



Spokane Street Swing Bridge (Low Bridge) Access Policy

June 2021

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Table of Contents

	Page
1 Overview/Policy Background.....	1-1
West Seattle High-Rise Bridge (High Bridge) Safety Program.....	1-1
Role of the Spokane Street Swing Bridge (Low Bridge) in managing mobility while the high bridge is closed.....	1-2
Spokane Street Swing Bridge (Low Bridge) Data Collection and Automated Enforcement.....	1-4
2 Community and Stakeholder Engagement.....	2-1
Summary of Program Engagement.....	2-1
Racially Equitable Outcomes.....	2-1
3 Low bridge Program Goals and Objectives.....	3-1
Program Goals & Objectives.....	3-1
Foundational and Conditional Travel.....	3-1
4 Granting and Revoking Low Bridge Access.....	4-1
Approach to Managing Conditional Access.....	4-6
5 Applying For Conditional Access.....	5-1
Eligibility.....	5-1
Requesting Access.....	5-1

Appendices

Appendix A: Justification of User Groups by Program Goals and Objectives

Appendix B: Low Bridge Recovery Time and Capacity Analysis

Table of Figures

	Page
Figure 1-1 Modified Mode Share Goals (September 2020)	1-3
Figure 3-1 Low Bridge Access Allotments for Conditional Users	3-3
Figure 4-1 Capacity and Historical Volume	4-2
Figure 4-2 Low bridge Volumes Westbound April 19 – 25, 2021	4-3
Figure 4-3 Low bridge Volumes Eastbound April 19 – 25, 2021	4-3
Figure 4-4 Low Bridge Access Allotments for Conditional Users	4-4
Figure 4-5 2021 Current Conditions with Expanded Medical and Business	4-5
Figure 4-6 2022 Potential Conditions with Terminal 5 Open	4-5
Figure B-1 Bridge Openings by Month	2
Figure B-2 Bridge Openings, March 2021	3
Figure B-3 Low bridge Average Volumes by Hour on Weekends in June 2020	4
Figure B-4 Low Bridge Volumes by Hour on 4/3/2021	5
Figure B-6 Low Bridge Volumes by Hour on 4/10/2021	5

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1 OVERVIEW/POLICY BACKGROUND

West Seattle High-Rise Bridge (High Bridge) Safety Program

Background

In March 2020, the Seattle Department of Transportation (SDOT) closed the West Seattle High-Rise Bridge (high bridge) in the interest of public safety. The decision was based on regular inspections of the bridge, which showed rapidly growing cracks. When the high bridge closed, SDOT restricted access to the Spokane Street Swing Bridge (low bridge). The low bridge is designed to carry a maximum of 20,000 vehicles a day, which is about a fifth of the volume that the high bridge was carrying prior to closure. Low bridge restrictions were put in place to ensure that freight, public transit, high-occupancy vehicles (HOVs), and emergency response vehicles can travel efficiently to and from West Seattle.

The low bridge restrictions were initially enforced by the Seattle Police Department (SPD). A photo-enforcement system was installed in January 2021 and replaced live police enforcement.

The process of determining the types of trips and vehicles allowed to cross the low bridge has evolved as SDOT and the Seattle Department of Neighborhoods (DON) has learned more about bridge operations and community needs. Access was originally limited to freight, transit and emergency vehicles only, and has evolved over time to allow trips for urgent and unplanned purposes, first permitted via placard and now via license plates entered into the low bridge access system (monitored with a photo-enforcement system). Hours of restriction have evolved to provide access for everyone when doing so will not impede access for freight, transit, and emergency vehicles.

This April 2021 low bridge access policy update reflects input from hundreds of people and businesses submitted to the SDOT inbox, comments made at public meet meetings, and input received through one-on-one engagement opportunities spearheaded in early 2021 by DON. This collective input informed updated goals and objectives for low bridge access, including an added focus on ensuring equitable access to the low bridge. Based on this foundation, new operational measures were put in place help to provide the greatest community benefit of low bridge access while ensuring that emergency vehicles, transit, and freight are always able to cross reliably.

Timeframe of West Seattle High-Rise Bridge (WSHB) Closure and Low Bridge Restrictions

Restricted and regulated access to the low bridge is expected to continue until the high bridge is rehabilitated and fully reopened to service. SDOT plans to reopen the high bridge in 2022.

Key milestones related to the high bridge closure and management of the low bridge include:

Timeframe	Change or Update
March 23, 2020	High bridge closed in response to rapid cracking
April – December 2020	Low bridge restrictions managed through placards and SPD enforcement
December 2020	Phase 1 stabilization work completed on the high bridge
January 11, 2021	Automated photo enforcement started on the low bridge. Access allowed without pre-authorization for transit, freight, and emergency vehicles. Pre-authorization required for a limited number of commercial users.
April 9, 2021	SDOT updates low bridge access policy to temporarily double the number of daily permitted trips and include new medical users and expand business access
2021-2022	Phase 2 rehabilitation design, procurement, construction, monitoring, and reopening of the high bridge
December 2021/January 2022	Expected re-opening of Terminal 5 facility, which will increase large truck volumes on the low bridge and may require reduction in temporary access privileges for other user groups
2022	Planned reopening of the high bridge and removal of restrictions on low bridge access

Role of the Spokane Street Swing Bridge (Low Bridge) in managing mobility while the high bridge is closed

The low bridge is one of a limited number of detour routes connecting West Seattle with downtown and the rest of the region during the high bridge closure. Given its limited capacity and the need to manage that capacity through restrictions, the low bridge also provides a unique opportunity to prioritize some types of high-occupancy trips to help achieve the [Reconnect West Seattle vision](#).

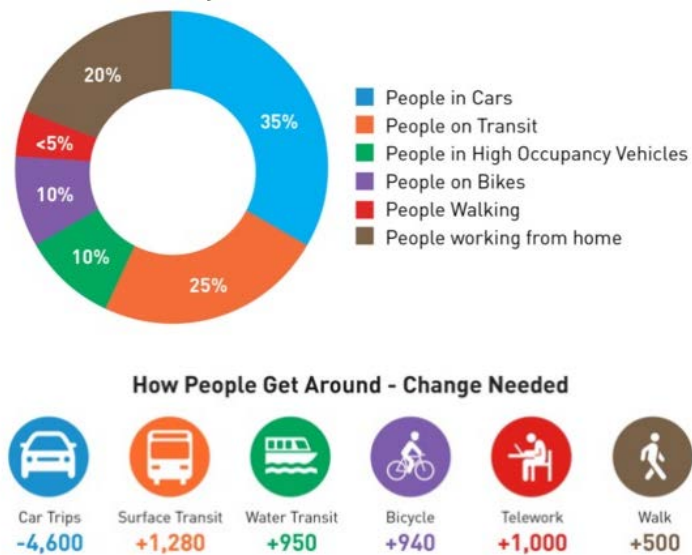
Detour Routes

Before the high bridge closure, there were 21 vehicle travel lanes crossing the Duwamish River. Since the bridge closure and the placement of restrictions on the low bridge to ensure emergency response vehicles have unimpeded access to and from the West Seattle Peninsula, there are now 12 travel lanes for personal vehicles, with access restrictions on the two low bridge travel lanes, all concentrated at the south end of West Seattle. Furthermore, the detour routes go through some of Seattle’s most racially and ethnically diverse and historically underserved neighborhoods, bringing increased congestion and pollution to places where people already experience poorer health outcomes than the City as a whole.

Reconnect West Seattle

The Reconnect West Seattle plan delivers community-prioritized projects to minimize travel impacts on detour routes through Highland Park, South Park and Georgetown as well as mobility options to decrease drive-alone trips across the Duwamish River. The vision of Reconnect West Seattle is to achieve similar levels of people traveling across the Duwamish to those seen before the closure of the high bridge, while reducing the environmental injustices that impact communities in the Duwamish Valley. The Reconnect West Seattle mode share goals emphasize a reduction in vehicle trips and a shift to other travel modes or staying local.

Figure 1-1 Modified Mode Share Goals (September 2020)



Critical Connection to Port, Business, and Industrial Activities

The low bridge is a primary point of access to The Northwest Seaport Alliance's key strategic Seattle marine cargo terminals, specifically Terminal 5 (The Northwest Seaport Alliance [NWSA] is a marine cargo operating partnership of the ports of Seattle Tacoma). This terminal is currently undergoing a major upgrade, meaning container trucks are not crossing the Duwamish River to load or unload container ships in high volumes at this time, though it should be noted that there has been some additional truck volume across the low bridge as a result of using Terminal 5 uplands space to store containers to support the current global cargo surge. However, at the launch of phase 1 operations of the Terminal 5 upgrades – expected in January 2022 – port freight volumes are expected to significantly increase. While Terminal 5 will eventually be a two-berth operation, it will begin with ships only coming to one berth through 2022. In order to accommodate the additional truck traffic, SDOT will be required to further restrict low bridge access.

Terminal 5 in Seattle has long been considered a premier container cargo terminal on the West Coast because of its naturally deep berth, wide footprint, and the availability of an on-dock rail yard which allows containers to be directly loaded from the ship onto rail lines. The new ultra-large container ships, however, require larger, heavier cranes with a longer reach, which in turn requires strengthening the dock and upgrading utilities. Together with their tenant, the infrastructure investments from NWSA into Terminal 5 are more than \$500 million, the most significant in the joint venture's existence. According to NWSA, the estimated economic impact of investment in Terminal 5 are expected to provide \$90 million in direct state economic impacts and more than \$2 billion over the term of its tenant's 30-year lease, with estimated total state fiscal impacts of almost \$400 million. In addition, the upgraded terminal is expected to provide approximately 6,660 new direct jobs.

NWSA's Terminal 5 Modernization Program provides these much needed infrastructure improvements in order to remain competitive with the global market. These investments also involve key community benefits

to enhance water and air quality. This includes updating stormwater treatment systems and installing “shore power” infrastructure, which allows a vessel to plug into electricity while at berth, substantially reducing air emissions. The plan also includes technology improvements to manage truck flow around the terminal and a railroad “quiet zone” to reduce noise impacts for the surrounding community.

The NWSA expects Phase 1 of the project to be completed by the end of 2021 and to launch operations at the north berth in January 2022.

Spokane Street Swing Bridge (Low Bridge) Data Collection and Automated Enforcement

Data collection on the low bridge is part of the larger evaluation of the transportation impacts associated with the closure of the high bridge. In addition to travel time, vehicle volume and transit performance metrics, we are also measuring corridor specific performance elements like recovery from incidents, bridge openings and unauthorized use. These inform our low bridge access policies.

Automated Enforcement Details

On September 29, 2020, the Seattle City Council approved automated enforcement for the low bridge to reduce traffic congestion and increase safety through Ordinance 119897. This ordinance amended Sections 11.31.090 and 11.50.570 of the Seattle Municipal Code. In the first quarter of 2021, SDOT transitioned to the automated photo enforcement system. Under this system, approved user groups register vehicle license plates with SDOT. Automated license plate cameras fixed on the bridge capture license plate numbers of all vehicles crossing the bridge. Unauthorized vehicles – those without a plate registered to the system - are subject to a \$75 citation for every trip across the bridge. The registered owner of an unauthorized vehicle will receive a notice of infraction in the mail within 14 days.

By automating the system, the City has eliminated the use of police officers on-site. The photo enforcement system also provides SDOT more flexibility and options to adjust (add or remove) user groups and to monitor the number of trips taken by these groups. This has allowed recent policy changes that opened bridge use to more user groups and expanded access for other groups on a temporary basis. Automated enforcement is helping to maximize the number of people and businesses that can use the limited low bridge.

Under HB 1793, revenues are first used to cover the cost of installing, operating, and maintaining the cameras. Fifty percent of remaining funds are remitted to the state’s Cooper Jones active transportation safety account and the other fifty percent must be used by the City to support improvements to transportation that support equitable access and mobility for persons with disabilities.

A photo enforced violation is treated like a parking infraction. This type of infraction does not result in any issues with your license, no points assessed, and no impact to your insurance.

Data Collection and Use of Data

The City of Seattle systems and processes for photo enforcement abide by law and best practices when it comes to personal privacy and data security and are prohibited from being used for any other law enforcement action.

A similar photo technology is already used by the City to promote safety at intersections by citing people running red lights and speeding in school zones. The Washington State Legislature approved HB 1793 in 2020 to allow the cameras for limited new uses including those mentioned above.

Privacy and Surveillance

All pre-authorized low bridge users have signed the privacy statement below:

Personal information provided to SDOT (including your name and license plate number) is subject to Washington Public Records Act and may be subject to disclosure to a third-party requestor. At the City of Seattle, we are committed to protecting your privacy and will ensure that any disclosures are done according to law. To learn more about how this information is managed please see our Privacy Statement (<http://www.seattle.gov/tech/initiatives/privacy/privacy-statement>).

SDOT will be logging the number and time of low bridge trips made by each authorized license plate number. By requesting access to the low bridge, you are consenting to this use of your low bridge travel information for monitoring and evaluation purposes. This trip log is also subject to Washington Public Records Act and may be subject to disclosure to a third-party requestor.

Additional Data Collection

SDOT commissioned a data collection study with the University of Washington's Urban Freight Lab to better understand freight flows in the greater West Seattle impact area. The study included a freight trip generation analysis. This analysis uses commercial land uses and travel data from the Puget Sound Regional Council travel surveys to determine the number and type of freight trips generated across the study area.

Additionally, the Freight Lab interviewed and conducted an online survey of a small number of businesses that spanned multiple sectors including: major industrial producers, the Port of Seattle, grocery stores, food service establishments, and others. The survey was structured to better understand West Seattle High-Rise Bridge closure impacts to their business and deliveries. The findings from this study via surveys and interviews reinforce the community conversations presented below.

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2 COMMUNITY AND STAKEHOLDER ENGAGEMENT

Summary of Program Engagement

Background

Following the emergency closure of the West Seattle High-Rise Bridge in March 2020, SDOT restricted access to the low bridge, allowing only emergency vehicles, public transit buses, and large trucks transporting freight to use the bridge. In mid-2020, after monitoring performance in the Spokane Street Corridor, SDOT determined there was capacity to allow a limited number of other users low bridge access. A limited number of other user groups were granted access at this point including businesses near the bridge, maritime and industrial workers, and certain types of West Seattle businesses as part of a pilot program.

Following the implementation of automated enforcement in January 2021, SDOT was able to produce more accurate and detailed data about low bridge use. This data led to the recognition that low bridge access could be expanded further on a temporary basis (at least through the fourth quarter of 2021). Before expanding access further, SDOT reviewed its policy regarding who should be granted access and conducted a major public and stakeholder engagement effort.

Goals for this engagement effort were to:

- Gather input from community members we had not heard from on the policy
- Listen to voices of underrepresented community members and consider their needs in SDOT's decision-making process
- Use feedback to inform policy development including goals, objectives, criteria, and operations

SDOT and DON outreach teams engaged people and businesses, particularly those in communities most impacted, through focus groups, community conversations, one-on-one interviews, and surveys.

Racially Equitable Outcomes

With intent to not further existing inequities, SDOT developed a list of Racial Equity Outcomes to guide our process. Throughout outreach, analysis, and implementation, the City of Seattle is striving toward these outcomes:

- Increase participation of Black, Indigenous, and People of Color (BIPOC) community members and representation of their needs and concerns, particularly those who have not been involved with or were not aware of this work to date.
- Use data to understand racial and social equity dimensions of policy options and to focus on those who have been most impacted. Opportunities include:
 - Pursue low bridge access for sectors where BIPOC community members are overrepresented in the workforce, and where disproportionate impacts of COVID-19 have been documented.
 - Minimize diversion to detour routes, in neighborhoods with higher BIPOC representation and disproportionate social and health disadvantages.
- Intentionally level the distribution of low bridge access to address racial disparity in terms of user group identification, education and outreach, administration, and enforcement.

Approach

SDOT and DON sought input from community members, businesses, and organizations that have been impacted heavily by West Seattle High-Rise Bridge closures but have not had opportunity to be heard on the issue of low bridge access. Individuals, community organizations and businesses that shared their experiences were compensated for their time and expertise. Outreach included:

- **Community discussions and focus groups** with essential workers, small business owners, low-income residents, seniors, and BIPOC community organizations.
- **One-on-one interviews** with BIPOC owned and operated businesses in West Seattle including restaurants, landscapers, plumbers, assisted living centers, janitors, nail/hair salons.
- **Surveys** with healthcare workers, Harbor Island employees, and social service providers in West Seattle.
- **Partnering with Community Liaisons**, who are trusted community builders, in reaching out to their networks in-language and conducting focus groups or group discussions with West Seattle small businesses in Korean, seniors in Vietnamese, Uber/Lyft drivers in Somali, and small businesses in Spanish.

Partners

SDOT and DON partnered with the Seattle Housing Authority - High Point, Sikko Mando Relief Organization, Villa Comunitaria, Delridge Neighborhood Development Association, Dominican Association of Washington State, and Vietnamese Cultural Center to hear from their members. The City is very appreciative of the time and energy that our partners contributed to ensure that a diverse range of experiences and perspectives were represented in this phase of engagement.

Preliminary Themes: What We've Heard So Far

Through the outreach efforts, individuals, community organizations, and businesses were asked questions about how they get around, how they have been impacted by the bridge closure and COVID-19, and if they had actionable ideas for solutions. Engagement objectives were to more fully understand the impacts of the low bridge regulations, detour routing, circumstances under which people or businesses need access to the low bridge and impacts of low bridge access policies.

Many community members are experiencing a sense of isolation and disconnect. The terms “island” and the “mainland” were regularly used to describe West Seattle and destinations across the Duwamish River. Low bridge access restrictions and current detour routes were cited by many as key barriers to getting to work, medical care, childcare, and schools. Across demographics, people reflected that they are unable to arrive on a predictable schedule to work, childcare, medical appointments, or other obligations, and that extended delays have become the norm along detour routes. Community members noted a resulting negative impact on their time, income, mental and physical health, job performance, and environment. Employment, healthcare, childcare, and cultural activities are key drivers of resident travel across the Duwamish River.

Business respondents reported a negative impact on revenue and customer access, citing the compounding circumstances of the bridge closure and a pandemic. Supply runs are the primary driver of business traffic across the Duwamish River, and many businesses note that they are unable to purchase what they need from West Seattle stores. Many shared a concern that their business will continue to decline even

after social distancing measures reduce, when competitors across the Duwamish River will begin to recover, but before West Seattle is reconnected and able to participate in the recovery.

Community and business participants alike expressed **a lack of understanding regarding the low bridge access policy** and many found it difficult to provide input on a policy they had not been aware of prior to the conversation. Community and business respondents noted strong support for increased transparency and explanation about the reasons for restricting access, the rationale for who will have access in the new policy, and how the new access policy will or will not reduce congestion on detour routes.

Participants largely agree low bridge access should be expanded, in particular for medical and emergency trips (whether for health, family, or financial emergencies). Some community members noted that they now wait longer to receive medical care due to the added distance and expense of reaching providers across the Duwamish River, leading to symptoms becoming worse before treatment is received. Others commented on anxiety due to increased distance between themselves and family members who may require help in an emergency. Among the solutions suggested to this challenge, residents were supportive of a simpler way to waive low bridge tickets related to emergency trips, rather than needing to go through the official Seattle Municipal Court mitigation process.

Ongoing Engagement

The information gathered from this outreach and engagement effort was used to inform this low bridge access policy update and will be used to inform future policy updates and implementation. There are several proposed solutions and ideas that have been generated, some of which apply holistically to the West Seattle High-Bridge Safety Program. SDOT will be reviewing policy recommendations and implementing actionable items.

SDOT and DON will continue to engage with the community by sharing information, attending local meetings, continuing conversations with community partners, and responding to phone call and emails. This policy is meant to be an iterative and evolving process. This means that if we are hearing from the community that something isn't working or a situation needs to be addressed, then SDOT will review the situation and look for possible solutions.

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3 LOW BRIDGE PROGRAM GOALS AND OBJECTIVES

Program Goals & Objectives

In early 2021, SDOT committed to updating its low bridge access policy to ensure racially equitable outcomes were at the center, that community needs and voices were being integrated, and that limited low bridge capacity was being used in the best interest of the Seattle community. Input from the Community Task Force (CTF), from the community engagement efforts documented in Section 2 of this policy, and SDOT's goals for policies for us of public rights of way were used to share three key goals and supportive objectives. These are:

Goal 1: Health, Life, and Safety

- **Objective 1a:** Ensure reliable travel time for emergency vehicles at all times of day
- **Objective 1b:** Prioritize trips that improve patient and provider access to lifesaving medical treatment

Goal 2: Mobility and System Operations

- **Objective 2a:** Maintain Spokane Street corridor performance throughout the day, including a 1 to 1 recovery time following a bridge opening or incident
- **Objective 2b:** Prioritize public transit, high-capacity modes, and high-occupancy vehicles
- **Objective 2c:** Reduce single-occupant travel and detour route congestion

Goal 3: Economic Growth and Sustainability

- **Objective 3a:** Prioritize freight movement to support economic health and decrease detour route traffic
- **Objective 3b:** Support businesses with critical and urgent needs including businesses impacted by COVID-19

Foundational and Conditional Travel

Foundational User Groups

Foundational user groups are determined to be the most essential in supporting the program goals. These users (or vehicle types) represent travel needed to ensure people are safe and protected in cases of emergency, travel needed to keep ensure stores are stocked with goods and the regional supply chain is not disrupted, and to move people in high-capacity vehicles that make efficient use of road space and ensure affordable access for every traveler.

While SDOT holds the right to adjust any user groups travel privileges, it is assumed that these foundational users will receive priority access and that travel will not be restricted. These foundational users include:

- **Emergency response vehicles:** Firetrucks, ambulances, etc.
- **Freight:** Vehicles over 10,000 GVWR allowed; no pre-authorization required

- **Public Transit and Public School Buses**
 - All transit and paratransit vehicles trips allowed without pre-authorization
 - All school bus trips are allowed without pre-authorization
- **High-Occupancy Vehicle (HOV) Users** with pre-authorization required
 - Rideshare Vehicles including Vanpools
 - Vehicles used for commute trips only
 - Rideshare vehicles and their usage are defined in [state code](#). They must have rideshare plates [assigned by the Washington State Department of Licensing \(DOL\)](#).
 - As defined by state code, private rideshare vehicles serve a minimum of 7 people and a maximum of 15 people
 - Vanpools are a type of rideshare vehicle managed by a transit agency, for example King County Metro. Vanpools have their ridership and other usage requirements set by the transit agency.
 - Employer / student shuttles
 - Vehicles used for commute trips only
 - Generally, commercial / apportioned vehicles with a licensed [CDL driver](#)
 - Provide higher capacity than vanpool or rideshare options
 - Must provide data on routes and ridership as requested by SDOT

Conditional Users

Any user group not included in the “foundational” users group list above is considered to have “conditional” or temporary access. This means that SDOT may further restrict or revoke access at any time to protect the reliability of travel for foundational user groups.

Trip Capacity for Allocation to Conditional Users

Section 4 of this policy details how SDOT monitors bridge use and uses that data to determine the daily allotment of trips across the bridge. These allotments are based on two-way trips. In other words, one allotted daily trip is equal to a trip across the bridge and back. The following table summarize the number of trips available to conditional users in 2020 and the increase allowed in the first quarter of 2021.

Figure 3-1 Low Bridge Access Allotments for Conditional Users

User Group	New Allotment Per Day	Old Allotment	Change from 2021 Q1	Trip Target
West Seattle Businesses	225	35	+190	10 trips per business per month
Maritime Industrial	150	150	-	5 trips per business per month
International Longshore and Warehouse Union (ILWU)	225	225	-	225 trips per day across all users*
Medical	225	0	+225	Number of 'recipient' users is not yet known
Government Agencies	75	40	+35	Agency-specific trip targets are being developed
Total	900	450	+450	

* ILWU users have highly varied trip needs. We will need to coordinate with their fleet manager to manage down to 225/day.

Conditional User Groups

Conditional users as of April 8, 2021 [Updated Regularly]

Trips allowed for conditional users groups are typically of an urgent and unplanned nature, lifesaving, or required to support a business and/or organization (i.e., through the quick acquisition of urgently needed supplies, inventory or key personnel). **Commuting to regularly scheduled work shifts is not allowed for any users.**

A summary of how program goals and objectives (see Section 3) were applied to determine eligible user groups is included in Appendix A.

Current (as of May 2021) conditional user groups include:

- Government agencies are allowed access when responding to an emergency and/or when conducting urgent and unplanned business across the bridge. Thirty-four (34) local, state, and federal government agencies currently have access.
- International Longshore and Warehouse Union (ILWU)
 - Local 19 trips are authorized when members are dispatched across Duwamish River.
 - Local 98 are authorized when members are dispatched across Duwamish River.
 - Local 52 are authorized when members are dispatched across Duwamish River.
- Maritime and Industrial Businesses near or on Harbor Island can apply for access to the low bridge for urgent and unplanned trips.
 - The number of license plates per business is not limited, but each business is required to monitor trips and stay under a business trip cap.

- Maritime and industrial businesses near or on Harbor Island are defined by their proximity to the low bridge and their need for transport between work sites on either side of the bridge.
- West Seattle Restaurants & Retail Businesses
 - Access is permitted for urgent/unplanned trips for West Seattle retail and restaurant sector businesses (600+ businesses)
 - 3 registered plates are allowed per business
 - Businesses must be based in West Seattle (zip codes 98106, 98116, 98126, 98136)
 - Restaurant is defined using the North American Industrial Classification System (NAICS) code that identify a company's primary business activity
 - Retail is defined using the North American Industrial Classification System (NAICS) code that identify a company's primary business activity.
 - For this purpose, retail does not include businesses that are primarily service or trade-based, despite paying retail taxes (ex. hair salons, home remodelers, home repair, etc.) Access is intended for brick and mortar businesses who sell directly to consumers.

Medical Users On-call Healthcare Providers traveling to and from contractually required on-call shifts can apply for access to the low bridge, but not for regular commute shifts.

On-call Healthcare Providers are defined as those contractually required to respond to a worksite within 30-minutes or less and are taking a trip to or from a contractually required response to a call to a medical institution.

There is an also a retroactive option for providers who live in West Seattle and receive a citation after traveling across the low bridge for an on-call shift, which is to contest the ticket and request a waiver through the *Declaration of Non-Responsibility Process*. This process:

- Applies to health care providers who are on-call, live in West Seattle, and receive a call-out notification to a hospital east of the Duwamish River and must cross the low bridge to respond. The Declaration of Non-Responsibility does not apply to workers commuting to regular, scheduled shifts.
- To apply for cancellation of a citation, the owner may submit a Declaration of Non-Responsibility, accompanied by proof documentation on official letterhead (or electronically with official logo) stating:
 - The subject of the citation is an employee of [institution named on letterhead/logo]
 - The employee lives in West Seattle
 - The employee was on-call on the date of infraction and the employee was called in at approximately the time shown on the infraction; alternatively - the employee's call schedule for this month is attached
 - Proof documentation must be signed/e-signed (not typed) from by institutional official with authority to confirm

The citation mailed to the employee will include instructions on how to submit this information via a Declaration of Non-Responsibility. This documentation will be sent to the City of Seattle Municipal Court for review and determination if the citation will be waived.

Lifesaving Medical Treatment is defined by a healthcare provider and permitted when travelling to or from a lifesaving medical treatment appointment. Examples of lifesaving medical treatment include, but are not limited to, chemotherapy, radiation, dialysis, etc.

- The authorization is granted for 90 days and must be reapplied for if extending beyond that time period.

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4 GRANTING AND REVOKING LOW BRIDGE ACCESS

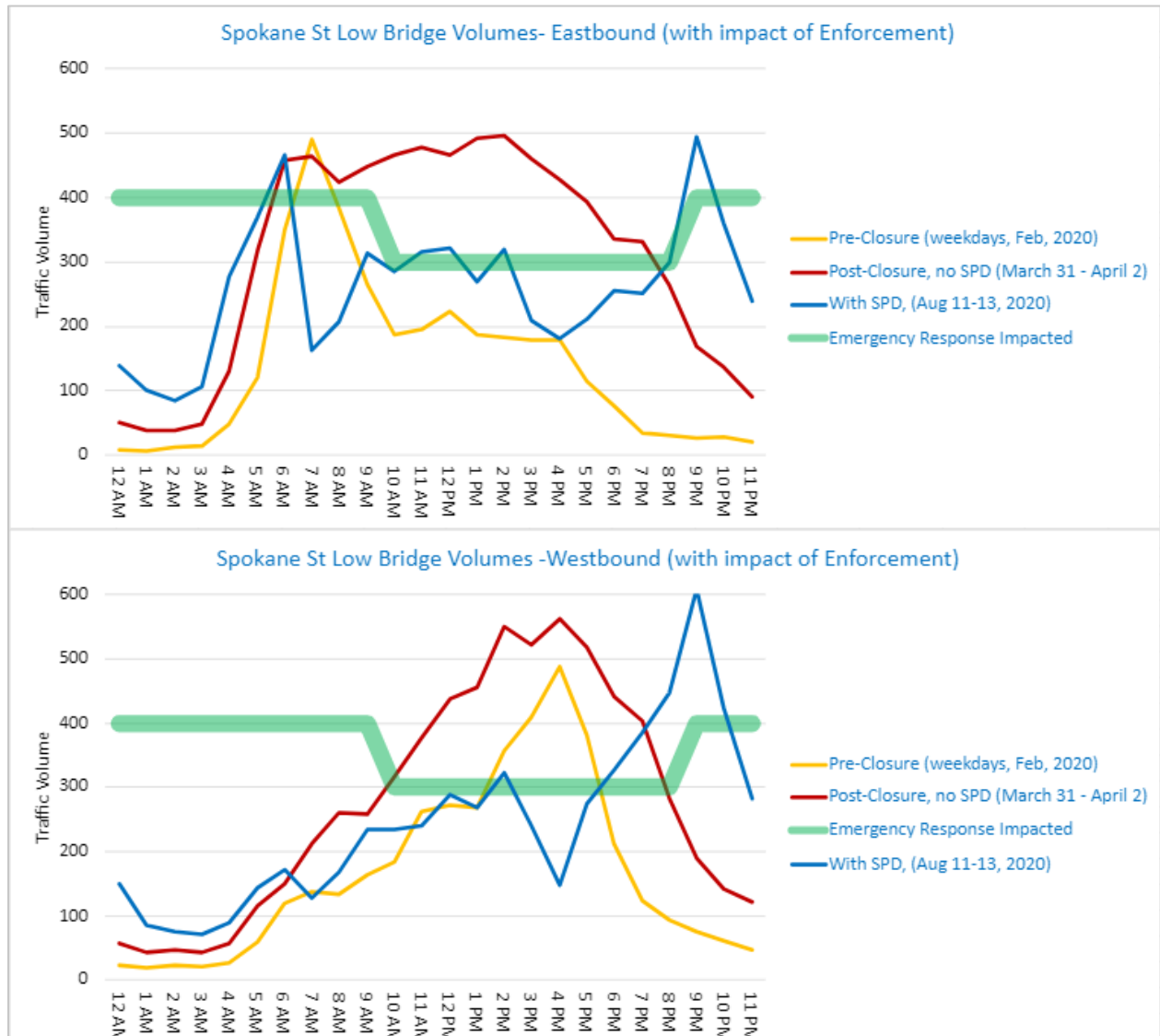
Data Basis for Low Bridge Access Allowance

The Seattle Department of Transportation continues to use a data-driven approach to calculate the capacity of the low bridge with an intent to allow as many daily trips as achievable while maintaining reliable access for critical travel needs across the bridge and within the corridor.

SDOT defines the available capacity of the lower Spokane St corridor as a volume of traffic that facilitates timely recovery from events or incidents. This recovery is essential not only for infrequent incidents like collisions, but also for frequent but unscheduled events such as bridge openings.

Early analysis conducted after enforcement of low bridge restrictions started in early 2020 showed that the corridor could accommodate 400-500 additional round trips a day while maintain the recovery time target. After the delay of reopening for Terminal 5 was announced, we reviewed the corridor performance and determined that the corridor had additional capacity available until Terminal 5 opens and resulting large truck volumes increase. This analysis showed that the corridor could accommodate a total of 900 daily roundtrips in addition to transit, freight and emergency vehicles while still maintaining reliable access for those users.

Figure 4-1 Capacity and Historical Volume



Because this analysis depends on assumptions about traffic distribution and predictions about the distribution of freight traffic associated with Terminal 5 across the day, we have updated our 2020 report with traffic distributions from 2021 and current Terminal 5 predictions but expect to update our analysis at the tail end of 2021 when more is known about port operations. A summary of the 2020 analysis can be found in Appendix B. Highlights of the Spring 2021 update include: a change in the hours of restricted access on weekends (now 8 AM 9 PM), the ability to add new user groups (medical providers/recipients and rideshare vehicles) and the ability to expand urgent and unplanned access to an expanded group of West Seattle restaurants and retail businesses.

Lower Spokane Street Corridor Constraints

Capacity of the low bridge corridor is driven by several factors including the number of travel lanes, the operation of the swing bridge, surrounding intersections, and signal timing that all influence

recovery time from incidents. It is measured by several inputs, including throughput at signalized intersections, which is based on traffic simulation software and accepted standards, and the impact of incidents, including frequent bridge openings. These incidents further limit the capacity of the corridor.

Because there are more frequent bridge openings in the late-morning and afternoon hours, corridor capacity is reduced during these times. After analyzing current hourly trips and capacity during restricted hours, SDOT determined that the corridor can accommodate 400 one-way trips per hour in each direction between 5 AM and 10 AM, and 300 one-way trips per hour in each direction between 10 AM and 9 PM.

The charts below show typical observed traffic volumes (vertical blue and green bars), projected Terminal 5 volumes once the terminal opens (vertical grey bars), and the estimated directional hourly thresholds at which corridor performance would decline to an unacceptable level (horizontal red lines). These charts reflect a single week in April 2021, but the values shown have remained very consistent from week to week.

Figure 4-2 Low bridge Volumes Westbound April 19 - 25, 2021

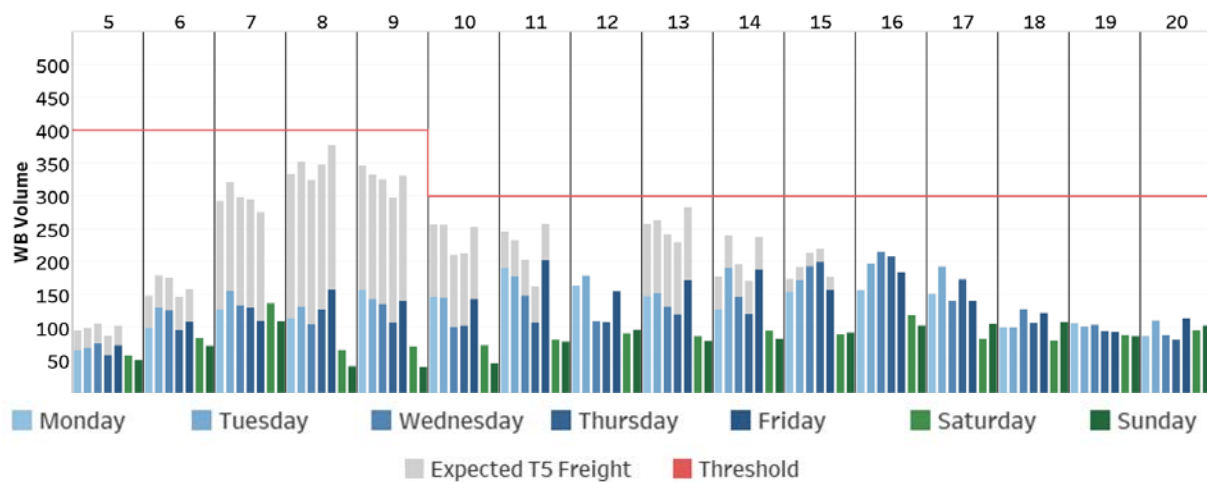
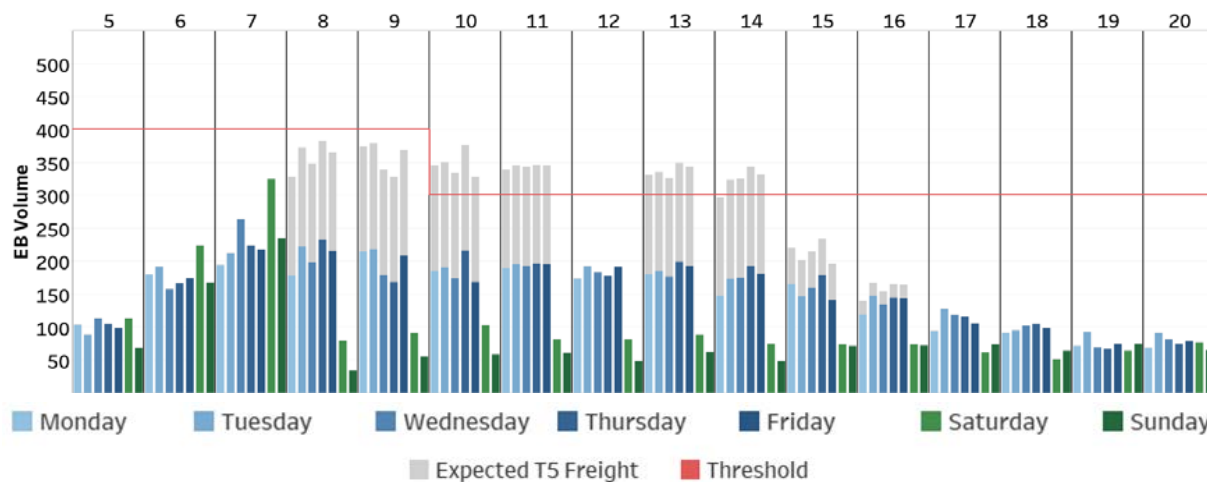


Figure 4-3 Low bridge Volumes Eastbound April 19 - 25, 2021



Anticipated Changes to Conditional Use Trip Allowance

Since learning the opening of Terminal 5 has been delayed until early 2022, SDOT recognized that available capacity to temporarily allot to additional users. The table below shows how SDOT has been able to allocate 450 additional daily trips on a temporary basis.

Figure 4-4 Low Bridge Access Allotments for Conditional Users

User Group	New Allotment Per Day	Old Allotment	Change from 2021 Q1	Trip Target
West Seattle Businesses	225	35	+190	10 trips per business per month
Maritime Industrial	150	150	-	5 trips per business per month
ILWU	225	225	-	225 trips per day across all users*
Medical	225	0	+225	Number of 'recipient' users is not yet known
Government Agencies	75	40	+35	Agency-specific trip targets are being developed
Total	900	450	+450	

* ILWU users have highly varied trip needs. We will need to coordinate with their fleet manager to manage down to 225/day.

The two charts below further detail the results of SDOT capacity allotment modeling, based on current use by various user groups. The first chart reflects capacity allotments prior to Terminal 5 opening (this includes conditional user trips show in Figure 4-4 above and estimated foundational user trips), while the second shows a large reduction in allotment for conditional users once Terminal 5 opens.

Figure 4-5 2021 Current Conditions with Expanded Medical and Business

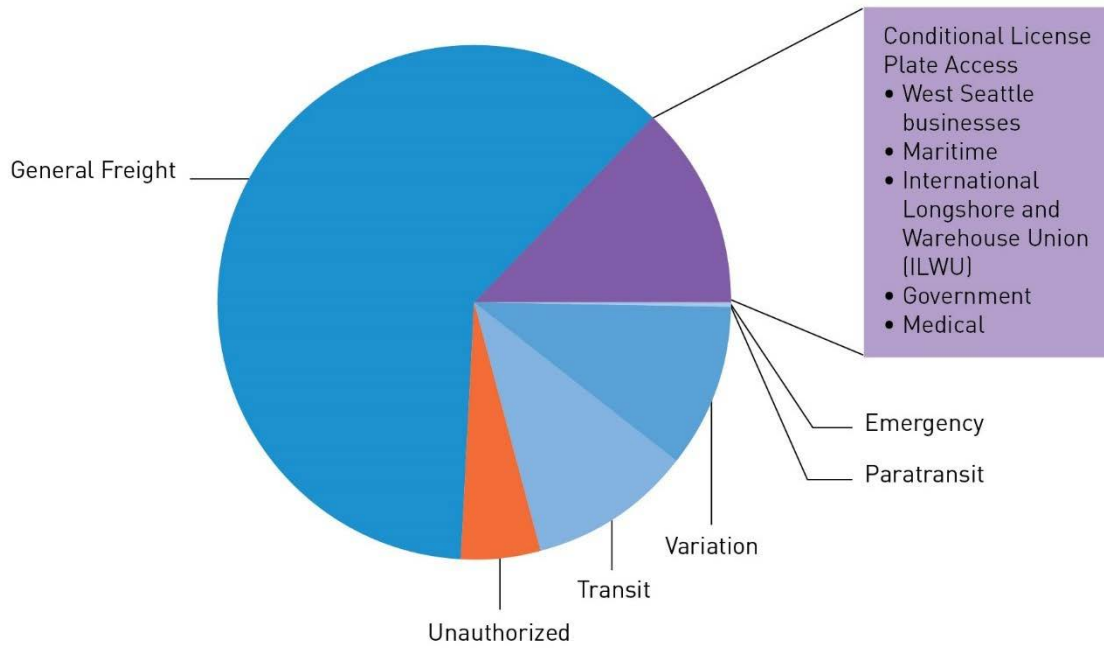
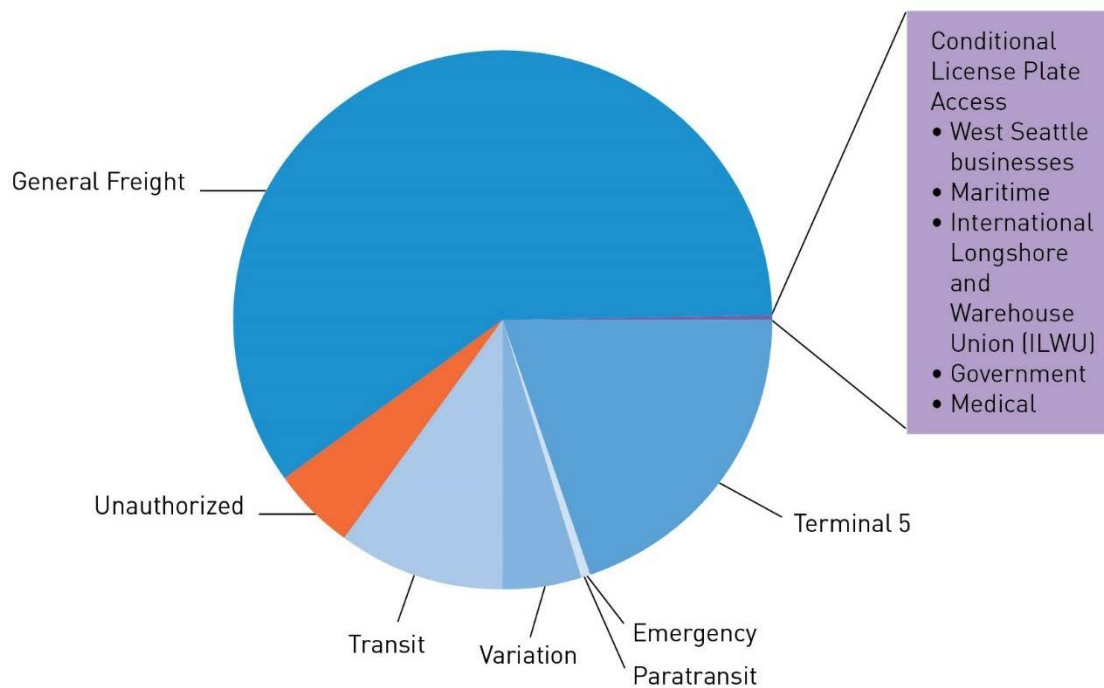


Figure 4-6 2022 Potential Conditions with Terminal 5 Open



It is expected that monitoring and evaluation will inform revisions to the approach as we learn more about actual usage.

Time of Day Restrictions

Time of day plays an important part in determining capacity on the low bridge. Hours restrictions establish the periods of time when anyone can use the low bridge and when use is restricted. Allowable trips vary as underlying freight and transit demand vary throughout the day, as does the frequency of bridge openings.

SDOT initially established time of day restrictions based on past usage, to provide access during as many hours of the day as possible without causing corridor performance to fail. After observing several months of actual low bridge use with restrictions in place, SDOT recognized the opportunity to add additional hours of unrestricted access on weekend mornings and adjusted the restrictions accordingly. While the agency does not anticipate any additional adjustments in 2021, should SDOT observe dramatic changes in motorist or marine behavior that significantly impact corridor performance, it will determine if additional adjustments are appropriate.

As of April 10, 2021, the low bridge is closed to non-authorized vehicles (no personal vehicles, no motorcycles or motor scooters, no taxis, no ride-hail app vehicles like Uber and Lyft) Monday through Friday: 5 AM to 9 PM, and Saturday and Sunday: 8 AM to 9 PM.

Calculation of Allowable Trips

Refer to September 2020 capacity analysis and March 2021 confirmation. See Appendix B.

Approach to Managing Conditional Access

Managing Trip Targets

SDOT will monitor trips for all users monthly. Looking for use that exceed established trip targets for each user groups, as well as for patterns that indicate that prohibited commute trips may be being taken.

Revocation

SDOT has developed a framework for alerts when trips by individuals exceed their user group pre-determined limit. People will receive a warning before additional action is taken. SDOT will be looking for a consistent pattern of exceeding trip limits and commute patterns.

5 APPLYING FOR CONDITIONAL ACCESS

Eligibility

Use groups eligible for conditional use will be updated if and when additional access is deemed available based on ongoing data collection and monitoring.

Requesting Access

Access Request Form

On April 28, 2021 SDOT launched the [Access Request Form \(ARF\)](#) where people can apply to SDOT for access to the low bridge. This is a single point of entry and system for SDOT to review request for access. This form may change based on the groups eligible for conditional use.

How We Process Requests

- **Government agencies** submit their license plates primarily for monitoring purposes. The agency point of contact can submit plates at any time for upload once a month.
- **International Longshore and Warehouse Union (ILWU)** submit plates and update information through the Access Request Form. ILWU membership and need is confirmed by a Union representative once a month for upload once a month.
- **Maritime and industrial businesses near or on Harbor Island** submit plates and update information through the Access Request Form. SDOT staff will confirm each business meets the goals of the policy for upload once a month.
- **Restaurants and retail businesses** submit plates and update information through the Access Request Form. SDOT staff will confirm each business meets the goals of the policy. If a business is denied access, their application can be reevaluated by a panel of city staff. Plates are uploaded once a month.
- **On-call healthcare providers** submit plates and update information through the Access Request Form or the fillable PDF/paper Lifesaving Medical Treatment form. SDOT staff will confirm each form is completed and signed and upload plates once a month.
- **People receiving lifesaving medical** treatment submit plates and update information through the Access Request Form or the fillable PDF/paper On-call medical Provider form. SDOT staff will confirm each form is completed and signed and upload plates once a month.
- **High-Occupancy Vehicle users** submit plates and update information through the Access Request Form. SDOT staff will upload plates once a month.

Support for Applicants

The Access Request Form, as well as responses granting or denying access, is available in eight languages: English, Khmer, Korean, Oromo, Somali, Spanish, Traditional Chinese, and Vietnamese.

Community Liaisons and Environmental Coalition of South Seattle (ECOSS) staff are available to assist in completing the forms in the above-mentioned languages.

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APPENDICES

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Appendix A Justification of User Groups by Program Goals and Objectives

All potential users are evaluated by the program criteria to demonstrate how allowing use by this group meets the program goals.

For **business users**, the criteria are applied in line with the authorizations above, where each trip is for an urgent, unplanned purpose to supply essential personnel, supplies or inventory.

Criteria	Freight (Over 10,000 GVWR)	Gov't	ILWU	Maritime + Industrial Businesses	Restaurant + Retail Businesses
Goal 1: Health Life and Safety Goal					
Is the patient or provider travel need urgent, critical, and/or life-sustaining?					
Are travel needs unpredictable and/or require rapid travel time?		◆	◆	◆	◆
Can the need be confirmed by a physician or medical provider?					
Goal 2: Mobility and System Operations Goal					
Does user group increase use of high-capacity vehicle travel, thus combining trips and reducing vehicle demand on bridge and detour routes?					
Is there no clear option for users to travel via a detour route, shift trips to non-restricted times of day or consolidate trips with other users?	◆	◆	◆	◆	◆
Goal 3: Economic Health and Sustainability Goal					
Does business or industry proximity to the low bridge create acute access need?	◆		◆	◆	
Does vehicle or user group travel on low bridge ensure movement of critical freight and goods (regional or local)?	◆		◆	◆	
Is there a clear threat of economic loss to a certain class, type or geographic concentration of businesses?	◆				◆
Is the user group associated with an industry that has suffered a clear, documented loss due to COVID-19?					◆

For **medical users**, the criteria are applied in line with the authorizations above, where each trip is for life-sustaining purpose. Medical users meet all criteria for the Health, Life and Safety Goal.

Criteria	Emergency Response Vehicles	On-Call Medical Providers	Patients Seeking Lifesaving Medical Treatment
Goal 1: Health Life and Safety Goal			
Is the patient or provider travel need urgent, critical, and/or life-sustaining?	◆	◆	◆
Are travel needs unpredictable and/or require rapid travel time?	◆	◆	◆
Can the need be confirmed by a physician or medical provider?	◆	◆	◆
Goal 2: Mobility and System Operations Goal			
Does user group increase use of high-capacity vehicle travel, thus combining trips and reducing vehicle demand on bridge and detour routes?			
Is there no clear option for users to travel via a detour route, shift trips to non-restricted times of day or consolidate trips with other users?	◆	◆	◆
Goal 3: Economic Health and Sustainability Goal			
Does business or industry proximity to the low bridge create acute access need?			
Does vehicle or user group travel on low bridge ensure movement of critical freight and goods (regional or local)?			
Is there a clear threat of economic loss to a certain class, type or geographic concentration of businesses?			
Is the user group associated with an industry that has suffered a clear, documented loss due to COVID-19?			

For high-occupancy vehicle users, all users are meeting all criteria for the Mobility and System Operations Goal.

Criteria	Transit	School Buses	Rideshare Vehicles including Vanpools and Employee Shuttles
Goal 1: Health Life and Safety Goal			
Is the patient or provider travel need urgent, critical, and/or life-sustaining?			
Are travel needs unpredictable and/or require rapid travel time?	◆	◆	
Can the need be confirmed by a physician or medical provider?			
Goal 2: Mobility and System Operations Goal			
Does user group increase use of high-capacity vehicle travel, thus combining trips and reducing vehicle demand on bridge and detour routes?	◆	◆	◆
Is there no clear option for users to travel via a detour route, shift trips to non-restricted times of day or consolidate trips with other users?	◆	◆	◆
Goal 3: Economic Health and Sustainability Goal			
Does business or industry proximity to the low bridge create acute access need?			
Does vehicle or user group travel on low bridge ensure movement of critical freight and goods (regional or local)?			
Is there a clear threat of economic loss to a certain class, type or geographic concentration of businesses?			
Is the user group associated with an industry that has suffered a clear, documented loss due to COVID-19?			

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Appendix B Low Bridge Recovery Time and Capacity Analysis

When discussing the capacity of the lower Spokane Street Corridor, we first look at the capacity of the corridor as a whole, then look at what capacity may be available to other user groups after accounting for the corridor’s foundational user groups. These foundational user groups are heavy freight, light freight, transit, and emergency vehicles; and reflect a variety of travel patterns.

Lower Spokane Street Corridor constraints

The capacity of the low bridge corridor is driven by several factors including the number of travel lanes, surrounding intersections and signal timing that all influence recovery time from incidents. The most common type of unscheduled incident is

the opening of the Spokane Street Swing Bridge to accommodate marine traffic. These frequent openings further limit the capacity of the corridor.

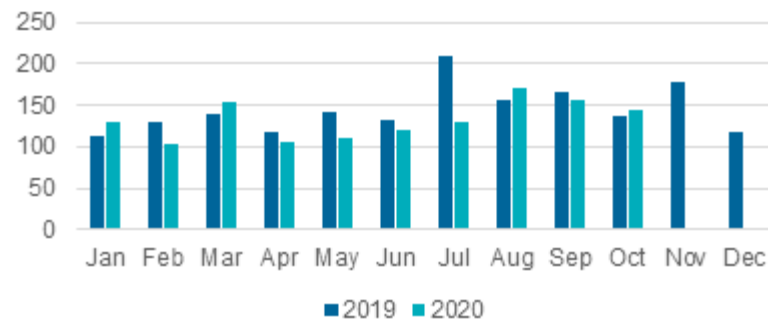
The low bridge typically opens between 4 to 7 times per day with no day-by-day pattern. Analysis of bridge openings by time of day shows most openings occur during the midday and PM Peak (68% of openings). Bridge openings last an average of 11 minutes per opening with a peak of 22 minutes, and most openings last from 8 to 15 minutes. Bridge openings by month show consistent usage throughout the year with a small increase in the summer and fall.

Operational capacity of the bridge is the volume at which traffic recovers after a bridge opening

To maintain a reliable crossing, the operational capacity has been determined to be the volume at which traffic on the bridge recovers from a bridge opening in a 1 to 1 ratio. This means that when the bridge is open to marine traffic and closed to cars and trucks for 10 minutes, traffic crossing the bridge recovers within 10 minutes after the bridge reopens to traffic. Targeting a 1:1 ratio limits the disruption to traffic caused by an incident or bridge opening, maintaining a reliable crossing.

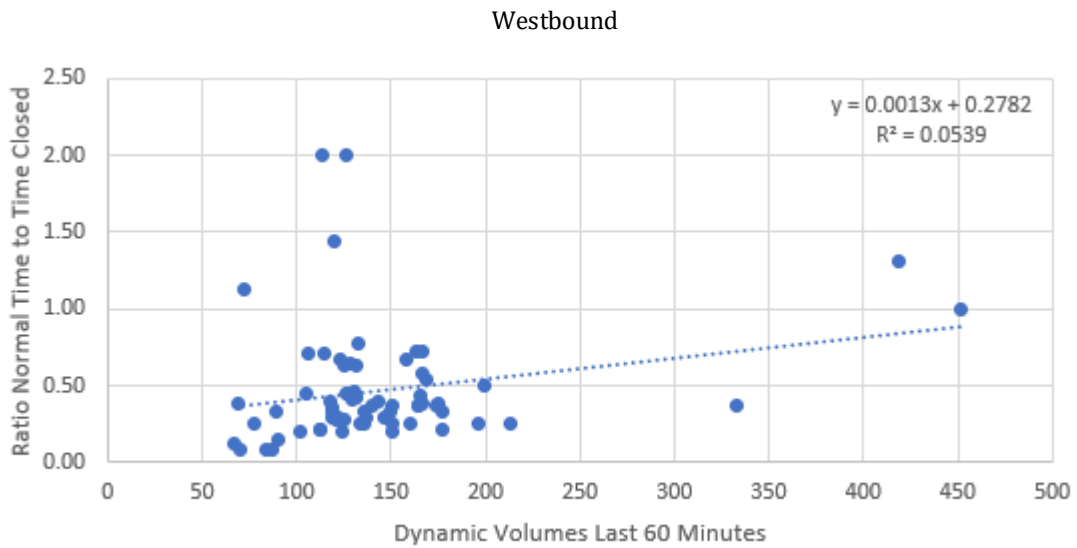
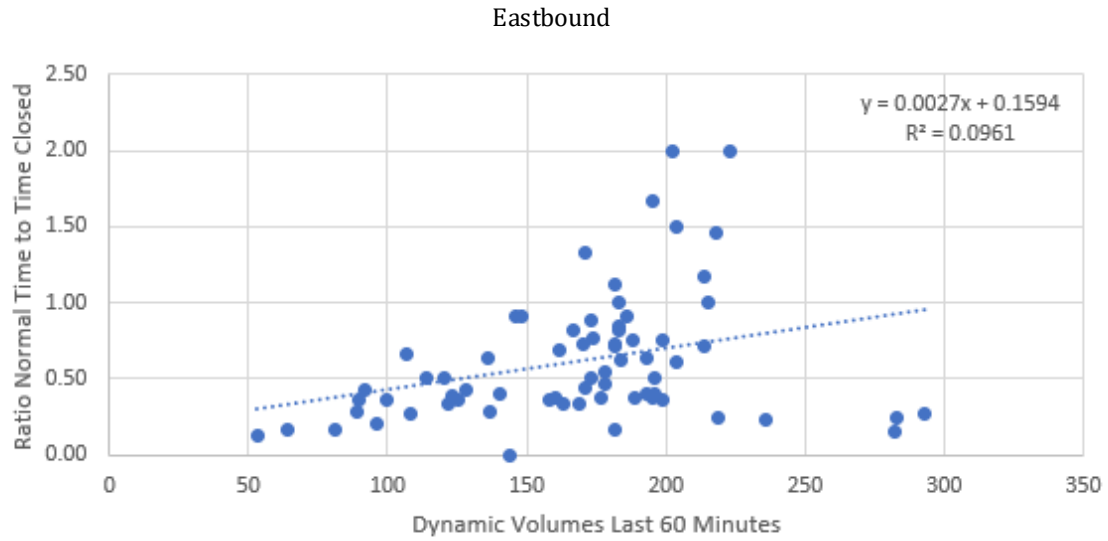
As volumes in the corridor grow, the recovery time from incidents also tends to increase. Once the volume exceeds about 300 vehicles per hour in each direction, the recovery from a bridge opening tends to exceed a 1:1 ratio. The following graphics reflect bridge openings that occurred in March 2021. They show a best estimate of volume related to a 1:1 ratio of recovery time ranging between 300vph and 450vph. This is consistent with our early analysis and is consistent with observations

Figure B-1 Bridge Openings by Month



that this corridor has typically recovered from this spring's opening of the low bridge in less than the duration of the opening event.

Figure B-2 Bridge Openings, March 2021



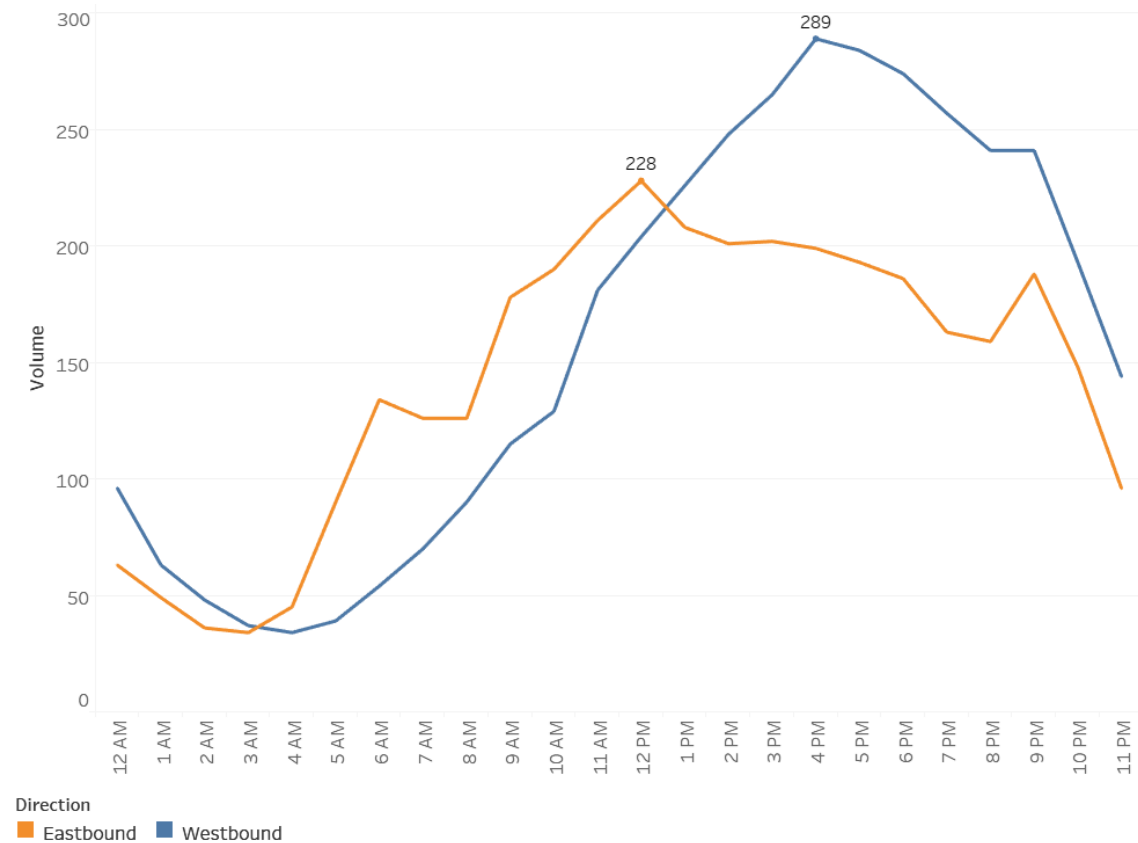
Reliable Operational Baseline Capacity Targets

Given the intersection capacity analysis, tempered by the bridge openings, the morning period of 5 AM to 10 AM can accommodate 400 vehicles per hour per direction on weekdays because there are less frequent bridge openings. The midday and afternoon periods from 10 AM to 9 PM can accommodate 300 vehicles per hour per direction. The capacity is lower due to the increased frequency of bridge openings during these times. Operating within these capacities allow us to meet our goal of maintaining a reliable trip to and from West Seattle for emergency vehicles, transit, and freight.

Hours of Restrictions

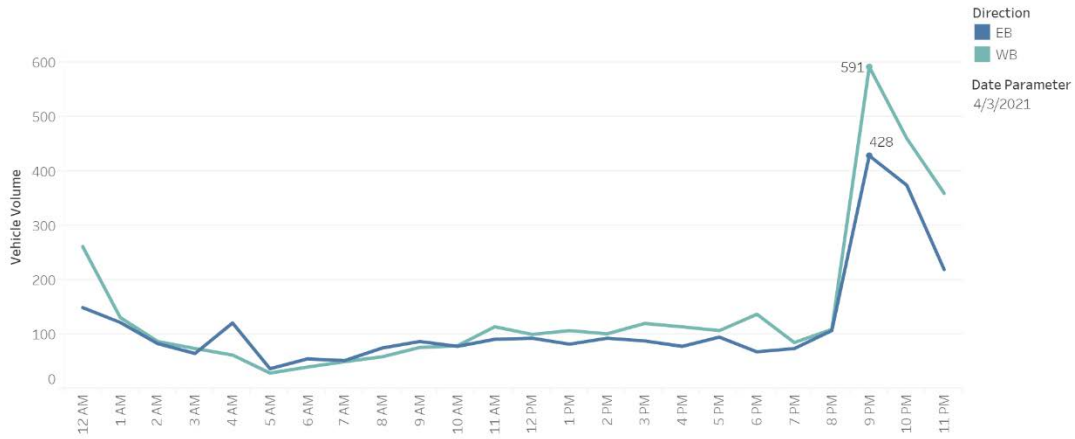
While the bridge was initially restricted around-the-clock, there was limited enforcement on the weekends, resulting in conditions in June 2020 where the bridge was nearing capacity, particularly during the midday to the afternoon. However, outside of those times there was capacity on the bridge and in June 2020, SDOT modified the hours of restrictions to allow all users access to the low bridge between 9 PM and 5 AM. Figure B-3 below shows the pattern of low bridge use in June 2020 when, due to the pandemic, city-wide traffic levels were 53% lower than pre-pandemic. As of April 2021, city-wide traffic levels during the week have risen and now typically 1/3 lower than pre-pandemic.

Figure B-3 Low bridge Average Volumes by Hour on Weekends in June 2020



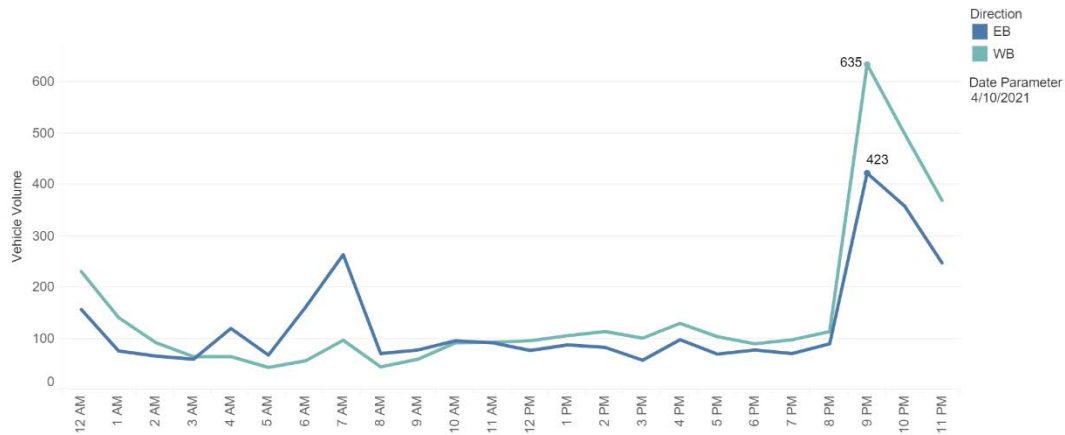
SDOT again examined low bridge utilization in spring 2021 to explore opportunities to adjust the restrictions. Figure B-4 shows volumes by hour on Saturday, April 3.

Figure B-4 Low Bridge Volumes by Hour on 4/3/2021



Based on low morning use on weekends and little evidence of unmet demand in the nearest detour routes, SDOT adjusted the weekend hours of restrictions to begin at 8 AM instead of 5 AM. Similar volume analysis on Saturday, April 10 shows the resulting movement in the pre-restriction demand spike from the 4 AM hour to the 7 AM hour, and still well below the capacity limits.

Figure B-6 Low Bridge Volumes by Hour on 4/10/2021



Reliable Operational Baseline Capacity Targets

Given the intersection capacity analysis, tempered by the bridge openings, the morning period of 5 AM to 10 AM can accommodate 400 vehicles per hour per direction on weekdays because there are less frequent bridge openings. The midday and afternoon periods from 10 AM to 9 PM can accommodate 300 vehicles per hour per direction. The capacity is lower due to the increased frequency of bridge openings during these times. Operating within these capacities allow us to meet our goal of maintaining a reliable trip to and from West Seattle for emergency vehicles, transit, and freight.

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