean, Mandarin, Somali, Spanish, Tagalog, and Vietnamese. These include the Seattle Tier 1 languages that are spoken by at least 10,000 residents. This will lower the burden on property-owners that do not speak English as a first language who are looking for more information.

Finally, SDOT should create a list of licensed and bonded concrete contractors to provide to property owners with the notice of repair.⁸³ This will lower the burden on property owners to find their own contractor and will allow another form of accountability for the contractor.

⁸³SDOT provides a list of registered tree service providers. For more information see: www.seattle.gov/transportation/projects-and-programs/trees-and-landscaping-program/registered-tree-service-providers

7.4 INSTITUTE AN INCOME-BASED COST-SHARING PROGRAM FOR LOWER-INCOME PROPERTY OWNERS

Develop a cost sharing/discount mechanism to offer property owners when conducting repair enforcement. We recommend adopting the discount structure outlined in the need-based discount option in Section 6.3. This discount program can be combined with City-provided repair financing for up to 20-year terms for repairs in excess of \$2,500. The financing should be held via lien placed upon the property and be required to be collected in whole at any future point of sale.

SDOT will need to decide the extent to which they engage in income verification for participation in the program. More extensive income verification would require additional administrative work and would necessitate extra steps to protect the privacy of sensitive property owner income records. SDOT could also consider a system

with less stringent verification based largely on the word of the property owner. In addition, this program would only be for residential, single-family, property owners. Properties zoned in downtown, commercial, mixed-use, major institutions, and multi-family would be restricted from this program.

The income-based cost-sharing program will change prioritization because of the increase in the number of repairs. The prioritization for these repairs could either be based on first-come first-serve applications to the discount program, be offered to the most vulnerable communities first, or they could be prioritized based on the same sidewalk damage severity and usage criteria currently used. Prioritization of enforcement would continue to be based on the existing criteria, but there would need to be a separate method for those who apply through the low-income discount program.

TABLE 3: EXAMPLE HOUSEHOLD INCOME DISCOUNT SCENARIO FOR SEATTLE⁸⁴

Household Size	1	2	3	4	5	Discount for the Cost Sidewalk Repair	Extended Repayment Term
Household Income	\$0 - \$60,800 [80% AMI]	\$0 - \$69,500	\$0- \$78,150	\$0- \$86,900	\$0- \$93,850	100%	n/a
	\$60,800- \$68,400 [90% AMI]	\$69,501- \$78,200	\$78,151- \$87,950	\$86,901- \$97,750	\$93,851- \$105,550	75%	Up to 5 years
	\$68,401- \$76,000 90-100% AMI	\$78,201- \$86,900	\$87,951- \$97,750	\$97,751- \$108,600	\$105,551- \$117,300	50%	Up to 5 years
	\$76,001- \$83,600 100-110% AMI	\$86,901- \$95,500	\$97,751- \$107,500	\$108,601- \$119,500	\$117,301- \$129,000	25%	Up to 5 years
	\$83,601- \$91,200 110-120% AMI	\$95,501- \$104,250	\$107,501- \$117,300	\$119,501- \$130,300	\$129,001- \$140,750	0%	Up to 5 years
	>\$91,200 120%+ AMI	>\$104,250	>\$117,300	>\$130,300	>\$140,750	0%	n/a

⁸⁴AMI values are calculated based on 2019 HUD income limits.

7.5 IMPLEMENT CLEARER ENFORCEMENT METHODS

To properly reform sidewalk repair policy in Seattle, it is critical that property owner incentives to repair be rebalanced. Due to limited enforcement and escalation mechanisms, there is currently little incentive for private property owners to comply with a sidewalk repair notice. Repair enforcement should be streamlined to better manage repairs on noncompliant property owners. The City should create a process, similar to code enforcement work, to approve City repairs and provide an appeal process to property owners. As mentioned previously, this will require amendments to current laws and possibly the adoption of new laws. With this process in place, enforcement by SDOT can begin in earnest. SDOT could also begin issuing citations to property owners who do not respond to initial notices to help cover some of the administrative overhead.

7.6 SECURE INCREASED AND STABLE FUNDING SOURCES

To enact the recommendations above will require greater resources and funding for the SSRP, while ensuring consistent and stable program funding will allow the sidewalk repair team to more effectively use resources year over year. Stability in program funding will allow for a more consistent workflow and best use of funds given some inherent fixed costs of program administration. Further, even if the recommendations above are implemented, there are still many sidewalks with repair needs for which SDOT is solely responsible and lacks resources to address. Supporting divisions like Urban Forestry will also need additional resources to ensure retention of street trees with increased sidewalk maintenance. As such, SDOT must increase SSRP's funding to better meet replacement and repair needs. As the Move Seattle levy expires, the City and SDOT should obtain feedback from community members about sidewalk maintenance funding and responsibility.

7.7 CONCLUDING THOUGHTS

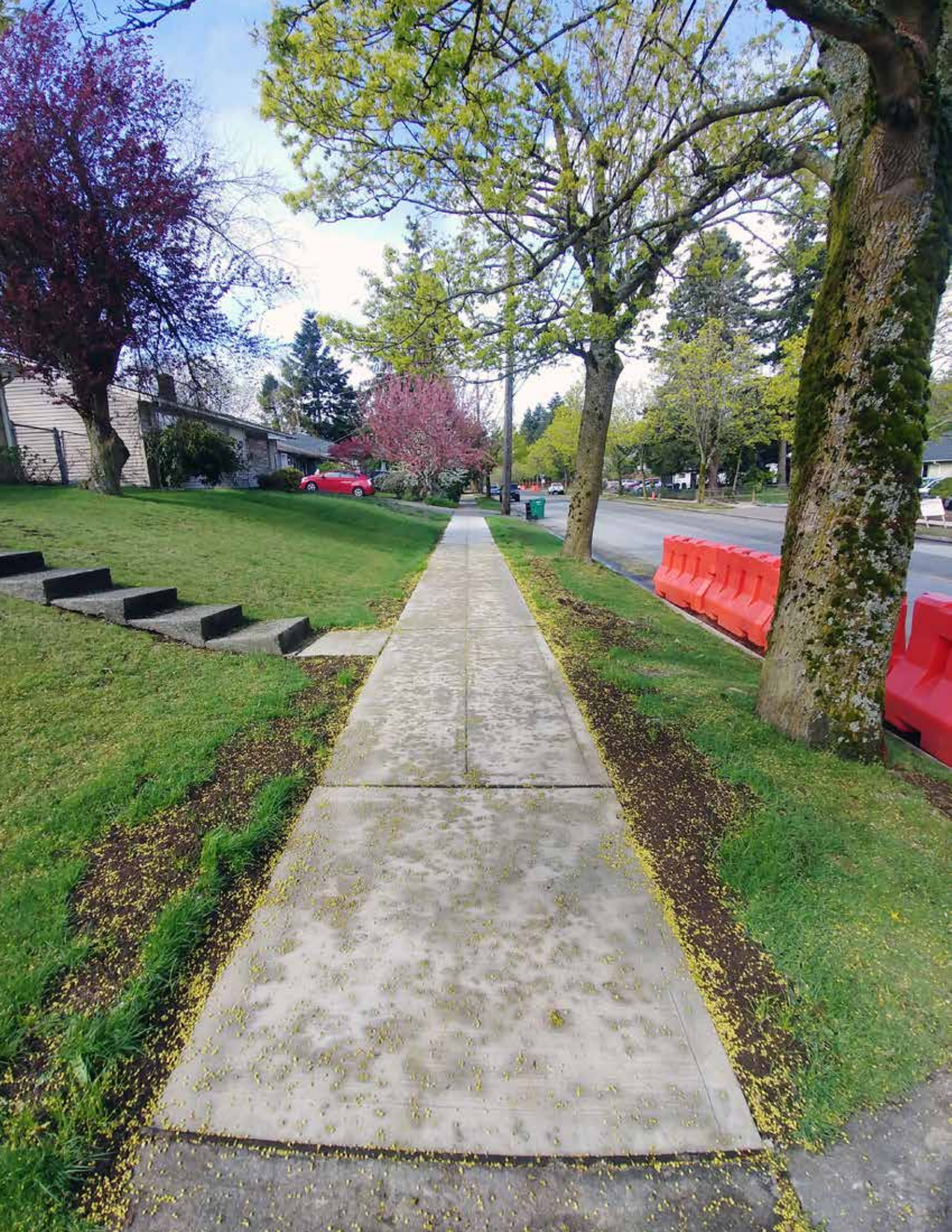
Our recommendations are designed to increase the total amount of sidewalks repaired in Seattle while ensuring that lower income property owners are not unduly burdened by the costs of repair and giving all but the highest income property owners options for medium- and long-term financing through the City. Based on our research and analysis, the Evans School Consulting Team believes the combination of financing strategies, streamlined administrative processes, improved enforcement, and greater community outreach will result in greater property owner compliance with repair notices and increase the rate of repair of sidewalks in Seattle.

Through improved private property owner enforcement and permitting, along with greater City commitment to sidewalk repair funding and administrative resources, the ultimate goal is to improve the accessibility of our sidewalks so all Seattle residents and visitors can more fully participate in community life and equitably access opportunity and resources through walking and rolling.

Seattle and many cities across the country face the daunting task of repairing existing sidewalk networks and maintaining accessible and safe pedestrian infrastructure. While often overlooked, sidewalks are one of the most fundamental parts of our built environment. We want to ensure Seattle sidewalks are accessible to all, well maintained for future generations, and provide the backbone of an equitable, climate-conscious, and resilient multimodal network.

7.8 ADDENDUM: SIDEWALK REPAIR IN THE WAKE OF COVID-19

This report was largely developed and written from January through May of 2020. In early March, the University of Washington and the City of Seattle began operating on a remote basis due to the impacts of COVID-19. This pandemic has impacted the political, financial, and cultural framework we now operate in moving forward. We recognize City and SDOT budgets and priorities will be dramatically impacted by COVID-19 for years to come. The analysis and recommendations included are provided for consideration when future funding and administrative capacity become available. The above recommendations may need to be slowly phased in as resources become available.



APPENDIX A: ENFORCEMENT MATERIALS



Warning No. XXXXXX

STREET USE WARNING

REQUIRED RESPONSE DATE: **xx/xx/2020**

FAILURE TO CORRECT THIS VIOLATION MAY RESULT IN CIVIL PENALTIES

THE UNDERSIGNED CERTIFIES AND SAYS THAT:

Violator Name

Violator Address

City

State

ZIP

Violation Location

DID THEN AND THERE COMMIT OR IS RESPONSIBLE FOR THE FOLOWING VIOLATIONS (CHECK ALL THAT APPLY):

- | | |
|---|---|
| ☐ Street Vending (15.17) | ☐ Obstruction of utility or traffic control facilities (15.22.050) |
| ☒ Sidewalk maintenance (broken, damaged, etc.) (15.72) | ☐ Removal of earth and debris/Mixing of mortar or concrete (15.22) |
| ☐ Sidewalk cafes/tables and chairs (15.16) | ☐ No permit to drive over sidewalk or curb (15.22.100) |
| ☐ Use of the public right-of-way without a permit (15.04) | ☐ Warning lights and barricades (15.40, 15.44.010) |
| ☐ Planters | ☐ Debris in public places (15.46) |
| ☐ Basketball hoop | ☐ Marquees/awnings/canopies (15.10) |
| ☐ Other: | ☐ Newsstands (15.14) |
| ☐ Planting trees and shrubs (15.42) | ☒ OTHER: Maintenance of Tree SMC 15.43.040 |
| ☐ Signs/banners (SMC 15.12) | |

NOTES/OBSERVATIONS (INCLUDE SPECIFIC FACTS FOR EACH VIOLATION)

The sidewalk adjacent to your property is damaged and requires a permanent restoration. The sidewalk is cracked, displaced, and an abrupt vertical level change exists between sidewalk panels. The damage is caused by the privately maintained street tree adjacent to your property. SDOT has installed asphaltic sidewalk shims on the sidewalk as a temporary measure, but full restoration in concrete is required.

Any person or entity that owns or is responsible for the maintenance of any tree is liable for any damage done by the tree roots to the public sewers, storm drains, sidewalks, pavement, or other City-owned infrastructure. **SMC 15.43.040(C).**

Please submit a Street Use Permit application for the full restoration of the sidewalk by **xx/xx/2020**. Review the City of Seattle Standard Specifications and Plans (<http://www.seattle.gov/util/Engineering/StandardSpecsPlans/index.htm>) for required standards regarding the sidewalk. Additional rules and codes can be found at the Rules and Codes page of the City of Seattle website (<https://www.seattle.gov/transportation/permits-and-services/permits/rules-and-codes>).

Sidewalk repair requires a Street Use Permit. Please ensure you obtain a Street Use Permit before you start the repair. If you have questions regarding the permit, please contact Street Use at SDOTPERMITS@seattle.gov

INSPECTOR

DATE

Please sign and return this notice with the Street Use application by **xx/xx/2020** in person at the Street Use Counter. We are located at the Seattle Municipal Tower at 700 5th Ave, Floor 23, Seattle, WA 98104. Alternatively, you may return a copy of the signed notice and application by email at SDOTPermits@seattle.gov.

VIOLATOR'S SIGNATURE ACKNOWLEDGING RECEIPT

DATE

HOW TO APPLY FOR A STREET USE PERMIT

A Street Use permit application may be submitted in person at the Street Use Counter, by email, or by mail. A complete application includes the application form in addition to the supplementary documentation identified according to permit type on the application form.

To apply in person:

Seattle Municipal Tower
700 5th Avenue, Suite 2300, Seattle, WA 98124
(206) 684-5267
Monday, Wednesday, Friday: 9:00 AM to 4:00 PM
Tuesday, Thursday: 10:30 AM to 4:00 PM

Please bring this document with you when applying for permits at the Street Use Counter.

To apply by mail:

Submit your completed application and site plan by mail to:
SDOT Street Use Permit Services
700 5th Avenue, Suite 2300
PO Box 34996
Seattle, WA 98124-4996

To apply by email:

Submit your completed application and site plan to:
SDOTPERMITS@seattle.gov

You **MUST** enter the **Warning No.** (located at the top of this application) in comment box.

SOME PERMITS MAY REQUIRE ADDITIONAL DOCUMENTS AND REVIEW TIME FOR AN APPLICATION TO BE CONSIDERED COMPLETE.

SDOT Street Use website
www.seattle.gov/transportation/stuse_home.htm

Client Assistance Memos (CAMs)
www.seattle.gov/transportation/stuse_docs.htm

Seattle Municipal Code (SMC) can be found at:
https://library.municode.com/wa/seattle/codes/municipal_code

SDOT Street Tree manual can be found at:
<http://www.seattle.gov/transportation/projects-and-programs/programs/trees-and-landscaping-program.htm>

If you need assistance, call (206) 684-5253.

VEGETATION REMOVAL FROM SIDEWALKS ADJACENT TO YOUR PROPERTY



Seattle
Department of
Transportation

Did you know?

The area between the curb and property line, including sidewalks, planting strip area and vegetation, is the maintenance responsibility of the adjacent property owner?

It is the responsibility of the property owner to:

- Keep the sidewalk or pedestrian pathway clear from vegetation overgrowth.
- Prevent weeds, grass and shrubs from growing in and over sidewalk.
- Remove moss and rake leaves from sidewalk.
- Trim vegetation blocking streetlights, traffic signs and drivers' view at intersection.

Vegetation hanging over the sidewalk must be trimmed to a minimum clearance of 8 feet above the sidewalk grade and 14 feet above street surface - Permits are not required to remove limbs less than 2 inches in diameter.



VEGETATION REMOVAL FROM SIDEWALKS ADJACENT TO YOUR PROPERTY

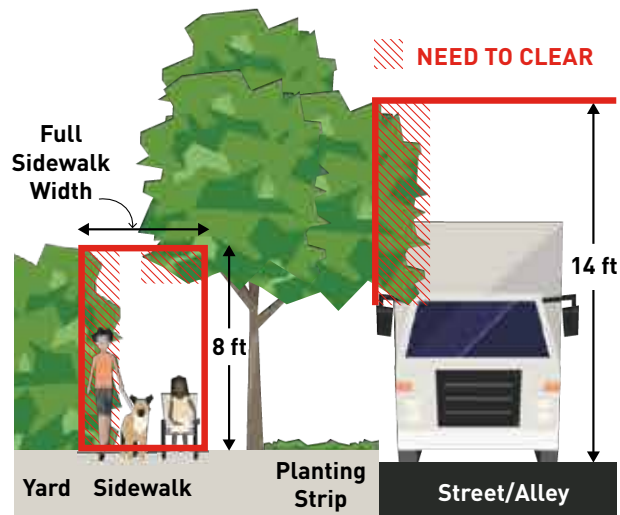
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Seattle
Department of
Transportation

APPENDIX B: PEER CITIES INTERVIEW QUESTIONS

INTRODUCTORY SCRIPT

"We're ____, MPA students at the University of Washington's Evans School of Public Policy & Governance. We are conducting this research as part of our role as consultants for the Seattle Department of Transportation on how sidewalk repair programs work in different cities. We will be asking you some questions regarding [City]'s sidewalk repair program. The data collected during this interview will be summarized in a report made available to City of Seattle employees and may be released to the general public"

INTRODUCTORY QUESTION

- Can you briefly describe your job and/or area of expertise?

REPAIR POLICIES & PROCESSES

- How many square feet (and/or miles) of sidewalk are there in [CITY]?
- How many square feet (and/or miles) of sidewalk do you repair on average each year and how much does this vary year to year?
- What citizen outreach is done (if any) regarding sidewalk repair?
 - How do equity concerns factor into your outreach efforts?
- How does your team handle work with and around street trees?
 - Are there official City policies about safeguarding trees, and what are they?
- How do you identify & prioritize areas in need of sidewalk repair?
 - How do you address equity concerns when considering where to perform sidewalk repairs?
- How often do you reassess sidewalk repair needs?
 - Do you think this reassessment period is appropriate for your City's needs?

RESPONSIBILITY

- How do you go about ensuring property owner compliance with sidewalk repair regulations?
 - Do you think the majority of property owners are aware of their responsibility to fix the sidewalk? (IF APPLICABLE)
 - How do you notify property owners of needed sidewalk repair?
 - What sort of penalties are in place (if any) if homeowners do not complete repairs within the given time period?
 - Do you place liens on noncompliant property owners? If so, how does this work?
 - Do you give homeowners the option to do the repairs themselves?
- What permits are required for repairs?
 - How long does the permitting process usually take?
- How do you work to ensure accessibility and compliance with ADA regulations?

FUNDING AND ADMINISTRATION

- What is the annual budget for city-funded sidewalk repairs?
- What are the funding sources for repair spending?
- Do you offer financing or cost sharing for homeowners?
 - If so, what are the criteria for participation?
- How many staff members do you have working on sidewalk repair?

- Do city crews perform any repairs?
 - How often are contractors involved and how is this decision made?
 - Do you provide residents with a list of approved or suggested contractors that have been vetted?
 - Do you have any agreements with local contractors? (IF APPLICABLE)

CLOSING QUESTIONS

- What do you think are the top 3 things your program does well and the top 3 things that could be improved upon?
- Is there anything else you'd like to tell us about your sidewalk repair program?

APPENDIX C: PEER CITIES SIDEWALK REPAIR CODE

PORTLAND SIDEWALK REPAIR CODE OVERVIEW

Portland City Charter, Title 17 Public Improvements, Chapter 17.28 Sidewalks, Curbs and Driveways, section A: “The owner(s) of land abutting any street in the City shall be responsible for constructing, reconstructing, maintaining and repairing the sidewalks, curbs, driveways and parking strips abutting or immediately adjacent to said land”.⁸⁵

17.28.090 Repair by City of Portland: “If the owner, agent or occupant of any lot, part thereof or parcel of land which has been posted with notice to repair a sidewalk or curb, or both, shall fail, neglect or refuse to make repairs within the period of 60 calendar days after posting, the City Engineer may as soon as the work can be conveniently scheduled, make the repairs, and the cost shall be determined and assessment made as provided in this Chapter.”⁸⁶

17.28.140 City Charges for Construction or Repair of Sidewalks, Curbs and Driveways: “The property owner shall be charged for the construction, reconstruction or repair of sidewalks, curbs and driveways. The cost for the City to have repairs made will be assessed as a lien upon the property.”⁸⁷

17.28.150 Billing for Charges: “When work is completed by the City on any construction, reconstruction or repair of a sidewalk, curb or driveway, the amount of the charge shall be determined by the City Engineer and reported to the Revenue Division. The Revenue Division shall calculate a proposed assessment that includes the amount of the improvement charge plus 10% of the charge to defray the administrative costs of notice, assessment and lien recording.”⁸⁸

DENVER SIDEWALK REPAIR CODE OVERVIEW

ARTICLE VI. - SIDEWALKS, CURBS, GUTTERS AND DRIVEWAYS

Sec. 49-119. - Sidewalk repairs on hazardous walks.

When the manager of transportation and infrastructure determines that a sidewalk’s condition is such that it presents a hazard to members of the public, then a notice to repair the sidewalk, as set forth in section 49-120(b), shall be sent to the owner or agent in charge of the abutting property.

[Code 1950, § 321.6; Ord. No. 450-84, § 2, 8-27-84; Ord. No. 39-20, § 94, 2-3-20]

⁸⁵Responsibility for Sidewalks and Curbs. Portland City Code 17.28.020. Retrieved from www.portlandoregon.gov/citycode/article/379393

⁸⁶Repair by City of Portland. Portland City Code 17.28.090. Retrieved from, www.portlandoregon.gov/citycode/article/461711

⁸⁷City Charges for Construction or Repair of Sidewalks, Curbs and Driveways. Portland City Code 17.28.140. Retrieved from www.portlandoregon.gov/citycode/article/754738

⁸⁸Billing for Charges. Portland City Code 17.28.150. Retrieved from www.portlandoregon.gov/citycode/article/754739

Sec. 49-120. - Contents and service of notice.

(a) Service of the notice provided for in section 49-118 and 49-119 shall be made either by serving such notice on the person or entity named in the notice, or by sending such notice by first class mail, to the residence or place of business of the person or entity named in the notice, and by posting such notice in a conspicuous place on the property abutting the hazardous sidewalk. If the notice is served on other than the owner of the property adjacent to the sidewalk, a copy of the notice shall be mailed to the owner at the address contained in the assessor's record. (b) Any notice issued under sections 49-118 and 49-119 shall contain: (1) A description of the construction, reconstruction, or repairs required; (2) A statement of the condition of the sidewalk that constitutes the hazard; (3) A statement advising of the right to an administrative hearing to appeal the notice, if requested within thirty (30) days, pursuant to section 56-106(b) of the Revised Municipal Code; (4) A requirement that compliance shall be made within forty-five (45) days from the date of issuance of the notice, [and such notice] shall also indicate that failure to make the repairs within forty-five (45) days shall be unlawful, and that failure to comply with the notice may result in the work being done by the city at the expenses of the party to whom the notice was issued.

[Code 1950, § 321.8; Ord. No. 450-84, § 3[1], 8-27-84; Ord. No. 811-88, § 1, 12-27-88]

Sec. 49-121. - Access and ease of movement for handicapped persons.

The manager of transportation and infrastructure shall require that all new streets and any existing streets which are reconstructed shall provide for the safe and convenient movement of handicapped persons, including those in wheelchairs, across all curbs at all crosswalks and at all intersection corners.

[Ord. No. 298-83, § 1, 5-23-83; Ord. No. 39-20, § 95, 2-3-20]

Cross reference— Rights and duties of persons with mobility handicaps who operate wheelchairs, § 54-547.

Sec. 49-122. - City may construct, reconstruct, or repair a sidewalk.

If a person or entity to whom notice is directed pursuant to section 49-118 or 49-119 fails to comply within the time specified in the notice, the manager of transportation and infrastructure or his designated representative may, in his discretion, order the construction, reconstruction, or repair of the sidewalk by or on behalf of the city, and the procedures outlined in division 3 of this article VI for collection of costs and expenses thereof shall apply in addition to the penalties provided by this Code.

[Ord. No. 811-88, § 2, 12-27-88; Ord. No. 39-20, § 96, 2-3-20]

Secs. 49-123—49-130. - Reserved.

DIVISION 3. - LIEN FOR REPAIRS

Sec. 49-131. - Recovery of cost and expenses.

(a) When work has been performed pursuant to section 49-122, the manager of transportation and infrastructure or his designated representative shall bill any or all owners, occupants, lessees or holders of legal or equitable interest of or in the property known to the manager of transportation and infrastructure or his designated representative for the costs and expenses as determined by the manager of transportation and infrastructure or his designated representative. (b) If the owner, occupant, lessee or holder of legal or equitable interest of or in the property shall fail within thirty (30) days after billing to pay the costs and expenses of work by the city, a lien may be assessed against the property. The manager of transportation and infrastructure, to initiate such lien, shall certify a statement thereof to the manager of finance, who shall record a notice of such lien with the clerk and recorder. The manager of finance shall assess and charge the same against the property involved, and collect the same due, plus interest thereon, in the manner as are delinquent real

property taxes. If the lien remains unsatisfied, the manager of finance shall sell the property involved in the manner prescribed for sales of property for delinquent property taxes. The lien created hereby shall be superior and prior to all other liens, regardless of their dates of recordation, except liens for general taxes and special assessments. In addition to the remedies set forth herein, an action or other process provided by law may be maintained by the city to recover or collect any amounts, including interest, owing under this provision.(c)The liens created hereby shall be superior and prior to other liens, regardless of date, except liens for general and special taxes.

[Code 1950, §§ 322.1, 322.3; Ord. No. 450-84, § 3[2], 8-27-84; Ord. No. 811-88, § 3, 12-27-88; Ord. No. 464-98, § 5, 7-6-98; Ord. No. 775-07, § 79, 12-26-07; Ord. No. 39-20, § 97, 2-3-20]

Sec. 49-132. - Discharge of work certificate; sale; redemption.

(a)The certificate issued in section 49-131 upon being sold to the manager of finance shall thereupon receipt for the same and enter upon a roll to be kept for the purpose the date of issue, name of the holder, description of the property affected thereby, and the amount of the principal sum due thereon.(b)Redemption of the certificate by payment to the manager of finance of the principal amount and accrued interest by any person having a legal or equitable interest in the abutting property shall, upon recordation of a release of lien given therefor by the manager of finance, effect satisfaction of the debt and release of the lien based thereon.

[Code 1950, §§ 322.2, 322.4; Ord. No. 450-84, § 4, 8-27-84; Ord. No. 775-07, § 80, 12-26-07]

Sec. 49-133. - Redemption of certificate; extinguishment of lien.

Any sidewalk certificate issued under the provisions of section 49-131 may be taken up, redeemed, and paid, in the following manner:

(1)The manager of finance is hereby authorized and directed to receive from the owner of any property, against which any such sidewalk certificate is a lien, or from the agent, assignee or attorney of any such owner, or from any person having a legal or equitable claim in or to such property, at any time before the foreclosure of the lien created by any such sidewalk certificate, the amount and interest due upon any such sidewalk certificate, and hold the amount for the owner of such certificate, and pay over the same to the owner of such certificate, upon the presentation of the same for cancellation.(2)The manager of finance, upon receipt of the amount, shall issue to the person making such payment, a redemption certificate, in the usual form.(3)Upon payment as aforesaid, and the receipt of such certificate of redemption, the interest upon the sidewalk certificate shall cease, and the lien created thereby shall be deemed cancelled, extinguished, and for naught held from the date of the recording of the certificate of redemption, in the office of the city clerk.

[Code 1950, § 322.5; Ord. No. 775-07, § 81, 12-26-07]

Sec. 49-134. - Manager of transportation and infrastructure furnishes manager of finance list of certificates.

It shall be the duty of the manager of transportation and infrastructure to furnish to the manager of finance, from time to time, a list of all outstanding sidewalk certificates, showing date of issue thereof, description of property affected thereby, to whom issued, and the amount for which the same was issued.

[Code 1950, § 322.6; Ord. No. 775-07, § 82, 12-26-07; Ord. No. 39-20, § 98, 2-3-20]

Secs. 49-135—49-140. - Reserved.

BOSTON SIDEWALK REPAIR CODE OVERVIEW

Mass. Gen. Law. Part I. Title XIV. Ch. 83. Section 26 - **Assessments for the construction or reconstruction of sidewalks** - In the order for the construction of a new sidewalk or the reconstruction of a sidewalk with material of more permanent character than that with which it was originally constructed, the board making the order may provide for the assessment of a reasonable amount, not exceeding one half the cost, upon the abutting estates. If an ordinance or by-law so provides, the total assessed upon any individual estate shall not exceed one per cent of the value thereof as fixed by the last preceding annual assessment for taxes.

Section 27 - - **Recording of statements; assessment liens** - Whenever the aldermen of a city or the sewer commissioners, selectmen or road commissioners of a town lay out or determine to construct a sewer or drain in a public way, or in a way opened or dedicated to the public use which has not become a public way, or adopt an order for the establishment or reconstruction of a sidewalk for such a way, and assessments may be made or charges imposed under this chapter for the construction of such improvement or the use thereof, they shall forthwith cause to be recorded in the registry of deeds of the county or district in which such city or town is situated a statement of their action, which shall specify the ways in which such sewer, drain or sidewalk is located. All assessments made or charges imposed under this chapter upon land which abuts upon any such way in which such sewer, drain or sidewalk is located shall constitute a lien upon such land from the time such statement is recorded and all charges authorized by section sixteen shall from the time of assessment constitute a lien upon the land connected with the common sewer. Liens under this section shall continue for the same period and under the same conditions as a lien established under chapter eighty.

ITHACA SIDEWALK REPAIR CODE OVERVIEW

§ C-73 **Sidewalk improvement districts.**

A. Establishment of sidewalk improvement districts; map.

[1] The City is hereby divided into five sidewalk improvement districts ("districts" or "SIDs"): District No. 1, District No. 2, District No. 3, District No. 4, and District No. 5. The districts are bounded as shown on the map titled "Official Sidewalk Improvement District Map of the City of Ithaca, New York" (hereinafter "SID Map"), and which accompanies in printed format and is hereby made part of this section.[2]

[2] Editor's Note: A copy of the Sidewalk Improvement District Map is on file in the City offices.

[2] The Superintendent of Public Works or his or her designee shall prepare, maintain, and keep current the SID Map in accordance with amendments made thereon pursuant to action of the Common Council.

[3] Where uncertainty exists with respect to the boundaries of the aforesaid districts as shown on the SID Map, the rules established for interpreting the Official Zoning Map as set forth in § 325-6 of the City Code shall be used to interpret the SID Map.

B. Construction or repair of sidewalks in districts.

[1] The Board of Public Works shall recommend, subject to amendment and approval by the Common Council, a budget and a schedule of sidewalk construction or repair to be performed in each SID as part of the City's budget for each fiscal year; provided, however, that the budget for the first fiscal year following the year of enactment of this section shall be recommended and approved on such schedule as deemed practicable by the Board of Public Works and Common Council. The Board shall have the authority to include

in such budget all or any portion of the cost for past sidewalk construction or repair performed by the City on a property located in and subject to assessments as part of a SID, so long as said cost has not been assessed upon the abutting property owner prior to the effective date of this section. Along with such budget and schedule of work, the Board shall recommend to Council any adjustments it deems desirable to the assessment formula set forth in Subsection C hereof. Such budget may include the issuing of, and payment of the maturing principal of and interest on, any obligation issued pursuant to the Local Finance Law for the purpose of financing the construction or repair of sidewalks pursuant to this section.

(2) Before the budget and schedule of work required by Subsection B hereof are given final approval by the Board, the City Clerk shall give notice by publication three times in a local newspaper of a public hearing thereon on a date specified, which date shall not be less than 10 days from the first publication. Before the date of public hearing, any person may file with the City Clerk written objections to such budget or schedule of work or any part thereof, which objections shall be presented to the Board before action shall be taken on such budget and schedule of work. At the time so appointed or at such other time to which it may adjourn for that purpose, the Board may hear the allegations of any person interested who shall have filed such objections and may take proof in relation thereto. Such allegations and proofs shall be confined to the matters stated in such written objections. The Board may thereupon alter or correct any assessment as justice may require, finally approve the same and file a schedule thereof with the Common Council, which may amend and confirm the same by local law after a public hearing, and if so confirmed, the amount of each assessment as derived from the assessment formula shall be a lien upon the real property so assessed. Such assessments and, if required, any reassessments, shall be collected in the manner provided in this Charter and the City Code for the enforcement, levy, and collection of City taxes.

(3) The Board of Public Works or Common Council may include construction or repair of sidewalk curb cuts and curb accessibility ramps in the local improvements to be made in a SID. The Board of Public Works or Common Council shall not include construction or repair of driveway cuts or aprons, which shall remain the financial responsibility of the abutting property owner.

(4) Work performed in a SID pursuant to this section shall be deemed a local improvement, and Common Council declares and finds that the assessment formula in Subsection C assesses each property in each district in proportion to the benefit received by that property from the construction and repair of sidewalks in its respective SID, and that such assessments are necessary to defray the cost of construction and repair of sidewalk in the respective SIDs.

(5) Nothing herein shall be construed to modify or alter any power of the Common Council, Board of Public Works, or Planning and Development Board to require a property owner to bear the full cost of sidewalk construction or repair as part of the site plan review process pursuant to Chapter 276 of the City Code, regardless of whether said property is located within a SID.

C. Assessment formula.

[Amended 3-5-2014 by L.L. No. 1-2014]

(1) Definitions. As used in this section, the following terms shall have the meanings indicated:

ANNUAL MAINTENANCE FEE

The annual maintenance fee for nondevelopable lots and sliver lots is \$0; for low-foot-traffic lots, it is \$70; and for all other lots, it is \$140.

BUILDING SQUARE FOOTAGE

The total square footage of all buildings on a lot as recorded by the Tompkins County Department of Assessment.

COST OF PAST WORK

The total sum, including labor and materials, actually paid for past work; provided, however, that none of the following shall be included:

- (a) Costs exceeding \$15 per square foot of past work completed; or
- (b) Any overhead fee, interests or penalties imposed for failure to perform sidewalk construction or repair pursuant to the Charter or City Code, including but not limited to § C-73.1E of the Charter.

DOUBLE-LOW-FOOT-TRAFFIC LOTS

Those lots with a Property Class Code of 280 or 281, or substantially identical successor designations, and with two residences that each have a Site Class Code of 210, 215, 240, 250, or 270.

[Added 9-1-2015 by L.L. No. 2-2015]

FRONT FEET

The length of perimeter, measured in feet, by which a lot abuts the line of the public street or streets, provided that, if a lot's perimeter along the line of the public street or streets is bisected such that a portion of the perimeter is within a SID and a portion of the perimeter is not located within any SID, only that portion of the perimeter within a SID shall be included, and provided further that a sliver lot's front feet shall be deemed to be the lesser of the lot's actual front feet or 110 feet.

LOT

Lot or parcel of land, as set forth by the current City of Ithaca Tax Maps on file with the Tompkins County Department of Assessment.

LOT SQUARE FOOTAGE

The total area of a lot measured in square feet, as recorded by the Tompkins County Department of Assessment, or as otherwise calculated by that department.

LOW-FOOT-TRAFFIC LOTS

Those lots, qualifying neither as sliver lots nor as nondevelopable lots, with a Property Class Code of 210, 215, 220, 240, 250, 270, 311, or 312, or substantially identical successor designations. [Amended 9-1-2015 by L.L. No. 2-2015]

NONDEVELOPABLE LOTS

Those vacant lots not qualifying as sliver lots with a lot square footage less than the lowest minimum lot size requirements for any development under the City of Ithaca Zoning Ordinance for the zoning district in which the lot is located, as certified by the Director of Planning and Development or his or her designee pursuant to Subsection C(3) hereof; provided, however, that if a zoning district has more than one minimum lot size, the relevant minimum lot size for this purpose shall be the smallest minimum lot size for that zoning district that is not subject to adjustments for residency or number of units.

PAST WORK

Sidewalk construction or repair performed on a lot located in and subject to assessments as part of a sidewalk improvement district, and permitted by and performed in accordance with the general drawings and specifications established by the Office of City Engineer, provided that such work is performed at the cost of the property owner of the lot upon which the work is performed or funded by documented contributions made to a business improvement district established by Chapter 149 of the City Code by the property owner of a lot located in said business improvement district for the sole purpose of performing sidewalk construction and repair, and provided further that work completed as required by a site plan review pursuant to Chapter 276 of the City Code is excluded.

PROPERTY CLASS CODE

The property type classification code, as defined by the New York State Office of Real Property Services in the Assessors' Manual, or such other substantially similar documentation later produced by that office, assigned to a lot by the Tompkins County Department of Assessment, as may be updated by that Department from time to time.

SIDEWALK CONSTRUCTION OR REPAIR

Construction or repair of any public sidewalk or footpath intended for the use of pedestrians in a City park or approximately following along the line of the public street or streets upon which the lot fronts, including but not limited to sidewalk curb cuts and curb accessibility ramps, and other actions determined by the Board of Public Works to be necessary to the construction or repair of said sidewalk or footpath, including, but not limited to, any paving, earth work, drainage, and appurtenances; provided, however, that the construction or repair of driveway cuts, aprons, or a pedestrian mall (as that term is defined in § C-89B of the Charter) is excluded.

SITE CLASS CODE

The property type classification code, as defined by the New York State Office of Real Property Services in the Assessors' Manual, or such other substantially similar documentation later produced by that office, assigned to each residence on a lot with more than one residence by the Tompkins County Department of Assessment, as may be updated by that department from time to time.

[Added 9-1-2015 by L.L. No. 2-2015]

SLIVER LOTS

Those vacant lots with a lot square footage equal to 2,000 square feet or less.

VACANT LOTS

Those lots with a Property Class Code between 300 and 399, or substantially identical successor designations.

(2) Each lot in a SID shall be annually assessed for work to be performed in the district as follows: annual maintenance fee plus square footage fee plus frontage fee less past work reduction.

(a) Square footage fee. The square footage fee for all low-foot-traffic lots and double-low-foot-traffic lots shall be \$0. For all other lots, the lot's square footage fee shall be equal to the lot's building square footage times \$0.015.

[Amended 9-1-2015 by L.L. No. 2-2015]

(b) Frontage fee. The frontage fee for all low-foot-traffic lots and double-low-foot-traffic lots shall be \$0. For all other lots, the frontage fee shall be \$30 for each 55 feet of front feet or portion thereof.

[Amended 9-1-2015 by L.L. No. 2-2015]

(c) Past work reduction. A lot's assessment under this section shall be reduced as set forth herein.

[1] A lot is eligible for a reduction for the cost of past work for 20 years from the date the past work was substantially completed ("reduction period"). In each year of the reduction period for which an assessment, if any, is made pursuant to this section, the lot's past work reduction shall be an amount equal to 1/20 of the cost of past work. Should the allowable reduction for the cost of past work be greater than a lot's assessment under this section in any given year, the lot owner shall not be entitled to the difference, and the difference shall not apply to the assessment for any other year.

[2] The lot owner must provide sufficient evidence to the Superintendent of Public Works or his or her designee of the nature and location of the past work performed, the cost of the past work, and the date the past work was substantially completed. Such evidence must be provided no later than May 1 of the year preceding the fiscal year for which the owner seeks a past work reduction; provided, however, that in the first fiscal year following the year of enactment of this section, such proof must be provided no

later than the deadline, if any, established by the Board of Public Works, and if no such deadline is established, such proof must be provided no later than February 1 of that fiscal year. If the request is approved by the Superintendent of Public Works or his or her designee, the past work reduction shall automatically recur in each remaining year of the reduction period. The lot owner may appeal the determination of the Superintendent of Public Works or his or her designee to the Board of Public Works at an open meeting thereafter.

(3) Certification of nondevelopable lots. The owner of a lot may file an application with the Director of Planning and Development or his or her designee to have the lot certified as a nondevelopable lot. Such applications must be filed no later than the deadline for providing evidence for a past work reduction pursuant to Subsection C(2)(c)[2] above. Such certification shall be granted only to those lots not qualifying as sliver lots with a lot square footage less than the minimum lot size required for development by the City of Ithaca Zoning Ordinance for the zoning district in which the lot is located at the time of application. Once granted, the certification shall continue to be in effect for the lot, regardless of subsequent changes in ownership, until the end of the fiscal year during which the lot square footage increases for any reason to an amount in excess of the minimum lot size required for development; or the minimum lot size for development, as may be revised or amended from time to time, in the zoning district in which the lot is located, is reduced to an amount equal to or lesser than the lot square footage. The owner of a lot that has received a certification pursuant to this provision shall notify the Director of Planning and Development or his or her designee of any change in the lot square footage.

D. Appeals and reassessments.

(1) No action or proceeding to set aside, vacate, cancel, or annul any assessment for a local improvement shall be maintained, except for total want of jurisdiction to levy and assess the same on the part of the officer, officers, board,

or body authorized by law to make such levy or assessment or to order the improvement on account of which the levy or assessment was made. In the event that a court of competent jurisdiction finds such total want of jurisdiction, this section shall be deemed repealed, and the sidewalk assessment policy in § C-73.1 of the Charter shall automatically take effect.

(2) No action or proceedings shall be maintained to modify or reduce any assessment for a local improvement, except for fraud or substantial error by reason of which the amount of such assessment is in substantial excess of the amount which should have been lawfully levied or assessed.

(3) Any person or persons, jointly or severally, aggrieved by any determination of assessment for a local improvement pursuant to this section may have the decision reviewed by the Supreme Court of New York in the manner provided by Article 78 of the Civil Practice Law and Rules.

(4) Whenever any assessments made under the provisions of this section shall be set aside or shall be decided by any court having jurisdiction thereof to have been improperly or illegally made or whenever it shall be ascertained that the proceedings under which said assessment has been made shall have been so far irregular and erroneous as to make the collection of such assessment illegal, then a reassessment shall be made with the same force and effect as if it had been an original assessment; provided, however, that in the event that no assessment is thereafter successfully levied, those properties affected shall be subject to § C-73.1 of the Charter.

E. Duties of owner. Nothing herein shall modify or abolish the duty of the owner of lands abutting any street, highway, alley or other public place in the City to keep the sidewalks, approaches or street driveways adjoining such lands free and clear of and from snow, ice and all other obstructions, nor shall anything herein modify or abolish the liability of such owner for any injury or damage caused by reason of omission, failure or

negligence to keep such sidewalk free from snow, ice or other obstructions as set forth in § 73.1(B) (1) of the Charter.

[1] Editor's Note: This local law also provided for the renumbering for former § C-73 as C-73.1.

§ C-73.1 Sidewalks not included in sidewalk improvement districts.

[Amended 9-7-1988 by L.L. No. 1-1988; 4-5-1989 by L.L. No. 3-1989; 8-5-1992 by L.L. No. 3-1992; 10-7-1992 by L.L. No. 8-1992; 7-2-2008 by L.L. No. 4-2008; 9-4-2013 by L.L. No. 3-2013]

A. Authority.

(1) The Board of Public Works shall have jurisdiction over the construction, repair and maintenance of all sidewalks, approaches and street driveways abutting any of the streets, highways, alleys and public places in the City and shall have power to make rules and regulations with respect thereto, relating to materials, grade, location, manner and method of construction, dimensions and all other matters in connection therewith, not inconsistent with the provisions of this section.

(2) The Board of Public Works shall have the power to make rules and regulations regarding the removal of ice, snow, and other obstructions from sidewalks and to require the area, if any, between the sidewalk and curb to be kept in a safe condition and the grass on such area, if any, to be properly mowed.

B. Duties of owner.

(1) The owner of lands abutting any such street, highway, alley or other public place in the City shall construct, repair and maintain the sidewalks, approaches or street driveways adjoining such lands and shall keep the same in a safe state of repair and free from defects and free and clear of and from snow, ice and all other obstructions, and the area, if any, between the sidewalk and curb in a safe condition and the grass thereon, if any, properly mowed. Such

owner shall be liable for any injury or damage by reason of omission, failure, or negligence to make, maintain or repair such sidewalk and keep it free from defects, snow, ice, or other obstructions. Such owner shall also be liable for any violation or nonobservance of any ordinance or regulation relating to making, maintaining, and repairing sidewalks, keeping them free from defects and removing snow, ice, and other obstructions therefrom. Nothing herein contained shall be construed to prevent such owner, by lease or otherwise, from delegating to a tenant or occupant the duties and liabilities hereby imposed, but such delegation shall not relieve the owner of his/her primary duties and liabilities hereunder.

(2) The construction and repair of such sidewalks, approaches, and street driveways shall be only upon application, in writing, to the Superintendent of Public Works, without expense to the City and in conformity with the rules and regulations of the Board.

C. Failure to comply.

(1) The Superintendent of Public Works, by notice, given personally or by mail, may require the owner of any land adjoining a sidewalk, approach or street driveway to construct or repair such sidewalk, approach or street driveway in conformity with rules and regulations of the Board of Public Works. In such notice, the Superintendent shall fix a reasonable deadline for the completion of such work, which deadline shall not be less than 60 days after the date of the notice. Upon the failure of the owner to complete such construction or repair within the time limit, the Superintendent of Public Works may cause such sidewalk, approach or street driveway to be constructed or repaired, either by contract or by the Department of Public Works, at the expense of the owner, to be collected as set forth in Subsection E.

(2) Nothing within this section shall prevent the Superintendent of Public Works from demanding or causing the immediate repair or replacement of a sidewalk, approach or street driveway if the failure to immediately repair or replace such sidewalk poses a significant public health or safety risk.

(3) The Superintendent of Public Works may cause the removal of ice, snow or other obstruction from such sidewalk and may cause the area between the sidewalk and curb to be rendered in a safe condition and the grass thereon mowed, at the expense of the owner.

D. Uniform sidewalk improvements; construction of new sidewalks on a street or part thereof.

(1) On petition of interested property owners or on its own motion, the Board of Public Works may direct that new sidewalks and street driveways be laid on any street or part thereof pursuant to plans and specifications prepared and adopted by it. Before determining to make such improvement, the Board shall hold a public hearing on such proposed improvement upon not less than five days' notice, given personally or by mail or by publication in the official newspaper. After such public hearing, the Board may determine to make such improvement, either by contract or by delegation to the property owner(s), or by the City, under the direction of the Superintendent of Public Works.

E. Assessments for sidewalk improvements.

(1) The determination of cost, apportionment and assessment of any sidewalk improvement carried out pursuant to Subsection C or D herein shall be governed by the provisions relating to improvement assessments (in § C-89 of the Charter), except that the entire cost thereof shall be deemed to benefit the adjoining owners.

(2) Any expense incurred by the City pursuant to the provisions of this section shall be billed to the property owner, together with an overhead fee of 25%. The bill shall be payable to the City Chamberlain within 30 days of the billing date or, upon written request to the City Chamberlain

within 30 days of the billing date, shall be payable in no more than five annual installments. If any bill or annual installment is not paid by November 1 of each year, the City Chamberlain shall enter the same as a lien against the premises as provided in § C-54 of the Charter of the City of Ithaca. The Chamberlain shall add the same to the next assessment roll of general City taxes and shall collect and enforce the assessment in the same manner and by the same proceedings, at the same time and with the same penalties as the general City tax and as a part thereof, except that, in addition to the penalties provided for in the aforementioned provisions, interest shall accrue on any unpaid balance from the date of billing to the date of actual payment at 12% per annum or \$3 per month, whichever is greater.

F. Those provisions of this § C-73.1 compelling owner construction or repair of sidewalk shall not apply to lots or parcels located in a sidewalk improvement district and subject to an assessment for work performed in that district pursuant to § C-73 of the Charter; provided, however, that those provisions of this § C-73.1 regarding the abutting landowner's duty to maintain the sidewalks adjoining his or her property free and clear of snow, ice, and all other obstructions, and the landowner's liability for injuries or damages arising from the landowner's failure to do so, shall continue to apply to all lots in the City; provided further that this section and related provisions in the City Code shall continue to apply to the construction or repair of driveway cuts or aprons regardless of whether a lot or parcel is located in a district or is subject to such an assessment; and provided further that should a court of competent jurisdiction hold, or the City so concede, that § C-73 of the Charter in its entirety or any district created by that section in particular is invalid or unconstitutional, or that any particular property within any district is not subject to that section, any property thereby determined not to be subject to sidewalk improvement district assessments pursuant to § C-73 shall be subject to the provisions regarding sidewalk construction or repair set forth in this § C-73.1.

LOS ANGELES SIDEWALK REPAIR CODE OVERVIEW

Chapter VI, Public Works and Property
Section 62.104. Repairs to Sidewalks, Driveway Approaches, Curb Returns and Curbs.

(c) Notice of Non-Compliance and Order

to Repair. Except as provided in Subsection (d), if the Board determines that a Sidewalk, Driveway Approach, Curb Return or Curb is in a condition that endangers a Person or property passing thereon or violates the Americans with Disabilities Act, the Board shall notify the owner of the Lot containing the Sidewalk, Driveway Approach, Curb Return or Curb to repair the Sidewalk, Driveway Approach, Curb Return or Curb. Notice to repair shall be given by posting a Notice of Non-Compliance and Order to Repair in a conspicuous place on the Lot and by mailing the notice to the owner of the Lot, at the last known address as indicated on the last equalized assessment rolls.

(1) **Content of Notice of Non-Compliance and Order to Repair.** The Notice of Non-Compliance and Order to Repair shall: (a) identify the Sidewalk, Driveway Approach, Curb Return or Curb requiring repair; (b) contain a description of the required repair; (c) designate the materials to be used; and (d) specify the deadlines for commencing and completing the repair and provide that if the repair is not commenced and thereafter diligently prosecuted to completion, the Board shall be authorized to make such repair at the Lot owner's expense, and the cost of the repair shall be recorded as a lien on the Lot.

(2) **Time Required for Repair.** Within 30 days of the date of mailing the Notice of Non-Compliance and Order to Repair, or such longer time as the Board may allow, not to exceed 90 days, the owner of the Lot shall commence the specified repair in the manner and with the materials specified in the Notice of Non-Compliance and Order to Repair. All repair work performed pursuant to a Notice

of Non-Compliance and Order to Repair shall be completed within 60 days of the date of issuance of the Notice, or such longer time as the Board may allow, not to exceed 120 days. No owner of a Lot receiving a Notice of Non-Compliance and Order to Repair shall fail to commence or complete the repair within the time specified or in the manner and with the materials specified.

(3) **Failure to Repair.** If the owner of a Lot receiving a Notice of Non-Compliance and Order to Repair fails to commence or complete the repair within the time specified, or in the manner and with the materials specified, the Board shall have the authority to perform, at the Lot owner's expense, the work required by the Notice of Non-Compliance and Order to Repair and any other preventative actions such as root pruning or tree removal to prevent additional damage.

(4) **Determination of Responsibility for Damage.** Whenever the Board determines that a Person has damaged a Sidewalk, Driveway Approach, Curb Return or Curb, all costs incurred by the City to repair the damage shall be a personal obligation of the Person responsible for the damage, recoverable by the City in an action before any court of competent jurisdiction. If the Person responsible is the owner of the Lot, then the costs incurred pursuant to this section may be recorded as a lien on the Lot. The cost of the actual repair and preventative action, such as root pruning or tree removal to prevent additional damage, shall be recoverable along with an amount equal to 40 percent of the cost to perform the actual work, but not less than \$100, to cover the City's costs for administering any contract and supervising the work. In addition to this personal obligation or lien and all other remedies provided by law, if the Board determines that a Sidewalk, Driveway Approach, Curb Return or Curb is damaged to such an extent as to create a public nuisance, the City may collect any judgment, fee, cost or

charge, including any permit fees, fines, late charges or interest, incurred in relation to the provisions of this section as provided in Los Angeles Administrative Code Sections 7.35.1 through 7.35.8.

(5) Appeal to the Board. An owner of a Lot disputing a determination by the Board in a Notice of Non-Compliance and Order to Repair may appeal the decision to the Board. Any such appeal must be in writing and received by the Board within 30 days of the date of mailing the Notice of Non-Compliance and Order to Repair. Further action on the Notice of Non-Compliance and Order to Repair shall be stayed pending the outcome of the appeal. The determination by the Board on appeal shall be final.

(d) Limitations to Issuing Notice of Non-Compliance and Order to Repair a Damaged Sidewalk. Except as provided in Subsection (f), a Notice of Non-Compliance and Order to Repair with respect to a damaged Sidewalk shall not be issued: (1) prior to the issuance of a Certificate of Sidewalk Compliance; or (2) during the Sidewalk Repair Warranty Period unless the repair is required to remedy damage caused by the owner of the Lot or a third party.

This limitation on the issuance of a Notice of Non-Compliance and Order to Repair with respect to a damaged Sidewalk shall not apply to any Sidewalk first constructed after the effective date of this section, or to any Sidewalk adjacent to a Lot owned by a governmental entity, including, but not limited to, the Federal Government, the State of California, any political or administrative subdivision of the Federal Government or State of California, and any county, city and county, municipal corporation other than the City of Los Angeles, irrigation district, transit district, school district, or other district established by law.

(e) Sidewalk Repair Warranty Period. Except as provided herein, the Sidewalk Repair Warranty Period shall be 20 years for Residential Property and five years for Commercial and Industrial Property commencing on the date the Board issues a Certificate of Sidewalk Compliance to the owner of the Lot. The Sidewalk Repair Warranty shall be deemed waived by the Lot owner if the Board grants the owner's request to keep any tree that the City otherwise would remove to protect the Sidewalk from ongoing or future damage. The Sidewalk Repair Warranty Period shall expire in advance of the warranty period upon any subsequent repair performed by the Board or its designee.

APPENDIX D: 5-YEAR SIDEWALK SHIM/ BEVEL PLAN FRAMEWORK



Seattle
Department of
Transportation

Sidewalk Safety Repair Program – Proactive Maintenance Assessment

Background

The City of Seattle has grown significantly over the past two decades, and with that growth comes an increasing need for pedestrian infrastructure. When properly maintained, sidewalks are an equitable transportation asset, serving all members of the public regardless of socioeconomic status or capacity. With nearly 46% of Seattle's 2,300 miles of sidewalk determined to be in *fair*, *poor*, or *very poor* condition, the Seattle Department of Transportation (SDOT) needs new approaches to repair and ongoing maintenance to address this fundamental need. In 2019, Seattle City Council passed Resolution 31908 directing SDOT to present a range of policy alternatives to improve sidewalk repair and address the recorded observations of obstructions in its backlog from prior assessments.

Concerns

- SDOT's 2017 Sidewalk Assessment documented approximately 156,000 observations on the City of Seattle's sidewalk network. Most of these observations are vertical misalignments (uplifts).
- Uplifted and misaligned sidewalk panels can be the cause of trip and falls, which can expose the City to claims and liability.
- Prevention of tripping hazards is especially crucial for seniors and people with disabilities.
- Maintenance and spot repairs on Seattle's sidewalks have historically been driven by customer request. Mobilization, request interpretation, and other factors reduce the amount of time crews are producing work.
- Sidewalk maintenance has not been prioritized department-wide. This has resulted in large backlogs of sidewalk requests.
- A proactive and rotational maintenance process has not been formally implemented or funded.
- Sidewalk condition continues to decline.
- It is our duty to ensure sidewalks are safe for the public.

Objectives

- Sidewalk Safety Repair Program (SSRP) seeks to implement a proactive maintenance plan to visit all City of Seattle sidewalks on a 5-year rotational basis to apply shims and bevels to mitigate sidewalk defects.
- Funding will still need to be provided for SSRP permanent replacement and repair of sidewalks, as permanent repair is important and necessary.
- SSRP's proactive maintenance approach will be focused on the reduction of trip and fall and as a hedge against claims and liability.
- Proactive shim grids are significantly more cost effective than complaint-based response.
 - Streamlines process – Increases crew wrench-time
 - Lowers unit cost
- Proactive shim grids provide more equitable service delivery to the public.



- Proactive shim grid implementation is possible with priority shifts vs. increased staffing.

Discussion

- Sidewalk spot repairs address vertical misalignments both known and unknown.
- Spot repairs will consist of the installation of asphalt sidewalk shims by SDOT Maintenance crews and by blanket vendors via sidewalk grinding (beveling).

Bevel: the uplifted edge of the sidewalk is cut off* with a concrete saw



*No more than half of the thickness of a concrete sidewalk should be removed when beveling, otherwise the panel would become too thin and break apart.

Shim: a wedge of asphalt is applied on top of the sidewalk to mitigate the uplifted edge.



- Maintenance grids also function as a de facto inspection program.
 - Not all sidewalks will need sidewalk shims.
 - Crews will confirm that a block has no defects (clean block) as they work through a shim grid.
- Grids allow for improved data collection and reduction in admin costs

Customer Request Based (CSR) vs. Proactive Grids

Cost Savings

Proactive Grids are more cost effective than CSR-based responses

- Average cost per individual sidewalk shim (FY18, FY19) – 82% cost savings in grids
 - CSR Shims (Business as Usual)
 - \$390.44 per sidewalk shim installed
 - Shim Grids (Proposed)
 - \$70.40 per sidewalk shim installed

Type	ShimsBuilt	BlocksShimmed	CostTotal	CostPerShim
CSR Shims 2018	3343	834	\$895,844.00	\$267.98
Shim Grids 2018	5145	883	\$395,665.00	\$76.90

Type	ShimsBuilt	BlocksShimmed	CostTotal	CostPerShim
CSR Shims 2019	1221	376	\$626,258.85	\$512.91
Shim Grids 2019	2309	543	\$147,525.15	\$63.89

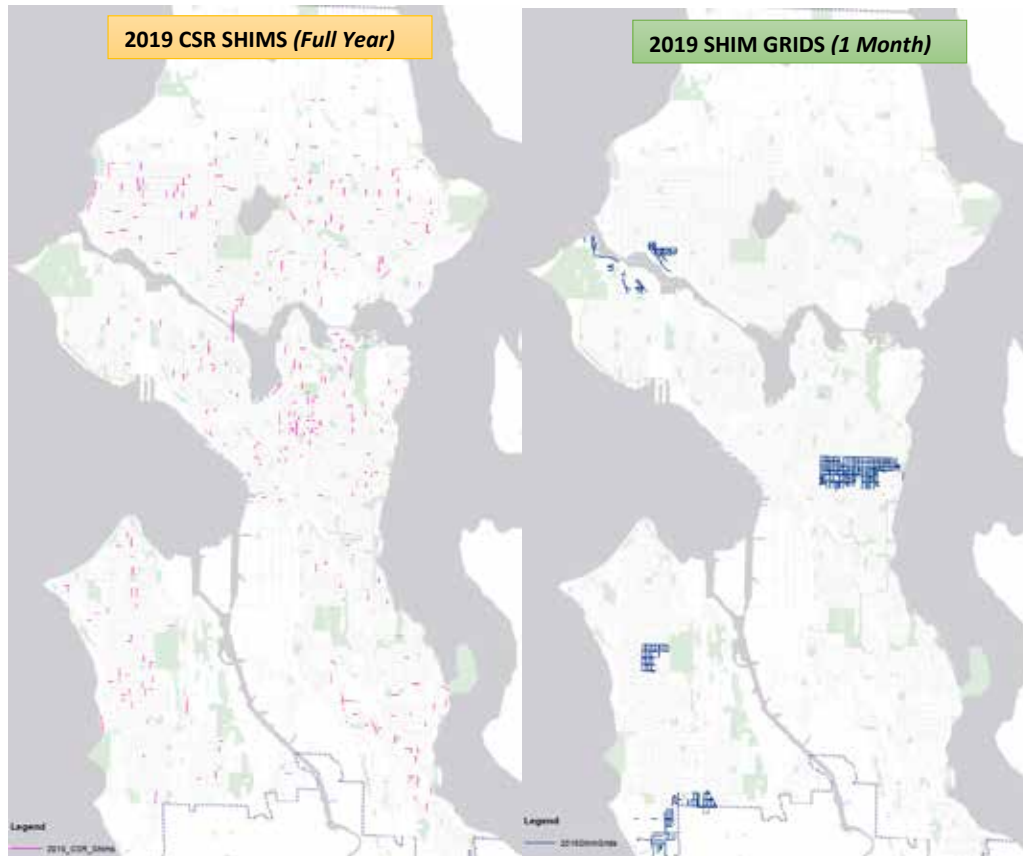


2Yr_Average	AvShimsBuilt	AvBlocksShimmed	AvCostTotal	AvCostPerShim
CSR Shims	2282	605	\$761,051.43	\$390.44
Shim Grids	3727	713	\$271,595.08	\$70.40

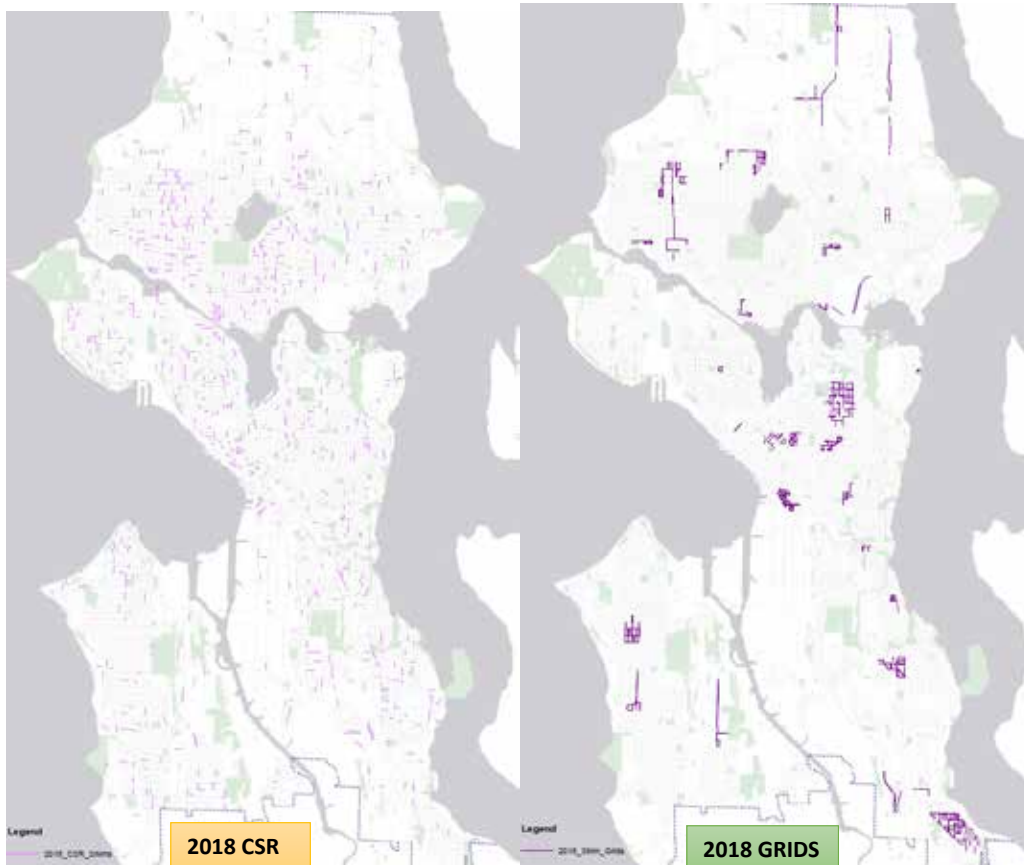
Effectiveness

Proactive Grids allow more maintenance in less time.

- 2019
 - Full Year – CSR:
 - 1,221 sidewalk shims were installed on 376 blocks during the full year.
 - 1 Month – Shim Grids:
 - 2,309 sidewalk shims were installed on 543 blocks in about 1 month.
 - In addition, 387 blocks were confirmed to have no defects (clean blocks).
 - 930 blocks of sidewalk were either shimmed or confirmed clean.



- 2018
 - Full Year – CSR:
 - 3,343 sidewalk shims were installed on 823 blocks during the full year.
 - In 2018, there was a push by SSRP to complete CSR backlog, as crews were motivated by their success working in Shim Grids. Due to this push, these CSR numbers are likely near peak crew efficiency with the CSR model.
 - 2 Month – Shim Grids:
 - This was the first time Shim Grids were implemented in SDOT.
 - 5,145 sidewalk shims were installed on 883 blocks in 2-3 months.
 - This work was completed in tandem with the Pothole Blitz Project.

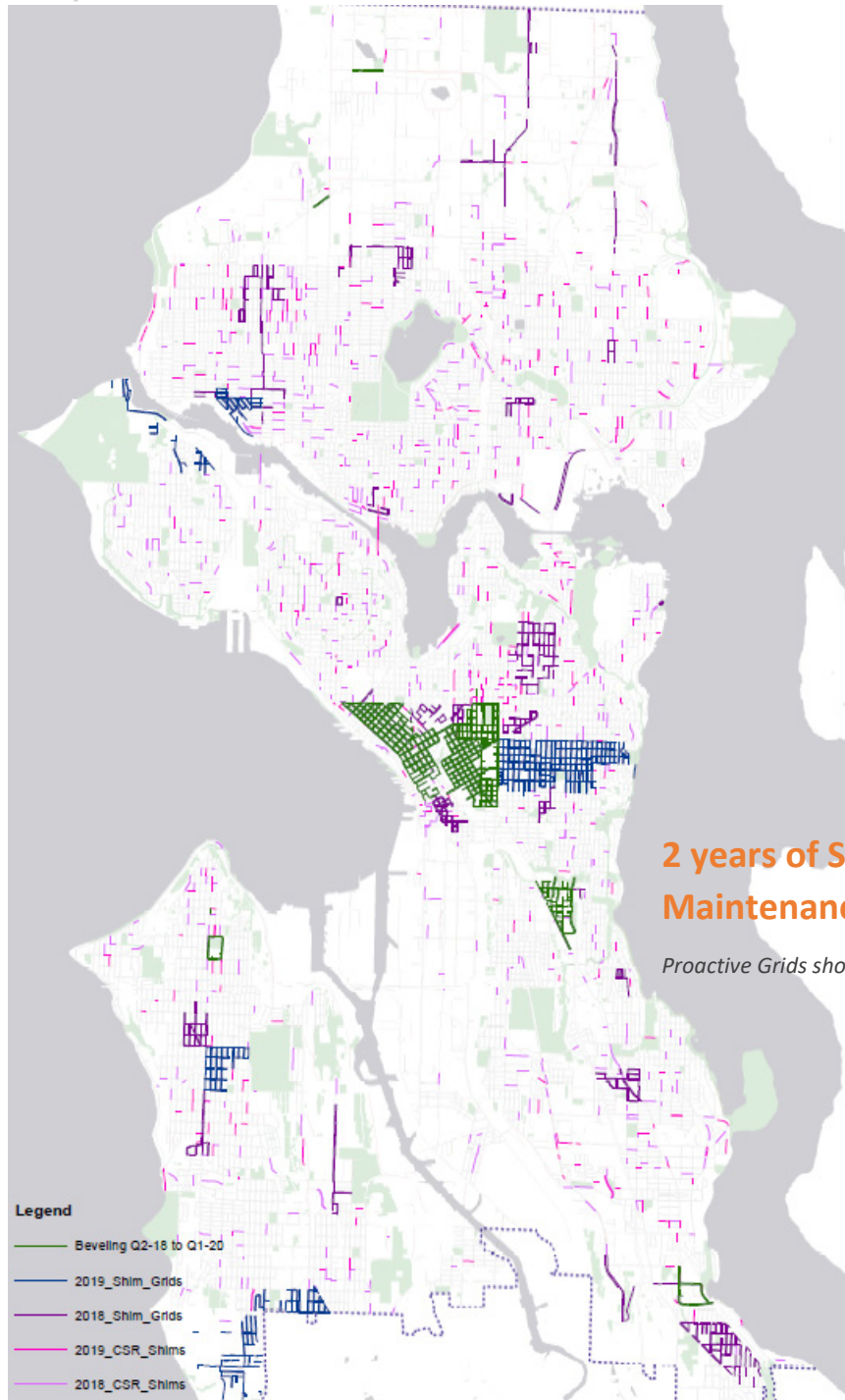


- Along with Crew work, contractors were used to Bevel sidewalks in grids starting in 2018
 - 12,119 bevels were completed on 1063 blocks of sidewalk in this time frame.
 - 146 sidewalks were verified 'clean'.

- 1,209 blocks of sidewalks were addressed in total.



- Two years of SSRP sidewalk maintenance:



**2 years of Sidewalk
Maintenance.**

Proactive Grids show noticeable impact

- Comparison
 - SSRP has allocated about \$1,500,000 of its annual budget towards Preventive Maintenance, such as shimming and beveling.
 - 2018, 2019 Preventive Maintenance funding breakdown:

CSR (Business as Usual)				
Year	Shims	Blocks	Cost	Duration
2018	3,343	823	\$895,844.00	Year
2019	1,221	376	\$626,258.85	Year
CREW SHIM GRID PILOT				
Year	Shims	Blocks	Cost	Duration
2018	5,145	883	\$395,665.00	2-3 Month
2019	2,309	930	\$147,525.15	1 Month
CONTRACTOR BEVEL GRID PILOT				
Year	Bevels	Blocks	Cost	Duration
2018	1,278	246	\$162,777.00	6 Month
2019	8,776	802	\$943,762.00	Year

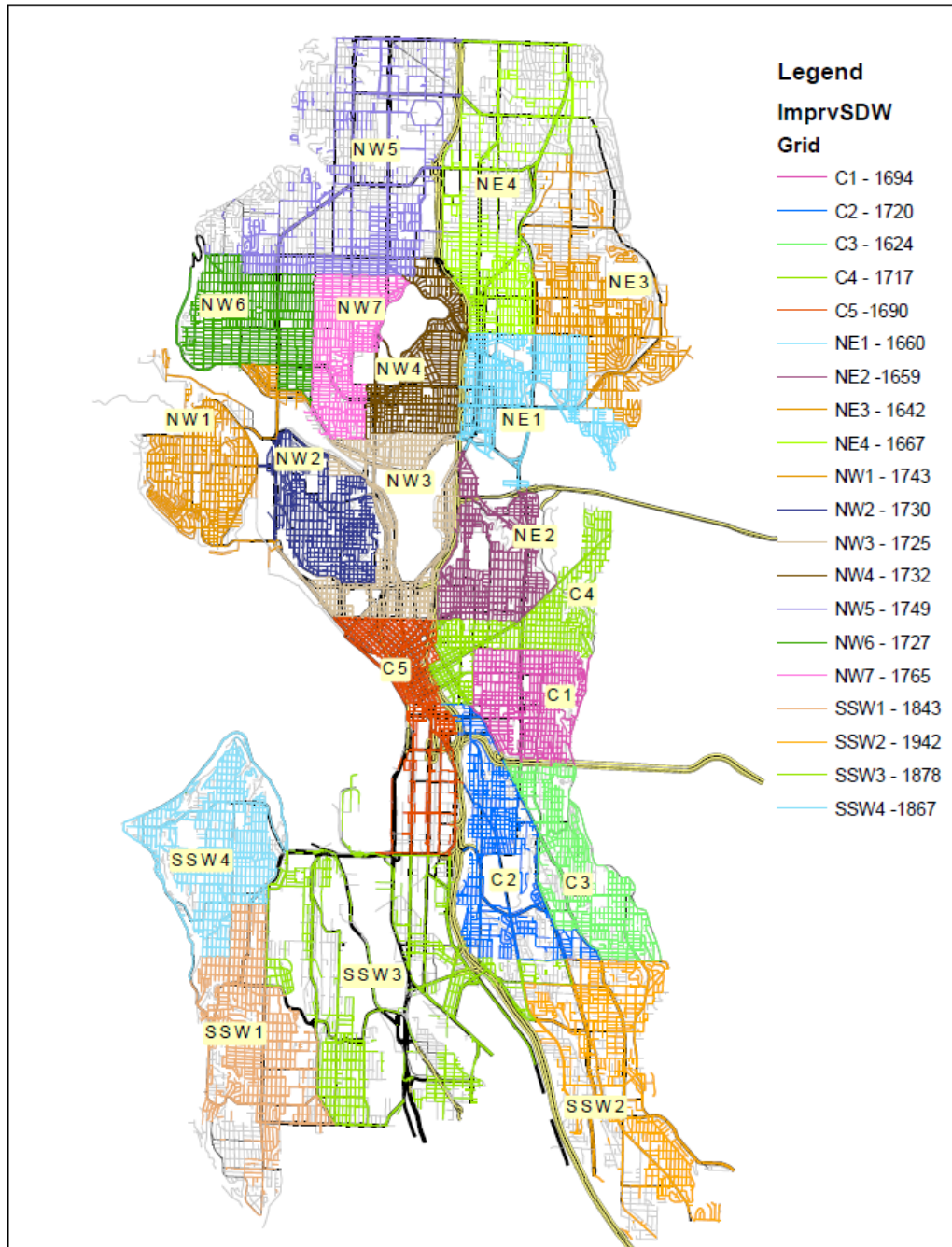
Proposed Proactive Maintenance Grids

- Split Seattle's 34,774 sidewalks into 20 grids.
- 4 Grids will be completed each year for 5 years.
 - One scenario would be to contract 2 Grids per year for Beveling, 2 Grids for Crews.
- After 5 years, the project will start over.
 - The first 5 years will be the most labor-intensive.
 - After that, many sidewalks will simply need to be inspected and previous work touched up if conditions worsen.
- Requested funding will be on top of existing SSRP funding. Other aspects of SSRP, such as permanent repair, curb repair, alley entrance repair, curb ramps triggered by other sidewalk repair work, etc. are all essential services.
- Funding for sidewalk Preventive Maintenance has recently been around \$1,500,000 per year; additional funds will be needed to implement a Proactive Maintenance Program.
- SSRP is ready to implement today, if funded.
 - SSRP has already created Asset Groupings for each sidewalk in the Hansen 8 work management system.
 - This adds these grid assignments into the master sidewalk data, managed by Asset Management Group.
 - Each individual block face of sidewalk will need a unique work order for the best quality data. These Asset Groupings allow for the auto creation of all work.



orders for an entire maintenance grid at once, saving hundreds of hours of admin time creating over 30k work orders.

- SSRP project manager and assistant have write-access to the Hansen 8 database, allowing for accomplishments to be bulk-updated from outside the Hansen 8 system, again saving hundreds of hours of administrative work.
- Crew maps have been created for work crews to document their work (# of shims on which blocks, clean blocks, etc.).
 - In the future, we wish to use a mobile application.



Cost Estimate – Proactive Grid Approach to Sidewalk Maintenance

- Data From 2019 Pilot
 - In 2019, the Central Crews worked on the C1 shim grid for 30 working days (240 working hours)
 - 542 sidewalk block faces were addressed.
 - 397 blocks required shims
 - 1617 shims were installed on 397 blocks
 - 145 blocks were ‘clean’ and required no work
 - Crews inspected these sidewalks for defects.
 - About 18 blocks were addressed per day, or 2.25 blocks per hour



- Crews consisted of
 - Core Crew
 - 2 Maintenance Laborers
 - 1 Truck Driver
 - 1 Asphalt Raker
 - On four separate days, a Construction Maintenance Equipment Operator was needed for support (dig out).
 - Sidewalk Shimming work can be conducted with 3 crew members, only at a reduced pace.
 - Crews can still operate with unexpected leave; cross-training is recommended.
- Equipment and Materials
 - 1 Pothole Patch Truck (Hot Box)
 - 1 Flatbed Truck, Pickup or Dump Truck
 - 2 Tons of Asphalt used on average per day
- Administrative
 - 1 Admin Specialist entered the crew time into Hansen8 work management system during their normal workday.
 - 1 Civil Engineering Specialist, Associate, translated crew maps into the Hansen8 work management system.



- In the future, a mobile app can be used to simplify the recording of grid work, help guide crews on which blocks are still left to complete and to improve data quality.
 - From this data, we anticipate crews working in future shim grids to reasonably complete a minimum of 1.5 sidewalk block faces per hour, possibly more.
- Estimated SDOT Staff and Equipment Required (at current billable rates)

SDOT CREWS				
Job_Class	Job_Desc	CostPerUnit	Hrs_Unit_PerDay	CostPerDay
	crew			
12180	Maint Laborer *	\$75.77	8	\$606.19
97718	Maint Laborer	\$75.77	8	\$606.19
61058	Truck Drvr	\$89.34	8	\$714.69
65050	Asphalt Raker	\$88.03	8	\$704.23
65300	Constr&Maint Equip Op	\$98.78	1	\$98.78
33570	TRUCK - FLATBED - 12 YR - CLAS TRUCK - HEAVY	\$24.00	8	\$192.00
30882	TRUCK - POTHOLE PATCH TRUCK	\$67.16	8	\$537.28



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SM-Asphalt	2 Ton Asphalt	\$167.00	1	\$167.00
	<i>admin</i>			
53310	Civil Engrng Spec,Assoc	\$129.29	1	\$129.29
20078	Admin Spec III	\$78.96	1	\$78.96
	1 Crew Cost Cost			\$3,834.60
	+20% 1 Crew Cost			\$766.92
	Total 1 Crew Cost Per Day			\$4,601.52

- Estimated Beveling Cost, based on invoices from 2018 to current, broken down by sidewalk condition rating.

Beveling Cost by Sidewalk Condition Rating			
<i>SidewalkCondition</i>	<i>totCost</i>	<i>instance</i>	<i>averageCost</i>
EXCELLENT	\$146,133.17	246	\$594.04
GOOD	\$690,748.93	612	\$1,128.67
FAIR	\$391,539.18	261	\$1,500.15
POOR	\$64,553.64	45	\$1,434.53
VERY-POOR	\$23,009.11	16	\$1,438.07
UNKNOWN	\$8,816.34	15	\$587.76

- Staff capacity is not an issue with our blanket contractor, they will increase staff to meet our demand.
- SDOT Crew production is estimated to be 1.5 sidewalk block faces per hour.

Predicted Cost Per Grid – Bevel Contractor vs. SDOT Crews

BEVEL				
Grid	CONTRACTOR	CrewHrs	CrewDays	SDOT CREWS
C1	\$2,134,997.75	1129	141	\$649,581.24
C2	\$2,052,802.40	1147	143	\$659,551.20
C3	\$1,991,082.27	1083	135	\$622,739.04
C4	\$2,114,304.41	1145	143	\$658,400.82
C5	\$1,822,442.13	1127	141	\$648,047.40
NE1	\$2,034,493.23	1107	138	\$636,543.60
NE2	\$2,124,774.16	1106	138	\$636,160.14
NE3	\$2,138,648.01	1095	137	\$629,641.32
NE4	\$2,073,928.24	1111	139	\$639,227.82
NW1	\$2,199,184.54	1162	145	\$668,370.78
NW2	\$2,187,332.39	1153	144	\$663,385.80
NW3	\$1,977,396.24	1150	144	\$661,468.50
NW4	\$2,127,416.45	1155	144	\$664,152.72
NW5	\$2,127,420.32	1166	146	\$670,671.54



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NW6	\$2,145,069.99	1151	144	\$662,235.42
NW7	\$2,217,220.66	1177	147	\$676,806.90
SSW1	\$2,339,788.33	1229	154	\$706,716.78
SSW2	\$2,307,642.67	1295	162	\$744,679.32
SSW3	\$2,226,947.05	1252	157	\$720,137.88
SSW4	\$2,383,972.69	1245	156	\$715,919.82

- Grids were chosen for beveling or shimming based on the percentage of concrete sidewalks, condition, and other factors. These can be adjusted.

Yearly Funding Needed for Implementation (at current rates)

- 3 Options
 - Option 1
 - 4 Grids completed each year:
 - 2 Grids: Bevel Contractor
 - 2 Grids: Shim Crews, SDOT
 - Highest cost option
 - Option 2
 - 4 Grids completed each year:
 - 4 Grids: Shim Crews, SDOT
 - Lowest cost option
 - Option 3
 - 4 Grids completed each year:
 - 1 Grid: Bevel Contractor
 - 3 Grids: Shim Crews, SDOT
 - Balanced cost option

Note: The order in which these grids are completed can be adjusted.

Grand total = Additional funded needed.

Year 1								
Option 1			Option 2			Option 3		
Grid	Action	Cost	Grid	Action	Cost	Grid	Action	Cost
C1	BEVEL	\$2,134,998	C1	SHIM	\$649,581	C1	SHIM	\$649,581
C4	BEVEL	\$2,114,304	C4	SHIM	\$658,401	C4	BEVEL	\$2,114,304
C2	SHIM	\$659,551	C2	SHIM	\$659,551	C2	SHIM	\$659,551
SSW2	SHIM	\$744,679	SSW2	SHIM	\$744,679	SSW2	SHIM	\$744,679
Subtotal		\$5,653,533	Subtotal		\$2,712,213	Subtotal		\$4,168,116
Existing		(\$1,500,000)	Existing		(\$1,500,000)	Existing		(\$1,500,000)
Grand total		\$4,153,533	Grand total		\$1,212,213	Grand total		\$2,668,116
Year 2								
Option 1			Option 2			Option 3		
Grid	Action	Cost	Grid	Action	Cost	Grid	Action	Cost
NE1	BEVEL	\$2,034,493	NE1	SHIM	\$636,544	NE1	BEVEL	\$2,034,493



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NE2	BEVEL	\$2,124,774	NE2	SHIM	\$636,160	NE2	SHIM	\$636,160
C3	SHIM	\$622,739	C3	SHIM	\$622,739	C3	SHIM	\$622,739
SSW3	SHIM	\$720,138	SSW3	SHIM	\$720,138	SSW3	SHIM	\$720,138
<i>Subtotal</i>		\$5,502,144	<i>Subtotal</i>		\$2,615,581	<i>Subtotal</i>		\$4,013,530
<i>Existing</i>		(\$1,500,000)	<i>Existing</i>		(\$1,500,000)	<i>Existing</i>		(\$1,500,000)
<i>Grand total</i>		\$4,002,144	<i>Grand total</i>		\$1,115,581	<i>Grand total</i>		\$2,513,530

Year 3

Option 1			Option 2			Option 3		
<i>Grid</i>	<i>Action</i>	<i>Cost</i>	<i>Grid</i>	<i>Action</i>	<i>Cost</i>	<i>Grid</i>	<i>Action</i>	<i>Cost</i>
NW2	BEVEL	\$2,187,332	NW2	SHIM	\$663,386	NW2	SHIM	\$663,386
NW3	BEVEL	\$1,977,396	NW3	SHIM	\$661,469	NW3	BEVEL	\$1,977,396
NE3	SHIM	\$629,641	NE3	SHIM	\$629,641	NE3	SHIM	\$629,641
NW1	SHIM	\$668,371	NW1	SHIM	\$668,371	NW1	SHIM	\$668,371
<i>Subtotal</i>		\$5,462,741	<i>Subtotal</i>		\$2,622,866	<i>Subtotal</i>		\$3,938,794
<i>Existing</i>		(\$1,500,000)	<i>Existing</i>		(\$1,500,000)	<i>Existing</i>		(\$1,500,000)
<i>Grand total</i>		\$3,962,741	<i>Grand total</i>		\$1,122,866	<i>Grand total</i>		\$2,438,794

Year 4

Option 1			Option 2			Option 3		
<i>Grid</i>	<i>Action</i>	<i>Cost</i>	<i>Grid</i>	<i>Action</i>	<i>Cost</i>	<i>Grid</i>	<i>Action</i>	<i>Cost</i>
NW4	BEVEL	\$2,127,416	NW4	SHIM	\$664,153	NW4	SHIM	\$664,153
NW6	BEVEL	\$2,145,070	NW6	SHIM	\$662,235	NW6	BEVEL	\$2,145,070
NE4	SHIM	\$639,228	NE4	SHIM	\$639,228	NE4	SHIM	\$639,228
NW5	SHIM	\$670,672	NW5	SHIM	\$670,672	NW5	SHIM	\$670,672
<i>Subtotal</i>		\$5,582,386	<i>Subtotal</i>		\$2,636,288	<i>Subtotal</i>		\$4,119,122
<i>Existing</i>		(\$1,500,000)	<i>Existing</i>		(\$1,500,000)	<i>Existing</i>		(\$1,500,000)
<i>Grand total</i>		\$4,082,386	<i>Grand total</i>		\$1,136,288	<i>Grand total</i>		\$2,619,122

Year 5

Option 1			Option 2			Option 3		
<i>Grid</i>	<i>Action</i>	<i>Cost</i>	<i>Grid</i>	<i>Action</i>	<i>CostForGrid</i>	<i>Grid</i>	<i>Action</i>	<i>Cost</i>
SSW1	BEVEL	\$2,339,788	SSW1	SHIM	\$706,717	SSW1	BEVEL	\$2,339,788
SSW4	BEVEL	\$2,383,973	SSW4	SHIM	\$715,920	SSW4	SHIM	\$715,920
C5	SHIM	\$648,047	C5	SHIM	\$648,047	C5	SHIM	\$648,047
NW7	SHIM	\$676,807	NW7	SHIM	\$676,807	NW7	SHIM	\$676,807
<i>Subtotal</i>		\$6,048,615	<i>Subtotal</i>		\$2,747,491	<i>Subtotal</i>		\$4,380,562
<i>Existing</i>		(\$1,500,000)	<i>Existing</i>		(\$1,500,000)	<i>Existing</i>		(\$1,500,000)
<i>Grand total</i>		\$4,548,615	<i>Grand total</i>		\$1,247,491	<i>Grand total</i>		\$2,880,562



Next Steps

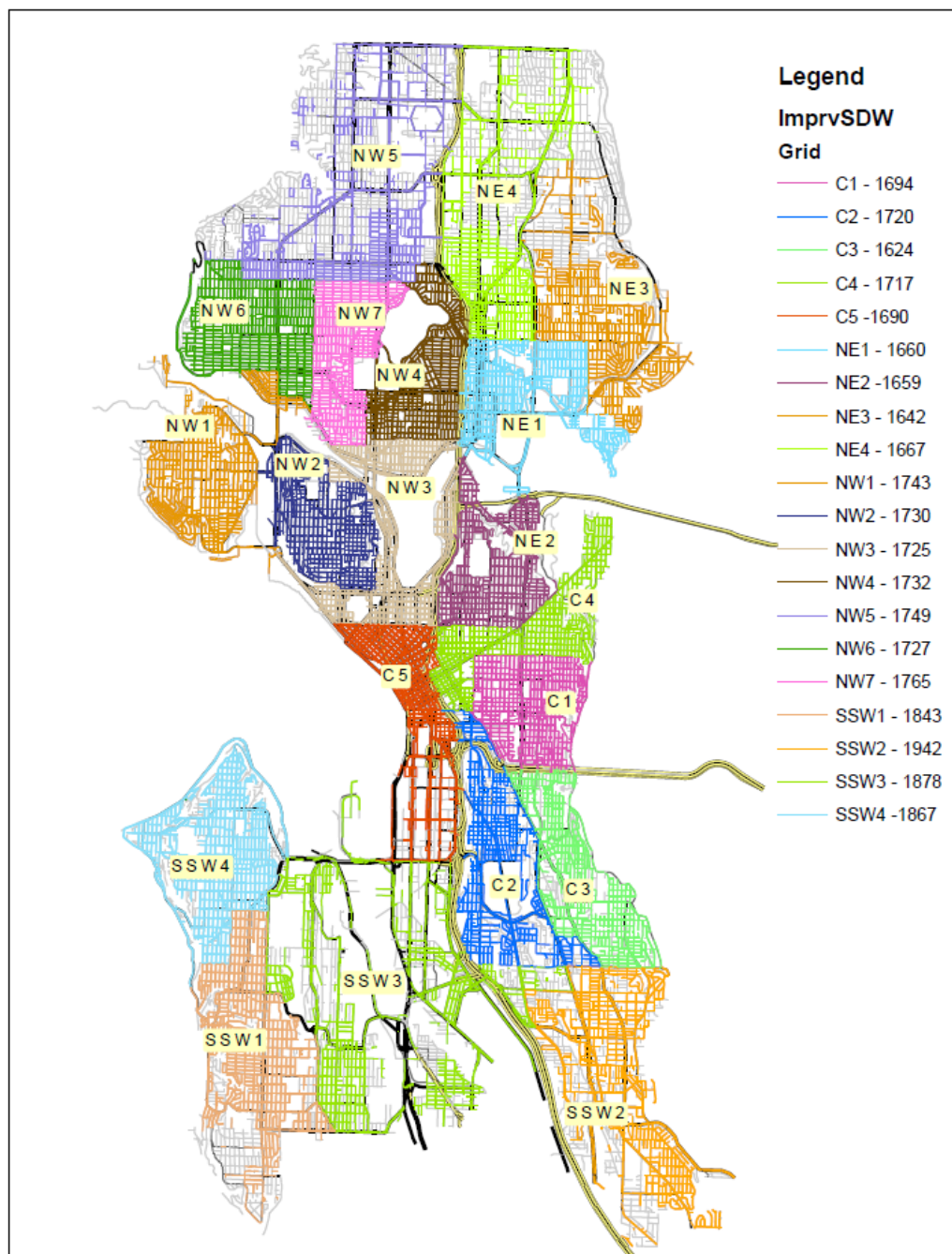
- Department wide prioritization of sidewalk maintenance to use current Maintenance Operations staffing levels.
- Additional SSRP funding will have to be secured via BIP.

Ensuring Success

- SDOT's Maintenance Crews are among the hardest working people in SDOT. A high-effort, long-term project like this should not be simply added to their workload without a top-down reprioritization and rebalancing of City maintenance expectations, or additional crew staff.
 - Each of the 4 Street Maintenance Crews complete between 2,500 to 3,500+ work orders each year, per crew.
 - Over 85% of these work orders are on Street Segments (primarily filling potholes), with the remaining 15% shared between Sidewalks, Trees, Signs, Signals, Appurtenances, etc.
 - These crews also must respond-to and clear dangerous conditions as they are reported.
 - Each crew is between 7-9 people. Crews of this size are greatly impacted by vacant pockets and non-operational equipment.
 - Ensuring the needs of SDOT's Maintenance Crews are met quickly is critical for ensuring they can operate at full efficiency.
 - Seasonal temporary labor, or shared divisional labor (parks, etc.) will be required for this proposal, to either support other necessary work or Sidewalk Grids directly.
 - If not already established, cross-training for fulltime crew members, so personnel can work out-of-class when needed, will improve efficiency of operations.
- Work towards increased efficiency for other requested work.
 - For example, pothole filling requests are currently addressed by 4 crews, across 100% of the City each day. Crews are expected to respond to these requests within 4 business days. Travel time between request locations may limit crew efficiency.
 - Efficiency may be improved with a neighborhood-zoned approach to pothole filling, where crews rotate between zones and respond to requests in smaller geographical areas.
 - City streets will be divided into logical neighborhood zones.
 - Depending on the day, crews would only fill potholes within a certain neighborhood zone.
 - Crews would rotate through each neighborhood zone at regular intervals (daily, every 2 days, etc.) and start the rotation again after the final zone is completed.
 - This would allow for more requests to populate in a certain zone before dispatching crews, improving travel time, and allow for improved route planning prior to dispatching crews.
 - Good customer service is provided, as the Customer Service Team will be able to tell constituents which day the crews will be filling potholes in their area.



All Sidewalk Grids



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