

# Legislative Report – I-5 Ramp Reconfiguration Study

December 1, 2024



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# Opening Letter

Dear Transportation Committee Members:

As directed by **Engrossed Substitute House Bill 1125, Sec. 219, Subsection 9**, the Washington State Department of Transportation (WSDOT) is submitting the **I-5 Ramp Reconfiguration Study**. The study is part of the March 2022 Move Ahead Washington transportation package that funded and directed WSDOT to create a modern vision for I-5 by developing a comprehensive Master Plan for the corridor in Washington state from the Oregon border to the Canadian border.

WSDOT established the Cascadia High-Speed Rail and I-5 Program to shape and implement a vision for an integrated, multimodal transportation system for western Washington and its connections throughout the British Columbia/Washington/Oregon megaregion. Under the Cascadia Program, the **I-5 Master Plan** will inform future I-5 investment decisions that meet the demands of future growth, are equitable and resilient, move people and goods safely and efficiently, connect communities, and support a thriving economy.

The **I-5 Ramp Reconfiguration Study** will be used to inform WSDOT's I-5 Master Plan and the City of Seattle's efforts to lid I-5 in the Downtown and University District areas to reconnect communities separated by highway construction. WSDOT and the City collaborated to define a scope for this study to ensure it would best support the City's lid planning efforts and WSDOT's I-5 Master Plan and be achievable within the \$300,000 budget and the timeframe set by the Legislature. The study:

- Summarizes existing transportation conditions within the study area to establish a clear baseline for future analysis.
- Evaluates, at a high level, the range of transportation implications—positive, negative, or neutral—associated with potential future ramp changes.
- Recommends a framework for subsequent detailed studies and analyses (beyond this initial effort) needed to fully understand the potential transportation implications of potential lid development and future ramp changes and identifies which entities will lead the work.

As the City applies \$2.2 million in funding from a federal Reconnecting Communities and Neighborhoods Community Planning Grant and local match to continue research and planning for a future lid, WSDOT will continue to advance the I-5 Master Plan. Once a community vision for the I-5 lid has been established, a more detailed assessment will be necessary to understand the transportation implications of a lid for all modes of travel at a more granular level. WSDOT is committed to a continued partnership with the City of Seattle and collaboration between these parallel efforts.

We appreciate the Legislature's support and look forward to continuing our work with you and the Governor's Office as we advance the Cascadia Program and the I-5 Master Plan and continue to partner with Washington communities on key transportation priorities.

Sincerely,

Julie Meredith, PE

Assistant Secretary, Urban Mobility, Access and Megaprograms, WSDOT

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## List of Abbreviations

ADA	Americans with Disabilities Act
City	City of Seattle
ESHB	Engrossed Substitute House Bill
FHWA	Federal Highway Administration
HCM	Highway Capacity Manual
I-5	Interstate-5
ITS	Intelligent Transportation System
Lid Study	I-5 Lid Feasibility Study
Metro	King County Metro
NE	northeast
RCN	Reconnecting Communities and Neighborhoods
RSEI	Racial and Social Equity Index
RSJI	Racial and Social Justice Initiative
SR	State Route
STP	Seattle Transportation Plan
USDOT	U.S. Department of Transportation
VPH	vehicles per hour
WSDOT	Washington State Department of Transportation

# 1 Executive Summary

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## 1.1 Purpose and Background

The **I-5 Ramp Reconfiguration Study** informs future work to be conducted during WSDOT's I-5 Master Plan and the City of Seattle's (City) efforts to lid I-5 in the Downtown and University District areas to reconnect communities separated by the construction of the highway. The study process included close collaboration with the City and coordination with the community group Lid I-5 and other interested parties.

Transportation is one of many factors influencing lid placement and design. This study focuses on understanding the complex trade-offs of potentially closing, reconfiguring, or consolidating I-5 on- and off-ramps associated with lid development. I-5 ramp closure or reconfiguration changes are dependent on the desired lid location.

The City is applying \$2 million in funding from a federal Reconnecting Communities and Neighborhoods Community Planning Grant (in addition to \$200,000 of a local match) to continue research and planning for a future lid over I-5 in Downtown Seattle. Further definition of a lid location and footprint will require additional technical analysis and robust community engagement consistent with Federal Environmental Justice requirements and the HEAL Act. As the City identifies a preferred lid location and as ramp change options are further developed and refined, a more detailed assessment will be necessary to understand the transportation implications for all modes of travel at a more granular level.

Ramp changes hold the potential to derive both positive and negative transportation implications. For example, a ramp removal (and the associated reduction in traffic volumes at the former ramp terminal and on immediate surrounding streets) could provide localized air quality and noise benefits while improving connectivity and safety through fewer multimodal conflicts. Simultaneously, a ramp removal could adversely impact communities by removing direct freeway access (particularly for people reliant on I-5 to access jobs and other essential destinations).

In spring 2023, the Washington State Legislature provided \$300,000 of funding for WSDOT to conduct a study that looks at the following 12 I-5 on- and off-ramp locations in Downtown Seattle and the University District:

- 6<sup>th</sup> Avenue southbound on-ramp
- James Street northbound off-ramp
- Cherry Street northbound on-ramp
- Madison Street northbound off-ramp
- Spring Street southbound on-ramp
- Seneca Street northbound off-ramp
- University Street northbound on-ramp
- Union Street southbound off-ramp
- Olive Way northbound off- and on-ramps
- Yale Avenue southbound on-ramp
- Northeast (NE) 45<sup>th</sup> Street northbound and southbound on- and off-ramps
- NE 50<sup>th</sup> Street northbound and southbound on- and off-ramps



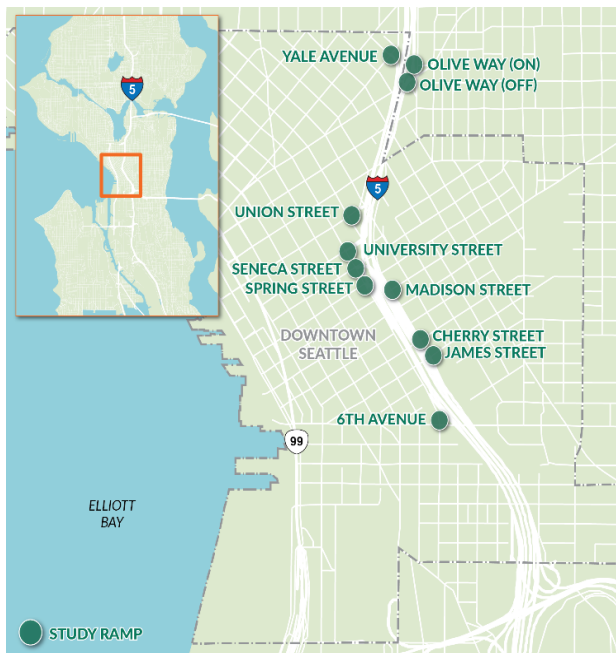
The I-5 Ramp Reconfiguration Study was funded through the Move Ahead Washington transportation package that also directed WSDOT to form a modern vision for the I-5 corridor by developing an actionable border-to-border I-5 Master Plan. WSDOT and the City collaborated to define a scope for this study to ensure it would best support the City’s lid planning efforts, WSDOT’s I-5 Master Plan efforts, and be achievable within the budget and timeframe set by the Legislature. This study:

- Summarizes the known existing transportation conditions in the Downtown and University District study areas to create a foundational understanding.
- Evaluates, at a high level, the range of positive, negative, or neutral transportation implications of potential future ramp changes based on the existing conditions.
- Recommends a framework for subsequent detailed studies and analyses (beyond this initial effort) needed to fully understand the potential transportation implications of potential lid development and future ramp changes and identifies which entities will lead the work.

## 1.2 Existing Transportation Conditions

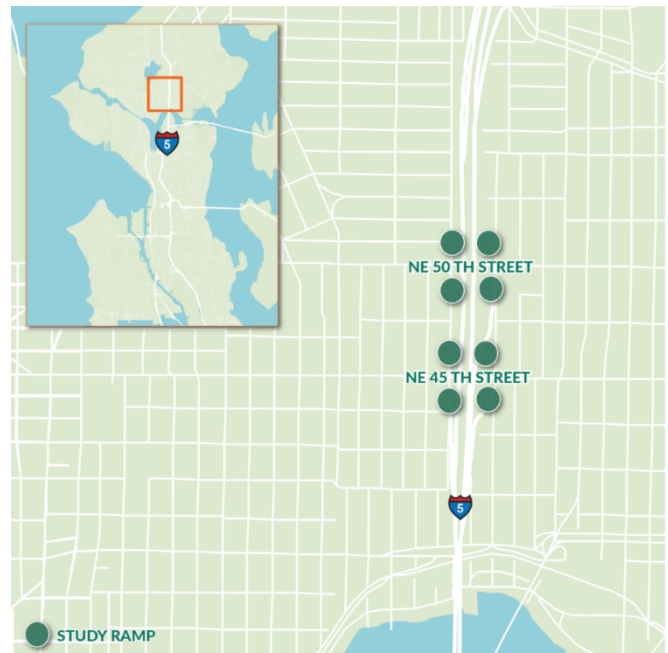
I-5 is a vital north-south transportation corridor that powers regional, national, and international economies and supports thousands of people connecting to jobs, schools, services, goods, and each other daily. Within Washington, the busiest section of the corridor runs through Downtown Seattle.

The report organizes existing conditions by two groupings of ramps, one in Downtown Seattle and one further north in the University District. These segments represent different urban environments with distinct demographic, land use, and transportation contexts. Figures 1 and 2 illustrate Downtown and University District segments and study ramps.



**Figure 1. Downtown Segment Study Ramps**

Data: Seattle Department of Transportation



**Figure 2. University District Segment Study Ramps**

Data: Seattle Department of Transportation

The following existing transportation conditions were assessed in the report:

- Equity and demographics
- Key destinations
- Car and truck traffic
- Pedestrian, bicycle, and transit volumes
- Freight conditions
- Safety for all modes of travel
- Walking/rolling conditions
- Bicycling conditions
- Transit conditions
- Emergency access

This study provides a solid understanding of existing multimodal transportation conditions to help inform further consideration of potential future lid design options. While this analysis did not include traffic modeling due to the time and budget required to examine multiple combinations of changes to 12 on- and off-ramp locations, traffic modeling will be a critical piece of future analysis to compare the benefits and impacts of a narrowed set of lid design options. Any future planning to narrow the range of potential lid designs (e.g., Planning and Environmental Linkages process) or environmental review to evaluate the environmental and related social and economic effects of a proposed design (e.g., National Environmental Policy Act process) would include assessment of a wide variety of environmental effects, including both positive and negative effects on the multimodal transportation system. Any changes to freeway access would require an Access Revision Report, consistent with Chapter 550 of the [WSDOT Design Manual](#). Chapter 5.0 of this report includes recommendations related to the need for future detailed analysis once the City has narrowed the range of potential lid design options.

A high-level snapshot of key transportation conditions in the Downtown and University District segments follows. Appendix A includes detailed information for each ramp location.

## Downtown

- Figure 3 includes information on demographics and community context.
- Traffic volumes on study ramps vary by location; however, most study ramps currently operate at or near capacity during peak periods.
- Many ramps are spaced much more closely than current state and federal guidance of one mile in urban areas.<sup>[1]</sup>
- The trends in traffic using Downtown ramps show the most



**Figure 3. Downtown Existing Conditions**

<sup>1</sup> [Interstate System Access Informational Guide \(dot.gov\)](#)

common travel patterns are between Downtown and south of Downtown, with the second most common pattern between Downtown and east of Downtown. Very few trips using Downtown ramps have an origin or destination outside of Downtown, which indicates that traffic uses Downtown ramps to access Downtown destinations or I-5 from Downtown.

- Traffic congestion near some study area ramp terminals presents challenges to transit reliability.
- Sidewalks are typically present in this area with north-south and east-west bicycle facilities and frequent transit service. Sidewalk and crosswalk gaps and curb ramp deficiencies exist near 5 of 11 study ramp terminals. Several east-west bicycle facilities feature steep slopes through the area.
- Figures 4 and 5 present an overview of existing car and truck trips that use Downtown on- and off-ramps.

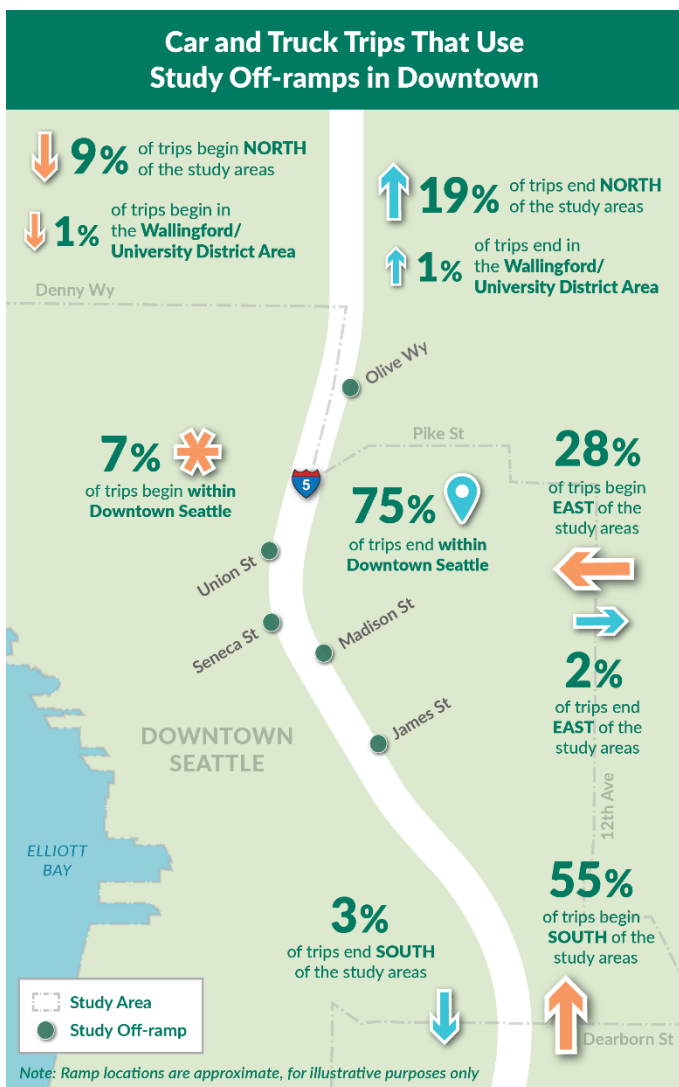


Figure 4. Existing Conditions: Downtown Off-ramps

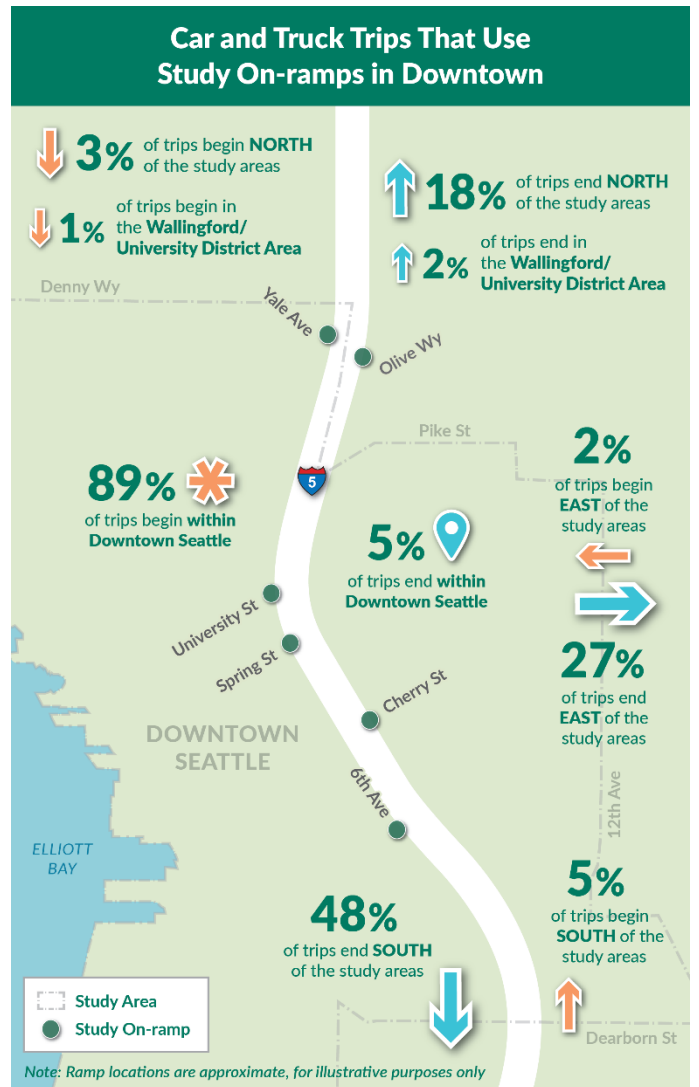


Figure 5. Existing Conditions: Downtown On-ramps

## University District

- Figure 6 includes information on demographics and community context.
- East-west connections across I-5 are limited, leading to interactions between transit vehicles and people bicycling, walking, and using mobility devices at major intersections, such as NE 45<sup>th</sup> Street at 5<sup>th</sup> Avenue and 7<sup>th</sup> Avenue. An unfunded bicycle/pedestrian-only bridge crossing I-5 is planned at NE 47<sup>th</sup> Street<sup>[2]</sup>.
- The trends in traffic using University District study area ramps show that about half of the travel patterns are between the University District and Wallingford areas and north of the study area, with the rest of the travel patterns distributed between Downtown, east, and south of the study area. Very few trips using University District study area ramps have an origin or destination outside of the University District and Wallingford areas, which indicates that traffic is using University District study area ramps to access the adjacent University District and Wallingford areas or to access I-5 from these areas.
- Sidewalks are typically present in this area. Crosswalk gaps exist at four of the eight study ramp terminals. There are several gaps in the existing bikeway network.
- Traffic congestion near the NE 45<sup>th</sup> Street ramps limits transit reliability.
- Figures 7 and 8 present an overview of existing car and truck trips that use University District on- and off-ramps.



**Figure 6. U-District Existing Conditions**

<sup>2</sup> [Seattle Transportation Plan - Transportation | seattle.gov](https://seattle.gov/transportation)

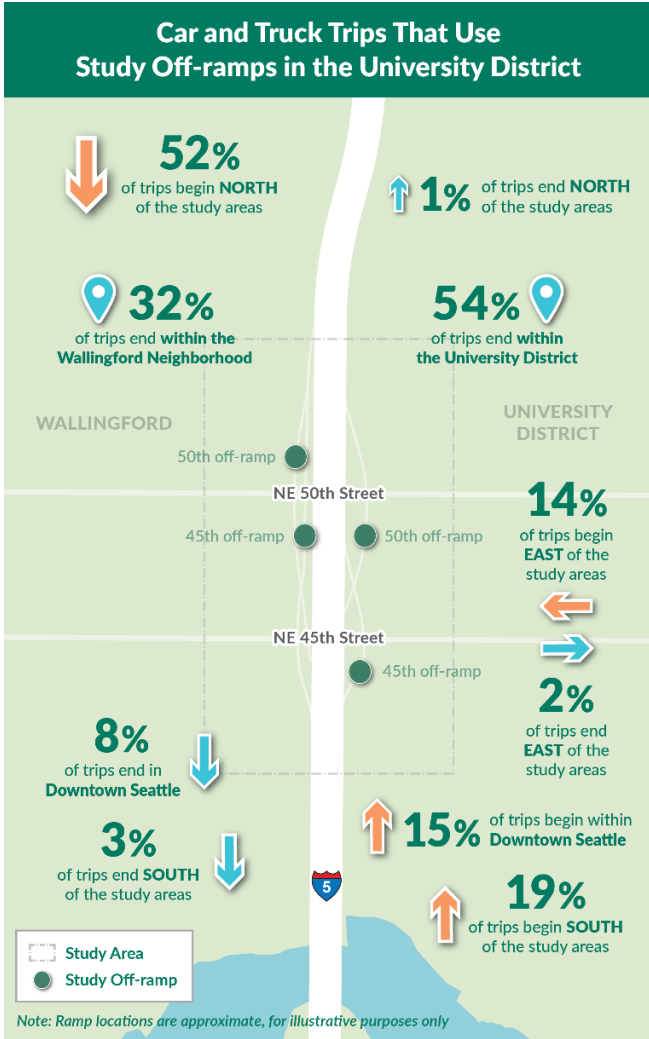


Figure 7. Existing Conditions: U-District Off-ramps

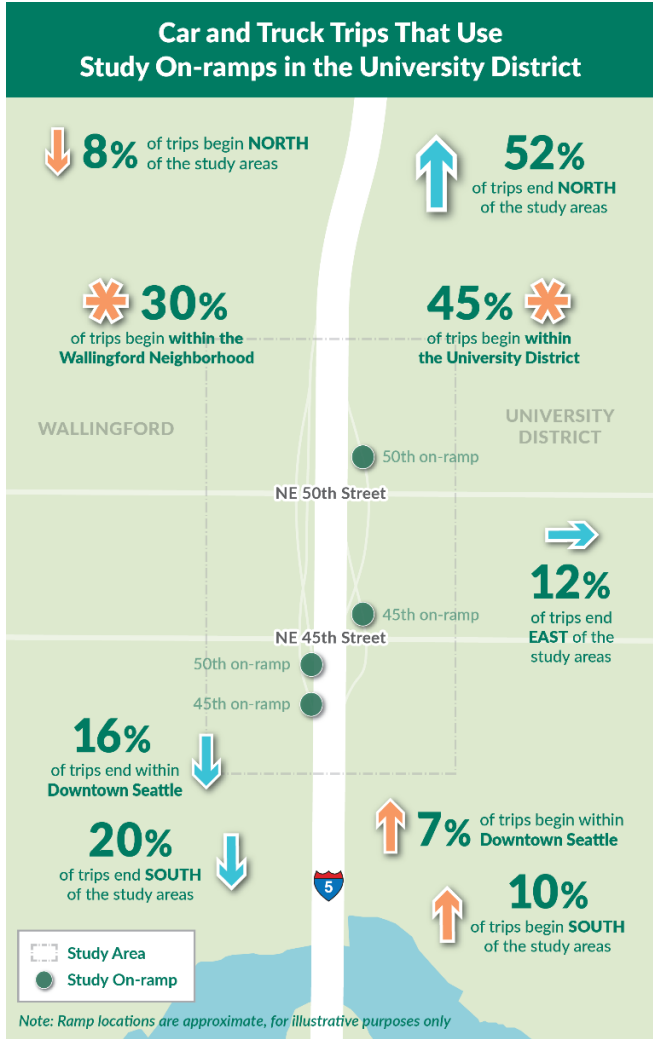


Figure 8. Existing Conditions: U-District On Ramps

## 1.3 Transportation Implications of Potential Ramp Changes

The report identifies a range of transportation implications (positive, negative, neutral) of potential future I-5 ramp changes, considering the existing transportation conditions and input collected with City partners and Lid I-5 interested parties at a July 2024 transportation workshop.

Implication topic areas in the report include the following:

- Equity
- Car and truck traffic
- Transportation safety
- Freight
- Walking and rolling
- Bicycling
- Transit reliability and operations
- Emergency access
- Community connectivity
- Potential acreage provided by ramp removal

The study found that future ramp changes have the potential to reshape traffic patterns, enhance safety, offer equity benefits, and provide land for community use, though changes can also present challenges that require careful planning and additional analysis. Looking at transportation safety, for example, ramp changes hold the potential to reduce multimodal conflict points where on- and off-ramps connect to the surface street grid, particularly at ramp terminal intersections. Fewer crashes may result from lower traffic volumes and simpler intersection geometry. Alternatively, if unmitigated, ramp changes could increase conflict potential and negatively impact safety at ramp terminals or other routes if they receive diverted traffic volumes. Technical or geometric improvements may be required to mitigate any increased conflicts related to ramp changes.

The transportation implications provided the context for the report's recommendations for future work.

## 1.4 Recommendations for Future Study

This study lays the groundwork for future transportation analysis and focus areas for the City's I-5 Lid planning work. For WSDOT's I-5 Master Plan, the study provides a good baseline of existing conditions in the Downtown Seattle and University District segments to help inform areas of future investment decisions.

The report outlines recommendations for future work or analysis necessary to better understand the transportation implications of future ramp changes and identifies who will lead these efforts.

## 1.4.1 Recommendations for WSDOT I-5 Master Plan

The following transportation analysis activities focused on the I-5 ramp study area are recommended for inclusion in WSDOT's I-5 Master Plan process:

- Advance analysis and documentation consistent with WSDOT agency mission, goals, and objectives.
- Conduct safety analysis on I-5 in the study area.
- Conduct seismic vulnerability analysis on I-5 in the study area.
- Continue to collaborate with the City and its lid planning efforts, participate in partner engagement activities, provide feedback, stay informed, and share I-5 Master Plan updates.
- Incorporate relevant information from this study, including feedback collected during the workshop with partner agencies on July 11, 2024, into the I-5 Master Plan.
- Refer to and incorporate relevant information and details from the City's lid planning efforts into the I-5 Master Plan.
- Continue to collaborate with transit, port, freight, and other key mobility and land use partners and the public, including the Lid I-5 organization, community organizations, commuter and employee focus groups, businesses, and tourism advocates.

## 1.4.2 Recommendations for City I-5 Lid Planning

The following are key report recommendations for future activities that could be integrated into the City's Reconnecting Communities grant scope or other future planning, Planning and Environmental Linkages (PEL) or State Environmental Policy Act (SEPA)/National Environmental Policy Act (NEPA) efforts:

- **Coordination:** Coordinate with WSDOT and FHWA to ensure planning efforts are consistent with state and federal guidance and that the process is set up for a future PEL or NEPA process. Coordinate with WSDOT NW Region on an ongoing basis to understand data availability and how it can be leveraged for analysis.
- **Planning/PEL:** Conduct an analysis of lid location and footprint alternatives through a robust community process consistent with Federal Environmental Justice requirements and the HEAL Act, using a variety of perspectives (e.g., social, economic, and environmental benefits and impacts). Working with the community and in coordination with WSDOT and other partner agencies:
  - Develop and implement a community engagement process.
    - As part of this work, identify equity priority communities (including people using I-5 and I-5 ramps, people using nearby streets, and people living and working near the corridor) and assess benefits and impacts related to transportation safety and access for community members and workers.
  - Develop and implement a tribal and agency coordination plan.

- Collect additional existing conditions data as needed, such as outdated pedestrian, bicycle, and transit data.
- Develop a problem statement or purpose and need.
- Establish a set of goals, objectives, criteria, and key performance indicators representing the community vision for the lid. Some of these will relate to transportation, and some could specifically relate to ramp closures or reconfigurations.
- Establish a range of potential lid location and/or lid footprint alternatives. These alternatives would include potential ramp changes.
- With WSDOT participation, screen the alternatives, using the criteria and key performance indicators.
  - Related to I-5 ramps, the analysis conducted could include traffic modeling to:
    - Understand the capacity of ramp terminals and operational constraints.
    - Examine benefits or impacts to mainline I-5.
    - Understand latent demand and potential for regional travel diversion to or from I-405 and Highway 99.
    - Examine potential implications for modal shift.
    - Understand the benefits or impacts on travel time for maritime-related freight and other industrial uses.
    - Understand origins/destinations and how many people use I-5 for shorter trips in the study area; ensure that this modeling also examines origins/destinations by time of day.
    - Examine benefits or impacts to I-5 express lanes and collector-distributor roads.
    - Understand the benefits or impacts on local freight delivery.
    - Understand the benefits or impacts of noise and air quality.
    - In partnership with WSDOT, look at potential regional and local diversion to other highways/ramps and local streets and determine what this means for people driving, walking, biking, taking transit and freight (heavy freight and local deliveries – Port, I-90) in terms of mobility, access, reliability, and safety; and emergency access and travel times/reliability.
      - Understand the benefits or impacts on freight using these corridors.
  - Analysis could assess safety benefits for all modes on local streets and the I-5 mainline.
    - Conduct a Ramp Safety Assessment in accordance with the Target Zero Strategic Highway Safety Plan.
  - Analysis could determine implications for first responder and regional evacuation routes; engage with Seattle Police and Fire Department.



- Analysis could assess geometric implications based on the proposed development on top of the lid for the specific scenarios, which could include a mix of buildings and open space (for example, lids need to be wider and stronger to support multi-story development, which can impact the adjacent transportation system or existing development).
  - Develop a preferred lid location(s) and footprint(s) to carry into the SEPA/NEPA process.
  - Determine the recommended NEPA class of action.
- **SEPA/NEPA:** In partnership with FHWA, WSDOT, and other partner agencies and interested parties, conduct environmental reviews consistent with state and federal processes. This work would include transportation-related analyses.
  - Develop and implement a community engagement process.
  - Develop and implement a tribal and agency coordination plan.
  - Develop a purpose and need.
  - Describe the alternatives.
  - Assess the environmental impacts/effects of the proposed action/alternatives. This work would include transportation analysis for all modes.
  - Develop environmental documentation.
- **Other efforts:** Other efforts recommended include:
  - Establish a shared basis of design between WSDOT, the City, and other partners to set expectations for future analysis and recommendations and focus on user needs to ensure design decisions are consistently implemented throughout the future development process.
  - Study the transportation impacts of temporary ramp closures that are a component of the I-5/Yesler Way to Northgate maintenance project to help inform ramp closure potential through a real-world scenario.
  - Continue to collaborate with WSDOT and their I-5 Master Plan efforts.
  - Continue to collaborate with transit agencies, the Port of Seattle, and other key partners and the public, including communities, commuters, and employee groups reliant on manufacturing, trade, and tourism.

WSDOT understands the importance of the lid to Seattle and reconnecting the community. WSDOT's I-5 Master Plan and the City's lid planning work will run in parallel to be successful. WSDOT and the City will actively coordinate and collaborate as these efforts move forward.

## 2 Purpose and Background

### 2.1 Study Background

Interstate-5 (I-5) is a vital north-south transportation corridor for regional, national, and international economies and supports thousands of people traveling daily. Washington’s busiest stretch of I-5 runs through Seattle (Figure 9). Community members and the City are continuing to explore the feasibility of lidding I-5 in Downtown Seattle and further north in the University District. Highway lids are a type of deck bridge that can support development, open space, and/or roadways and provide connections over the highway. Current concepts to lid I-5 could require reconfiguring, relocating, or removing I-5 ramps to provide benefits such as more developable land, safer multimodal travel, and more continuous connections for people traveling east/west across the corridor. Any changes to I-5 ramps would require significant technical analysis, coordination with WSDOT, FHWA, and other partners, and robust community engagement.



Figure 9. Complex Network of I-5 Ramps, Travel Lanes, Collector-Distributor Roads, and Overcrossings

Source: 2024 Google

## 2.1.1 Study Proviso and WSDOT I-5 Planning

In spring 2023, the Washington Legislature directed WSDOT to conduct an I-5 Ramp Reconfiguration Study in partnership with the City and informed by Lid I-5 interested parties, to be completed by December 1, 2024. The proviso included in ESHB 1125, Section 219, Subsection 9(c) reads:

*(c) Of the amounts provided in this section, \$300,000 is provided solely for the department to conduct a Seattle Interstate 5 ramp reconfiguration study. The study must be conducted in coordination and partnership with the city of Seattle's department of transportation, informed by the input of Interstate 5 lid stakeholders, and coordinated with work under (a) and (b) of this subsection. The department must provide a study report, including recommendations, to the city of Seattle's department of transportation and the transportation committees of the legislature by **December 1, 2024**. The study must include an analysis of:*

- (i) Options and opportunities to reconfigure, relocate, or remove Interstate 5 ramps within and between the Chinatown-International District and the University District for the purpose of improving through-traffic operations, enhancing multimodal transportation safety, and enabling more efficient air rights development;*
- (ii) Potential mitigation needs and cost estimates of ramp changes and demolitions;*
- (iii) Benefits of ramp changes and demolitions to pedestrian and bicycle travel, transit operations, and future lid design;*
- (iv) Ramps for the mainline collector-distributor lanes and express lanes including, at a minimum, ramps connecting to and from James Street, Cherry Street, 6th Avenue, Madison Street, Seneca Street, Spring Street, University Street, Union Street, Olive Way, Yale Avenue, NE 45th Street, and NE 50th Street;*
- (v) Removal of the existing ramps at Seneca Street, Spring Street, and University Street; and*
- (vi) Removal and consolidation of the existing NE 45th Street and NE 50th Street ramps.*

The I-5 Ramp Reconfiguration Study is part of the March 2022 Move Ahead Washington transportation package that also directed WSDOT to form a modern vision for the I-5 corridor by developing an actionable I-5 Master Plan from the Oregon border to the Canadian border. The Plan will result in implementing projects, policies, and strategies to improve travel, the economy, and livability.

In August 2023, WSDOT aligned this I-5 planning work with high-speed rail planning. The Cascadia High-Speed Rail and I-5 Program aims to strategically design a modern, north-south multimodal transportation system that serves everyone who visits, lives, and works in the region by:

- Fostering a vibrant economy.
- Enhancing quality of life.
- Improving safety.
- Boosting system efficiency.
- Promoting community connectivity.
- Reducing carbon emissions.

Collaborating and partnering with jurisdictions along the I-5 corridor is important to ensuring alignment on how to achieve this vision. The partnership between WSDOT and the City related to I-5 planning is an example of working together to develop a common understanding and realize shared goals.

## 2.1.2 City-led I-5 Lid Planning

In spring 2024, USDOT awarded the City a \$2 million federal Reconnecting Communities and Neighborhoods (RCN) grant (paired with a \$200,000 local match) to continue planning, technical studies, and community engagement for lidding I-5 in the Downtown area and University District (Figure 10). The work funded by the grant will take place over two to three years and build on the 2020 I-5 Lid Feasibility Study (Lid Study), expanding the study area north and south. The Lid Study found that lidding is possible, although challenging, and can result in a variety of social, environmental, and economic benefits. The RCN award follows a fall 2023 City Council endorsement of the Lid I-5 project. The City submitted the grant in partnership with Lid I-5 <sup>[3]</sup>, an organization with the mission “to build the case and constituency for lidding I-5 and building a more connected, sustainable, and equitable Seattle.”



Figure 10. I-5 University District Area Between NE 45th St. and NE 50th St. Looking South

Source: 2024 Google

## 2.2 Study Purpose

This study serves as a building block for future work conducted during WSDOT’s I-5 Master Plan, the City’s lid planning work, and other efforts by:

- Summarizing the known existing transportation conditions in the study area to create a foundational understanding.
- Describing the range of positive, negative, or neutral transportation implications of potential future ramp changes based on the existing conditions.
- Recommending future work or analysis needed to better understand the potential transportation implications of future lid development and ramp changes and identifying which entities will lead the work.

## 2.3 Partnership and Coordination

WSDOT conducted the I-5 Ramp Reconfiguration Study in partnership with the City and informed by Lid I-5 interested parties as directed by the Washington Legislature. WSDOT and the City collaborated closely and engaged with interested parties regularly on the study approach and outline.

From January to April 2024, WSDOT and the City worked together to define a scope for this study to

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<sup>3</sup> [Lid I-5 – Let’s build a stronger Seattle, together. \(lidi5.org\)](https://lidi5.org)

ensure it would best support the City’s lid planning efforts, WSDOT’s I-5 Master Plan efforts, and be achievable within the budget and timeframe set by the Legislature.

From February to April 2024, WSDOT shared the scope and approach with Lid I-5 interested parties.

In May 2024, WSDOT met with the City and Lid I-5 interested parties to share an update on the Study and the plan for an interactive transportation workshop. The City and Lid I-5 interested parties discussed the study area and initiated the development of a scope for the lid planning effort, funded by the RCN grant.

On July 11, 2024, WSDOT and the City hosted an interactive transportation workshop that convened key agencies and organizations identified by WSDOT and the City to:

- Develop a shared understanding of the WSDOT I-5 Ramp Reconfiguration Study, City-led RCN lid work, and WSDOT I-5 Master Plan and how they interrelate.
- Share information about existing I-5 ramp area multimodal transportation conditions.
- Gather feedback on the future work or analysis that should be done to increase understanding of transportation implications (positive, negative, neutral) of potential future ramp changes associated with lid development.
- Gather feedback on engagement opportunities and strategies for the WSDOT I-5 Master Plan and City-led RCN lid work.

Invited participants were provided briefings ahead of the workshop and represented the following:

- Lid I-5
- Lid I-5 North Coalition
- King County Metro (Metro)
- Sound Transit
- Port of Seattle
- Downtown Seattle Association
- University of Washington
- University District Partnership
- Wallingford Neighborhood
- Cascade Bicycle Club
- Puget Sound Regional Council
- Commute Seattle
- Northwest Seaport Alliance

Several key themes emerged during the workshop and have been incorporated into the study findings:



**Interconnectedness:** Participants expressed the need for a study of the interrelationships among ramps and the effects of potential traffic diversion resulting from ramp changes on other area ramps, nearby surface streets, and regional downstream/upstream locations.



**Safety for Vulnerable Roadway Users:** Participants prioritized the safety and connectivity needs of people walking, rolling, bicycling, and using transit. Several study ramps sit in areas with safety issues, and ramp changes could present improvement opportunities.



**Think Beyond Ramp Traffic:** Participants identified ways ramp changes may affect more than the drivers using the ramps, including local and regional freight deliveries, emergency vehicles such as fire trucks and ambulances, tourists and other visitors, and people living or working near ramps affected by noise, air pollution, and safety issues.



**Green Space:** Participants identified several locations where ramp changes could provide room for additional green spaces, including the area around the Spring Street ramp near Freeway Park and the area between NE 45<sup>th</sup> Street and E 50<sup>th</sup> Street in the University District.



**Conflicting Needs:** Participants suggested that desired pedestrian, bicycle, and transit improvements near University District study ramps conflict with each other and the existing car and truck traffic patterns for available right-of-way, making it challenging to make cohesive changes without major reconfiguration of the existing roadway network.

# 3 Existing Transportation Conditions

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## 3.1 Introduction

This chapter summarizes existing transportation conditions in the study area. Existing transportation conditions assessed include:

- Equity and demographics
- Key destinations
- Car and truck traffic
- Pedestrian, bicycle, and transit volumes
- Freight conditions
- Safety for all modes of travel
- Walking/rolling conditions
- Bicycling conditions
- Transit conditions
- Emergency access

These existing conditions provided the groundwork to identify transportation implications of potential ramp changes (see Chapter 4), recommend what future work or analysis is needed to better understand these implications, and help inform decisions (see Chapter 5). Appendix A includes detailed existing conditions information for the study area, including origin-destination travel patterns and other information for each ramp.

## 3.2 Study Area and Context

I-5 is a vital north-south transportation corridor that powers regional, national, and international economies and supports thousands of people connecting to jobs, schools, services, goods, and each other daily. Within Washington, the busiest section of the corridor runs through Downtown Seattle.

ESHB 1125 directed this study to look at a specific list of 12 I-5 on- and off-ramp locations in Downtown Seattle and the University District. **Existing conditions are organized by two geographic subareas or segments: Downtown and the University District.** Figure 11 shows the study area and the Downtown and University District segments within the overall context of central Seattle, and Figure 12 and Figure 13 show ramp locations for the Downtown and University District segments, respectively. The Downtown segment is located between Yesler Way to the south and Denny Way to the north and up to two blocks east and west of I-5. The University District segment is located between up to two blocks north of NE 50<sup>th</sup> Street, up to two blocks south of NE 45<sup>th</sup> Street, and up to two blocks east and west of I-5. Appendix A includes further details for each ramp location area.

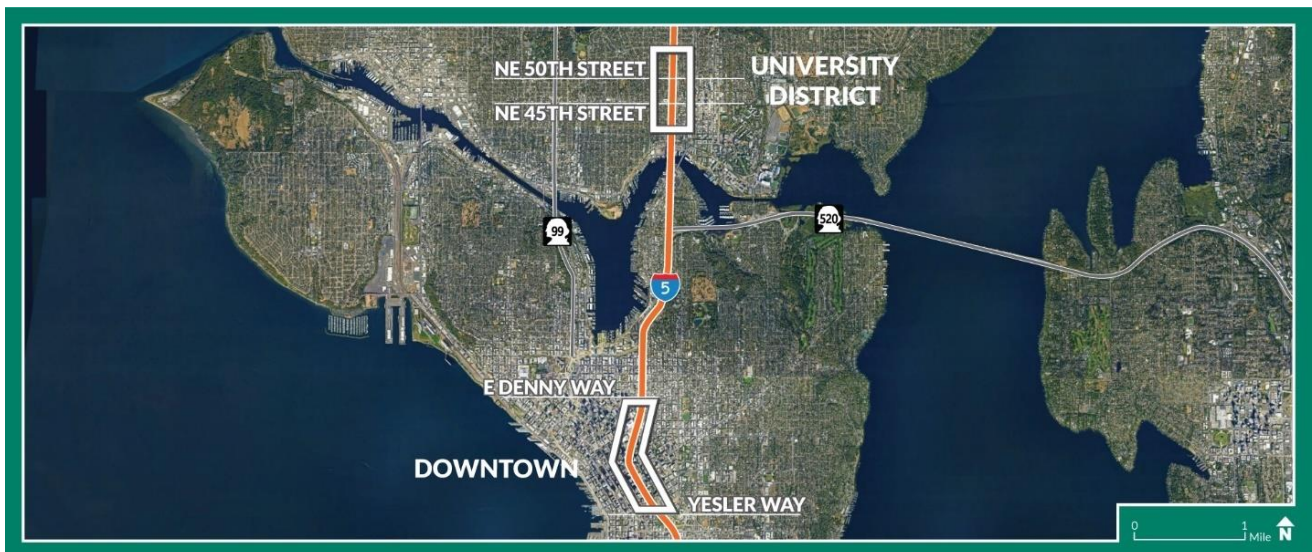
The Downtown study area features a dense collection of employment, residential, and civic uses. Important employment zones include the Central Business District west of I-5 and the medical district east of I-5. Key east-west streets such as Marion Street and Yesler Way provide access to the Seattle Ferry Terminal, while several east-west streets provide access to Port terminals via Alaskan Way. Downtown ramps are closely interconnected with each other and the broader transportation system.

Consistent with the proviso, the ramps within the Downtown segment evaluated in this study include the following (from south to north):

- 6th Avenue southbound on-ramp
- James Street northbound off-ramp
- Cherry Street northbound on-ramp
- Madison Street northbound off-ramp
- Spring Street southbound on-ramp
- Seneca Street northbound off-ramp
- University Street northbound on-ramp
- Union Street southbound off-ramp
- Olive Way northbound off- and on-ramps
- Yale Avenue southbound on-ramp

The University District study area features the Wallingford residential neighborhood to the west of I-5 and a large commercial/academic center to the east, including the University of Washington campus. The commercial area is a key employment zone north of Downtown, and the University of Washington is a premier academic and research facility with 46,753 students enrolled in 2023. Study ramps within the University District segment include:

- NE 45<sup>th</sup> Street northbound and southbound on- and off-ramps
- NE 50<sup>th</sup> Street northbound and southbound on- and off-ramps



**Figure 11. Study Area Context**

Image Source: Google Earth





Figure 12 Downtown Segment Study Ramps

Data: Seattle Department of Transportation

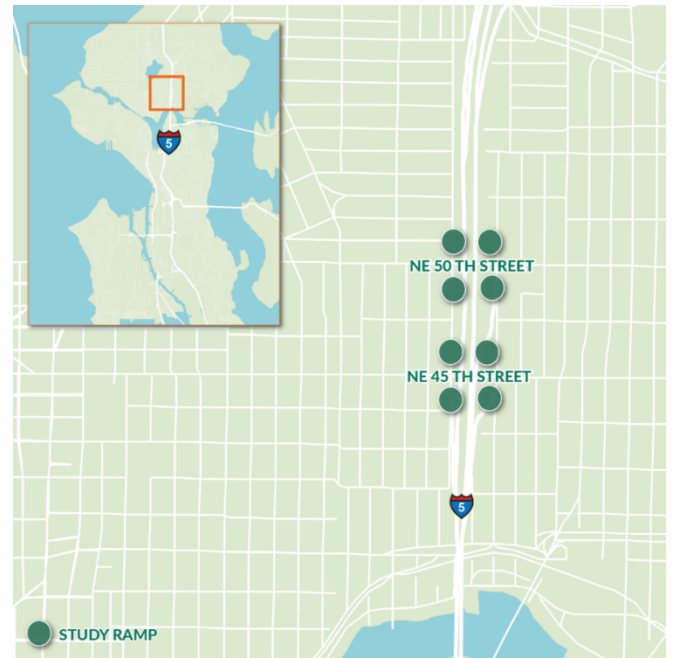


Figure 13. University District Segment Study Ramps

Data: Seattle Department of Transportation

### 3.3 Data Sources and Assessment Methods

The data sources used to summarize existing transportation conditions include the following:

- **Equity and demographics** data were obtained from the City’s Racial and Social Equity Index (RSEI), which uses classifications defined by the City’s Racial and Social Justice Initiative (RSJI). Demographic data for study ramp Census Tracts was obtained from the 2022 U.S. Census Bureau’s American Community Survey, 5-year Series, and retrieved through the City’s Build a Neighborhood Profile service.
- **Traffic volumes** were provided by the WSDOT 2022 Ramp and Roadway Traffic Volume Report (updated in 2023), supplemented by data from mobile devices (StreetLight data) to account for gaps in Downtown ramp vehicle detection loop data. Mobile devices also provided origin/destination trip data.
- **Crash data** for all travel modes was provided for a five-year period from January 1, 2019, through December 31, 2023, from the WSDOT Disclosure Request Center.
- **Pedestrian, bicycle, and transit volume data** was obtained from the 2020 Lid Study.
- **Freight data** was obtained from the City’s Transportation Plan.
- **Walking/rolling conditions data** were obtained from the City’s GIS data and the Transportation Plan. The team also noted conditions based on aerial photography and high-level field observations.

- **Bicycling conditions** were obtained from the City’s GIS data and the Transportation Plan. The team also noted conditions based on aerial photography and high-level field observations.
- **Transit data**, including pending bus route and service changes, were provided by Metro, Sound Transit, Community Transit, and City staff.
- **Key destinations** were obtained from the Seattle Department of Neighborhoods Landmarks Map and SpaceLab NW.
- **Emergency access connections** were identified by City staff.

### 3.4 Key Projects, Studies, and Initiatives

The following projects, studies, and initiatives helped inform the existing transportation conditions summary and the identification of potential ramp change implications (Chapter 4) and recommendations for future analysis (Chapter 5).

- Engrossed Substitute House Bill 1125 – Transportation Budget
- WSDOT I-5 Master Plan
- Lid Study (December 2020)
- City RSJI
- Seattle Transportation Plan (STP)
- Metro RapidRide G Line Expansion (and associated bus service changes)
- Sound Transit Ballard Link Extension (and associated bus service changes)
- Sound Transit 2 Regional Transit System Plan
- The Sound Transit 3 System Plan
- Seattle Emergency Operations Plan
- Seattle Emergency Community Hubs

Several STP construction projects are planned for streets near study ramps<sup>[4]</sup>. These include:

- NE 47<sup>th</sup> Street Pedestrian and Bicycle Bridge (unfunded) will provide a bicycle/pedestrian-only bridge crossing I-5 that connects to NE 47<sup>th</sup> Street in the University District.
- Ballard to U District RapidRide Coordination will support the upgrade of Metro’s Route 44 to RapidRide, connecting northern Seattle neighborhoods along NE 45<sup>th</sup> Street through the study area, improving access to regional destinations, and implementing Intelligent Transportation System (ITS) improvements.
- James Street Multimodal Improvements will make it safer and more convenient for people to walk, roll, and access transit along James Street by potentially repaving and redesigning some segments to better support transit operations, reducing interactions between modes, and implementing ITS improvements.

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<sup>4</sup> [Seattle Transportation Plan - Transportation | seattle.gov](https://seattle.gov/transportation)

Multiple City and regional plans include mode split goals that may affect transportation conditions within the study areas. These include:

- The Puget Sound Regional Council (PSRC) established the mode split goal for the region in the Growth Targets and Mode Split Goals for Regional Centers guidance paper<sup>[5]</sup>. The guidance states that the single-occupancy vehicle (SOV) trip share should meet or exceed the 18% drop in SOV use by 2040 predicted in the 2014 PSRC Travel Model in favor of transit and active transportation modes.
- The City established a policy targeting a 30% reduction in SOV trip share between 2019 and 2030 in favor of non-motorized modes in its Climate Change Response Framework<sup>[6]</sup>.
- The City's Commute Trip Reduction Strategic Plan 2019-2023<sup>[7]</sup> establishes a commuter Drive-Along Rate target of 25% by 2035, a 21% reduction from the 2017 baseline.
- King County Metro's Service Guidelines<sup>[8]</sup> establish broad goals to increase transit ridership and prioritize service where it is most needed, including underserved priority populations.

## 3.5 Existing Conditions

This section discusses existing transportation conditions within the I-5 Ramp Reconfiguration Study Area (Figure 14). A high-level snapshot of key conditions in the Downtown and University District segments is followed by information organized by the analysis topic areas described at the beginning of this chapter. Appendix A includes further details for each ramp area.

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<sup>5</sup> Growth Targets and Mode Split Goals for Regional Centers, A PSRC Guidance Paper (July 2014). <https://www.psrc.org/media/3199#:~:text=The%20paper%20addresses%20two%20related%20topics%E2%80%94housing%20and>.

<sup>6</sup> SDOT Climate Change Response Framework. [https://www.seattle.gov/documents/Departments/SDOT/About/Climate/Climate\\_Change\\_Response\\_Framework.pdf](https://www.seattle.gov/documents/Departments/SDOT/About/Climate/Climate_Change_Response_Framework.pdf).

<sup>7</sup> City of Seattle (SDOT) Commute Trip Reduction Strategic Plan 2019-2023. [https://www.seattle.gov/documents/Departments/SDOT/TransportationOptionsProgram/CTR\\_Final\\_Plan\\_20190822.pdf](https://www.seattle.gov/documents/Departments/SDOT/TransportationOptionsProgram/CTR_Final_Plan_20190822.pdf)

<sup>8</sup> King County Metro Service Guidelines. <https://kingcountymetro.blog/wp-content/uploads/2021/09/King-County-Metro-Service-Guidelines-July-2021.pdf>

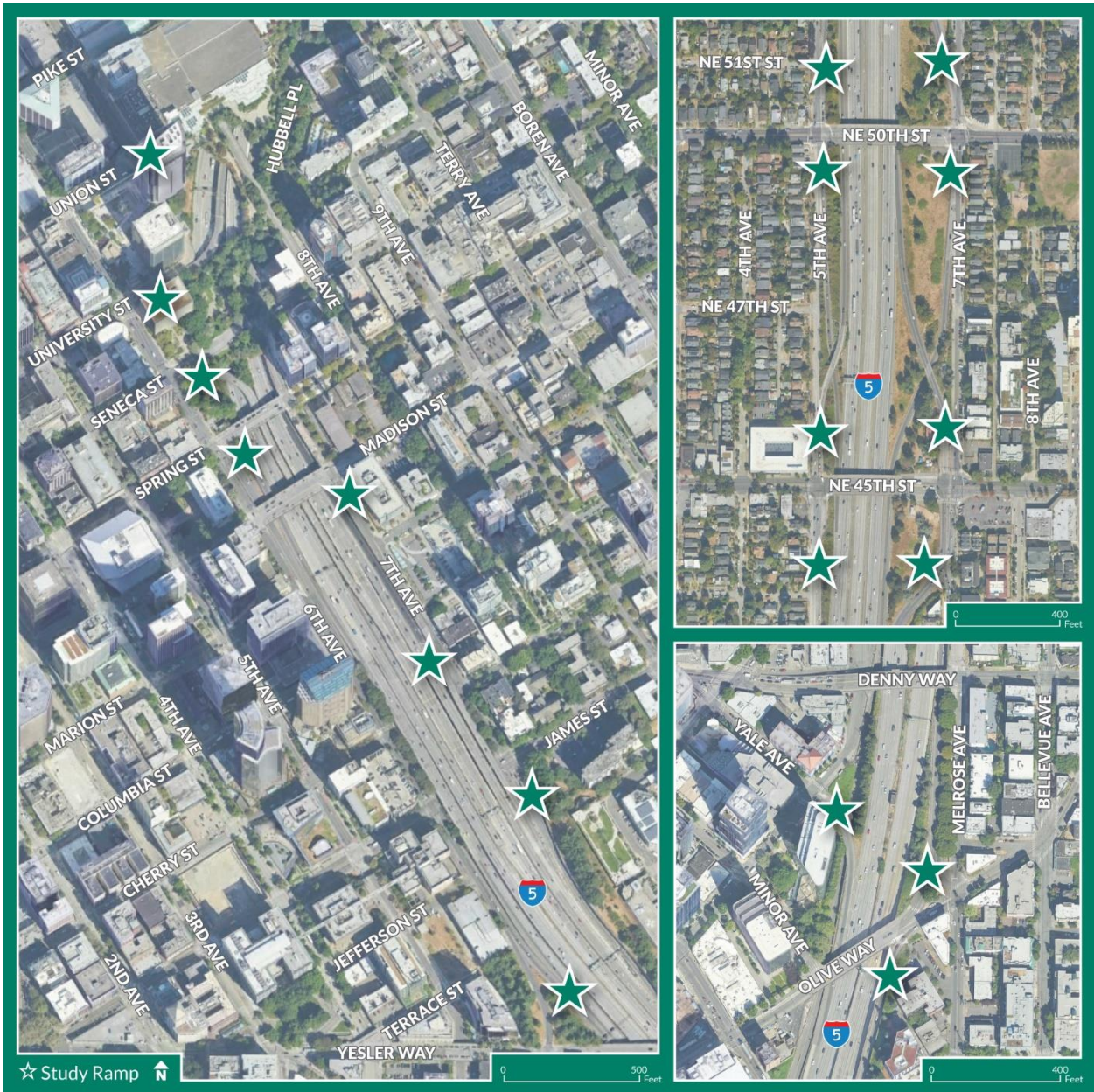


Figure 14. Study Area Context – General Ramp Locations

Image Source: Google Earth

## 3.5.1 Snapshot of Key Existing Conditions

### Downtown

- Figure 15 includes information on demographics and community context.
- Traffic volumes on study ramps vary by location; however, most study ramps currently operate at or near capacity during peak periods.
- Many ramps are spaced much more closely than current state and federal guidance of one mile in urban areas<sup>9</sup>.
- The trends in traffic using Downtown ramps show the most common travel patterns are between Downtown and south of Downtown, with the second most common pattern between Downtown and east of Downtown. Very few trips using Downtown ramps have an origin or destination outside of Downtown, which indicates that traffic uses Downtown ramps to access Downtown destinations or I-5 from Downtown.
- Traffic congestion near some study area ramp terminals presents challenges to transit reliability.
- Sidewalks are typically present in this area with north-south and east-west bicycle facilities and frequent transit service. Sidewalk and crosswalk gaps and curb ramp deficiencies exist near 5 of 11 study ramp terminals. Several east-west bicycle facilities feature steep slopes through the area.

Figures 16 and 17 present an overview of existing car and truck trips that use Downtown on- and off-ramps.



Figure 15. Downtown Existing Conditions

<sup>9</sup> [Interstate System Access Informational Guide \(dot.gov\)](https://www.dot.gov/interstate-system-access-informational-guide)

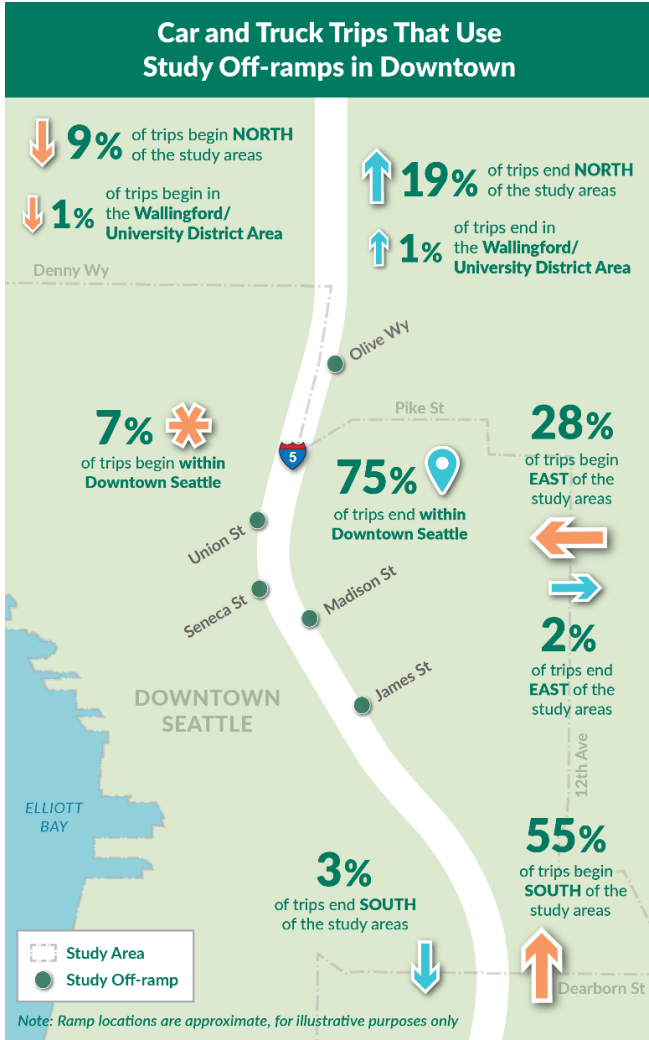


Figure 16. Existing Conditions: Downtown Off-ramps

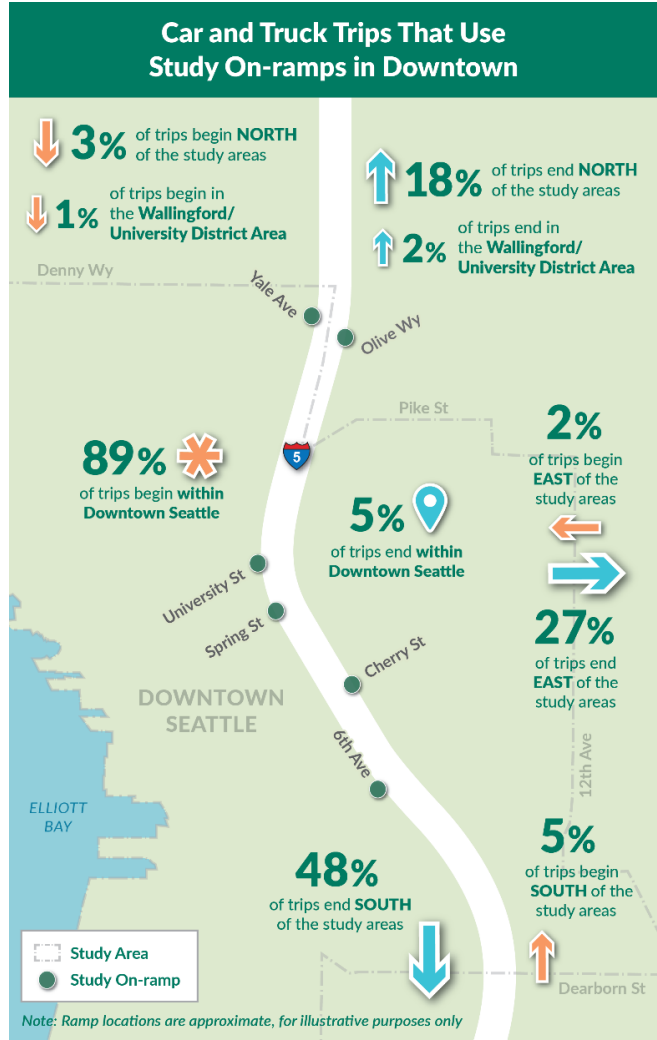


Figure 17. Existing Conditions: Downtown On-ramps

## University District

- Figure 18 includes information on demographics and community context.
- East-west connections across I-5 are limited, leading to interactions between transit vehicles and people bicycling, walking, and using mobility devices at major intersections, such as NE 45<sup>th</sup> Street at 5<sup>th</sup> Avenue and 7<sup>th</sup> Avenue. An unfunded bicycle/pedestrian-only bridge crossing I-5 is planned at NE 47<sup>th</sup> Street<sup>[10]</sup>.
- The trends in traffic using University District study area ramps show that about half of the travel patterns are between the University District and Wallingford areas and north of the study area, with the rest of the travel patterns distributed between Downtown, east, and south of the study area. Very few trips using University District study area ramps have an origin or destination outside of the University District and Wallingford areas, which indicates that traffic is using University District study area ramps to access the adjacent University District and Wallingford areas or to access I-5 from these areas.
- Sidewalks are typically present in this area. Crosswalk gaps exist at four of the eight study ramp terminals. There are several gaps in the existing bikeway network.
- Traffic congestion near the NE 45<sup>th</sup> Street ramps limits transit reliability.
- Figures 19 and 20 present an overview of existing car and truck trips that use University District on- and off-ramps.



**Figure 18. University District Existing Conditions**

<sup>10</sup> [Seattle Transportation Plan - Transportation | seattle.gov](https://seattle.gov/transportation)

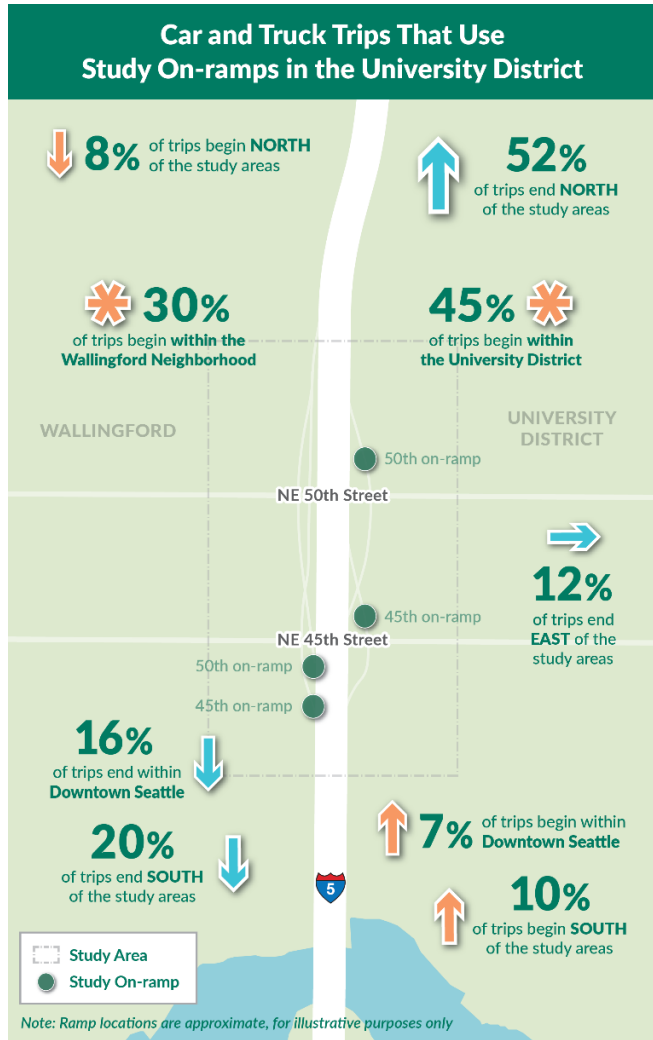
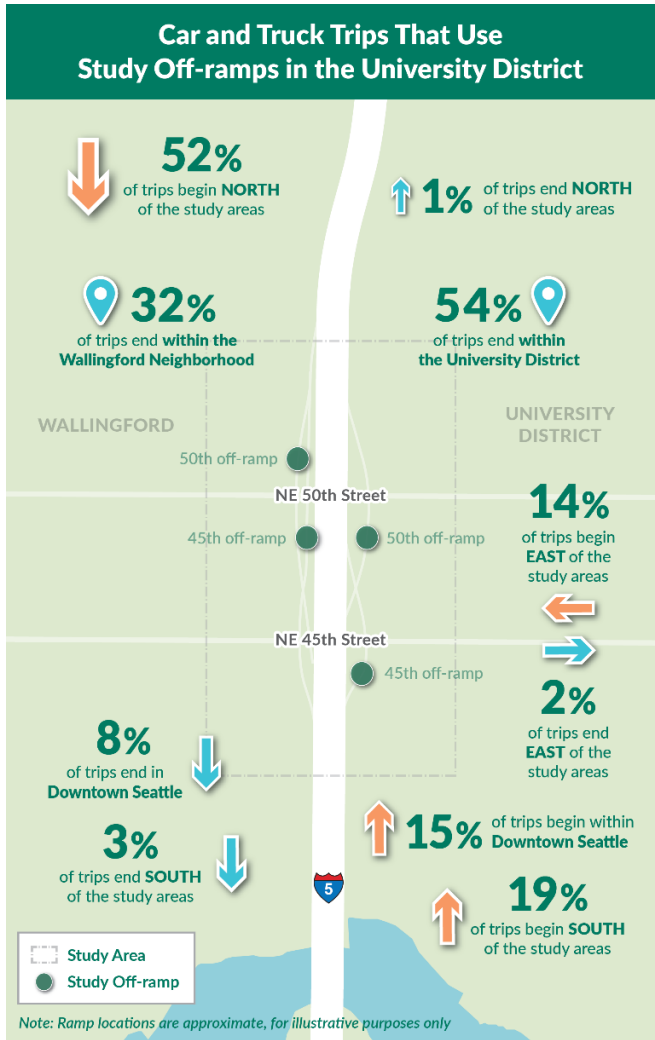


Figure 19. Existing Conditions: U-District Off-ramps

Figure 20. Existing Conditions: U-District On-ramps

### 3.5.2 Demographics and the Racial and Social Equity Index

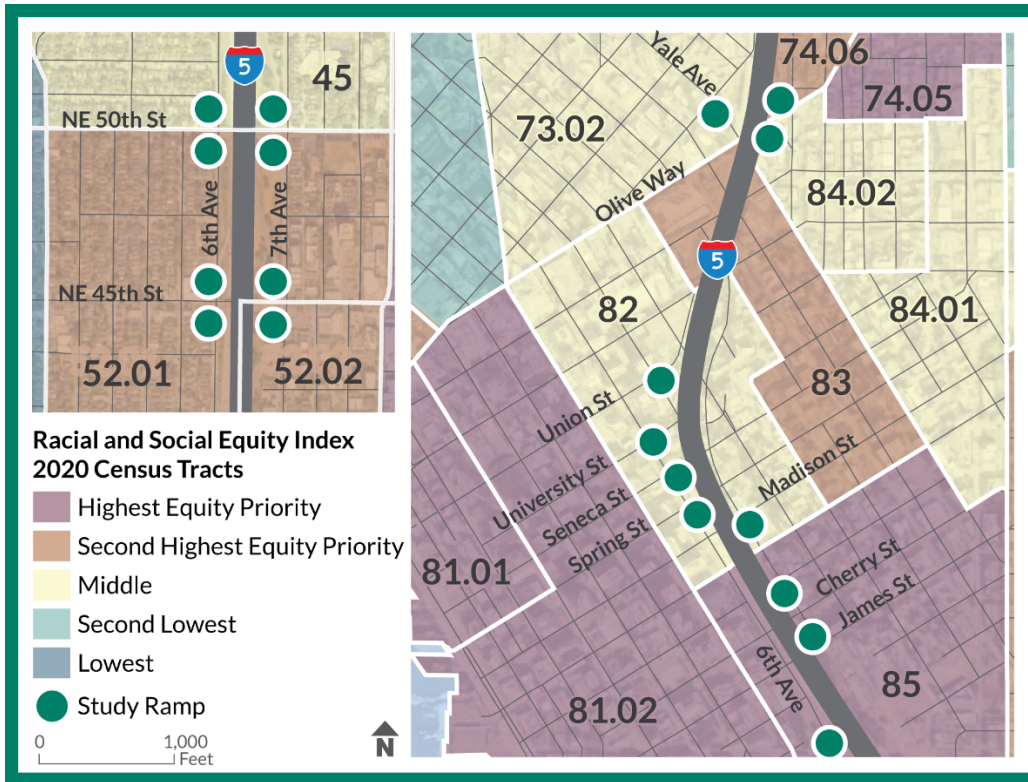
The RSEI is a tool used by the City to identify geographic priorities for programs, plans, and investments. <sup>[11]</sup> The RSEI uses 2017-2021 Census data <sup>[12]</sup> on race, ethnicity, and other related demographic information to establish equity priority categories. The RSEI shows that the study area is more densely populated, and community members are generally younger and less affluent than the City as a whole. Study area Census Tracts range from middle to highest equity priority. The highest equity priority areas

<sup>11</sup> [RSE Index Experience \(arcgis.com\).](https://experience.arcgis.com/experience/494bdbb2da4f4574bb330f072bc77073)  
<https://experience.arcgis.com/experience/494bdbb2da4f4574bb330f072bc77073>

<sup>12</sup> 2017-2021 5-Year American Community Survey Estimates, U.S. Census Bureau; 2020 Decennial Census, U.S. Census Bureau



include the medical district around Harborview Medical Center, the Central Business District west of 5th Avenue, and the central University District adjacent to the study area (Figure 21). Appendix A includes demographic information and RSEI details.



**Figure 21. City's RSEI Snapshot**

Source: City of Seattle, RSEI

<https://experience.arcgis.com/experience/494bdbb2da4f4574bb330f072bc77073>

Data: Seattle Department of Transportation, Google Earth

## Downtown

The southernmost study ramps reside within Census Tract 85, which is more densely populated, and community members are generally younger, more racially diverse, and less affluent than the City as a whole. Rents are lower than the City average, and the proportion of renters is higher. A smaller proportion of renters are rent-burdened. Census Tract 85 also has a larger proportion of households without a vehicle and a higher percentage of people with a disability.

Most northern Downtown study ramps reside within Census Tract 82, which is more densely populated, and community members are generally younger, more racially diverse, and more affluent than the City as a whole. Rents are higher than the City average, and the proportion of renters is higher. A smaller proportion of renters are rent-burdened. Census Tract 82 also has a larger proportion of households without a vehicle and a higher percentage of people with a disability.

The Downtown segment's northerly study ramps (Yale Avenue on-ramp and the Olive Way on- and off-ramps) reside within Census Tracts 74.06 and 84.02, which are more densely populated and community members are generally younger, more racially diverse, and less affluent than the City as a whole. Rents

are lower than the City average, and the proportion of both renters and burdened renters is higher. These areas also have larger proportions of households without a vehicle, and Census Tract 74.06 has a higher percentage of people with a disability. The Yale Avenue on-ramp resides within Census Tract 73.02, which is more densely populated, and community members are generally younger, more racially diverse, and more affluent than the City as a whole. Rents are higher than the City average, and the proportion of renters is higher. Census Tract 73.02 also has a larger proportion of households without a vehicle and a lower percentage of people with a disability.

## University District

The University District segment study ramps reside within Census Tracts 52.01, 52.02, and 45. This area is more densely populated, and community members are generally younger than the City as a whole. Census Tracts 52.01 and 52.02 are more racially diverse and less affluent than the City as a whole. Rents are lower than the City average, and the proportions of renters and burdened renters are higher. Census Tract 52.02 also has markedly lower median incomes, higher poverty rates, and a proportion of households without a vehicle than Census Tract 52.01 and the City as a whole. Census Tract 45 has more people per household with higher median household income but lower per capita income than the City.

### 3.5.3 Key Destinations

#### Downtown

Key destinations within and in the immediate vicinity of the Downtown segment of the study area include:

- City and county offices, including the Seattle Department of Transportation and King County Administration
- Medical centers, including the Harborview and Virginia Mason Medical Centers
- Community organizations and centers, including Seattle's LGBTQ+ Center and YWCA Seattle
- Seattle Public Library Central Branch and several parks, art and performance centers, and places of worship
- Lumen Field and T-Mobile Park stadiums are just south of the study area
- Tourism destinations including museums, waterfront, Pike Place Market, Seattle Aquarium, Seattle Center and Space Needle
- Ferry connections at Seattle Ferry Terminal and several waterfront piers
- Port operations along the Elliot Bay waterfront
- Buildings that receive frequent delivery services

#### University District

Key destinations within and in the immediate vicinity of the University District segment of the study area include:

- Residential area west of I-5, schools, and parks
- University of Washington and Husky Stadium

- Burke Gilman Trail
- Seattle Public Library University Branch, museums, art and performance centers, and places of worship
- Medical centers, including multiple University of Washington medical centers and 3W Medical for Women
- Community organizations and centers, including the University District Food Bank, Solid Ground, UHeights

### 3.5.4 Car and Truck Volumes

#### Downtown

I-5 in the Downtown study area is characterized by a dense network of ramps, express lanes, collector/distributor roads, and connections that integrate with the City’s intricate street grid. I-5 carried, on average, 170,000 vehicle trips daily through Downtown in 2022. Exit and entrance ramps connect I-5 to surface streets east and west of the highway. I-5 is flanked by walls and structures, an existing lid between Seneca Street and University Street, which holds Freeway Park, and an existing lid between Union Street and Pike Street, where the Seattle Convention Center sits.

The Downtown ramps work to form a unified interchange system, offering connectivity and access in all regional directions. The ramps support the flow of traffic to and from Downtown Seattle and the broader metropolitan area, as well as travelers heading out of the region via I-5. All Downtown on-ramps except Olive Way are metered.

- The 6th Avenue southbound on-ramp is the southernmost Downtown southbound on-ramp named in the proviso, collecting traffic from the Central Business District, the Chinatown-International District, First Hill, and Cherry Hill.
- The James Street northbound off-ramp is a significant exit for northbound traffic, providing direct access to the Central Business District, the Downtown Waterfront, the Chinatown-International District, First Hill, and Cherry Hill neighborhoods, as well as the medical district. The ramp also provides access to Downtown from westbound I-90.
- The Cherry Street northbound on-ramp provides access to I-5 from areas such as the Central Business District and First Hill, facilitating regional travel toward northern Seattle and beyond.
- The Madison Street northbound off-ramp serves the Central Business District and First Hill, providing an exit point for northbound I-5 traffic accessing these areas. The ramp also serves as an important entrance to Downtown from westbound I-90.
- The Spring Street southbound on-ramp collects traffic from the Central Business District and nearby neighborhoods.
- The Seneca Street northbound off-ramp provides access to the Central Business District and the Downtown Waterfront, supporting economic and recreational activities in these zones.
- The University Street northbound on-ramp provides access from the Central Business District and surrounding areas toward northern Seattle and beyond.

- The Union Street southbound off-ramp provides access to the Central Business District and adjacent neighborhoods.
- There may be some redundancy between the Seneca Street, Madison Street, and James Street northbound off-ramps due to their proximity within Downtown.

The Downtown segment ramps with the highest traffic volumes include 6<sup>th</sup> Avenue, Yale Avenue, and Spring Street (Table 1). The 6<sup>th</sup> Avenue on-ramp serves approximately 29% more traffic than the next highest ramp within the study area, Yale Avenue. The study area ramps serving the lowest traffic volumes include the Olive Way ramps, University Street on-ramp, and Union Street off-ramp. These ramps have traffic volumes that range from approximately 42% to 46% of the highest volume ramp.

In general, I-5 ramp volumes near Downtown Seattle (6<sup>th</sup> Avenue, James Street, Cherry Street, Madison Street, Spring Street, Union Street) are some of the highest in the state, exceeding 1,000 vehicles per hour (VPH) during AM or PM peak travel periods (60-minute periods of highest average traffic volumes, generally from 7:00 to 8:00 AM and from 5:00 to 6:00 PM, respectively); 6<sup>th</sup> Avenue, Madison Street, and Spring Street average over 15,000 vehicles on weekdays. In contrast, other freeway ramps in King County have, on average, less than 700 VPH during peaks and fewer than 10,000 vehicles on an average weekday. For example, the I-405 ramp at NE 8<sup>th</sup> Street in Bellevue reaches a peak of 530 VPH, with 8,190 vehicles on an average weekday. The SR-99 ramp at Des Moines Memorial Drive has a peak of 400 VPH and 4,270 vehicles on an average weekday. The SR-167 ramp at 15<sup>th</sup> Street NW has a peak of 550 VPH and 8,100 vehicles on an average weekday.

**Table 1. Average Daily Traffic Volumes, Downtown Study Ramps**

Downtown Segment Ramp Location	Average Daily Traffic Volumes	
	On-Ramp	Off-Ramp
6 <sup>th</sup> Avenue	21,450	-
James Street	-	12,000
Cherry Street	12,780	-
Madison Street	-	15,350
Spring Street	15,540	-
Seneca Street	-	10,010
University Street	9,960	-
Union Street	-	9,070
Olive Way	9,860	9,130
Yale Avenue	16,691	-

Source: [WSDOT 2022 Ramp & Roadway - Northwest Region Average Daily Volumes](#)

The Highway Capacity Manual (HCM) refers to 1,800 VPH as the maximum theoretical capacity for a single-lane ramp. Teams conducting any future traffic analysis will want to revisit this theoretical capacity

threshold. All AM and PM peak volumes for Downtown study ramps are below this, except for 6<sup>th</sup> Avenue during PM peak, which is 8% over the capacity standard (Table 2). Surplus capacity may support twice the current volumes of some ramps.

However, bottlenecks typically occur at signalized ramp terminals, and the capacity of these intersections is affected by several factors, including signal timing and phasing, lane configuration and geometry, coordination with nearby signals, and the presence of conflicting movements. These factors collectively determine the efficiency of traffic flow through the ramp terminals and the overall performance of the freeway interchange.

**Table 2. Average VPH Traffic Volumes, Downtown Study Ramps**

Downtown Segment Ramp Location	On-Ramp		Off-Ramp	
	AM (VPH)	PM (VPH)	AM (VPH)	PM (VPH)
6 <sup>th</sup> Avenue	1,080	1,940	-	-
James Street	-	-	1,080	760
Cherry Street	810	1,260	-	-
Madison Street	-	-	1,240	920
Spring Street	820	1,090	-	-
Seneca Street	-	-	730	620
University Street	380	990	-	-
Union Street	-	-	1,060	530
Olive Way	490	700	500	640
Yale Avenue	1,190	1,030	-	-

Source: [WSDOT 2022 Ramp & Roadway - Northwest Region Average Daily Volumes & Cellular Data](#)

## University District

I-5 through the University District area carries, on average, 176,500 daily trips. The NE 50th Street interchange provides access to the neighborhoods of Wallingford and the University District. It facilitates movement from I-5 to the commercial and residential areas along NE 50th Street. This interchange accesses the University of Washington, offering a route for students, staff, and visitors. It supports local traffic heading to nearby neighborhoods and regional traffic accessing the broader Seattle area.

The NE 45th Street interchange serves as an access point to the University District and surrounding areas, including the University of Washington, several medical facilities, and numerous retail establishments. It is the first exit north of Portage Bay and the Ship Canal Bridge and serves as a major thoroughfare for both local and through traffic, connecting I-5 with one of Seattle’s busiest and most densely populated neighborhoods. Within this interchange cluster, the northbound off-ramp at NE 45th Street serves the highest volume of traffic, with 11,820 vehicles on an average weekday. This interchange facilitates access to the University District, providing a connection for the daily influx of commuters, shoppers, and university affiliates.

The NE 50th Street and NE 45th Street interchanges work together to form a complementary system providing access to northern Seattle, particularly the University District and surrounding neighborhoods. These interchanges distribute traffic loads and provide multiple entry and exit points for northbound and southbound I-5 travelers. The NE 45th Street ramps are more heavily used because they provide more direct access to key areas. Notably, the NE 50th Street northbound on-ramp serves the lowest traffic volume among all ramps in this interchange cluster.

Within the University segment, the study ramps with the highest traffic volumes are the NE 45th Street northbound and southbound off-ramps (Table 3). The study ramps with the lowest traffic volumes are the NE 50th Street northbound on-ramp and southbound off-ramp. While these ramps support fewer daily trips than ramps within the Downtown core, they are still significant volumes and rank with the highest in the state. All on-ramps are metered.

**Table 3. Average Daily Traffic Volumes, University District Segment Ramps**

University District Segment Ramp Location	Average Daily Traffic Volumes	
	On-Ramp	Off-Ramp
NE 45 <sup>th</sup> Street		
Northbound	9,030	11,824
Southbound	7,680	10,930
NE 50 <sup>th</sup> Street		
Northbound	6,750	7,825
Southbound	7,450	7,010

Source: [WSDOT 2022 Ramp & Roadway - Northwest Region Average Daily Volumes](#)

All AM and PM peak volumes for University District study ramps are below the 1,800 HCM theoretical maximum capacity standard (Table 4). Teams conducting any future traffic analysis will want to revisit this theoretical capacity threshold. Surplus capacity may support up to three times the current volumes of some ramps.

**Table 4. Average VPH Traffic Volumes, University District Study Ramps**

University District Segment Ramp Location	On-Ramp		Off-Ramp	
	AM (VPH)	PM (VPH)	AM (VPH)	PM (VPH)
NE 45 <sup>th</sup> Street				
Northbound	460	460	880	680
Southbound	530	690	870	690

University District Segment Ramp Location	On-Ramp		Off-Ramp	
	AM (VPH)	PM (VPH)	AM (VPH)	PM (VPH)
NE 50th Street				
Northbound	520	430	500	470
Southbound	420	510	430	630

Source: [WSDOT 2022 Ramp & Roadway - Northwest Region Average Daily Volumes & Cellular Data](#)

### 3.5.5 Pedestrian, Bicycle, and Transit Volumes

This section includes readily available data from previous studies.

#### Downtown

The I-5 Lid Study reported that Pike Street, Pine Street, and Madison Street serve the highest pedestrian and bicycle volumes in the Downtown study area, while Union Street, University Street, Olive Way, and Spring Street serve the lowest volumes. The Lid Study found that the highest transit load volumes in the Downtown study area exist on Denny Way and Pine Street, while the lowest volumes exist on Madison Street, Spring Street, and Seneca Street.

Downtown study ramps currently used by transit vehicles include:

- James Street northbound off-ramp
- Cherry Street northbound on-ramp
- Seneca Street northbound off-ramp
- Olive Way northbound on-ramp

Transit service on the Olive Way on-ramp will stop by December 2024 due to near-term service changes implemented by Sound Transit. <sup>[13]</sup> Streets adjacent to study ramps that are currently used as transit routes and will see service reduced or eliminated as part of Sound Transit’s plans include:

- Olive Way
- Seneca Street
- James Street

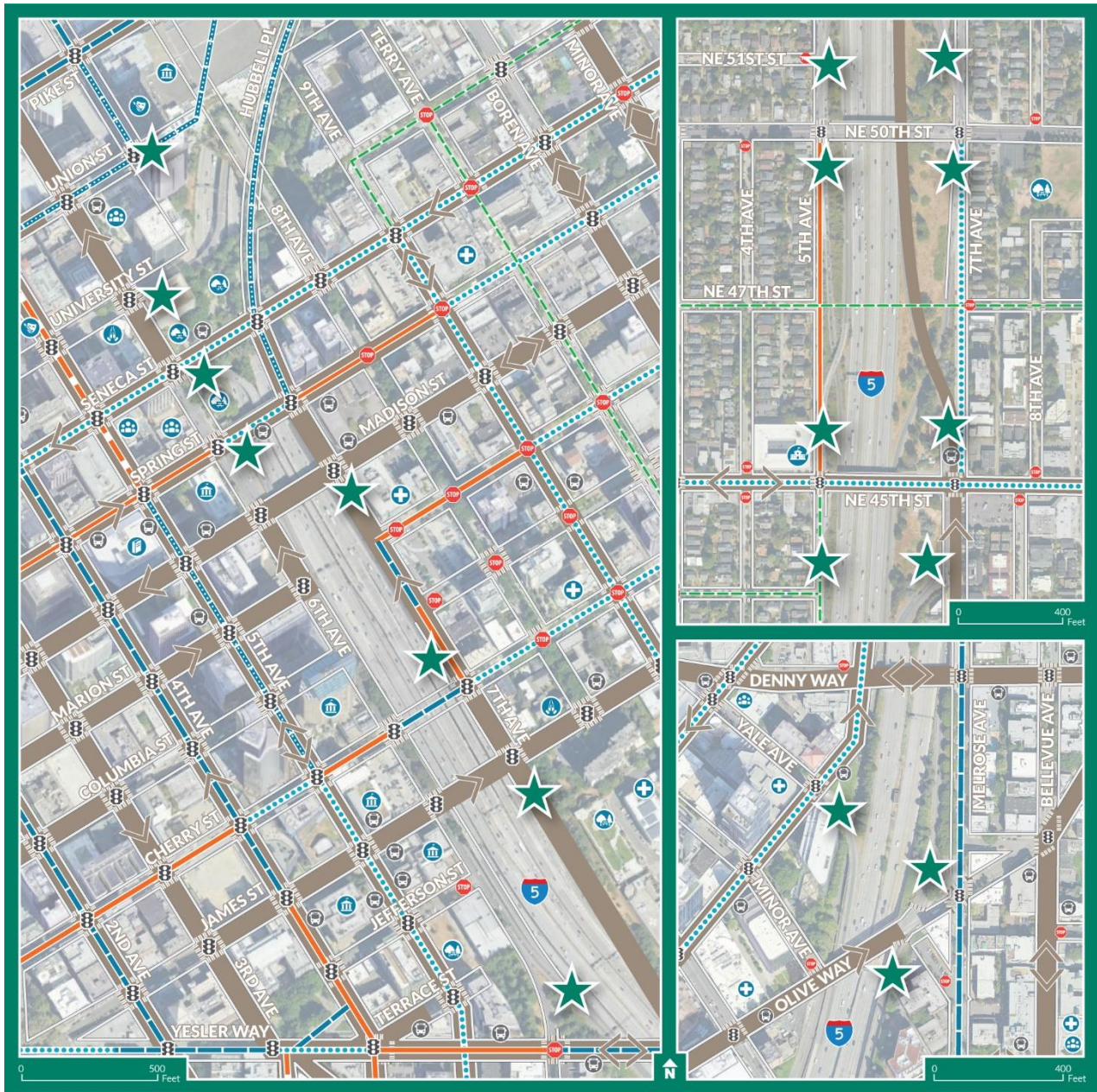
#### University District

The NE 45th Street northbound on-ramp is the only University District study ramp currently used by transit vehicles.

### 3.5.6 Study Area Features Map

Figure 22 shows the study area transportation and community features.

<sup>13</sup> [Sound Transit 3: The Regional Transit System Plan for Central Puget Sound, Sound Transit 2: A Mass Transit Guide](#)



**Figure 22. Key Transportation and Community Features Near Study Ramps**

Data Sources: City of Seattle, King County, Sound Transit. Community Transit.  
 Image Source: Google Earth



## 3.5.7 Walking and Rolling Conditions

### Downtown

#### Sidewalks

The Downtown study area sidewalk network is largely complete, with sidewalks present on most blocks with widths from 6 to 14 feet. Key missing sidewalk segments near the ramps include:

- 6<sup>th</sup> Avenue (east side) south of Spring Street
- 7<sup>th</sup> Avenue/Hubbard Place (west side)
- Denny Way Overpass (east side)

#### Crosswalks

Downtown segment study ramp terminal intersections are signalized with marked crossings, except for the Cherry Street and Olive Way ramp terminals, which feature crosswalks that are not controlled by signals or stop signs. Key missing crosswalks near the Downtown segment study ramps include:

- 6<sup>th</sup> Avenue and Spring Street (south leg)
- 6<sup>th</sup> Avenue and Madison Street (east and north legs)
- 7<sup>th</sup> Avenue and Madison Street (west leg)
- 7<sup>th</sup> Avenue and Spring Street (west leg)
- Hubbell Place and Seneca Street (west leg)

#### Curb Ramps

Most crossings at Downtown segment ramp terminal intersections feature curb ramps, although the type and orientation vary. The orientation of some curb ramps is in line with the crosswalk, while others are angled toward the center of intersections, which can present mobility challenges for people with visual impairments. Most curb ramps are ADA-compliant.

### University District

#### Sidewalks

The University District sidewalk network is largely complete, with sidewalks present on most blocks with widths generally between 4 and 6 feet. Key missing sidewalks include:

- 7<sup>th</sup> Avenue (west side) south of NE 45<sup>th</sup> Street
- 7<sup>th</sup> Avenue (west side) north of NE 50<sup>th</sup> Street
- 5<sup>th</sup> Avenue (east side)

#### Crosswalks

University District ramp terminal intersections along NE 45<sup>th</sup> Street and NE 50<sup>th</sup> Street are signalized with twin-stripe continental crosswalks on most legs. Key missing crosswalks near study ramp terminals include:

- NE 50<sup>th</sup> Street and 5<sup>th</sup> Avenue, east leg

- NE 50th Street and 7th Avenue, west leg
- NE 45th Street and 7th Avenue, east leg

### **Curb Ramps**

Most crossings at University District ramp terminal intersections feature curb ramps, although the type and orientation vary. The orientation of some curb ramps is in line with the adjacent crosswalk, while others are angled diagonally toward the center of the intersection, which can present mobility challenges for people with visual impairments.

## **3.5.8 Bicycling Conditions**

### **Downtown**

Several east-west bikeways traverse the study area's Downtown segment, including Cherry Street, Marion Street, Spring Street, Pike Street, and Pine Street. North-south bikeways exist on 4th Avenue, 9th Avenue, and a portion of 5th Avenue. Future bikeways are planned for 5th Avenue, 7th Avenue, Union Street, and Hubbell Place.

### **University District**

Multiple north-side bikeways exist near the study area while more corridors are planned. There are no existing facilities west of Roosevelt Way NE connecting to the neighborhoods north of NE 50th Street.

There are multiple existing and planned east-west bike facilities in the University District segment. Unless the planned NE 47th Street pedestrian/bike overcrossing is funded and built, NE 45th Street will remain the only designated bikeway linking neighborhoods across I-5. This corridor has a higher level of stress riding environment due to the higher volume of motor vehicles and transit buses.

## **3.5.9 Transit Conditions**

### **Downtown**

Existing traffic congestion near some study area ramp terminals presents challenges to transit reliability. Most streets in the Downtown segment feature frequent transit service with bus stops near ramp terminal locations. Several bus lines currently use the Seneca Street northbound off-ramp (Sound Transit Lines 577, 578, and 592) and Olive Way northbound on-ramp (Community Transit Line 424 and Sound Transit Line 545). Near-term bus network updates (affiliated with light rail and other high-capacity transit projects) will result in fewer buses using the study area ramps, particularly the Cherry Street and Olive Way ramps.

There are limited transit options crossing I-5 in the north-south direction in the northern part of the Downtown segment. Metro's RapidRide G Line began service on Madison Street and Spring Street in late 2024. Subsequently, Metro Line 12 relocated from Madison Street and Marion Street to Pine Street and Pike Street.

## University District

Existing traffic congestion near the NE 45<sup>th</sup> Street ramps presents challenges for transit reliability. Metro Line 44 runs east-west on NE 45<sup>th</sup> Street.

### 3.5.10 Freight Conditions

#### Downtown

According to the Freight Element of the STP <sup>[14]</sup>, three designated freight route types exist within the Downtown study area: Limited Access (interstates and highways), Major Truck Street (arterials connecting to the regional network), and Minor Truck Street (local connections to urban villages and commercial districts). These are key routes trucks use to access freight destinations, port facilities, and the regional highway system. The design of these routes is informed by considerations for freight vehicles, such as lane widths and turning radii. I-5 is the primary Limited Access freight route. Designated freight routes include Boren Avenue (Major Truck Street), Denny Way (Major Truck Street), and Fairview Avenue (Minor Truck Street). No formal freight routes access study area ramps or streets immediately adjacent. All Downtown streets provide convenient access to Port facilities via Alaskan Way and delivery access for buildings and venues in the Downtown segment.

#### University District

I-5 is the primary Limited Access freight route in the University District study area. No formal freight routes access study area ramps. There is one Major Truck Street (NE 50<sup>th</sup> Street) and one Minor Truck Street (NE 45<sup>th</sup> Street) adjacent to the study ramps, and both streets provide convenient access to the University of Washington campus, Husky Stadium, and the commercial area within the University District. NE 45<sup>th</sup> and NE 50<sup>th</sup> Streets provide convenient delivery access to the University District employment area and NE 45<sup>th</sup> Street commercial corridor east and west of I-5.

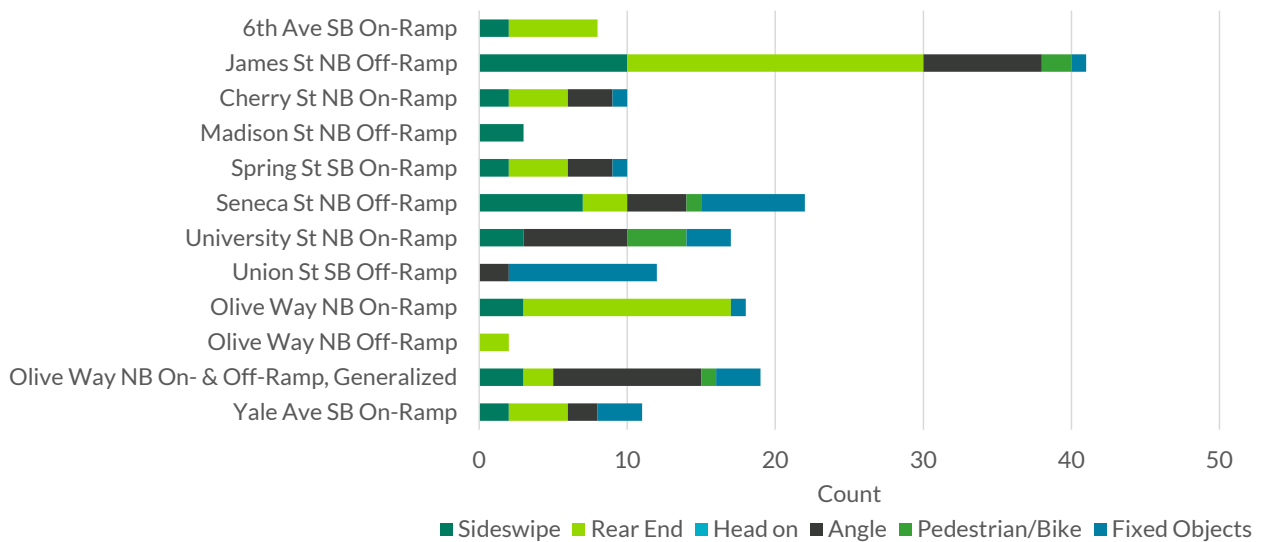
### 3.5.11 Safety for All Travel Modes

#### Downtown

A total of 192 crashes were reported in the vicinity of the Downtown segment study ramps between 2019 and 2023. The study area ramp areas experiencing the highest reported crashes included the Olive Way, James Street, and Spring Street ramps (Figure 23). Rear-end crashes (32%) and sideswipe crashes (25%) constituted the most common crash types. Most reported crashes resulted in no apparent injury (73%) and no reported fatalities. Most reported crashes involving people walking or bicycling occurred near the University Street on-ramp (4 crashes).

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<sup>14</sup> [Freight Element, Seattle Transportation Plan](#)



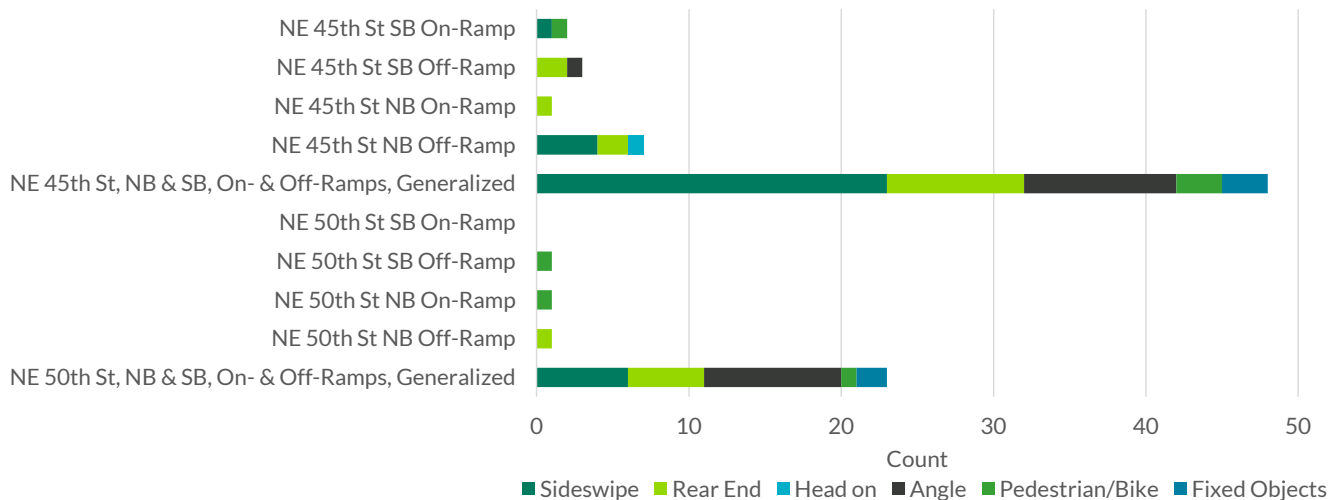
**Figure 23. Crash Type and Count by Downtown Segment Ramp Location, Jan. 2019-Dec. 2023**

Source: WSDOT Disclosure Request Center (WSDOT Records Center [mycusthelp.com](http://mycusthelp.com))

Notes: Crash data was reported for a 200-foot radius around ramp locations. Some crashes are attributed to the entire interchange and are listed as “generalized.”

## University District

A total of 87 crashes were reported near University District study ramps between 2019 and 2023. The highest crash area was around NE 45th Street on- and off-ramps (Figure 24). Seven reported pedestrian/bike crashes were near the study ramps during the period. Sideswipe was the most common crash type (39%). Most reported crashes had no apparent injury (71%). There were no recorded fatalities in the study period.



**Figure 24. Crash Type and Count by University District Segment Ramp Location, Jan. 2019-Dec. 2023**

Source: WSDOT Disclosure Request Center (WSDOT Records Center [mycusthelp.com](http://mycusthelp.com))

Notes: Crash data was reported for a 200-foot radius around ramp locations. Some crashes are attributed to the entire interchange and are listed as “generalized.”

## 3.5.12 Emergency Access and Access to Key Locations

### Downtown

Several hospitals and medical centers (e.g., Harborview, Virginia Mason, and Seattle Children's medical centers) are located near I-5 in the Downtown area. Study ramps such as the James Street off-ramp, 6<sup>th</sup> Avenue on-ramp, Cherry Street on-ramp, Spring Street on-ramp, and Seneca Street off-ramp provide essential access for emergency responders and others traveling between I-5 and the medical centers. The James Street exit is the signed route leading from northbound I-5 to the Harborview Medical Center. Study ramps in the southern portion of Downtown also serve Seattle Fire Station 10 (located on S Washington Street at 4<sup>th</sup> Avenue S).

### University District

The study ramps on NE 50<sup>th</sup> Street are key access points to and from Seattle Fire Station 17 on NE 50<sup>th</sup> Street at 11<sup>th</sup> Avenue NE.

# 4 Transportation Implications of Potential Ramp Changes

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## 4.1 Introduction

This chapter identifies transportation implications (positive, negative, neutral) of potential future I-5 ramp changes associated with lid development, considering the existing transportation conditions and input collected at the July 2024 transportation implications workshop. While there are a variety of potential implications related to future ramp changes (community, urban form, land use, development potential) associated with lid development, this report is focused on the transportation implications to provide a foundation to inform the scopes of work for future study. Section 4.2 includes a summary of broader transportation implications applicable to most or all study area ramps. Implication topic areas consistent with the proviso and WSDOT/City feedback include the following:

- Equity
- Car and truck traffic
- Transportation Safety
- Freight
- Walking and Rolling
- Bicycling
- Transit Reliability and Operations
- Emergency access
- Community connectivity
- Potential acreage provided by ramp removal

The implications discussed in this chapter informed the recommendations for future work or analysis identified in Chapter 5. This section discusses potential transportation implications for most or all study area ramp locations.

## 4.2 Summary of Transportation Implications

### 4.2.1 Equity

As discussed in Chapter 3, most study area ramps reside within middle or high-equity priority areas as defined by the City's RSEI. Ramp changes hold the potential to derive both positive and negative implications from an equity perspective. For instance, a ramp removal (and the associated reduction in traffic volumes at the former ramp terminal and on immediate surrounding streets) could provide localized air quality and noise benefits while improving safety through fewer multimodal conflicts. Simultaneously, a ramp removal could adversely impact communities by removing direct freeway access (particularly for people reliant on I-5 to access jobs and other essential destinations). Also worth noting are potential negative implications to communities of concern residing in areas farther away from a closed ramp who experience the consequences of increased traffic associated with revised motor vehicle routing. As ramp change options are further developed and refined, a more detailed assessment will be necessary to understand equity-related implications (positive and negative) at a more granular level.

## 4.2.2 Car and Truck Traffic

The distribution or diversion of car and truck traffic throughout Downtown and the University District has the potential to be affected both positively and negatively by future ramp changes. This includes access to ferries, stadiums, medical facilities, and other key trip generators and attractors. Street segments and intersections away from a closed or changed ramp could experience increased congestion and delays due to car and truck traffic rerouting to other access points. At the same time, streets and intersections within the immediate vicinity of a closed ramp may experience overall multimodal improvements due to lower volumes adjacent to ramps and fewer conflicts with other modes and car and truck traffic movements. Mainline I-5 could potentially see travel time benefits if confusing ramps are removed or reconfigured.

Ramp changes are likely to result in downstream or upstream impacts, or both, to capacity demand on other I-5 ramps that receive rerouted traffic. The affected ramps may need to be redesigned to accommodate revised travel patterns and, in some cases, volume growth. Such volume changes are likely to affect surface streets near these ramps. There could also be implications for car and truck traffic using other major north-south arterials in the region if traffic were to divert, such as SR 99 or I-405.

## 4.2.3 Transportation Safety

Ramp changes hold the potential to reduce multimodal conflict points where on- and off-ramps connect to the surface street grid, particularly at ramp terminal intersections. Fewer crashes may result from lower traffic volumes, simpler intersection geometry, and fewer traffic flow directions at these intersections. This has the potential to derive localized improvements for all travel modes, including personal vehicles, freight, transit, and people walking, rolling, and bicycling. Alternatively, ramp changes could increase conflict potential and negatively impact safety at ramp terminals or on other routes if they receive diverted traffic volumes. Technical or geometric improvements may be required to mitigate any increased conflicts related to ramp changes. Modeling may highlight potential increases or decreases in multimodal conflict points.

## 4.2.4 Freight

Ramp changes hold the potential to affect both local deliveries and regional/state/interstate truck traffic accessing or moving through the study area. While designated truck routes do not directly intersect most study ramps, traffic pattern changes and volume increases at ramps receiving diverted traffic can lead to more conflicts between truck traffic and other modes while impacting on-time reliability. Freight travel time reliability may also be negatively affected if ramps that receive diverted traffic are near or over capacity, leading to longer queues and increased congestion on I-5. Freight travel time reliability may be positively affected if mainline I-5 improves travel time due to reduced weaving movements related to ramp removal or reconfiguration. Similar to car and truck traffic, local deliveries may experience positive or adverse impacts related to a ramp change, depending on location. A reduction in overall motor vehicle volumes near a closed or changed ramp could translate to improved local freight travel times and on-time deliveries, while freight reliability may be adversely impacted on corridors serving higher volumes in cases of traffic diversion and revised travel patterns.

## 4.2.5 Walking and Rolling

Ramp changes could generally provide improved east-west connections and localized improvements for people walking and rolling, principally by reducing conflicts at ramp terminal intersections while providing opportunities to simplify pedestrian movements through these typically complex and higher-stress areas. Sample improvements include restoring closed crosswalks where appropriate, filling sidewalk gaps, upgrading intersection curb ramps, and providing more comfortable walking environments on I-5 overcrossings and undercrossings (potentially by allocating more space to the pedestrian realm). Ramp changes may provide opportunities for more direct access to key locations and transit services. Improvements that make it more attractive for people to walk and roll are consistent with local and regional mode split goals that prioritize the reduction of SOV trips. Beyond a ramp's immediate vicinity, people walking and rolling could potentially experience negative impacts associated with traffic diversion on other streets, particularly if revised travel patterns increase multimodal conflict potential.

## 4.2.6 Bicycling

Implications for bicycling are like those for people walking and rolling, namely localized improvements on streets within a ramp's immediate vicinity, enhanced east-west connections, and the potential for adverse impacts on streets absorbing diverted vehicle traffic. Ramp changes may provide opportunities for more direct access to key locations and transit services. Localized traffic volume reductions could present opportunities to reconsider a roadway's cross-section and develop lower-stress bicycling infrastructure, whereas increased volumes elsewhere could exacerbate the need for low-stress infrastructure (which may be challenging on corridors with limited space). Improvements that make it more attractive for people to bicycle are consistent with local and regional mode split goals that prioritize the reduction of SOV trips.

## 4.2.7 Transit Reliability and Operations

Ramp changes could hold positive or adverse implications for transit depending on the scale of geography. At a broader level, some ramp changes could necessitate the rerouting of buses to or from I-5, impacting transit travel times if the revised routes are overly circuitous and/or require buses to operate in mixed vehicle traffic. At the localized level, however, reducing traffic volumes on streets previously served by a ramp terminal could improve transit travel times and schedule reliability, thereby making transit a more reliable option. From a passenger access standpoint, streets with lower traffic volumes and simpler traffic patterns may make it easier to access transit due to fewer multimodal conflicts. Improvements that make it more attractive for people to use transit are consistent with local and regional mode split goals that prioritize the reduction of SOV trips. Access to transit near ramps that receive traffic diverted from closed ramps may degrade due to increased traffic and more complex traffic movements, especially for ramps redesigned for increased capacity. Technical or geometric improvements may be required to mitigate any increased conflicts related to ramp changes.



## 4.2.8 Emergency Access

Ramp changes can potentially affect access to emergency services such as fire stations and medical centers. Some study ramps serve as key access points to adjacent emergency facilities; changes to these ramps could necessitate diversion to other ramps via potentially circuitous routes. Additional congestion and conflict points at ramps receiving diverted traffic could also affect emergency response times. Ramp reconfigurations could potentially benefit emergency access if incorporated into the adjacent local street design.

## 4.2.9 Community Connectivity

Depending on location, ramp changes present opportunities to reconsider how some street segments interact with other parts of the community. For example, ramp closures may present opportunities to establish more direct pedestrian accessways to overcome disconnected portions of the street grid. Streets anticipated to experience traffic volume reductions associated with a ramp change could also potentially be optimized to better serve a variety of modes. Pedestrian-oriented land uses and connections may enhance community character and cohesion. A lid design that utilizes ramp closures may provide additional connections between neighborhoods and destinations, especially for people walking, rolling, and biking. Lids over highways offer opportunities to restore neighborhood cohesion and reconnect neighborhoods and communities displaced by the original infrastructure construction.

## 4.2.10 Potential Acreage Provided by Ramp Removal

Ramp changes present opportunities to potentially repurpose all or a portion of the land upon which they reside, as well as adjacent unpaved right-of-way, for other uses. For the study area ramps, the amount of potentially available land was considered in relation to the other study ramps, each of which was categorized as “Lower,” “Moderate,” or “Higher” in land potential. High-level estimates consider paved surfaces, adjacent structures, adjacent unpaved right-of-way, and slopes as components of the overall potential for development. Table 5 shows the summary of potential land available for each ramp.

**Table 5. Relative Acreage Provided by Potential Ramp Removal**

Lower (<3 Acres)	Moderate (3-7 Acres)	Higher (7+ Acres)
<ul style="list-style-type: none"> <li>Madison Street NB Off-Ramp</li> <li>Cherry Street NB On-Ramp</li> <li>James Street NB Off-Ramp</li> <li>Spring Street SB On-Ramp</li> <li>Seneca Street NB Off-Ramp</li> <li>University Street NB On-Ramp</li> <li>Union Street SB Off-Ramp</li> <li>Yale Avenue SB On-Ramp</li> </ul>	<ul style="list-style-type: none"> <li>6<sup>th</sup> Avenue On-Ramp</li> <li>Olive Way NB On-Ramp</li> <li>Olive Way NB Off-Ramp</li> <li>NE 45<sup>th</sup> Street SB Off-Ramp</li> <li>NE 50<sup>th</sup> Street SB On-Ramp</li> <li>NE 50<sup>th</sup> Street SB Off-Ramp</li> </ul>	<ul style="list-style-type: none"> <li>NE 45<sup>th</sup> Street NB On-Ramp</li> <li>NE 45<sup>th</sup> Street NB Off-Ramp</li> <li>NE 50<sup>th</sup> Street NB Off-Ramp</li> <li>NE 50<sup>th</sup> Street NB On-Ramp</li> </ul>

Note: NB = Northbound. SB = Southbound.

The development potential of a ramp location is also affected by other factors, including:

- The value of the ramp to the transportation network
- The ease of traffic mitigation and redirection to other ramps
- The location of any additional infrastructure, such as support columns
- The value of the space created for other uses, which can be influenced by adjacent land uses and the amount of space created

The value of new space must be considered in future analyses with the cost and convenience of construction as well as impacts on other parts of the transportation system.

# 5 Recommendations for Future Study

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## 5.1 Introduction

This study informs future City I-5 Lid planning and WSDOT's I-5 Master Plan. The known existing transportation conditions in the study area, and the range of positive, negative, or neutral transportation implications of potential future ramp changes that could be associated with lid development provide context for subsequent, more in-depth transportation analysis. For WSDOT's I-5 Master Plan, the study provides a baseline of existing conditions in the Downtown Seattle and University District segments to help inform areas of future investment decisions. For the City's I-5 Lid planning, this study informs subsequent planning and environmental processes.

Transportation is one aspect of the overall context for lid planning, and it is anticipated that the recommendations below will be infused into a broader planning process that analyzes a wide range of considerations (e.g., equity, social, environmental, economic) and conducts appropriate community engagement consistent with the HEAL Act to narrow the location and footprint of a potential lid.

The following sections include recommendations for future technical work, coordination, and analysis and who should lead the efforts.

## 5.2 WSDOT I-5 Master Plan Recommendations

Key activities for developing the I-5 Master Plan should include the following:

- **Visioning and Analysis:** Conduct visioning and analysis to address, through long-range planning and coordination with regional growth models, the multimodal needs within the Cascadia megaregion.
- **Equity-Centered Community Engagement, Agency Coordination, and Tribal Consultation:** Conduct thorough community engagement, agency coordination, and tribal consultation to ensure diverse input and alignment with equity goals.
- **FHWA PEL Concurrence:** Secure FHWA approval at critical milestones to validate the Plan's alignment with federal standards and ensure the Plan is set up for a smooth transition to environmental analysis and project development.
- **Climate Vulnerability Assessment** and coordination with a state-wide vulnerability assessment.
- **Comprehensive Funding Strategy:** Begin the development of a detailed strategy to secure and allocate funding for near-term corridor improvements.
- **Finalize Problem Statement:** Refine and formalize the Problem Statement, as part of the FHWA PEL process, to clearly define the issues and objectives of the Master Plan.
- **Goals, Objectives, and Key Performance Indicators (KPIs):** Establish clear goals, objectives, and key performance indicators to guide project evaluation and success measurement.

- **Policy/Strategy/Project Evaluation and Scenario Planning:** Assess potential policies, strategies, and projects according to the goals, objectives, and KPIs to determine near-, mid-, and long-term priorities. Evaluate different futures (e.g., funding availability, high-speed rail, transit implementation, and technology advances) through scenario planning to prioritize the policies, strategies, and projects that provide the most flexibility and greatest ability to meet regional and state goals.
- **Level of Magnitude Cost Estimation:** Develop preliminary cost estimates for planning purposes, ensuring a realistic financial framework for project implementation.
- **Prioritized Project List and Action Plan:** Bundle projects into actionable phases—near-, mid-, and long-term—and develop a detailed action plan for logical project implementation.
- **Draft Master Plan:** Prepare a comprehensive draft I-5 Master Plan Report.
- **Initial Program Development:** Begin the initial development of policies, strategies, and projects based on the Plan’s initial recommendations.

The following transportation analysis activities focused on the I-5 ramp study area are also recommended for inclusion in WSDOT’s I-5 Master Plan process:

- Advance analysis and documentation consistent with WSDOT agency mission, goals, and objectives.
- Conduct safety analysis on I-5 in the study area.
- Conduct seismic vulnerability analysis on I-5 in the study area.
- Continue to collaborate with the City and its lid planning efforts, participate in partner engagement activities, provide feedback, stay informed, and share I-5 Master Plan updates.
- Incorporate relevant information from this study, including feedback collected during the workshop with partner agencies on July 11, 2024, into the I-5 Master Plan. Appendix B includes a summary of the Transportation Workshop feedback.
- Refer to and incorporate relevant information and details from the City’s lid planning efforts into the I-5 Master Plan.
- Continue to collaborate with transit, port, freight, and other key mobility and land use partners and the public, including the Lid I-5 organization, community organizations, commuter and employee focus groups, businesses, and tourism advocates.

## 5.3 Future City I-5 Lid Planning Recommendations

While the City is currently leading the effort to explore potential lid creation opportunities over I-5 in Downtown Seattle, future planning efforts will require a collaborative approach between agencies to consider how lid design and/or reconfiguration of Downtown I-5 ramps may impact the broader transportation network. This approach has been utilized on other regional transportation projects, such as the Alaskan Way Viaduct Replacement Project and can expand the set of potential solutions to include a combination of roadway, transit, bicycle, and pedestrian improvements.

Any future planning to narrow the range of potential lid designs (e.g., a PEL process) or environmental review to evaluate the environmental and related social and economic effects of a proposed design and its

footprint (e.g., a NEPA process) would include an assessment of a wide variety of environmental effects, including both positive and negative effects on the multimodal transportation system. Future planning would also include community engagement consistent with the HEAL Act.

The following are recommendations for future activities that could be integrated into the City's Reconnecting Communities grant scope or other future planning, PEL or SEPA/NEPA efforts:

- **Coordination:** Coordinate with WSDOT and FHWA to ensure planning efforts are consistent with state and federal guidance and that the process is set up for a future PEL or NEPA process. Coordinate with WSDOT NW Region on an ongoing basis to understand data availability and how it can be leveraged for analysis.
- **Planning/PEL:** Conduct an analysis of lid location and footprint alternatives through a robust community process consistent with Federal Environmental Justice requirements and the HEAL Act, using a variety of perspectives (e.g., social, economic, and environmental benefits and impacts). Working with the community and in coordination with WSDOT and other partner agencies:
  - Develop and implement a community engagement process.
    - As part of this work, identify equity priority communities (including people using I-5 and I-5 ramps, people using nearby streets, and people living and working near the corridor) and assess benefits and impacts related to transportation safety and access for community members and workers.
  - Develop and implement a tribal and agency coordination plan.
  - Collect additional existing conditions data as needed, such as outdated pedestrian, bicycle, and transit data.
  - Develop a problem statement or purpose and need.
  - Establish a set of goals, objectives, criteria, and KPIs representing the community vision for the lid. Some of these will relate to transportation, and some could specifically relate to ramp closures or reconfigurations.
  - Establish a range of potential lid location and/or lid footprint alternatives. These alternatives could include potential ramp changes.
  - With WSDOT participation, screen the alternatives, using the criteria and KPIs.
    - Related to I-5 ramps, the analysis conducted could include traffic modeling to:
      - Understand the capacity of ramp terminals and operational constraints.
      - Examine benefits or impacts to mainline I-5.
      - Understand latent demand and potential for regional travel diversion to or from I-405 and Highway 99.
      - Examine potential implications for modal shift.
      - Understand the benefits or impacts on travel time for maritime-related freight and other industrial uses.
      - Understand origins/destinations and how many people use I-5 for shorter trips in the study area; ensure that this modeling also examines

- origins/destinations by time of day.
  - Examine benefits or impacts to I-5 express lanes and collector-distributor roads.
  - Understand the benefits or impacts on local freight delivery.
  - Understand the benefits or impacts of noise and air quality.
  - In partnership with WSDOT, look at potential regional and local diversion to other highways/ramps and local streets and determine what this means for people driving, walking, biking, taking transit and freight (heavy freight and local deliveries – Port, I-90) in terms of mobility, access, reliability, and safety; and emergency access and travel times/reliability.
    - Understand the benefits or impacts on freight using these corridors
- Analysis could assess safety benefits for all modes on local streets and the I-5 mainline.
  - Conduct a Ramp Safety Assessment in accordance with the Target Zero Strategic Highway Safety Plan.
- Analysis could determine implications for first responder and regional evacuation routes; engage with Seattle Police and Fire Department.
- Analysis could assess geometric implications based on the proposed development on top of the lid for the specific scenarios, which could include a mix of buildings and open space (for example, lids need to be wider and stronger to support multi-story development if desired, which can impact the adjacent transportation system or existing development).
  - Develop a preferred lid location(s) and footprint(s) to carry into the SEPA/NEPA process.
  - Determine the recommended NEPA class of action.
- **SEPA/NEPA:** In partnership with FHWA, WSDOT, and other partner agencies and interested parties, conduct environmental reviews consistent with state and federal processes. This work would include transportation-related analyses.
  - Develop and implement a community engagement process.
  - Develop and implement a tribal and agency coordination plan.
  - Develop a purpose and need.
  - Describe the alternatives.
  - Assess the environmental impacts/effects of the proposed action/alternatives. This work would include transportation analysis for all modes.
  - Develop environmental documentation.
- **Other efforts:** Other efforts recommended include:

- Establish a shared basis of design between WSDOT, the City, and other partners to set expectations for future analysis and recommendations and focus on user needs to ensure design decisions are consistently implemented throughout the future development process.
- Study the transportation impacts of temporary ramp closures that are a component of the I-5/Yesler Way to Northgate maintenance project to help inform ramp closure potential through a real-world scenario.
- Continue to collaborate with WSDOT and their I-5 Master Plan efforts.
- Continue to collaborate with transit agencies, the Port of Seattle, and other key partners and the public, including communities, commuters, and employee groups reliant on manufacturing, trade, and tourism.

WSDOT understands the importance of the lid to Seattle and reconnecting the community. WSDOT's I-5 Master Plan and the City's lid planning work will run in parallel to be successful. WSDOT and the City will actively coordinate and collaborate as these efforts move forward.

## **Appendix A: Existing Transportation Conditions - Ramp Area Details**





## **Appendix B: July 2024 Transportation Workshop Summary**

