



# Funding Application

<b>Competition</b>	Regional FTA
<b>Application Type</b>	Main Competition
<b>Status</b>	submitted
<b>Submitted:</b>	April 27th, 2020 7:03 PM
<b>Prepopulated with screening form?</b>	Yes

## Project Information

- Project Title**  
Seattle Center Monorail Station Improvements
- Regional Transportation Plan ID**  
'N.A.'
- Sponsoring Agency**  
Seattle
- Cosponsors**  
N/A
- Does the sponsoring agency have "Certification Acceptance" status from WSDOT?**  
N/A
- If not, which agency will serve as your CA sponsor?**  
N/A
- Is your agency a designated recipient for FTA funds?**  
No
- Designated recipient concurrence**  
King County Metro has provided concurrence as a "Designated Recipient" for the City of Seattle to submit the PSRC Regional FTA grant program competition.

## Contact Information

- Contact name**  
Jackie Kim
- Contact phone**  
206.684.0269, 206.886.8277
- Contact email**  
Jackie.Kim@seattle.gov

## Project Description

- Project Scope**  
This project will double Monorail system capacity, restoring it near its original 1962 design capacity to efficiently transport peak event crowds to and from Seattle Center. Grant funds will improve the handling capacity, passenger flows, accessibility, safety, security, and all-weather accommodations of the Seattle Center Monorail Station by: adding automated passenger gates at the Monorail platform edge for the 32 train doors; making station's main entrance ADA accessible, and covering passenger staging; leveling the station platform and train floor for better ADA compliance; making queuing areas more efficient, and improving passenger signage, wayfinding, and regional transit information. The total estimated engineering and construction cost is \$7 million, \$2.2 million currently secured for this work (including \$1.4 million local matching funds). This \$4.8 million grant would complete the project.  
  
Receiving \$4.8 million would not only leverage the existing \$2.2 million but would also leverage \$6.6 million in privately funded Westlake Station capacity and signage improvements, which includes separating the payment of fares from the boarding process by adding self-serve ticket vending kiosks and faregates at both Westlake and Seattle Center Stations. Together, the privately and publicly funded projects will significantly increase Monorail service and capacity.  
  
This project will cause a significant increase in transit's share of mode-split for passenger travel to, from, and between the Seattle Central Business District and Uptown Regional Growth Centers. As a direct consequence of this improved transit split over vehicle use, roadway congestion will be eased (particularly during major events), flow of nearby bus and streetcar transit on surface streets will improve, green-house gas emissions will be reduced, and event impacts on communities surrounding Seattle Center will be lessened. Additionally, economic and cultural activity will be increased and more equitably available to a broader spectrum of residents, particularly now that the Monorail is an ORCA participant.
- Project Justification, Need, or Purpose**  
The Monorail is the primary connector from Seattle Center to Westlake Center, within two of Seattle's densest regional growth centers, Uptown and Downtown CBD. As growth in each of these centers increases, the demand on the Monorail will also increase, but the current capacity is not projected to meet the future demand especially when the New Arena at Seattle Center (Arena) opens.  
  
As an FTA grant-funded 2018 Monorail station feasibility study concluded, station modifications through the years have unwittingly reduced the ability to carry the high capacity seen during the World's Fair, when an estimated 8 million passengers rode the trains. Although the entirely grade-separated, electrically-powered Monorail takes less than 2 minutes to move up to 350 passengers per train (system has two) between Seattle Center and Westlake Center, inefficiencies at the stations significantly lengthen dwell times. This project seeks to remedy those inefficiencies at Seattle Center Monorail Station and thereby requiring surge capacity lost through the years and incentivizing transit use.

At the Westlake terminus, Monorail riders are at one of only two critical transfer points in the transit network with direct connections to Sound Transit Link light rail, the local and regional bus network, and the Seattle Streetcar, and a short distance from Washington State Ferries. This makes the Monorail a very logical, capable, reliable, fast, and environmentally friendly solution – as the 2 million riders in 2019 can attest (almost 20% of Seattle Center’s 12 million visitors).

This grant would enable project completion in time to service new regional light rail expansions to the north and east. With pre-award authority and bridge financing (not yet secured), the schedule could be accelerated to complete as soon as the Arena scheduled opening in Fall 2021.

## Project Location

1. **Project Location**  
Seattle Center Campus
2. **Please identify the county(ies) in which the project is located. (Select all that apply.)**  
King
3. **Crossroad/landmark nearest the beginning of the project**  
5th and Thomas St (Seattle Center Station)
4. **Crossroad/landmark nearest the end of the project**  
5th & Pine St (Westlake Center Station)
5. **Map and project graphics**  
VIA\_Monorail\_Reconfiguration\_and\_Feasibility\_Study\_FINAL.pdf, project\_diagram.pdf

## Plan Consistency

1. **Is the project specifically identified in a local comprehensive plan?**  
Yes
2. **If yes, please indicate the (1) plan name, (2) relevant section(s), and (3) page number where it can be found.**  
Seattle’s Comprehensive Plan, 2015 (Comprehensive Plan) has several references to the importance of the Seattle Center Monorail as a transportation asset and the opportunities to increase its utility through access improvements and capacity upgrades. These references to policies demonstrate the priority that the City has placed on these improvements:  
DT-TP2 Promote a base circulation system including modifications to existing service and additional Downtown routes to improve access within Downtown and between Downtown and adjacent neighborhoods. In considering improvements to the base circulation system, examine the potential for using the Monorail, waterfront streetcar, shuttles, and regional bus service to enhance the base circulation system and improve local service. (page 272)  
F-P31 Strive to maximize Fremont access to planned citywide and regional transit services (e.g., Monorail, Sound Transit, water taxi, etc.). (page 304)

Seattle Department of Transportation North Downtown Mobility Action Plan (SDOT NODO MAP) (page 72-3) recommends Monorail station improvements.

Thomas Street Green Street Concept Plan: This project, which includes an enhanced entrance to the Seattle Center Monorail along Thomas street, ties into the Thomas Green Street concept plan developed in 2013, which enhances the pedestrian connection from Uptown to South Lake Union along Thomas Street.

Significant accessibility improvements are also part of this work, which is consistent with local policies. The existing entrance ramp at Thomas Street to the Seattle Center Monorail station platform is not ADA compliant (the current pedestrian accessible route is less direct through the Armory building). The ADA improvements to the ramp proposed in this project is an unfunded project on the City of Seattle’s Barrier Removal Schedule.

This project supports both Vision 2040 and Transportation 2040 goals.

As part of the Vision 2040 plan, page E1-3 of the Plan Review Manual says, "Other agencies, such as transit agencies, utilities, and special service districts, need to work to implement the Regional Growth Strategy. Agencies should coordinate their planning efforts with local comprehensive plans and should plan for sufficient public facilities and services to support the population and employment growth called for in the Regional Growth Strategy and local growth targets." This work on the Seattle Center Monorail station aims to provide facilities and services that are not only currently needed, but also will be in greater demand as the new Seattle Center Arena opens and as development continues of the regional transit system. The fastest and most direct way to get from Uptown to the Central Business District is by taking the Monorail. Further enhancing the station will only strengthen the transit network in downtown Seattle and reduce congestion.

Page E2-1 of the Plan Review Manual says, "Transportation 2040 calls for a transportation system that is safe, secure, and efficient." This particular project is exactly designed to work toward further improving these elements for the Seattle Monorail. All of the elements listed in the project description are there in order to enhance the safety, security, and efficiency of the system.

Both Vision 2040 and Transportation 2040 describe the goals for sustainable transportation, which is a hallmark for the Seattle Center Monorail. In addition to reducing dependence on low-occupancy vehicles, the Monorail operates on electricity and has been a forerunner in demonstrating environmentally friendly transportation for nearly 60 years. Instead of disposing of vehicles every 20-30 years like most transit systems, the Monorail has thoughtfully maintained and restored elements of the system to minimize natural resources utilized when constructing completely new vehicles.

3. **If no, please describe how the project is consistent with the applicable local comprehensive plan, including specific local policies and provisions the project supports. In addition, please describe how the project is consistent with a transit agency plan or state plan, if applicable.**

## Federal Functional Classification

1. **Functional class name**  
00 Not applicable (transit, enhancements, Etc.)

## Support for Centers

1. **Describe the relationship of the project to the center(s) it is intended to support.**

**Identify the designated regional growth or manufacturing/industrial center(s) and whether or not the project is located within the center or along a corridor connecting to the center(s).**

The Seattle Center Monorail has one terminus at Seattle Center within the Uptown Regional Growth Center (Uptown center) and the other terminus at Westlake Center within the Downtown Seattle Regional Growth Center (Downtown center). Transportation challenges in Uptown associated with large events at Seattle Center have been a focus of planning efforts for decades. Large events include Folklife, Bite of Seattle, Pride Fest, Bumbershoot, Rock-n-Roll Marathon, St. Patrick’s Day Parade as well as sports and music in the Arena. The Monorail is the only fast, efficient, grade-separated transportation option that traverses a highly congested stretch of roadway between the two centers.

It is a last-mile connection for people to reach events at the Seattle Center campus via the multi-modal transit hub at Westlake Center. By offering a transportation link to light rail, Seattle Streetcar, regional bus systems and nearby Washington State Ferries, the Monorail serves visitors coming from South Lake Union, First Hill/Capitol Hill, University Community, Tukwila, and SeaTac (and soon other regional destinations as Sound Transit 2 Link Light Rail service expands).

Increasing the capacity of the Monorail to move larger event crowds will allow Uptown and South Lake Union centers to leverage Link Light Rail regional service more than a decade before light rail actually reaches them. By the time the Arena opens, travel time from Northgate to Seattle Center on light rail and monorail is projected to be less than 30 minutes, easily beating any other mode of transportation. As light rail continues to expand in 2023 to Mercer Island and Bellevue, and in 2024 to Lynnwood and Redmond, those regional growth centers will also have an improved transit connection to events at Seattle Center

Improvements planned for the Seattle Center station along vacated Thomas Street on the Seattle Center campus would contribute to completion of the Thomas Street Redefined Street Concept Plan and elevate the pedestrian experience of arriving to/departing from events at Seattle Center.

**Criteria: Benefit to Center**

**1. Describe how the project will benefit or support the existing and planned housing and employment development of a center or centers. Does it support multiple centers?**

The City’s rezone of Uptown’s Regional Growth Center was one of the first centers to implement Seattle’s new Mandatory Housing Affordability policy in 2017. Among the objectives of the rezone are to

- Improve the jobs/housing balance by allowing for more residential development close to the job centers of downtown and South Lake Union.
- Shape future growth through development standards to improve the pedestrian environment, create more open space, and match the scale of surrounding development and geographic features
- Increase the supply of affordable housing by implementing the Housing Affordability and Livability Agenda (HALA) by increasing development capacity and applying the Mandatory Housing Affordability (MHA).

The Downtown and Uptown centers are both dense, highly walkable urban centers that are experiencing actual housing growth at a much faster rate than the 2015 Seattle Comprehensive Plan Estimates. In 2019 alone developers submitted plans for more than two dozen residential projects in Uptown totaling more than 2,500 housing units. The following table reports growth of residential units and jobs in both centers between (2016-2019).

-----	2015 Actual	-----	Comp Plan Est	----	Growth (2016-19)	----	Pct. Increase (2016-2019)
Downtown	24,345 units	.....	12,000 units	.....	5583 units	.....	22.9%
					5628 issued, not built	.....	23.1%
	164,000 jobs	.....	24,000 jobs	.....	24,345 jobs	.....	14.8%
Uptown	7557 units	.....	3000 units	.....	708 units	.....	9.3%
					1039 issued, not built	.....	13.7%
	15,483 jobs	.....	2500 jobs	.....	30	.....	<1%

Note: Housing units are as of December 2019, and jobs are 2018.

**2. Describe how the project will support the development or redevelopment plans and activities (objectives and aims) of a center or centers.**

The renovation of the Arena and launch of the new NHL Seattle franchise will increase the size and frequency of large events occurring at Seattle Center, creating traffic congestion and parking impacts in Uptown and adjacent communities. Maximizing the operating capacity of the existing Monorail line to its greatest people-moving potential can mitigate the impacts. An improved Monorail system will give Seattle Center patrons the option to easily and quickly avoid congestion before and after an event by accessing downtown’s existing high-capacity transportation infrastructure without putting further pressure on the pedestrian-oriented Uptown neighborhood.

The project will allow Uptown and South Lake Union to benefit from regional light rail expansion more than a decade ahead of schedule for the new Seattle Center station. The Seattle Center Arena Renovation Project FEIS projected that the Downtown-to-Ballard light rail extension beginning operations in 2035 will cause a shift from low-occupancy vehicles to transit and reduce congestion impacts during large Arena events. The Monorail is poised to fill the gap between the Arena opening and light rail reaching Seattle Center in 2035. The greatest opportunity for impact begins in 2023-24, when ST2 extensions connect communities to the north and east directly to Westlake Station and the Monorail.

This project is a recommendation from the North of Downtown Mobility Action Plan (NODO MAP), which was championed by leaders in the Uptown, South Lake Union and Belltown centers. According to the NODO MAP document, this project will address the following strategic priorities:

- Improve transit speed and reliability between Downtown, Belltown, and Uptown
- Create new transit connections serving North Downtown neighborhoods
- Decrease drive alone mode share and improve safety and accessibility for all people using the transportation system

**3. Describe how the project improves access to major destinations within the center, including enhanced opportunities for active transportation that can provide public health benefits through the following relevant areas: walkability, public transit access, public transit speed and reliability, bicycle mobility and facilities, streetscape improvements, etc.**

The Seattle Center Arena Renovation Project Final Environmental Impact Statement predicted that without mitigation, the majority of Arena patrons will choose to drive to the Arena. Improving the Monorail system capacity will improve the speed and reliability of public transit directly serving Seattle Center and result in more people choosing transit over cars. Station improvements including ADA accessibility will incentivize transit use and improve the pedestrian experience for all patrons using the Monorail and Thomas Street at Seattle Center.

**4. Describe how the project provides a range of travel modes to users traveling to centers, or if it provides a missing mode.**

In 2019, the Monorail was integrated into ORCA (One Regional Card for All) which positioned the Monorail to become a critical extension for riders using the Link Light Rail, Seattle Streetcar, King County Metro, Sound Transit, Community Transit, other regional bus systems, and nearby Washington State Ferries to reach events at the Seattle Center campus. Current station design, however, increases dwell time and inhibits the volume of riders who can use this connection during peak event times. This project will restore the Monorail to nearly its original carrying capacity and provide a seamless experience for crowds making connections between Westlake and Seattle Center.

**5. Describe how the project will benefit a variety of users, including commuters, residents, and commercial users).**

An improved Monorail system will give Seattle Center patrons the option to easily and quickly avoid congestion before and after an event by accessing downtown's existing high-capacity transportation infrastructure. Residents and businesses in north downtown neighborhoods will experience relief from event congestion impacts on their streets and sidewalks. Improved station accessibility and efficiency will also benefit workers commuting between Uptown/Seattle Center and Downtown Seattle (including large numbers of employees of the City and the Bill and Melinda Gates Foundation), students at the Center School at Seattle Center, tourists, and local visitors attending events and enjoying daily use of the at Seattle Center campus.

**6. Describe how the project will benefit those groups identified in the President's Order for Environmental Justice, seniors, people with disabilities, those located in highly impacted communities, and/or areas experiencing high levels of unemployment or chronic underemployment.**

An Economic Impact Study of Seattle Center in King County 2016 led by University of Washington's Dr. William Beyers and GMA Research determined that combined spending of Seattle Center visitors and businesses created \$1.864 billion in business activity, 18,621 jobs and \$631 million in labor income in King County. As a result, state and local governments received \$90 million in tax revenues. Business activity conducted by this City of Seattle department, combined with that of the many non-profit and for-profit businesses on the grounds, generated total revenue at Seattle Center of \$303 million and directly employed 7,446 people.

In a recent public opinion survey, the Seattle Center Foundation learned that challenges with transportation and parking are the most significant deterrent for potential visitors to Seattle Center. The Monorail can provide a safe, efficient transit option for many employees, visitors and families. The low cost of using ORCA with transfers puts this option within reach of more people. Many Seattle Center employees are service workers with relatively lower wages.

This project will improve ADA access between the Monorail platform and Thomas St. It will improve service and capacity to serve all users, including employees, seniors, people with disabilities, and low-income populations. ADA improvements are fundamental to the private investments being made at Westlake Center Station. Work at Westlake Center will include bringing a second elevator to access the platform at WLC. This grant will enable the Seattle Center station ADA facilities to match the level of improved service being implemented at Westlake.

The Monorail serves both the Uptown and Downtown centers. Increasing affordable housing is an objective of the 2017 Uptown rezone and the City is currently constructing a new affordable housing project adjacent to Seattle Center. Downtown has a high concentration of affordable housing and social service agencies serving low-income persons and persons with disabilities. A new affordable housing project is under construction on Mercer St and 2nd Ave. N. adjacent to Seattle Center. With the Monorail being integrated into the ORCA system, low-income riders with ORCA passes can make a no-cost transfer between the Monorail and Downtown transit.

**7. Describe how the project will support the establishment of new jobs/businesses or the retention of existing jobs/businesses including those in the industry clusters identified in the adopted Regional Economic Strategy.**

Tourism is a significant industry sector in the Regional Economic Strategy. The Monorail both transports tourists to generate revenue spent on activities at Seattle Center, and also produces economic multiplier effects documented in the 2016 Economic Impact Study of Seattle Center in King County. The Monorail is also an iconic 1962 World's Fair tourist attraction in itself.

Highlights of this economic study include:

- The combined spending of Seattle Center visitors and businesses created \$1.864 billion in business activity, 18,621 jobs and \$631 million in labor income in King County.
- "New money" economic impacts, those related to sales or income originating outside King County that would not occur if the activities at Seattle Center were not present, yielded \$1.182 billion in business activity, 10,625 jobs, \$381 million in labor income and \$65 million in tax revenues.
- 7,446 people are directly employed by businesses, including the many arts and cultural organizations, at Seattle Center.
- State and local governments receive \$90 million in tax revenues as a result of the business activity at Seattle Center.
- Seattle Center is a major regional destination, which about 42% of visitors coming from King County, 14% from other areas of Washington and 44% from out of state.
- 86% of visitors to Seattle Center indicated that the primary reason for their trip was to attend a performance, exhibition or event.
- Seattle Center visitors spent \$815 million in relation to their visits to Seattle Center.
- Business activity among the many non-profit and for-profit businesses on the grounds contributed to total revenue at Seattle Center of \$303 million.

By delivering much needed additional transit surge capacity (to serve Arena and other events), this project specifically supports the success of each of the Arena's 150+ annual events and the economic activity generated by the more than 2 million event attendees. Furthermore, attendance that uses transit creates economic activity that would not otherwise occur and spreads that activity to a larger geographic swath of the community, since every node along the transit journey provides an opportunity for event goers to interact with commercial enterprises and arts/cultural organizations.

The resulting ancillary spending will be an incremental revenue boost for businesses and arts organizations, directly supporting those jobs and overall growth. It will also spur business starts as new opportunities emerge.

This project improves and "sustains a high quality of life" - one of the three primary goals of the Regional Economic Strategy. Specifically, the project directly supports the plan's strategies to: Improve the Region's Transportation System (adds fast, reliable capacity); Focus New Growth in Urban Areas, Regional Centers, and Cities (last-mile solution, connects two); Ensure an Outstanding and Healthy Natural Environment (electrically powered, reduces overall congestion); Preserve, Enhance, and Improve Access to Open Space (Seattle Center is a 74 acre public park); and, Grow Access to Arts, Culture, Entertainment, and Sports (Seattle Center is home to more than 30 cultural, educational, sports and entertainment organizations).

**8. Does the project promote Commute Trip Reduction (CTR) opportunities?**

As King County's affiliate, the Monorail now accepts ORCA card for fare payment and is a full participant in all ORCA programs. Since October 2019 (when the Monorail began accepting ORCA) 151,000 Monorail boardings have been ORCA boardings (representing 26.9% of the total) and of those, over 78,000 have been ORCA Business Passport boardings (52.1% of the

ORCA total).

This project will help the Monorail more significantly serve the Commute Trip Reduction Plans of the expanding base of employers in both of the two regional growth centers the Monorail connects, as it has for the Bill & Melinda Gates Foundation since 2011 and City of Seattle. The specific project elements that enhance the Monorail for greater inclusion are (1) ADA accessibility improvements at the main station entrance on Thomas Street and station platform and (2) wayfinding and regional transit information signage improvements, which better enable linked multi-modal transit commutes.

As the project raises the use of the Monorail through capacity improvements, overall awareness of the Monorail as a vital component of the region's multi-modal transit network grows as well. Over time, this will result in the Monorail being specifically included in an increasing number of CTR plans and commute trips. Reconnections to the street grid over SR-99 (completing in 2019-2021) will put many large corporate offices in South Lake Union within a 10-minute walk of the Seattle Center Monorail station.

## Criteria: System Continuity/Long Term Benefit-Sustainability

### 1. Describe how this project provides a "logical segment" that serves a center, or allows users to access the system.

The Monorail is the best positioned segment to address timely transportation challenges in both the Uptown and Downtown regional growth centers. It already serves the growing population, job base, and event venues in these dense regional growth centers. Now as the renovated Arena will come online nearly 15 years before light rail will reach Uptown, investing in the City's existing, grade-separated transit asset is the most logical and prudent way to improve regional transit efficiency and mitigate further automobile traffic impacts to one of the most congested parts of the region.

### 2. Describe how the project fills in a missing link or removes barriers to a center (e.g. congestion, inadequate transit service/facilities.). Describe how this project will relieve pressure or remove a bottleneck on the Metropolitan Transportation System and how this will positively impact overall system performance.

This project completes the last critical element required to double Monorail capacity from 3,000 to 6,000 passengers in one direction per hour, nearly reaching its original design capacity and leveraging \$6.6 million of privately funded capacity improvements and modernization already moving forward at the Monorail's Westlake Station. These two projects together remove the bottlenecks in the system's capacity that were introduced by station modifications after the World's Fair, during which more than 8 Million people rode the Monorail over a 6-month period - 45,000 per day.

When the Arena opens with over 150 events per year, it will greatly magnify the travel to and from the Uptown Regional Growth Center. The arena operator, as part of its City approved and monitored Arena Access Management Plan, will be encouraging event attendees to use public transit. For example, NHL Seattle, owner of the hockey team, has publicly announced that it will subsidize Monorail and other transit use for ticket holders by including transit fares in the ticket. This early step is an indication of much more to come. The combination of the Arena programmatically promoting transit use, providing subsidy, and monitoring mode-split and progress of shifting attendees to transit together with over 2 million annual patrons will drive up the use of transit - particularly high capacity transit that can handle surges - the Monorail.

### 3. Describe how this project addresses safety and security.

The improvements planned in this project have safety, security, and efficiency at the heart of them. As described in the scope, this project includes the addition of automated edge platform gates, which would protect passengers from falling when the train is out of the station. Although it is not uncommon for transit systems to have open platforms, they are a safety concern. With an expected increase in the volume of people riding the Monorail and more surge crowds, protecting passengers (especially children) from the platform edge is extremely important.

Accessibility improvements to the entrance and throughout the station will improve safety for individuals who use wheelchairs and other mobility assistance devices. Leveling the platform with the floor of the train will reduce trip hazards and remove barriers. Revising the entrance at Thomas Street will provide ADA ramp access and will improve sight lines for better security.

Last but not least, passenger flow improvements will reduce potential injuries that could happen with significant crowds reaching a bottleneck.

### 4. Describe how the project improves intermodal connections (e.g. between autos, ferries, commuter rail, high capacity transit, bus, carpool, bicycle, etc.), or facilities connections between separate operators of a single mode (e.g., two transit operators).

The Seattle Center Monorail Stations Reconfiguration Evaluation Report, completed in 2018 by VIA Architecture, concluded that Monorail capacity could be doubled to 6,000 passengers in one direction per hour (from the current 3,000). Increasing peak capacity will make choosing any variety of transit options that connect at or near Westlake Center Station the most appealing and lowest-cost option when coupled with the Monorail as to connect quickly and efficiently to and from Seattle Center. This will especially be beneficial during post-event times at the Arena, McCaw Hall, and festivals at Seattle Center.

The Monorail provides options for Seattle Center visitors to travel to downtown to access SeaTac Airport (via Link Light Rail), available parking garages, and Washington State Ferries. Some may find it desirable to catch ride share rides downtown during major events at Seattle Center when downtown streets are much less congested than the streets near Seattle Center.

### 5. If applicable, describe how the project provides an improvement in travel time and/or reliability for transit users traveling to and/or within centers.

By improving passenger flow with more spacious layouts, automated fare gates and ticket kiosks, the project will reduce dwell time for Monorail trains running between Seattle Center and Westlake Center. This will improve reliability and travel time for passengers connecting to other modes of mass transit, particularly during the peak travel hours before and after large events at Seattle Center. Monorail is a fast, efficient 2-minute ride on a grade-separated guideway that is significantly faster than the 20-minute bus trip between downtown and Seattle Center. By providing a last-mile transit solution serving large events, the project will reduce strain on overloaded streets including Mercer St. and Denny Way.

### 6. If applicable, describe how the project increases transit use to or within centers.

Strong regional transit connections and an underutilized supply of off-street parking in and near Westlake Center will create demand from thousands of Arena patrons seeking an alternative to driving on congested streets and parking in expensive event garages. At its current capacity, the Monorail system will be challenged to meet that demand without long passenger wait times, which will deter riders. This project, coupled with the Arena's commitment to subsidizing transit rides for NHL Seattle fans that don't have an ORCA card through their employer, will prepare the system to handle that demand and encourage transit ridership to Arena events beyond the 17% predicted in the Seattle Center Arena Renovation Project Final Environmental Impact Statement.

### 7. Describe how this project supports a long-term strategy to maximize the efficiency of the corridor? Describe the problem and how this project will

**remedy it.**

Studies for the Key Arena, SODO Arena, Uptown Rezone and Seattle Center Master Plan have all pointed to the Seattle Center area street system congestion. While the long-term plan is adding light rail, this investment will allow Uptown and South Lake Union to benefit from a grade-separated connection to regional light rail connections more than a decade ahead of the Seattle Center station schedule.

## Criteria: Air Quality and Climate Change

- Please select one or more elements in the list below that are included in the project's scope of work, and provide the requested information in the pages to follow.**

Transit and Ferry Service, Transportation Demand Management

### Air Quality and Climate Change: Transit and Ferry Service

- What is the current transit ridership for the affected transit stops or routes?**  
The Monorail carried just under 2,000,000 passengers in 2019.
- What is the average transit trip length for the affected routes?**  
The length of a single one-way trip is slightly under 1 mile. Because Seattle Center draws visitors from all over the region, the Monorail serves an important role as connector to regional modes including bus rapid transit and light rail drawing riders from transit system service areas throughout King County and neighboring counties.
- What is the average transit trip length of the entire system?**  
A roundtrip is just under 2 miles.
- If the project includes a park and ride, how many new stalls are being provided?**  
N/A
- Are there other amenities included to encourage new transit ridership? If so, please describe.**  
Yes, new automated ticket machines, fare gates, and edge platform gates will improve efficiency for passengers to load and unload the trains. Wayfinding and accessibility improvements will reduce confusion and barriers in using the system. A quick, low stress, and efficient method of travel will encourage riders to take transit to and from events at the Arena rather than using low occupancy vehicles.
- What is the expected increase in transit ridership from the project?**  
A 50% increase in ridership is expected when the New Seattle Arena opens, and if the Seattle Center Station is upgraded to accommodate the increased capacity, this equates to 1,000,000 additional riders expected annually.
- If a new or expanded ferry service, what is the length of the driving route being replaced?**  
N/A
- Please describe the source of the project data provided above (e.g., Environmental Impact Statement, EPA/DOE data, traffic study, survey, previous projects, etc.).**  
Data to show the benefit of this work are presented in the Seattle Center Arena Renovation Project Final Environmental Impact Statement, Seattle Center Monorail Stations Reconfiguration Evaluation Report, the Draft Arena Access Management Plan, and the North of Downtown Mobility Action Plan.

### Air Quality and Climate Change: Transportation Demand Management

- How many employees or potential users will be targeted?**  
Completing the Monorail station improvements will double the system's capacity, allowing the Monorail to carry 6,000 people in one direction per hour, or up to 30% of patrons from the new Seattle Center Arena within the first hour after a large event. The efficient connection will target millions of annual visitors to Seattle Center. The reduced congestion in the north downtown neighborhoods will benefit Seattle residents and commuters.
- What percentage of the targeted population is expected to shift from driving to transit, bicycling, or other alternative mode?**  
Improving Monorail station capacity is a critical part of the plan to reduce automobile travel to the Seattle Center Arena by approximately 17%. The Monorail will connect patrons of large events to regional transit at Westlake station.  
  
NHL Seattle will be subsidizing public transit rides for all NHL fans who don't have an ORCA card through work. The arena team estimates that this could more than double the number of people (from 4% to 10%) taking Monorail public transit to/from events (increasing the number of public transit riders from an estimated 17% to 23%). With the arena team's transportation-focused communications, they believe that fans will choose to take public transit when they are given accurate travel time estimates (30 minutes from Northgate on transit vs 60 mins driving), the relatively cheaper parking available near the Westlake Monorail station (\$10 downtown during most event times vs. \$60 at the arena), and the plethora of regional public transit options available to fans once they are downtown.
- What is the average commute trip length in the project area?**  
Data are not available to answer this question precisely and it is complicated to answer because commuters come from throughout the entire Sound Transit Link Light Rail system (with new ST2 service expansions in 2021 and 2023), King County Metro, Sound Transit and Community Transit bus systems and Washington State Ferries. In addition to commuters, this project will serve 20% of visitors to Seattle Center including for major events. Based on the analysis done by NHL Seattle, about 5% people live close enough to walk to games, 15% live so far away that they have no choice but to drive and the remaining 80% or so live within about a 45 min drive or an hour transit ride.
- How many new vanpools will be formed?**  
N/A
- What is the average vanpool trip length?**  
N/A
- What is the vanpool occupancy?**  
N/A
- Please describe the source of the project data provided above (e.g., Environmental Impact Statement, EPA/DOE data, traffic study, survey, previous projects, etc.).**  
Seattle Center Renovation Project Final Environmental Impact Statement;  
<https://www.seattle.gov/Documents/Departments/economicDevelopment/arena%20evaluation%20docs/Draft%20AAMP%208%2030%2018%20v3.pdf>  
  
Draft Arena Access Management Plan

## Criteria: Project Readiness and Financial Plan

- What is the PSRC funding source being requested?**  
N/A
- Has this project received PSRC funds previously?**  
Yes
- If yes, please provide the project's PSRC TIP ID**  
SEA-167

Phase	Year	Alternate Year	Amount
construction	2023		\$4,800,000.00

Total Request: \$4,800,000.00

## Total Estimated Project Cost and Schedule

### Planning

Funding Source	Secured/Unsecured	Amount
5307	Secured	\$280,000.00
Local	Secured	\$70,000.00
		<u>\$350,000.00</u>

**Expected year of completion for this phase: 2019**

### PE

Funding Source	Secured/Unsecured	Amount
Local	Secured	\$100,000.00
5307	Secured	\$400,000.00
		<u>\$500,000.00</u>

**Expected year of completion for this phase: 2021**

### Construction

Funding Source	Secured/Unsecured	Amount
5337 HIFG	Secured	\$400,000.00
Local	Secured	\$100,000.00
5307	Unsecured	\$4,800,000.00
Local	Secured	\$1,200,000.00
		<u>\$6,500,000.00</u>

**Expected year of completion for this phase: 2023**

### Summary

- Estimated project completion date**  
As early as Q4 2021 if bridge financing can be secured, otherwise 2023.
- Pretty total project cost**  
\$7,350,000.00

## Funding Documentation

- Documents**  
NDMAP.2019\_12\_FINAL.pdf, FFY\_2020\_TAMP\_CMMP\_with\_RN\_and\_TA\_signature.pdf

- Please enter your description of your financial documentation in the text box below.**

The Seattle Center Monorail Stations Reconfiguration Evaluation Report, completed in 2018 by VIA Architecture, proposes methods to improve peak passenger capacity, connections to other transit modes, and the overall passenger experience. The total cost estimate to complete all three proposed phases for Seattle Center Station totaled more than \$12M. This was more than we could consider funding, so the overall scope was narrowed to two phases rather than three, with an estimated cost of \$7M including soft costs and contingency. To date, approximately \$350,000 has been spent planning the improvement of station capacity and passenger flow efficiency. This leads to a total estimated project cost of \$7.35M.

The study also suggested more than \$10M worth of improvement work at Westlake Center Station in order to improve efficiency at both ends of the system. Again, this was more than available funding, but fortunately private investors were willing to contribute \$6.6M for improvements at Westlake Center, which will go hand-in-hand with the improvements to be done at Seattle Center. However, in order to optimize the entire Monorail system, this additional funding is needed at Seattle Center Station to complement the work at Westlake Center to improve passenger flow and accessibility.

Since FTA requires a 20% local match for grants, we will need \$1.4M in local matching funds for the \$7M in costs for design and construction phases. Of that amount, \$1M is available per the NODO MAP allocation, and the other \$400,000 will come from farebox revenue (7.5% of farebox revenue is automatically set aside for capital investment and is typically used for local matching funds).

The Monorail currently receives a small portion of earned share 5307 and 5337 funds each year (TIP SEA-167 and SEA-210), totaling around \$1M. These annual grants provide the funds to execute the Transit Asset Management Plan, which includes multiple capital improvement projects for the Seattle Monorail. Therefore, approximately \$800,000 of those funds will be put toward this project. Combining that with the local match results in \$2,200,000, so \$4,800,000 is the remaining amount needed in FTA grants to complete the funding for this \$7M project.

Note regarding the documents: one attached document is the Seattle Monorail Transit Asset Management Plan (TAMP) revised in the Fall of 2019, which shows a 5-year rolling plan intended to maintain an indefinite life for the Monorail. This plan had anticipated using \$2.5M of the

annual earned share dollars toward this Seattle Center Station project, but with increasing costs of construction and the need for significant electrical infrastructure upgrades, the amount available had to be reduced to \$800,000 plus local match. The other document shows evidence of the \$1M in local match secured via the North Downtown Mobility Action Plan (NODO MAP), see page 72 on attached document and found at this link <https://www.seattle.gov/transportation/projects-and-programs/programs/transportation-planning/north-downtown-mobility-action-program>.

If the full \$4.8 million is not granted, the revised entrance, ADA improvements, and surge capacity elements of the project would need to be eliminated. This would significantly diminish the ability to handle surge crowds and the inefficiencies would likely dissuade transit users. If ingress or egress is congested, users may decide to use other methods such as low occupancy vehicles with adverse environmental impacts. However, the greatest impact and benefit would be realized if the entire scope of work was done before the Arena opens. Below is the current list of prioritized items and estimated costs, which totals \$7M:

- Platform edge passenger gates for safety (\$2M)
- Signage and Wayfinding to improve flow (\$200k)
- Platform resurfacing to create level boarding for better ADA accessibility (\$1M)
- Revised entrance at Thomas Street to create ADA accessible entrance and streamline flow during peak surge crowds (\$3.8M).

Note that the work listed above incorporates phases 1 and 2 of the Seattle Center Station work shown in the NODO MAP document.

Since it appears the money being requested in this application would not be available until 2023, bridge loans or bond funds, if available, could be utilized to cover the costs until the grant money is available in 2023. We anticipate using FTA's provisions for pre-award authority to allow construction work to begin well before grant funds would become available. NEPA documentation is already complete, so construction work could begin as soon as the design is finished. However, if pre-award authority is not available as soon as planned, the work would be delayed until finances are available.

## Project Readiness: PE

1. **Are you requesting funds for ONLY a planning study or preliminary engineering?**  
No
2. **What is the actual or estimated start date for preliminary engineering/design?**  
May 2020
3. **Is preliminary engineering complete?**  
No
4. **What was the date of completion (month and year)?**  
N/A
5. **Have preliminary plans been submitted to WSDOT for approval?**  
N/A
6. **Are there any other PE/Design milestones associated with the project? Please identify and provide dates of completion. You may also use this space to explain any dates above.**  
N/A
7. **When are preliminary plans expected to be complete?**  
10/2020

## Project Readiness: NEPA

1. **What is the current or anticipated level of environmental documentation under the National Environmental Policy Act (NEPA) for this project?**  
Categorical Exclusion (CE)
2. **Has the NEPA documentation been approved?**  
Yes
3. **Please provide the date of NEPA approval, or the anticipated date of completion (month and year).**  
July 31, 2019

## Project Readiness: Right of Way

1. **Will Right of Way be required for this project?**  
No
2. **What is the actual or estimated start date for right of way?**  
N/A
3. **What is the estimated (or achieved) completion date for the right of way plan and funding estimate (month and year)?**  
N/A
4. **Please describe the right of way needs of the project, including property acquisitions, temporary construction easements, and/or permits.**  
N/A
5. **What is the zoning in the project area?**  
N/A
6. **Discuss the extent to which your schedule reflects the possibility of condemnation and the actions needed to pursue this.**  
N/A
7. **Does your agency have experience in conducting right of way acquisitions of similar size and complexity?**  
N/A
8. **If not, when do you expect a consultant to be selected, under contract, and ready to start (month and year)?**  
N/A
9. **In the box below, please identify all relevant right of way milestones, including the current status and estimated completion date of each.**  
N/A

## Project Readiness: Construction

1. **Are funds being requested for construction?**  
Yes

2. **Do you have an engineer's estimate?**  
Yes
3. **Engineers estimate document**  
Monorail\_Station\_Estimate\_-\_Seattle\_Center\_Phase\_1\_Est\_FINAL\_05212018.pdf
4. **Identify the environmental permits needed for the project and when they are scheduled to be acquired.**  
None. Improvements to existing station.
5. **Are Plans, Specifications & Estimates (PS&E) approved?**  
N/A
6. **Please provide the date of approval, or the date when PS&E is scheduled to be submitted for approval (month and year).**  
N/A
7. **When is the project scheduled to go to ad (month and year)?**  
December 2020

## Other Considerations

1. **Describe any additional aspects of your project not requested in the evaluation criteria that could be relevant to the final project recommendation and decision-making process.**  
This larger project to improve system capacity at both Seattle Center and Westlake Center stations has been planned for many years, but has not gone beyond the planning phase due to insufficient secured funding. Now with the commitment of private investors to do the required work at Westlake Center Station, the work at Seattle Center Monorail Station will lag behind if it is not tackled now. We recognize that the current construction environment has many risks due to the current global crisis. Nevertheless, the desire is for both station projects to be completed by the time the Arena opens. If funding is granted, we would work tenaciously to be ready at the time the Arena opens or as soon as possible thereafter.  
  
By thoughtful, strategic maintenance and capital improvements, the Seattle Monorail is being stewarded to have an indefinite life. Therefore, investing in this nearly 60 year old system not only furthers transit, but continues the legacy of innovation and forward-thinking celebrated by the Century 21 World's Fair in 1962.
2. **Describe any innovative components included in your project: these could include design elements, cost saving measures, or other innovations.**  
One unique aspect is that NHL Seattle, owner of the hockey team, has publicly announced that it will subsidize Monorail and other transit use for ticket holders by including transit fares in the ticket. This will undoubtedly incentivize new transit usage in the area as individuals opt to use the Monorail as their last mile solution from any number of other transit options that are near Westlake Center. The Seattle Center Monorail is poised to handle the increased demand if this work is funded.
3. **Describe the process that your agency uses to determine the benefits of projects; this could include formal cost-benefit analysis, practical design, or some other process by which the benefits of projects are determined.**  
Seattle Center, as the custodian of the Monorail for the City of Seattle, has worked integrally with the Monorail operator, Seattle Monorail Services LLC, to develop a comprehensive Transit Asset Management Plan (TAMP). Prior to the FTA releasing the guidance for developing a TAMP, the Monorail system had a similar plan called the Capital and Major Maintenance Program (CMMP), which is a 5-year planning tool to ensure the Monorail will be well maintained and upgraded to continue operating decades into the future. The first CMMP document was approved in June 2015 and has been updated annually since, and in 2018 was merged with TAMP guidelines to create what we are calling the TAMP/CMMP. Most of the work in the CMMP has been funded through 5307 and 5337 grants through regional formula funds (TIP SEA-167 and SEA-210). A prioritized project list was developed early in the process, with station reconfiguration being listed as one of the higher priority projects. In light of that, a station reconfiguration feasibility study was initiated in 2017 to look at several conceptual designs for both stations, evaluating them for practicality, cost-benefit, efficiency, and aesthetics. This project is a direct result of the recommendations for Seattle Center Station in that study.  
  
As part of the feasibility study, several public outreach meetings with various neighborhood groups (Uptown, Belltown, Southlake Union) were held in conjunction with the Arena EIS and NODO MAP process. At these meetings, concepts for the Monorail stations were presented and feedback was received. The backing of the public particularly favored improved multi-modal connections and ADA improvements in the stations, both are part of this project. In addition, online and paper surveys were distributed through community blogs, social media, local news, neighborhood groups, and at the Monorail station. The survey revealed the following:
  - Current and proposed Monorail improvements could triple Monorail ridership during events at the Seattle Center. After improvements are made, upwards of 70 percent of survey participants say they will ride the Monorail to get to Seattle Center.
  - Improving the platform-to-platform connection between the Monorail and Link Light Rail is the most critical improvement to increasing ridership.
  - After improvements, most riders will get to the Westlake Monorail station via the Link Light Rail.
  - Those who predict they will attend more events at the Seattle Center are the most likely to consider taking the Monorail from a Link Light Rail transfer.
For more details of the cost-benefit analysis and public outreach, see appendices A, B, and C of the attached "Seattle Center Monorail Stations Reconfiguration Evaluation Report" go to <https://www.seattlemonorail.com/wp-content/uploads/2018/06/VIA-Architecture-Monorail-Reconfiguration-Evaluation-Report-FINAL-AS-PUBLISHED.pdf>
4. **Final documents**  
1\_Categorical\_Exclusion\_Email\_and\_NEPA\_documentation\_.pdf

**From:** Witmer, John (FTA) <[John.Witmer@dot.gov](mailto:John.Witmer@dot.gov)>  
**Sent:** Wednesday, July 31, 2019 4:46 PM  
**To:** Levengood, Stephen <[Stephen.Levengood@seattle.gov](mailto:Stephen.Levengood@seattle.gov)>  
**Cc:** Canete, Ken <[Ken.Canete@seattle.gov](mailto:Ken.Canete@seattle.gov)>; Assam, Mark (FTA) <[Mark.Assam@dot.gov](mailto:Mark.Assam@dot.gov)>; Changchien, Amy (FTA) <[Amy.Changchien@dot.gov](mailto:Amy.Changchien@dot.gov)>; Dunn, Ned <[Ned.Dunn@seattle.gov](mailto:Ned.Dunn@seattle.gov)>  
**Subject:** Confirmation of Categorical Exclusion - SDOT/Seattle Center - Seattle Center Monorail System Renovation project

**CAUTION: External Email**

Dear Stephen: The Federal Transit Administration (FTA) has reviewed the materials submitted by e-mail on July 30, 2019, including an FTA Categorical Exclusion (CE) worksheet and supporting documentation describing the proposed Seattle Department of Transportation (SDOT)/Seattle Center - Seattle Center Monorail System Renovation project (Project) in Seattle, Washington. The Project implements the Seattle Center Monorail Transit Asset Management Plan (TAMP) and Capital and Major Maintenance Program (CMMP) Plan. The TAMP/CMMP Plan, most recently updated in September 2018, is a 5-year plan prioritizing Seattle Center Monorail capital renovations to the trains, stations, and elevated guideways and supporting pylons. Based on the current TAMP/CMMP Plan, the City of Seattle plans the following maintenance and renovation activities to the Seattle Center Monorail system through 2023:

**Trains:** Floor replacement; door refurbishment; electrical system updates and remote monitoring; propulsion system replacement; power collector assembly system renovation; renovation and repairs to the pneumatic, low-voltage electrical, and suspension systems; exterior and structural repairs;

**Stations:** Electrical room upgrades and switchgear replacement; power supply replacement at the Seattle Center station; platform re-surfacing; refurbishment or replacement of train entry/exit gates and installation of automated fare gates to provide more efficient passenger loading and unloading;

**Elevated Guideways and Supporting Pylons:** Strengthening guideway/pylon connections; structural reinforcement of pylon pedestals and footings; guideway beam joint re-surfacing, and

### **Transit Asset Management Plan Development**

Under Section 106 of the National Historic Preservation Act (NHPA), and pursuant to 36 Code of Federal Regulations (CFR) Part 800, FTA consulted with the Washington State Historic Preservation Officer (SHPO). On July 5, 2019, in correspondence to the SHPO, FTA determined that the Project would result in no adverse effect on resources listed on, or eligible for, the National Register of Historic Places (NRHP). FTA received SHPO concurrence with this determination on July 24, 2019.

This e-mail confirms that FTA has determined that the Project qualifies as a CE under the National Environmental Policy Act (NEPA) pursuant to 23 CFR Part 771.118(c)(8). This determination of CE applies only to the Project as described above and in the July 30, 2019 documentation submitted to FTA. Should the Project scope change or new information on the Project or its potential environmental effects be

provided, FTA may require a re-evaluation of the NEPA determination and may withdraw or suspend the CE or require additional environmental reviews.

This confirmation is not an expressed or implied promise that Federal financial assistance for the Project will be awarded. Please contact me if you have questions.

Thank you for coordinating with FTA.

Sincerely,

John Witmer  
Community Planner  
Federal Transit Administration, Region X  
915 2nd Avenue, Suite 3142 | Seattle, WA 98174-1002  
(206) 220-7964 | [john.witmer@dot.gov](mailto:john.witmer@dot.gov) | [www.transit.dot.gov](http://www.transit.dot.gov)

**From:** Dunn, Ned [<mailto:Ned.Dunn@seattle.gov>]

**Sent:** Tuesday, July 30, 2019 9:20 AM

**To:** Witmer, John (FTA) <[John.Witmer@dot.gov](mailto:John.Witmer@dot.gov)>

**Cc:** Canete, Ken <[Ken.Canete@seattle.gov](mailto:Ken.Canete@seattle.gov)>; Assam, Mark (FTA) <[Mark.Assam@dot.gov](mailto:Mark.Assam@dot.gov)>; Changchien, Amy (FTA) <[Amy.Changchien@dot.gov](mailto:Amy.Changchien@dot.gov)>; Levensgood, Stephen <[Stephen.Levensgood@seattle.gov](mailto:Stephen.Levensgood@seattle.gov)>

**Subject:** RE: Monorail follow-up

John – Attached is a completed CE checklist for the Monorail FTA grant. Stephen Levensgood (lead Project Manager for Monorail renovation projects) and I had a couple of questions in completing the checklist:

1. We followed your instruction to check box #8 under II.B (Maintenance, Rehab, Reconstruction of Facilities). We are assuming you only want one box checked in this section(?). We wondered if we should also check box 7 (Acquisition, Rehab, Maintenance of Vehicles or Equipment), as the scope of work includes work on the trains.
2. We included the language you requested that the “Washington State Historic Preservation Officer concurred with a finding of ‘no adverse effect’ on July 24, 2019.” I wasn’t sure where to put that, so I included it in two places: (1) in III.M. (Historic & Cultural Resources), even though I believe Section III relates to “Documented Categorical Exclusions” which I understand to be different than the CE for the Monorail grant(?); (2) in III.AA, next to the box for “Section 106 (Historic Properties)”.

I am also including the APE as the “project vicinity map” and the Section 106 no adverse effect letter from the State, as attachments to the CE checklist.

Let us know if there is anything else you need from us in order to get this grant executed. My hope is to get the grant executed in FFY 2019 before TrAMS closes in September.

Thank you again for all your assistance. -- Ned

**Ned Dunn**

**Assistant Director, Redevelopment/Capital Budget**

tel: 206.684.7212 fax: 206.386.9091

e-mail: [ned.dunn@seattle.gov](mailto:ned.dunn@seattle.gov)

**From:** Witmer, John (FTA) <[John.Witmer@dot.gov](mailto:John.Witmer@dot.gov)>

**Sent:** Wednesday, July 24, 2019 10:19 AM

**To:** Dunn, Ned <[Ned.Dunn@seattle.gov](mailto:Ned.Dunn@seattle.gov)>

**Cc:** Canete, Ken <[Ken.Canete@seattle.gov](mailto:Ken.Canete@seattle.gov)>; Assam, Mark (FTA) <[Mark.Assam@dot.gov](mailto:Mark.Assam@dot.gov)>; Changchien, Amy (FTA) <[Amy.Changchien@dot.gov](mailto:Amy.Changchien@dot.gov)>

**Subject:** Monorail follow-up

**CAUTION: External Email**

Ned: Since we now have Section 106 concurrence, would you fill out the CE form for NEPA? Here's the link to it. You would select C8 on the checklist in Part B. Part III is where you provide the project description.

<https://cms.fta.dot.gov/about/regional-offices/region-10/fta-region-10-categorical-exclusion-and-documented-categorical>

There's a section on Historic and Cultural Resources in the CE checklist. In this section, please indicate that the Washington State Historic Preservation Officer concurred with a finding of "no adverse effect" on July 24, 2019. I'll go ahead and review the grant (and send review comments to Ken), but FTA will need to send you an email approving the CE before we can formally process the grant. Since we've addressed the main issue with the Section 106 concurrence, the remainder of the CE is more or less a formality.

Thanks, John

John Witmer  
FTA Region 10  
915 Second Avenue, Suite 3142  
Seattle, WA 98174-1002  
206-220-7964



Allyson Brooks Ph.D., Director  
State Historic Preservation Officer

July 24, 2019

Ms. Linda Gehrke  
Deputy Regional Administrator  
Federal Transit Administration  
915 Second Avenue  
Suite 3142  
Seattle, WA. 98174-1002

In future correspondence please refer to:  
Project Tracking Code: 2019-07-04899  
Property: City of Seattle\_ Seattle Center Monorail System Renovation Project  
Re: NO Adverse Effect

Dear Ms. Gehrke:

Thank you for contacting the State Historic Preservation Officer (SHPO) and Department of Archaeology and Historic Preservation (DAHP) regarding the above referenced proposal. This action has been reviewed on behalf of the SHPO under provisions of Section 106 of the National Historic Preservation Act of 1966 (as amended) and 36 CFR Part 800. Our review is based upon documentation contained in your communication.

First, we agree with the Area of Potential Effect (APE) as mapped in the survey report. We also concur that the current project as proposed will have "NO ADVERSE EFFECT" on historic properties within the APE that are listed in, or determined eligible for listing in, the National Register of Historic Places. As a result of our concurrence, further contact with DAHP on this proposal is not necessary. However, if new information about affected resources becomes available and/or the project scope of work changes significantly, please resume consultation as our assessment may be revised. Also, if any archaeological resources are uncovered during construction, please halt work immediately in the area of discovery and contact the appropriate Native American Tribes and DAHP for further consultation.

Thank you for the opportunity to review and comment. Please ensure that the DAHP Project Number (a.k.a. Project Tracking Code) is shared with any hired cultural resource consultants and is attached to any communications or submitted reports. If you have any questions, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Dennis Wardlaw', is written over a light blue horizontal line.

Dennis Wardlaw  
Transportation Archaeologist  
(360) 586-3085  
dennis.wardlaw@dahp.wa.gov





U.S. Department  
of Transportation  
**Federal Transit  
Administration**

REGION X  
Alaska, Idaho, Oregon,  
Washington

915 Second Avenue  
Federal Bldg. Suite 3142  
Seattle, WA 98174-1002  
206-220-7954  
206-220-7959 (fax)

July 5, 2019

Allyson Brooks, Ph.D.  
State Historic Preservation Officer  
Washington Department of Archaeology and Historic Preservation  
P.O. Box 48343  
Olympia, WA 98504-8343

**Subject: City of Seattle  
Seattle Center Monorail System Renovation Project  
NHPA Section 106 Eligibility and Effects Determination  
Grant No.: 1749-2019-1**

Dear Dr. Brooks:

The City of Seattle proposes to use federal funds administered by the Federal Transit Administration (FTA) to construct the Seattle Center Monorail System Renovation Project (Project), located in the City of Seattle, King County, Washington. The Project is therefore considered a federal undertaking subject to the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations at 36 Code of Federal Regulations (CFR) Part 800. This letter initiates Section 106 consultation with the Washington State Historic Preservation Officer (SHPO), requests your feedback on the proposed Area of Potential Effects (APE), and requests your concurrence with the proposed Eligibility and Effects Determinations for the Project.

The Project implements the Seattle Center Monorail Transit Asset Management Plan (TAMP) and Capital and Major Maintenance Program (CMMP) Plan (see Exhibit A). The TAMP/CMMP Plan, most recently updated in September 2018, is a 5-year plan prioritizing Seattle Center Monorail capital renovations to the trains, stations, and the elevated guideways and supporting pylons. Based on the current TAMP/CMMP Plan, the City of Seattle plans the following maintenance and renovation activities to the Seattle Center Monorail system through 2023:

**Trains**

Floor replacement; door refurbishment; electrical system updates and remote monitoring; propulsion system replacement; power collector assembly system renovation; renovation and

July 5, 2019

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repairs to the pneumatic, low-voltage electrical, and suspension systems; exterior and structural repairs;

### **Stations**

Electrical room upgrades and switchgear replacement; power supply replacement at the Seattle Center station; platform re-surfacing; refurbishment or replacement of train entry/exit gates and installation of automated fare gates to provide more efficient passenger loading and unloading;

### **Elevated Guideways and Supporting Pylons**

Strengthening guideway/pylon connections; structural reinforcement of pylon pedestals and footings; guideway beam joint re-surfacing.

As shown in Exhibit B, the proposed APE boundary for the Project is limited to the existing Seattle Center Monorail stations, and the existing street right-of-way along the guideway. A search of the Washington Information System for Architectural and Archeological Records Data (WISAARD) was completed for Project. This search yielded the Historic Property Inventory Report for the Seattle Center Monorail contained in Exhibit C. The Seattle Center Monorail is eligible for listing on the National Register of Historic Places (NRHP) under Criterion A for its association with the 1962 Seattle World's Fair, and for its role in transportation history. The Seattle Center Monorail is also a designated City of Seattle landmark.

Based on the aforementioned documentation, FTA has made the following determinations:

- The Project APE is limited to the existing Seattle Center Monorail stations, and the existing street right-of-way along the guideway as depicted in Exhibit B.
- The Seattle Center Monorail is located within the Project APE and is eligible for listing on the NRHP. There are no other resources listed on, or eligible for, the NRHP within the Project APE.
- The Project would result in **no adverse effect** on resources listed on, or eligible for, the NRHP.

Pursuant to 36 CFR Part 800, FTA is seeking SHPO concurrence with these determinations within 30 days of receipt of this letter.

If FTA can provide any assistance or additional information which would aid in your prompt reply, please feel free to contact Mark Assam at (206) 220-4465 or [mark.assam@dot.gov](mailto:mark.assam@dot.gov). Thank you for your assistance.

Sincerely,

Linda M. Gehrke  
Regional Administrator

cc: Ned Dunn, Seattle Center, City of Seattle

July 5, 2019

Page 3

Attachments: Exhibit A: Seattle Center Monorail Consolidated Transit Asset Management Plan (TAMP) and Capital and Major Maintenance Program (CMMP) Plan, September 26, 2018

Exhibit B: Monorail System Renovation - Area of Potential Effects (APE)

Exhibit C: Historic Property Inventory Report, Seattle Center Monorail

**Seattle Center Monorail**  
**CONSOLIDATED**  
**Transit Asset Management Plan (TAMP)**  
(Per Federal Transit Administration MAP-21 State of Good Repair)  
and  
**Capital and Major Maintenance Program (CMMP)**  
**Plan**  
(Per Monorail System Concession Agreement)



Jointly Prepared by: Seattle Monorail Services and Seattle Center

September 26, 2018

A handwritten signature in black ink, appearing to be 'R. Nellams', written over a horizontal line.

Robert Nellams, Director, Seattle Center

A handwritten signature in black ink, appearing to be 'Tom Albro', written over a horizontal line.

Tom Albro, Managing Director, Seattle Monorail Services

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# INTRODUCTION

The Seattle Center Monorail is owned by the City of Seattle, overseen by the Seattle Center Department, and operated by Seattle Monorail Services, LLC through a concession agreement with the City. The Monorail carries over two million riders annually between downtown Seattle and Seattle Center, a 74-acre arts, culture and entertainment campus. The downtown station is part of a regional transit hub, with connections to light rail, local and regional buses and the Seattle streetcar system. The Monorail system is just under a mile long and consists of two trains, two stations and the elevated guideways and supports that run in-between.

The Monorail was constructed by ALWEG Rapid Transit Company to showcase ALWEG's proprietary monorail technology at the 1962 Seattle World's Fair (Century 21 Exposition). The Monorail carried over 8 Million passengers during the 6-month World's Fair. In 1965, the City of Seattle purchased the Monorail from ALWEG. ALWEG ceased existence a few years later.

Between 1965 and 1994, the Monorail was operated by a combination of Seattle Transit, later merged into King County Metro Transit, and the City of Seattle. In 1994, following a request for proposal process, the City of Seattle entered into a concession agreement with Seattle Monorail Services for maintenance and operation of the Monorail. In 2013, the City again issued a request for proposals for operation of the Monorail, and in December 2014 entered into a ten-year Monorail System Concession Agreement with Seattle Monorail Services effective January 1, 2015.

The Seattle Center Monorail celebrated its 50<sup>th</sup> anniversary in 2012. Both trains have exceeded one million miles. The Monorail is a designated City of Seattle Landmark. The goal of the Transit Asset Management Plan (TAMP) and the Seattle Center Monorail Capital and Major Maintenance Program (CMMP) Plan is for the historic Seattle Center Monorail to celebrate its 100<sup>th</sup> anniversary in a State of Good Repair. Seattle Center and SMS approach asset management to achieve safe, reliable, and enjoyable service in perpetuity. The Monorail system overall is considered to have an indefinite life. The Monorail's subsystems and components, however, will become obsolete and will eventually require either full replacement or major refurbishment. This plan, like previous Monorail asset management plans, focuses at the subsystem and component level.

With the exception of the downtown station at Westlake Center, the Monorail system configuration is largely as it was in 1962. In 1988, the Westlake Station was moved slightly north and incorporated into Westlake Center Mall development. This modification reduced Monorail peak passenger capacity by about half, as the current configuration allows clearance for only one train in the station at a time and is accessed through the 3<sup>rd</sup> floor of the Westlake Center shopping mall, where the original downtown station accommodated two trains and had greater access from the street level. The Seattle Center station location remains the same and accommodates two trains. A 2018 Monorail Stations Reconfiguration Evaluation Report provides recommendations for increasing system capacity to meet current and future needs.

## **ABOUT THIS PLAN**

This Plan supplements the existing Monorail asset management plan – the Seattle Center Monorail Capital and Major Maintenance Program (CMMP) Plan – to include all of the elements of a Transit Asset Management Plan (TAMP) required by the Federal Transit Administration in one consolidated document.

The Monorail System Concession Agreement between the City of Seattle and Seattle Monorail Services stipulates that SMS and the City, through its Seattle Center Department, shall jointly prepare a 5-year Capital and Major Maintenance Program (CMMP) Plan that identifies and prioritizes current and future capital improvement and major maintenance needs of the Monorail system in a systematic manner, together with a capital spending plan. The CMMP Plan is to be updated annually, so it is always looking ahead five years. The original CMMP Plan was completed in 2015 and built upon prior asset management plans using a similar approach. Updates to the CMMP Plan were completed in 2016 and 2017. The consolidated TAMP/CMMP Plan constitutes the 2018 CMMP Plan update.

The CMMP Plan is very much aligned with the overarching goal of State of Good Repair from the Moving Ahead for Progress in the 21st Century (MAP-21) funding and authorization bill passed by the United States Congress in 2012, and the Federal Transit Administration’s (FTA) July 2016 rule requiring FTA grantees to develop Transit Asset Management Plans (TAMP). The process and structure of the CMMP Plan have been augmented to include the new elements required by the FTA for a TAMP in one consolidated document.

The Consolidated TAMP/CMMP Plan includes nine sections, in accordance with FTA guidelines for Tier 1 agencies:

- (1) Asset Inventory;
- (2) Asset Condition Assessment;
- (3) Decision Support Tools;
- (4) Investment Prioritization;
- (5) Transit Asset Management and State of Good Repair Policy;
- (6) Implementation Strategy;
- (7) Key Activities;
- (8) Summary of Resources; and,
- (9) Monitoring, Updating and Evaluation Outline.

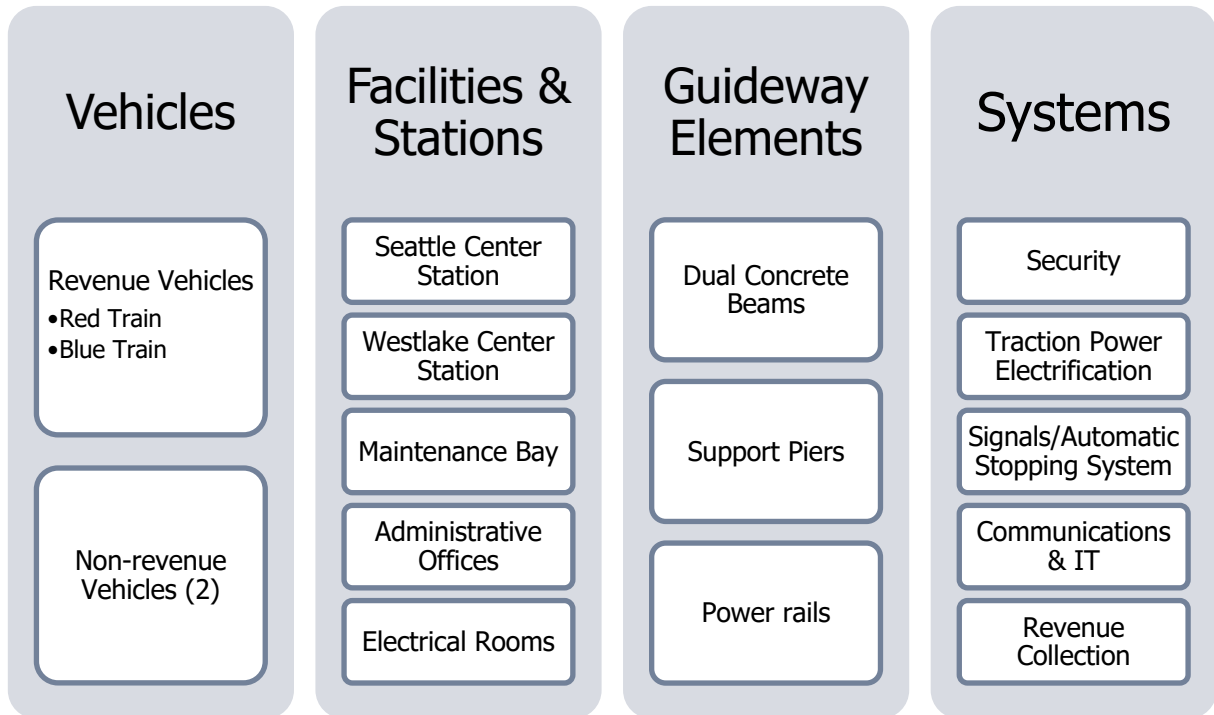
# SECTION 1: ASSET INVENTORY

The Seattle Center Monorail operates between downtown Seattle and Seattle Center, the former site of the 1962 Seattle World’s Fair. The two monorail trains (Red Train and Blue Train) have been in nearly continuous operation since 1962, each having logged over 1,200,000 miles.

Facilities include the Seattle Center Monorail Station (370 Thomas St) and the Westlake Center Monorail Station (400 Pine St). The train maintenance area is underneath the passenger platform at the Seattle Center Station. Administrative offices are adjacent to the Seattle Center Station platform. Ticket booths are located on the passenger platforms at both stations.

A fixed, dedicated and elevated one-mile dual beam guideway runs mostly above the street right-of-way and is supported by over 60 concrete columns and a few steel supports. The Monorail trains run on 700 volts of DC power, which is supplied to the trains through contact rails attached to each beam. Each station has an electrical room with switchgear to control the power to the guideway. The Monorail system has two portable non-revenue service vehicles that are placed on the guideway for inspection, maintenance, and repair using an overhead crane.

The following table shows a high-level inventory for the Seattle Monorail System:



## SECTION 2: ASSET CONDITION ASSESSMENT

Because of the historic nature and projected longevity of the Monorail system, Seattle Center and SMS use a condition-based assessment for the Monorail, rather than a useful life benchmark (ULB) metric. According to Federal Register Vol. 18, No. 143 dated Tuesday July 26, 2016 published at <https://federalregister.gov/a/2016-16883>, "FTA has provided flexibility for condition assessments so individual transit providers and sponsors can determine the most effective methodology to use for their circumstances," and also "FTA recognizes that age is not necessarily the most accurate performance measure available."

The first two tables below show the condition assessments for the rolling stock and subsystems, for the Seattle Center Monorail.

*Table 1. Rolling Stock Condition Assessment*

Year	Make & Model	Actual Life Odometer (as of Aug 2018)	Is Vehicle Safe?	Agency's ULB (year)	Maintenance Current?	Performs Designed Function?	Accessible (ADA)	Seating Capacity	Fuel Type
1962	Red Train Alweg	1,284,000	Yes	ULB of subsystems varies based on history of overhauls See following table for Subsystem ULBs	Yes	Yes	Yes	130	Electric
1962	Blue Train Alweg	1,336,000	Yes		Yes	Yes	Yes	130	Electric

*Table 2. Rolling Stock Subsystem Condition Assessment*

Subsystem	Last Replacement/Overhaul	Last Replacement/Overhaul Cost	Current Condition	Agency's ULB (year)	Next Overhaul
Bogies, Suspension & Drivetrain	2008 Blue 2010 Red	\$3M	Good	16-20 years	2024-2030
Propulsion	1994	Unknown	Good but facing obsolescence	25 years	2022-23
Pneumatics	2008 Blue 2010 Red	\$1M	Good	20 years	2028-30
Low Voltage Electrical	2008 Blue 2010 Red	\$2.5M	Good	20 years	2028-30

Facilities and infrastructure are given a score from 1-5 based on the Transit Economic Requirements Model (TERM) condition assessment scale. Under the TERM scale, an asset in need of immediate repair or replacement is scored as one (1), whereas a new asset with no visible defects is scored as five (5). An asset is deemed to be in good repair if it has a rating of 3, 4 or 5 on this scale. Likewise, a facility is deemed to be not in good repair if it has a rating of 1 or 2.

**Table 3. TERM Scale**

Rating	Condition	Description
5	Excellent	No visible defects, new or near new condition, may still be under warranty if applicable
4	Good	Good condition, but no longer new, may have some slightly defective or deteriorated component(s), but is overall functional
3	Adequate	Moderately deteriorated or defective components; but has not exceeded useful life
2	Marginal	Defective or deteriorated component(s) in need of replacement; exceeded useful life
1	Poor	Critically damaged component(s) or in need of immediate repair; well past useful life

**Table 4. Facility and Infrastructure Condition Assessment**

Category	Facility Name	Condition Rating (TERM Scale)	Year Built	Comments
Facility	Seattle Center Platform (SC)	3	1962	Areas identified for improvement include loading and unloading of trains and platform configuration.
Facility	Westlake Center Platform (WLC)	3	1987	Areas identified for improvement include increase passenger flow capacity, streamline loading and unloading of trains.
Facility	Administrative Offices (SC)	2	1962	Replace or refurbish.
Infrastructure	Guideway (Piers A-56)	3	1962	Resurfacing of the beam joints has been done along the guideway over the past 12 years, and annual inspections are done to prioritize and plan for future resurfacing work. Tie-down bolts are re-tensioned on a 10-year cycle.
Infrastructure	Guideway (Piers 57-64)	3	1987	Guideway repairs were performed in 2012 in this area. Inspected annually.
Infrastructure	Power Rails	4	1962, replaced 2010	Annually inspected and insulators cleaned.
Infrastructure	Electrical Rooms	3	1988	Improvements to 700VDC electrical equipment and air handling are scheduled for 2019-2021

## SECTION 3: DECISION-SUPPORT TOOLS

Seattle Center and SMS devote significant time to identifying, prioritizing, and monitoring Monorail capital and major maintenance projects. Through regular TAMP/CMMP meetings, technical expertise from staff and specialized consultants, and capital project implementation, the refinement of the TAMP/CMMP is a continuous process informed by past experience, new information and lessons learned, culminating in a published updated plan each year. The most important decision making tool is the existing TAMP/CMMP, which was developed by reviewing the history of Monorail capital improvements to inform the priority and timing for future investments. New studies and analyses are also important factors in shaping current and future TAMP/CMMP Plans. Current examples of that are the Stations Reconfiguration Evaluation Report, completed in 2018, and a seismic analysis currently underway.

In developing and updating the 5-year TAMP/CMMP, Seattle Center and SMS consider the following factors:

1. Priority of a given project. Priority is a combined relative metric that combines urgency and importance.
2. Train operational limitations—maintain one train in service at all times and avoid work during peak ridership periods.
3. Timing and availability of funding.
4. Efficiency of implementation—bundle work wherever it makes sense.

The higher priority projects are generally scheduled in the plan as soon as funds and timing allows. Projects are also analyzed to find where procurement, design, and/or construction efficiencies could be realized if projects were sequenced or undertaken in groups.

The table below shows the current prioritized list of potential improvements along with recently completed CMMP projects.

Table 5. *Prioritized Project List as of 2018.*

List of Potential Improvements	Priority Ranking	Status
<ul style="list-style-type: none"> <li>• <b>Guideway &amp; other concrete major maintenance:</b> Bottom beam repairs, Pier Crack Injection, Tie-down bolt re-tensioning, Pier Cleaning &amp; Renumbering, Top &amp; Side Repairs</li> </ul>		<p>Last phase completed 2015-16.</p> <p>Next phase planned for 2020-2022</p>
<ul style="list-style-type: none"> <li>• <b>Electronic Ticketing, Point Of Sale Update &amp; Computer Network Upgrade</b></li> </ul>		Completed 2018
<ul style="list-style-type: none"> <li>• <b>Perform Study/Design for Station Upgrades</b> to connect with Metro, Street Car, Light Rail, and increase capacity</li> </ul>		Completed 2018

List of Potential Improvements	Priority Ranking	Status
• <b>Electrical Room Upgrades:</b> New AC electrical feed at SC for 700VDC, Uninterruptible Power Supply System, Emergency Lighting, Fire Detection System, HVAC System Improvements, Seal rooms from water, update ramp PLCs, Intrusion Alarms	1	Design in progress. Work planned for 2019-21.
• <b>Train Floor Replacement:</b> Replace transit flooring and subfloor	2	Design in progress. Work planned 2018-2019
• <b>Elevator Improvements at Westlake Station</b>	3	Work planned 2019
• <b>Seismic Evaluation &amp; Upgrades</b>	4	Phase 2 Analysis in progress: 2018-2019 Upgrades: TBD
• <b>Station Reconfiguration:</b> Update Look & Feel, Platform Resurfacing, Accessibility Improvements, Station Lighting; POS Redesign, Passenger Experience, and Capacity Improvements	5	Planned for 2020+
• <b>Improve visibility, wayfinding, and accessibility</b> to/from Seattle Center Campus & Westlake Center	5	Part of station reconfiguration 2020
• <b>Train Electrical Minor Updates</b>	6	Planned for 2020-21
• <b>Switchgear upgrade</b>	7	Planned for 2020
• <b>Passenger Door Upgrades</b> (improvements to actuators, sensitive edges, latching, rollers, tracks, etc.)	8	Planned for 2019-20
• <b>System Status Monitoring:</b> Vibration, temperature, pressure, location monitoring	9	Planned for 2020-21
• <b>Propulsion system design</b>	10	Planned for 2019-21
• <b>Propulsion system replacement</b>	10	Planned for 2023-24
• <b>Collector System Overhaul</b>	11	Planned with propulsion system work 2023-24
• <b>Train Heating and Ventilation Improvements</b>	12+	Considering heated floors as part of floor design
• <b>Create method for covering trains while in revenue position in stations</b>	12+	Planned as part of station reconfiguration.
• <b>Train Frame Inspections and Paint</b>	12+	2024+
• <b>Exterior Skin Inspections, Repair, &amp; Paint</b>	12+	2023+
• <b>Bogie Inspections &amp; Repairs</b>	12+	2023+
• <b>Intercar link inspections &amp; Bearing Replacement</b>	12+	2024+
• <b>Suspension Arm Inspections</b>	12+	2024+
• <b>PLC, Relays &amp; Touch panel updates</b>	12+	2024+

List of Potential Improvements	Priority Ranking	Status
•Pier Painting	12+	Done in 2016 with guideway work. To be repeated.
•Bellows Replacement	12+	Planned for 2024
•Windshield Windows	12+	TBD
•Beam/power-rail snow removal	12+	TBD

## SECTION 4: INVESTMENT PRIORITIZATION

### TAMP/CMMP PLAN APPROACH

The table below shows the investment prioritization for the 2018 TAMP/CMMP Plan based on the decision-making list in Section 3. The Plan is built upon previous CMMP Plans and revised based on technical expertise from staff and specialized consultants, past experience, new studies and analyses, and regular TAMP/CMMP meetings between Seattle Center and SMS. The timing and prioritization of projects is also based on projected availability of funding to carry out the plan.

A new study influencing the 2018 TAMP/CMMP Plan is the Stations Reconfiguration Evaluation Report completed in 2018. The study examined how to improve system accessibility and capacity, and specifically examined the merits and feasibility of various station improvement alternatives. The study concluded that Monorail capacity could be doubled to 6,000 passengers per hour per direction (from the current 3,000) with a relatively modest investment. The evaluation was particularly timely given the likelihood that KeyArena (located at Seattle Center) will be privately redeveloped to serve as a premier entertainment and sports venue, reopening in 2020 as home to concerts, the WNBA Champion Seattle Storm, and a new National Hockey League team. A redeveloped arena is expected to host twice as many events as the current arena, and the Monorail will be a key transportation link to carry arena patrons between Seattle Center and downtown, connecting with the region's expanding light-rail transit system and downtown amenities.

The costs to implement the recommendations of the 2018 Stations Reconfiguration Evaluation Report exceed the funding capacity of the CMMP Plan. However, the 2018 TAMP/CMMP Plan allocates over \$2 Million for station improvements, contingent on additional funding sources and partners being identified to carry out a larger scope of station improvements.

### ESTIMATED COSTS AND TIMELINE

Estimated costs and timing of projects are incorporated in the table on the following page. Cost estimates in the TAMP/CMMP are generally planning level estimates, which are considered AACE Class 5 estimates. As more information becomes available, such as more detailed project scopes or engineer's estimates, cost estimates are updated.

The timing of projects is based on a number of factors, including:

1. Priority of a given project
2. Interrelation with other projects (both Monorail and otherwise)
3. Train operational limitations—maintain one train in service at all times and avoid work during peak ridership periods
4. Timing and availability of funding
5. Efficiency of implementation—bundle work wherever it makes sense

Design and procurement take place throughout the year, but the higher impact projects generally occur during periods of lower passenger volumes (late fall, winter, and early spring).

Table 6. Estimated TAMP/CMMP Plan Project Costs by Year

Category	Group	LTD (2015-17)	2018	2019	2020	2021	2022	2023	Totals
Trains	CMMP Planning	77,473	50,000	80,000	50,000	50,000	50,000	50,000	\$ 407,473
Elevated	Guideway Work	635,228	-	-	200,000	200,000	500,000	-	\$1,535,228
Stations	Electrical Room Updates & Switchgear replacement	64,454	166,000	1,200,000	800,000	-	-	-	\$2,230,454
Stations	Replace Ticketing System	96,723	217,000	-	-	-	-	-	\$ 313,723
Trains	Monorail Wheels	-	75,000	-	-	-	-	-	\$ 75,000
Stations	Feasibility Study & Station Redesign	85,884	220,000	255,000	-	-	-	-	\$ 560,884
Stations	Station Reconfiguration & WLC Elevator Upgrade	-	-	500,000	1,500,000	500,000	-	-	\$2,500,000
Trains	Train Floor Replacement	-	80,000	870,000	-	-	-	-	\$ 950,000
Elevated	Seismic Evaluation Phase 2	-	65,000	180,000	-	-	-	-	\$ 245,000
Trains	Passenger Door Refurbishment	-	-	150,000	1,000,000	-	-	-	\$1,150,000
Stations	ORCA Startup (Allowance)	-	-	500,000	-	-	-	-	\$ 500,000
Trains	Train Electrical Updates and Remote Monitoring System	-	-	-	50,000	200,000	-	-	\$ 250,000
Trains	Propulsion System & Collector Redesign	-	-	30,000	-	270,000	-	-	\$ 300,000
Trains	Propulsion & Collector Installation	-	-	-	-	-	-	1,300,000	\$1,300,000
Trains	Train Exterior, Structure, Bogies: Repairs & Coating	-	-	-	100,000	-	-	900,000	\$1,000,000
Trains	General Program Contingency	-	25,000	100,000	100,000	50,000	50,000	50,000	\$ 375,000
	<b>Total Costs</b>	<b>\$ 959,763</b>	<b>\$ 898,000</b>	<b>\$ 3,865,000</b>	<b>\$ 3,800,000</b>	<b>\$ 1,270,000</b>	<b>\$ 600,000</b>	<b>\$ 2,300,000</b>	<b>\$ 13,692,763</b>
<b>Spending by Fund</b>									
	<b>FTA Grant Funds</b>	742,353	637,057	2,692,000	3,040,000	1,016,000	480,000	1,680,260	\$ 10,198,870
	<b>IRA Match (20% of FTA)</b>	185,588	159,264	673,000	760,000	254,000	120,000	420,065	\$ 2,459,717
	<b>Vehicle License Fees</b>	-	-	500,000	-	-	-	-	\$ 500,000
	<b>Irrevocable Marketing Account (IMA)</b>	20,615	49,675	-	-	-	-	-	\$ 70,290
	<b>Other IRA Draw</b>	11,207	52,004	-	-	-	-	310,675	\$ 373,886
	<b>Total</b>	<b>\$ 959,763</b>	<b>\$ 898,000</b>	<b>\$3,865,000</b>	<b>\$ 3,800,000</b>	<b>\$ 1,270,000</b>	<b>\$ 600,000</b>	<b>\$ 2,300,000</b>	<b>\$ 13,692,763</b>

## **COSTS PER ALI**

Table 7 groups the TAMP/CMMP Plan projects into the three main FTA Activity Line Items (ALIs) for the Monorail—Rehab/Renov Elevated Structures, Rehab/Renov Rail Stations, and Vehicle Overhaul (Trains). These totals are broken into anticipated yearly costs in these three categories (ALIs).

*Table 7. Project Costs Per Year According to Grant Categories*

	<b>LTD 2015-17</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Totals</b>
<b>Elevated Structures</b>	635,228	65,000	180,000	200,000	200,000	500,000	-	\$1,780,228
<b>Stations</b>	247,061	603,000	2,455,000	2,300,000	500,000	-	-	\$6,105,061
<b>Trains</b>	77,473	230,000	1,230,000	1,300,000	570,000	100,000	2,300,000	\$5,807,473
<b>Totals</b>	<b>\$ 959,763</b>	<b>\$ 898,000</b>	<b>\$ 3,865,000</b>	<b>\$ 3,800,000</b>	<b>\$ 1,270,000</b>	<b>\$ 600,000</b>	<b>\$ 2,300,000</b>	<b>\$13,692,763</b>

## SECTION 5: TRANSIT ASSET MANAGEMENT AND STATE OF GOOD REPAIR POLICY

### VISION

The vision of the TAMP/CMMP is to shepherd a thoughtful and strategic capital and major maintenance program so the Monorail remains continually in a state of good repair.

Because of the historic nature of the system and value of maintaining continuous service, the TAMP/CMMP approach is not one of train replacement, but rather of strategic overhaul or replacement of train systems and components. Station improvements prioritize increasing capacity and better connections to light rail and buses, and guideway investments focus on structural integrity and a smooth ride. Realizing this vision requires a clear and dynamic plan that is regularly updated and persistently pursued over many years, in discrete and strategic increments, with each successive project building on its predecessors.

### GUIDING PRINCIPLES

The following are guiding principles for the TAMP/CMMP. Each project decision should be considered in light of these principles:

- Support a positive passenger experience
- Ensure reliability and safety
- Optimize capacity
- Increase longevity
- Enhance maintainability
- Respect overall look and feel of original trains
- Minimize disruption to passenger service while work is performed
- Optimize operating costs
- Minimize environmental impact
- Align with the goal of achieving a “State of Good Repair”

### MAIN FOCUS AREAS

Four main focus areas are:

- Enhance Experience (remove obstacles)
- Extend Longevity (state of good repair)
- Amplify Impact (leverage the asset)
- Improve Safety and Security (minimize risk)

Most projects will address more than one focus area, with some projects advancing all four.

## **STATE OF GOOD REPAIR POLICY STATEMENT**

A **State of Good Repair** is the condition in which a capital asset is able to operate at a full level of performance, providing its intended function. A capital asset is in a state of good repair when that asset:

1. Is able to perform its designed function and meets its performance targets.
2. Does not pose a known unacceptable safety risk.
3. Scheduled maintenance is up to date and being performed in accordance with the reliability centered maintenance plan.
4. Rehabilitation and subsystem replacements are planned and implemented to maintain and enhance system performance and reliability.

## **ROLES & RESPONSIBILITIES**

Roles and Responsibilities for the TAMP/CMMP are defined in the Monorail System Concession Agreement, in CMMP Project Agreements, and in the Monorail System Safety Program Plan (SSPP), a document that is reviewed by the FTA and WSDOT on a periodic basis.

### **ACCOUNTABLE EXECUTIVE**

The Accountable Executive for the Seattle Center Monorail is the Seattle Center Director.

### **PROJECT SPECIFIC ROLES**

Specific project roles for SMS and Seattle Center are defined in each CMMP Plan Project Agreement. Below is an example of typical roles for a given project, but may vary depending on the specific project and will be stipulated in each project agreement.

*SMS Role Owner's Representative; scope definition; engineering design review; assist with development of procurement documents and review of proposals and bids; project management; system integration; testing and verification.*

*Seattle Center Role Owner; assist with procurement documents; project management; schedule coordination; work acceptance; provide close-out project documents; project oversight; approval of project scope, budget, and documents; post bid documents on ebid; request for contract award; issue notices to proceed to contractor(s). Review, approve, and pay invoices. Submit requests for FTA grant reimbursement.*

## SECTION 6: IMPLEMENTATION STRATEGY

The asset management plan for the Seattle Center Monorail has two major components: ordinary maintenance and capital improvements. A reliability-centered ordinary maintenance plan is carried out by Seattle Monorail Services (SMS) in accordance with the Monorail System Concession Agreement and overseen by Seattle Center as part of Seattle Center’s Third Party Operator Checklist for the Seattle Center Monorail. Capital investments in the Monorail are guided by this TAMP/CMMP Plan. The structure and team to implement and oversee the TAMP/CMMP is already in place. The TAMP/CMMP will be monitored throughout the year by the asset management team.

When a TAMP/CMMP project is ready to move forward, Seattle Center and SMS execute a Project Agreement which details the scope, schedule, budget, funding sources, and procurement methods.

A key objective of the Consolidated TAMP/CMMP Plan is for the Monorail system and all system elements to meet their respective performance targets as outlined in the following table:

Table 8. Performance Targets

<b>Asset Category</b>	<b>Asset Class</b>	<b>Individual Asset</b>	<b>Performance Measure</b>	<b>Performance Targets</b>
Equipment	Construction	Crane	Number of vehicles operable at any point in time	At least one asset must be safely operable at any given time
	Non-revenue Service Vehicles	Track Maintenance Vehicle		
Rolling Stock	Revenue Vehicles	Red Train Subsystems	Meet Service Requirements	Perform four (4) roundtrips per hour with 99% uptime
		Blue Train Subsystems		Less than 10% operating mileage difference between trains in a year
Infrastructure	Fixed Guideway	Red & Blue Guideway Support Columns Power Rail	Areas with performance restrictions	Restrictions don’t hinder ability to perform four (4) roundtrips per hour
	Electrification	Electrical Vaults & Switchgear		
Facility	Support Facilities	Maintenance Facility & Storage	Percentage of facilities below condition 3 on the TERM scale	20% below 3 on the TERM scale
		Administrative Offices		
	Passenger Facilities	Westlake Center (WLC) Platform Seattle Center (SC) Platform		

## SECTION 7: KEY ACTIVITIES

### TRANSIT ASSET MANAGEMENT PLAN POLICIES

Seattle Center and SMS establish and update asset management policies through several mechanisms, beginning with the concession agreement between them. These policies are further articulated in this Plan, which is signed by both the Seattle Center Director and SMS's Managing Director.

The asset management plan is defined in the concession agreement as "*...the rolling five-year plan cooperatively prepared by the City and the Concessionaire which identifies, sequences, and prioritizes current, future and potentially emergent Capital Improvement and Major Maintenance projects, including FTA eligible improvements, needed by the Monorail System...These projects generally are intended to enhance the function and operation, add to the value of or extend the useful life of the Monorail System, improve the attractiveness of the Monorail System to users and the general public, and/or improve Monorail System operational, mechanical or financial performance.*"

The concession agreement goes on to stipulate the purpose, funding sources, content, update frequency (annual), project criteria, and project implementation requirements of the asset management plan.

### TRANSIT ASSET MANAGEMENT TEAM

To accomplish the work described in the TAMP/CMMP, Seattle Center and SMS have a standing TAMP/CMMP team that is responsible for implementing, overseeing and updating the plan, and determining the scope, approach, and budgets for individual projects. The Team augments itself with outside expertise when necessary. Standing members of the Team include:

#### Seattle Center

- Redevelopment Director
- Assistant Director for Redevelopment/Capital Budget
- Capital Projects Coordinator
- Monorail Oversight Manager

#### SMS

- Managing Director
- General Manager
- Chief Systems Engineer
- Capital Projects Assistant
- Maintenance Manager

The team has standing quarterly meetings and meets more frequently when necessary.

## **ANNUAL AND ONGOING ASSET MANAGEMENT ACTIVITIES**

Major annual activities that are part of ongoing asset management of the Seattle Center Monorail include:

- Quarterly Asset Management Plan Team Meetings (Ongoing)
- Completion of Seattle Center Annual Third Party Operator Checklist for the previous year. (February)
- SMS submits Maintenance Reports to Seattle Center (Monthly)
- Updates to the Monorail Asset Inventory and Condition Assessment (Section 2 of this document) and submission to the Washington Department of Transportation (February)
- Report asset data to the National Transit Database (April)
- Develop, execute, and revise as necessary TAMP/CMMP Project Agreements (Ongoing)
- Review and update TAMP/CMMP projects and prioritization and update the TAMP/CMMP Plan (4<sup>th</sup> Quarter)

## SECTION 8: SUMMARY OF RESOURCES

### TAMP/CMMP PLAN FUNDING SUMMARY

The table below shows the projected funding sources for the TAMP/CMMP Plan. The lead funding source are FTA formula funds allocated through the Puget Sound Regional Council. The 20% local match for FTA grant funds comes from the Irrevocable Renewal Account (IRA). In accordance with the Monorail System Concession Agreement, 7.5% of ridership revenues are set aside in the IRA for projects identified in the CMMP Plan and for a contingency to fund emergency maintenance. In addition, the City of Seattle has allocated \$500,000 in vehicle license fees for one-time start-up costs associated with bringing the Monorail into the regional ORCA system. The Irrevocable Marketing Account (IMA) funded a portion of ticketing system replacement in 2017-18.

Table 9 - Projected Funding through 2023

Fund Sources	Through 2017	2018	2019	2020	2021	2022	2023	Totals
FTA Formula Funds	4,174,558	1,004,052	1,004,052	1,004,052	1,004,052	1,004,052	1,004,052	\$ 10,198,870
IRA Match	1,006,898	267,996	270,771	251,013	251,013	251,013	251,013	\$ 2,549,717
Vehicle License Fees	-	-	500,000	-	-	-	-	\$ 500,000
IMA	20,615	49,675	-	-	-	-	-	\$ 70,290
Other IRA	11,207	52,004	34,229	53,987	98,987	108,987	118,987	\$ 478,387
<b>Totals</b>	<b>\$ 5,213,277</b>	<b>\$ 1,373,727</b>	<b>\$ 1,809,052</b>	<b>\$ 1,309,052</b>	<b>\$ 1,354,052</b>	<b>\$ 1,364,052</b>	<b>\$ 1,374,052</b>	<b>\$ 13,797,264</b>

\* Includes remaining grant funds from prior years.

### OTHER POTENTIAL FUNDING SOURCES

The Seattle Center Monorail Stations Reconfiguration Evaluation Report completed in 2018 presents recommendations for improving peak passenger capacity, connections to other transit modes, and the overall passenger experience. The cost of recommended improvements exceed the capacity of the TAMP/CMMP and will require additional funding sources. If and when such funding sources are identified, the TAMP/CMMP Plan will be revised accordingly.

## SECTION 9: MONITORING, UPDATING, AND EVALUATION OUTLINE

Implementation of the TAMP/CMMP Plan is monitored and evaluated throughout the year by the Monorail TAMP/CMMP Team through its regular meetings, including project implementation and financial updates. This ongoing evaluation and monitoring culminates in an annual update to the TAMP/CMMP Plan. In between annual Plan updates, TAMP/CMMP Project Agreements, which identify the scope, schedule, estimated cost, funding sources, and contracting method for projects may be executed and revised during the year.

To preserve the capital investment in the Monorail system prioritized in the TAMP/CMMP Plan, a reliability-centered ordinary maintenance plan is carried out by Seattle Monorail Services (SMS) in accordance with the Monorail System Concession Agreement and overseen by Seattle Center as part of Seattle Center's Third Party Operator Checklist for the Seattle Center Monorail. Specific performance measures tracked include:

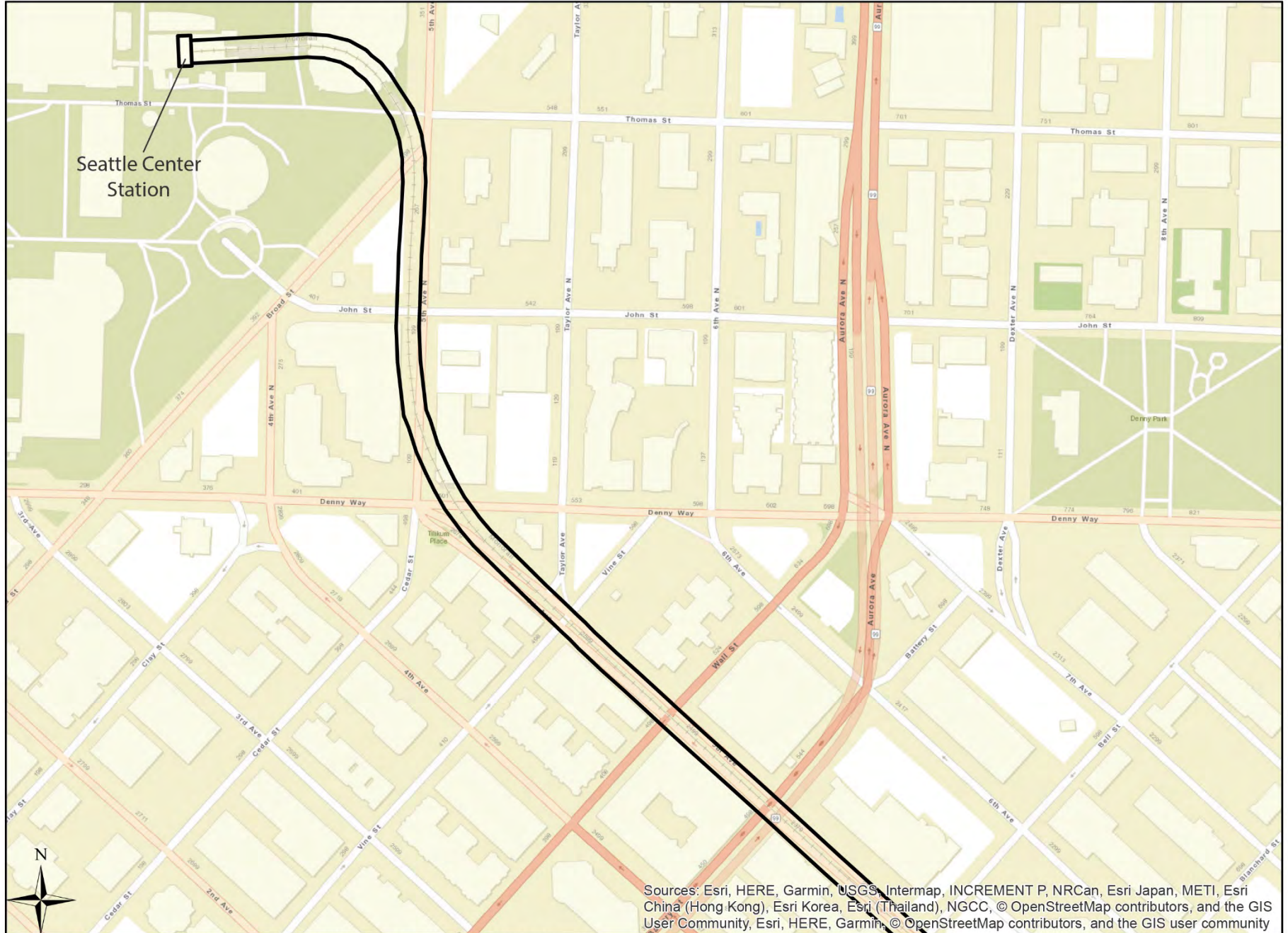
- Technician hours for routine maintenance
- Number of "breakdowns" causing service failure
- Number of missed trips due to equipment failure
- Percent of scheduled routine maintenance done on time

Over time, these measures help inform the TAMP/CMMP Team of the effectiveness of the TAMP/CMMP. Given the objective for the Monorail to operate in perpetuity, the TAMP/CAMP Team also assesses and monitors, among other factors:

- Condition of each major subsystem, including in some cases at the component level
- Potential for component or subsystem obsolescence due to lack of replacements or parts
- Potential impact of adjacent construction projects
- System resiliency
- Administrative effectiveness in complying with all regulations pertaining to procurement and public works

The TAMP/CMMP Team considers all of the above in evaluating the TAMP/CMMP and its own effectiveness. It does so annually as part of the plan updating effort and uses the review to inform improvements to the Plan, the asset management tools, and the Team's approach.

# Monorail System Renovation - Area of Potential Effects (APE)

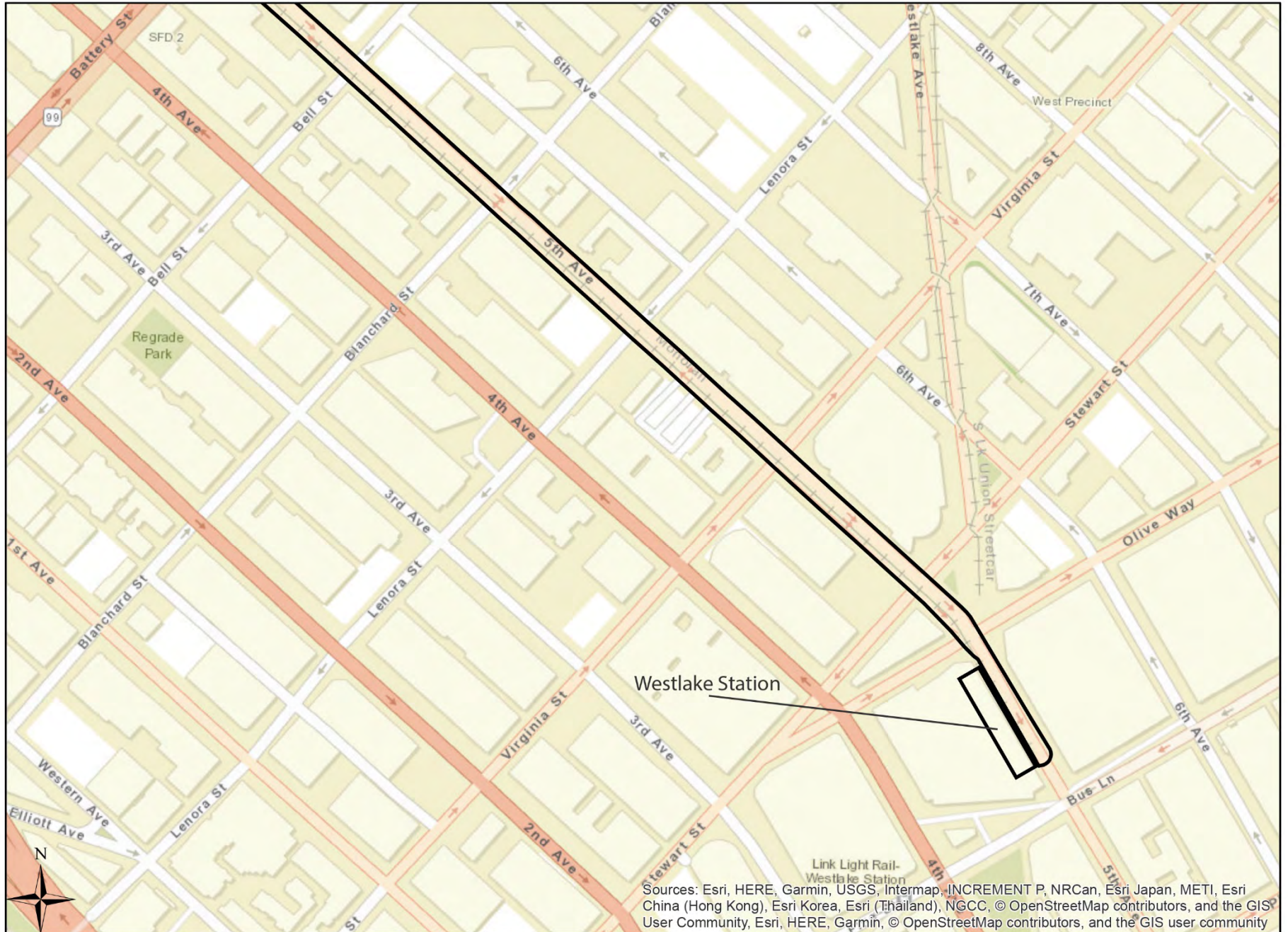


Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community, Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community

Monorail System - North (Seattle Center Station - 5th Avenue / Bell Street)

0.1 Miles

# Monorail System Renovation - Area of Potential Effects (APE)



Monorail System - South (5th Avenue / Bell Street - Westlake Station)

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community, Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community

0.1

Miles



## Historic Property Inventory Report

### Location

---

**Field Site No.** H234

**DAHP No.**

**Historic Name:** Alweg Monorail

**Common Name:** Seattle Monorail

**Property Address:** 5th Avenue,

**Comments:**

**Tax No./Parcel No.**

**Plat/Block/Lot**

**Acreage**

**Supplemental Map(s)**

---

<b>Township/Range/EW</b>	<b>Section</b>	<b>1/4 Sec</b>	<b>1/4 1/4 Sec</b>	<b>County</b>	<b>Quadrangle</b>
T25R04E	30	SW		King	SEATTLE SOUTH
T25R04E	31	NE			

### Coordinate Reference

**Easting:** 1184466

**Northing:** 840192

**Projection:** Washington State Plane South

**Datum:** HARN (feet)



# Historic Property Inventory Report

## Identification

---

**Survey Name:** AWV Tunnel **Date Recorded:** 09/09/2009  
**Field Recorder:** M. Sheridan  
**Owner's Name:** City of Seattle  
**Owner Address:**  
**City:** **State:** **Zip:**  
**Classification:** Structure  
**Resource Status:** **Comments:**  
Survey/Inventory  
**Within a District?** No  
**Contributing?**  
**National Register:**  
**Local District:**  
**National Register District/Thematic Nomination Name:**  
**Eligibility Status:** Determined Eligible - SHPO  
**Determination Date:** 11/19/2009  
**Determination Comments:** 051209-10-FHWA determined on 11/19/2009

## Description

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**Historic Use:** Transportation - Rail-Related **Current Use:** Transportation - Rail-Related  
**Plan:** Other **Stories:** **Structural System:** Concrete - Block  
**Changes to Plan:** Slight **Changes to Interior:**  
**Changes to Original Cladding:** Intact **Changes to Windows:**  
**Changes to Other:**  
**Other (specify):**  
**Style:** **Cladding:** **Roof Type:** **Roof Material:**  
**Foundation:** **Form/Type:**  
Concrete - Poured

## Narrative

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### Study Unit

Transportation  
Entertainment/Recreation

### Other

**Date of Construction:** 1962 Built Date **Builder:**  
**Engineer:** Alweg Company  
**Architect:**

**Property appears to meet criteria for the National Register of Historic Places:** Yes

## Historic Property Inventory Report

**Property is located in a potential historic district (National and/or local):** No

**Property potentially contributes to a historic district (National and/or local):**

**Statement of  
Significance:**

This structure is eligible for listing in the NRHP under Criterion A for its association with the 1962 Seattle World's Fair and for its role in transportation history. It is a designated Seattle landmark and has previously been determined eligible for listing in the NRHP.

This structure was built in 1961-62 as a 1.2-mile Monorail system between the Seattle World's Fair Century 21 Exposition and the central business district. It was privately built by Alweg Rapid Transit Systems at a cost of \$3.5 million. One of the greatest concerns of the fair organizers was to provide parking for the thousands of visitors. In keeping with the theme of Century 21, the first full-scale public transit Monorail would be constructed as one of the solutions to this expected problem. As a potential model for rapid transit in 21st century urban centers, it would be an experiment to see if modern techniques would make it possible to run an overhead track along a city street without impairing air space or interrupting vehicle traffic. The organizers also envisioned that the Monorail would be the fair's biggest attraction. Although parking problems turned out to be less of a problem than expected, the Monorail was a huge success, carrying more than eight million riders during the six months of the fair.

Although the monorail is owned by the City of Seattle, it is privately operated and receives no public subsidy. It carries approximately 1.5 million passengers a year.

The southern terminus was originally about one-half block farther south, but in 1988, when Westlake Park was built, the terminus was moved to the new Westlake Mall.

Monorails had been around since 1901 when the Rhineland city of Wuppertal began to operate a ten-mile overhead monorail line. Over the next sixty years, few Monorail systems were installed except at amusement parks, notably Disneyland. The Disneyland Alweg Monorail opened in June 1959. Swedish scientist Dr. Axel Lennart Wenner-Gren had developed the Alweg Monorail System in the early 1950s in Cologne, Germany. The name for the system was derived from the initials of the system's inventor, Dr. Wenner-Gren. After the fair's organizers developed the idea for a monorail system, they had difficulty finding someone to build it but the Alweg Company won the bid by offering to completely finance the project. For Alweg, the Seattle line would be the ultimate project to showcase the system's advantages in comparison to conventional two-rail lines. Construction began in April, 1961, and took ten months, only slightly disrupting traffic on Fifth Avenue. On March 24, 1962, the Monorail opened to the public nearly one month before the start of the World's Fair.

The high ridership during the six months of the fair meant that the system more than paid for itself. Following the fair, the Monorail system was turned over to the fair's organizers, Century 21 Exposition, Inc., at no cost, which avoided demolition costs and preserved the line as a demonstration system for future Alweg customers. In 1965, the City purchased the Monorail for \$600,000. Despite the success of the Monorail in Seattle, the Alweg Company was not successful in its efforts to provide an alternative to traditional public transit systems and went out of business before they installed any more systems. However, the Hitachi Company of Japan acquired patent licenses for the Alweg system in 1960, and today successful monorails based on the original Alweg designs operate full-scale service at various locations in Japan.

**Description of  
Physical  
Appearance:**

This concrete structure runs approximately 1.1 mile from the southeast corner of the Center House at Seattle Center to the east side of Westlake Center in downtown Seattle. The structure has two concrete beamways (three feet wide by five feet deep) supported by a series of 62 pre-stressed concrete T-pylons placed about 85 feet apart in the center of 5th Avenue. Near the north end, the beamway now runs through the Experience Music Project Museum, which was designed by architect Frank Gehry to extend around the beamways. The trains themselves have 64 rubber pneumatic tires and are powered by four 750 hp DC motors running at 700 volts; the power is obtained through a two-tiered contact rail aligned along the inside of the beamway.



## Historic Property Inventory Report

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**Major  
Bibliographic  
References:**

City of Seattle DCLU Microfilm Records.

Architecture/West. An Architect's Guidebook to the Seattle World's Fair, 1962. Seattle, WA: Pacific Builder and Engineer, v. 68, no. 4, April 1962.

Morgan, Murray. Century 21, The Story of the Seattle World's Fair, 1962. Seattle, WA: Acme Press, distributed by University of Washington Press, 1963.

Official Guide Book Seattle Worlds Fair 1962. Seattle, WA: Acme Publications Incorporated, c1962.

The Alweg Archives Website ([www.alweg.com](http://www.alweg.com))

City of Seattle Department of Neighborhoods Historic Resources Survey, 2005-2008.

## Photos



south terminus



5th Avenue

**FTA Region 10  
CATEGORICAL EXCLUSION and  
DOCUMENTED CATEGORICAL EXCLUSION WORKSHEET**

**Note:** The purpose of this worksheet is to assist sponsoring agencies (grantees) in gathering and organizing materials for environmental analysis required under the National Environmental Policy Act (NEPA), particularly for projects that may qualify as a Categorical Exclusion (CE) or Documented Categorical Exclusion (DCE). The use and submission of this particular worksheet is NOT required. The worksheet is provided merely as a helpful tool for assembling information needed by FTA to determine the likelihood and magnitude of potential project impacts. **NOTE: Fields are expandable, so feel free to use more than a line or two if needed.**

Submission of the worksheet does not satisfy NEPA requirements. FTA must concur in writing in the sponsoring agency's NEPA recommendation. Project activities may not begin until this process is complete. Contact the FTA Region 10 office at (206) 220-7954 if you have any questions or require assistance. If this is the first time you have filled out this form, FTA encourages you to review [http://www.fta.dot.gov/documents/FTA\\_CE\\_Presentation.pdf](http://www.fta.dot.gov/documents/FTA_CE_Presentation.pdf). Feel free to contact Region 10 for additional assistance. **Please see the end of this document for submittal procedures.** For links to other agencies or for further topical guidance, please go to Region 10's [Environmental Processes and Procedures](#) site.

<b>I. Project Description</b>		
Sponsoring Agency City of Seattle	Date Submitted 7/30/2019	FTA Grant Number(s) (if known) 1749-2019-1
Project Title <b>Seattle Center Monorail System Renovation</b>		
Project Description (brief, 1-2 sentences)  The project includes the following work:  <p><b>Trains:</b> Floor replacement; door refurbishment; electrical system updates and remote monitoring; propulsion system replacement; power collector assembly system renovation; renovation and repairs to the pneumatic, low-voltage electrical, and suspension systems; exterior and structural repairs;</p> <p><b>Stations:</b> Electrical room upgrades and switchgear replacement; power supply replacement at the Seattle Center station; platform re-surfacing; refurbishment or replacement of train entry/exit gates and installation of automated fare gates to provide more efficient passenger loading and unloading;</p> <p><b>Elevated Guideways and Supporting Pylons:</b> Strengthening guideway/pylon connections; structural reinforcement of pylon pedestals and footings; guideway beam joint re-surfacing.</p> <p><b>Transit Asset Management Plan Development</b></p>		
Purpose and Need for Project (brief, 1-2 sentences, include as an attachment if adopted statement is lengthy)  Carry out the Transit Asset Management (TAM) Plan for the Seattle Center Monorail in order to keep the Monorail system in a State of Good Repair.		
Project Location (include City and Street address)		

Seattle Center Station  
370 Thomas Street  
Seattle, WA 98109

Westlake Center Station  
400 Pine Street  
Seattle, WA 98101

Guideway is located on City of Seattle owned Right-Of-Way primarily along 5th Ave N and 5th Ave, between the Seattle Center Station and Westlake Center Station.

See attached Area of Potential Effects (APE).

Project Contact (include phone number, mailing address and email address)

Stephen R. Levengood  
305 Harrison Street Suite 109  
Seattle WA, 98109  
[stephen.levengood@seattle.gov](mailto:stephen.levengood@seattle.gov)  
206.684.7234

If your project involves construction, include the following as appropriate:

- Project vicinity map
- Project site plan showing access points and project boundaries
- Other useful maps as appropriate (topo, for instance, depending on circumstances, and/or Google Earth aerial, NEPA Assist, etc.)
- A few photographs of the site if useful to illustrate important features
- Details pertaining to the depth of soil excavation
- Note if the soil has been previously disturbed by prior construction or other activity
- List parks or recreation areas within the project vicinity
- Any previous consultations that might be relevant? (HUD, SHPO, or DOTs)

## II. NEPA Class of Action

Answer the following questions to determine the project's potential class of action. If the answer to any of the questions in Section A is "YES", contact the FTA Region 10 office to determine whether the project requires preparation of a NEPA environmental assessment (EA) or environmental impact statement (EIS).

### A. Will the project significantly impact the natural, social and/or economic environment?

YES (contact FTA Regional office)

NO (continue)

#### A.1 Is the significance of the project's social, economic or environmental impacts unknown?

YES (contact FTA Regional office)

NO (continue)

#### A.2 Is the project likely to require detailed evaluation of more than a few potential impacts?

YES (contact FTA Regional office)

NO (continue)

#### A.3 Is the project likely to generate intense public discussion, concern or controversy, even though it may be limited to a relatively small subset of the community?

YES (contact FTA Regional office)

NO (continue)

### B. Does the project appear on the following list of Categorical Exclusions (CEs)?

The types of activities listed below describe actions which, when the corresponding conditions are met, are under usual circumstances categorically excluded from further NEPA analysis under [23 CFR 771.118\(c\)](#). Unusual circumstances may include, but are not limited to, the presence of wetlands, historic buildings and structures, parklands, or floodplains in the project area, or the potential for the project to impact other resources. (Descriptions of each type of activity, and corresponding conditions, are available [here](#); this worksheet simply lists the name of each exclusion.)

YES (If checked AND there are no special circumstances, check the applicable box and proceed to Section III.)

NO (continue to Section II. C)

#### [23 CFR 771.118\(c\)\(1-16\)](#)

(1) Utility and Similar Appurtenance Action

(2) Pedestrian or Bicycle Action

- (3) Environmental Mitigation or Stewardship Activity
- (4) Planning and Administrative Activity
- (5) Activities Promoting Transportation Safety, Security, Accessibility and Communication
- (6) Acquisition, Transfer of Real Property Interest
- (7) Acquisition, Rehab, Maintenance of Vehicles or Equipment
- (8) Maintenance, Rehab, Reconstruction of Facilities
- (9) Assembly or Construction of Facilities
- (10) Joint Development of Facilities
- (11) Emergency Recovery Actions  
(Several conditions attach to this type of CE. We recommend you consult with FTA if you think this CE may apply to your action.)
- (12) Projects Entirely within the Existing Operational Right-of-Way.
- (13) Federally Funded Projects  
(Must be less than \$5 million in federal funding, or having a total estimated cost of not more than \$30,000,000 and Federal funds comprising less than 15 percent of the total estimated project cost.)
- (14) Bridge Removal and Related Activities.
- (15) Preventative Maintenance to Certain Culverts and Channels
- (16) Geotechnical and Similar Investigations

**C. Does the project appear on the following list of potential documented Categorical Exclusions?**

Projects that are categorical exclusions under [23 CFR 771.118\(d\)](#) require additional documentation demonstrating that the specific conditions or criteria for the CEs are satisfied and that significant effects will not result.

- YES (Check correct box below and continue to Part III)
- NO (Contact FTA Regional Office)

[23 CFR 771.118\(d\)\(1-8\)](#)

- (1) Modernization of a highway by resurfacing, restoring, rehabilitating, or reconstructing shoulders or auxiliary lanes.
- (2) Bridge replacement or the construction of grade separation to replace existing at-grade railroad crossings.
- (3) Acquisition of land for hardship or protective purposes. (NOTE: Hardship and protective buying will be permitted only for one or a limited number of parcels, and only where it will not limit the evaluation of alternatives (including alignments) for planned construction projects.
- (4) Acquisition of right-of-way. (NOTE: No project development on the acquired right-of-

- way may proceed until the NEPA process for such project development, including the consideration of alternatives, where appropriate, has been completed.)
  - (5) Construction of bicycle facilities within existing transportation right-of-way.
  - (6) Facility modernization through construction or replacement of existing components.
  - (7) Minor realignment for rail safety purposes
  - (8) Facility modernization/expansion outside existing ROW
- “Other” actions which meet the criteria for a CE in the CEQ regulations (40 CFR 1508.4) and will not result in significant environmental effects. Actions must not: induce significant impacts to planned growth or land use; require the relocation of significant numbers of people; have a significant impact on any natural, cultural, recreational, historic or other resource; cause significant air, noise, or water quality impacts; have significant impacts on travel patterns; or otherwise have significant environmental impacts (either individually or cumulatively).

**III. Information Required for Documented Categorical Exclusions**

If you checked “Yes” to any of the options in Part II.C, complete Section III.A and each relevant subject area of Sections B-AA. Depending on the project, some of the subject areas may not be applicable. In such cases, no discussion is needed. You may use documents prepared for other purposes (e.g., public meetings) if they are helpful.

The list below is not all-inclusive. If your proposed project has the potential to cause impacts to resources which are not listed below, please provide supplemental information about those potential impacts.

**A. Detailed Project Description**

Describe the project and explain how it satisfies the purpose and need identified in Part I.

**B. Location and Zoning**

Attach a map identifying the project’s location and surrounding land uses. Note any critical resource areas (historic, cultural or environmental) or sensitive noise or vibration receptors (schools, hospitals, churches, residences, etc). Briefly describe the project area’s zoning and indicate whether the proposed project is consistent with it. Briefly describe the community (geographic, demographic, economic and population characteristics) in the project vicinity.

**C. Traffic**

Describe potential traffic and parking impacts, including whether the existing roadways have adequate capacity to handle increased bus or other vehicular traffic. Include a map or diagram if the project will modify existing roadway configurations. Describe connectivity to other transportation facilities and modes, and coordination with relevant agencies.

**D. Aesthetics**

Will the project have an adverse effect on a scenic vista?

- No
- Yes, describe

Will the project substantially degrade the existing visual character or quality of the site and its surroundings?

- No
- Yes, describe

Will the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

- No
- Yes, describe

**E. Air Quality**

Does the project have the potential to impact air quality?

- No
- Yes, describe

Is the project located in an EPA-designated non-attainment or maintenance area?

- No
- Yes, indicate the criteria pollutant and contact FTA to determine if a hot spot analysis is necessary.
  - Carbon Monoxide (CO)
  - Ozone (O<sub>3</sub>)
  - Particulate Matter (PM<sub>10</sub> or PM<sub>2.5</sub>)

If the non-attainment area is also in a metropolitan area, was the project included in the MPO's Transportation Improvement Program (TIP) air quality conformity analysis?

- No
- Yes Date of USDOT conformity finding:

**F. Coastal Zone**

Is the proposed project located in a designated coastal zone management area?

- No
- Yes, describe coordination with the State regarding consistency with the coastal zone management plan and attach the State finding, if available.

**G. Environmental Justice**

Determine the presence of minority and low-income populations (business owners, land owners, and residents) within about a quarter-mile of the project area. Indicate whether the project will have disproportionately high and adverse impacts on minority or low-income populations. Describe any potential adverse effects. Describe outreach efforts targeted specifically at minority or low-income populations. Guidance is [here](#).

**H. Floodplains**

Is the proposed project located within the Federal Emergency Management Agency (FEMA) 100-year floodplain?

- No
- Yes, describe potential impacts, indicate if the project will impact the base flood elevation, and include or link to the FEMA Flood Insurance Rate Map (FIRM) with the project location identified.

**I. Hazardous Materials**

Is there any known or potential contamination at the project site? This may include, but is not limited to, lead/asbestos in existing facilities or building materials; above or below ground storage tanks; or a history of industrial uses of the site.

- No, describe steps taken to determine whether hazardous materials are present on the site.
- Yes, note mitigation and clean-up measures that will be taken to remove hazardous materials from the project site. If the project includes property acquisition, identify if a Phase I Environmental Site Assessment for the land to be acquired has been completed and the results.

**J. Navigable Waterways**

Does the proposed project cross or have the potential to impact a navigable waterway?

- No
- Yes, describe potential impacts and any coordination with the US Coast Guard.

**K. Noise and vibration**

Does the project have the potential to increase noise or vibration?

- NO
- YES, describe impact and provide map identifying sensitive receptors such as schools, hospitals, parks and residences. If the project will result in a change in noise and vibration sources, you must use FTA's "Transit Noise and Vibration Impact Assessment" methodology to determine impact.

**L. Prime and Unique Farmlands**

Does the proposal involve the use of any prime or unique farmlands?

- No
- Yes, describe potential impacts and any coordination with the Soil Conservation Service of the U.S. Department of Agriculture.

**M. Historic & Cultural Resources**

Impacts to cultural, historic, or recreational properties may trigger Section 106 or tribal consultations or a Section 4(f) evaluation, requiring consideration of avoidance alternatives.

Does the project involve any ground disturbing activities?

- No
- Yes, provide the approximate maximum ground disturbance depth. Also provide information on previous disturbances or where ground disturbance will occur.

Are there any historic resources in the vicinity of the project?

- No
- Yes, Attach photos of structures more than 45 years old that are within or adjacent to the project site and describe any direct or indirect impacts the project may cause.

Washington State Historic Preservation Officer concurred with a finding of "No Adverse Effect" on July 24, 2019 (see attached letter)

**N. Biological**

Are there any species located within the project vicinity that are listed as threatened or endangered under the Endangered Species Act? Determine this by obtaining lists of threatened and endangered species and critical habitat from the US Fish and Wildlife Service and the National Marine Fisheries Service.

Describe any critical habitat, essential fish habitat or other ecologically sensitive areas within or near the project area.

**O. Recreational**

Is the project located in or adjacent to a park or recreation area?

- No
- Yes, provide information on potential impacts to the park or recreation area. Please also indicate if the park involved Land and Water Conservation Act funds (Section 6(f))

**P. Seismic and Soils**

Are there any unusual seismic or soil conditions in the project vicinity? If so, indicate on project map and describe the seismic standards to which the project will be designed.

- No
- Yes, describe

**Q. Water Quality**

Does the project have the potential to impact water quality, including during construction.

- No
- Yes, describe potential impacts and best management practices which will be in place.

Will there be an increase in new impervious surface or restored pervious surface?

- No
- Yes, describe potential impacts and proposed treatment for stormwater runoff.

Is the project located in the vicinity of an EPA-designated sole source aquifer (SSA)?

- No
- Yes, provide the name of the aquifer which the project is located in and describe any potential impacts to the aquifer. Also include the approximate amount of new impervious surface created by the project. (May require completion of SSA worksheet.)

**R. Wetlands**

Does the proposal temporarily or permanently impact wetlands or require alterations to streams or waterways?

- No
- Yes, describe potential impacts

**S. Construction Impacts**

Describe the construction plan and identify impacts due to construction noise, utility disruption, debris and spoil disposal, and staging areas. Address air and water quality impacts, safety and security issues, and disruptions to traffic and access to property.

**T. Cumulative and Indirect Impacts**

Are cumulative and indirect impacts likely?

No

Yes, describe the reasonably foreseeable:

a) Cumulative impacts, which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes them. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

b) Indirect impacts, which are caused by the action but are later in time or farther removed in distance, yet are still reasonably foreseeable. Indirect impacts may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air, water and other natural systems, including ecosystems.

**U. Property Acquisition**

If property is to be acquired for the project, indicate whether acquisition will result in relocation of businesses or individuals.

**Note:** For acquisitions over \$500,000, FTA concurrence in the property's valuation is also required.

**V. Energy**

If the project includes the construction or reconstruction of a building, identify potential opportunities to conserve energy which could be employed. This includes building materials and techniques used for construction; special innovative conservation features; fuel use for heating, cooling and operations; and alternative renewable energy sources.

**W. Public Involvement**

Describe public outreach efforts undertaken on behalf of the project. Indicate opportunities for public meetings (e.g. board meetings, open houses, special hearings). Indicate any significant concerns expressed by agencies or the public regarding the project.

**X. Mitigation Measures**

Describe all measures to be taken to mitigate project impacts.

**Y. Other Federal Actions**

Provide a list of other federal NEPA actions related to the proposed project or in the vicinity.

**Z. State and Local Policies and Ordinances**

Is the project in compliance with all applicable state and local policies and ordinances?

No, describe noncompliance:

Yes

**AA. Related Federal and State/Local Actions**

Corps of Engineers Permit (Section 10, Section 404)

Coast Guard Permit

Coastal Zone Management Certification

Critical Area Ordinance Permit

ESA and EFH Consultation

Floodplain Development Permit

Forest Practice Act Permit

Hydraulic Project Approval

Local Building or Site Development Permits

Local Clearing and Grubbing Permit

National Historic Preservation Act-Section 106 consultation

National Pollutant Discharge Elimination System General Construction Permit

Shoreline Permit

Solid Waste Discharge Permit

Sole Source Aquifer Consultation

Section 4(f) (Historic or Recreational Properties; Wildlife Refuges)

Section 6(f) (Recreational Properties)

Section 106 (Historic Properties) Washington State Historic Preservation Officer concurred with a finding of "No Adverse Effect" on July 24, 2019 (see attached letter)

Stormwater Site Plan (SSP)

Temporary Erosion and Sediment Control Plan (TESC)

Water Rights Permit

Water Quality Certification—Section 401

Tribal Consultation or Permits (if any, describe below)

Other

Others (describe as applicable):

**Submitted By (name, title):**

Stephen Levensgood, Project Manager

**Date:**

July 30, 2019

Please submit two paper copies of this form, attachments, and a transmittal letter recommending a NEPA finding to the address below, or submit an electronic version to [fta.tro10mail@dot.gov](mailto:fta.tro10mail@dot.gov).

Contact FTA at the number below if you are unsure of these procedures. Modifications are typically necessary.

Federal Transit Administration, Region 10  
915 2nd Avenue, Suite 3142  
Seattle, WA 98174-1002

phone: (206) 220-7954  
fax: (206) 220-7959  
[fta.tro10mail@dot.gov](mailto:fta.tro10mail@dot.gov)

**For links to further topical guidance, please visit Region 10's [Grantee Resources: Environment](#) webpage.**

**Seattle Center Monorail**

**CONSOLIDATED**

**Transit Asset Management Plan (TAMP)**

(Per Federal Transit Administration MAP-21 State of Good Repair)

and

**Capital and Major Maintenance Program (CMMP)**

**Plan**

(Per Monorail System Concession Agreement)



Jointly Prepared by: Seattle Monorail Services and Seattle Center

September 30, 2019

Handwritten signature of Robert Nellams in blue ink.

Robert Nellams, Director, Seattle Center

Handwritten signature of Tom Albro in blue ink.

Tom Albro, Managing Director, Seattle Monorail Services

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## INTRODUCTION

The Seattle Center Monorail is owned by the City of Seattle, overseen by the Seattle Center Department, and operated by Seattle Monorail Services, LLC through a concession agreement with the City. The Monorail carries over two million riders annually between downtown Seattle and Seattle Center, a 74-acre arts, culture and entertainment campus. The downtown station is part of a regional transit hub, with connections to light rail, local and regional buses and the Seattle streetcar system. The Monorail system is just under a mile long and consists of two trains, two stations and the elevated guideways and supports that run in-between.

The Monorail was constructed by ALWEG Rapid Transit Company to showcase ALWEG's proprietary monorail technology at the 1962 Seattle World's Fair (Century 21 Exposition). The Monorail carried over 8 Million passengers during the 6-month World's Fair. In 1965, the City of Seattle purchased the Monorail from ALWEG. ALWEG ceased existence a few years later.

Between 1965 and 1994, the Monorail was operated by a combination of Seattle Transit, later merged into King County Metro Transit, and the City of Seattle. In 1994, following a request for proposal process, the City of Seattle entered into a concession agreement with Seattle Monorail Services (SMS) for maintenance and operation of the Monorail. In 2013, the City again issued a request for proposals for operation of the Monorail, and in December 2014 entered into a ten-year Monorail System Concession Agreement with Seattle Monorail Services effective January 1, 2015, with an option for an additional ten-year term by mutual agreement. The City and SMS have agreed in principle to execute the option term, with formal agreement expected in the fourth quarter of 2019.

The Seattle Center Monorail celebrated its 50<sup>th</sup> anniversary in 2012. Both trains have exceeded one-million miles. The Monorail is a designated City of Seattle Landmark. The goal of the Transit Asset Management Plan (TAMP) and the Seattle Center Monorail Capital and Major Maintenance Program (CMMP) Plan is for the historic Seattle Center Monorail to celebrate its 100<sup>th</sup> anniversary in a State of Good Repair. Seattle Center and SMS approach asset management to achieve safe, reliable, and enjoyable service in perpetuity. The Monorail system overall is considered to have an indefinite life. The Monorail's subsystems and components, however, will become obsolete and will eventually require either full replacement or major refurbishment. This plan, like previous Monorail asset management plans, focuses at the subsystem and component level.

With the exception of the downtown station at Westlake Center, the Monorail system configuration is largely as it was in 1962. In 1988, the Westlake Station was moved slightly north and incorporated into the Westlake Center Mall development. This modification reduced Monorail peak passenger capacity by about half, as the current configuration allows clearance for only one train in the station at a time and is accessed through the 3<sup>rd</sup> floor of the Westlake Center shopping mall, where the original downtown station accommodated two trains and had

greater access from the street level. The Seattle Center station location remains the same and accommodates two trains. A 2018 Monorail Stations Reconfiguration Evaluation Report provides recommendations for increasing system capacity to meet current and future needs.

## **ABOUT THIS PLAN**

This is the Seattle Center Monorail consolidated Transit Asset Management Plan and Capital and Major Maintenance Program Plan (TAMP/CAMP) for the 2020 federal fiscal year. It is an update to the original TAMP/CAMP published in 2018. The TAMP/CMMP Plan fulfills the requirements of both the Transit Asset Management Plan (TAMP) required by the Federal Transit Administration and the Capital and Major Maintenance Program (CMMP) Plan required by the Monorail System Concession Agreement. The TAMP/CMMP identifies and prioritizes current and future capital improvement and major maintenance needs of the Monorail system in a systematic manner. The TAMP/CMMP Plan is updated annually, so that it is always looking ahead five years. The original CMMP Plan was completed in 2015 and built upon prior asset management plans using a similar approach.

The TAMP/CMMP Plan is aligned with the overarching goal of State of Good Repair from the Moving Ahead for Progress in the 21st Century (MAP-21) funding and authorization bill passed by the United States Congress in 2012, and the Federal Transit Administration's (FTA) July 2016 rule requiring FTA grantees to develop Transit Asset Management Plans (TAMP).

The Consolidated TAMP/CMMP Plan includes nine sections, in accordance with FTA guidelines for Tier 1 agencies:

- (1) Asset Inventory;
- (2) Asset Condition Assessment;
- (3) Decision Support Tools;
- (4) Investment Prioritization;
- (5) Transit Asset Management and State of Good Repair Policy;
- (6) Implementation Strategy;
- (7) Key Activities;
- (8) Summary of Resources; and,
- (9) Monitoring, Updating and Evaluation Outline.

## **2019 PROGRESS AND STATUS UPDATE**

The following has taken place since last year's TAMP document was published:

- The Monorail asset inventory and asset condition assessment (Sections 1 and 2) were

reviewed and updated.

- The electrical room updates and switchgear replacement project was advertised for bid as a Public Works project. Bids are due on October 9, 2019. Work is anticipated to take place in 2020-21.
- The first phase of elevator refurbishment work at Westlake Center was completed using City of Seattle ADA Barrier Removal funds. The second phase of work is anticipated to be solicited in late 2019 and work completed in early 2020.
- Phase 2 of Seismic Analysis on the guideway structure was completed. A draft report was released in mid-2019 that recommends a multi-phase approach to meet the criteria for a 1000-year quake, which is the current standard. The estimated cost is \$10 million. The City and SMS are pursuing additional funding sources in order to complete the upgrades within the next five years.
- The load tire wheel rim replacement project was completed.
- Train floor replacement specifications and procurement package is nearly completed. This project will be advertised in early 4<sup>th</sup> Q as a request for proposal (RFP) solicitation. Work is planned to be completed by the end of 2020.
- Train passenger-door refurbishment specifications and procurement package are under development as a RFP solicitation. The project will be advertised in the 4<sup>th</sup> Q 2019.
- The City and SMS have agreed to adopt the regional integrated fare payment technology and transfer protocols by implementing the One Regional Card for All (ORCA) as a fare payment method for the Monorail. ORCA will be accepted beginning October 7, 2019.

## **HIGHLIGHTS OF TAMP/CMMP PLAN CHANGES**

- An additional \$1 million of transportation funding related to the new Seattle Center Arena has been added to the Monorail Station Improvements project. The total allocated for station improvements is now \$3.5 million.
- The current plan combines the propulsion system and collector redesign & installation project with the remote monitoring system and train electrical updates project. These have been combined because the design and installation work for both are closely related and each will impact the other. Combining them will reduce costs by streamlining system design and reducing duplication of efforts.
- A seismic retrofit project has been added based on recommendations from the 2019 Seattle Center Monorail Guideway Seismic Assessment.

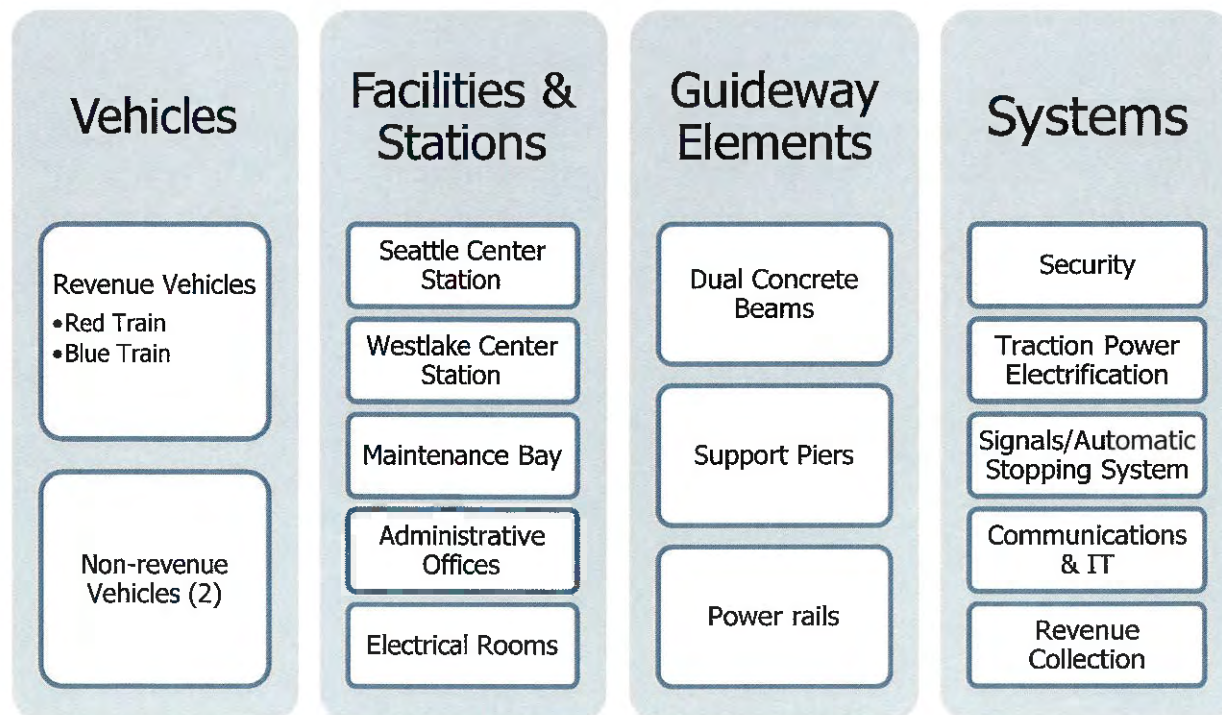
## SECTION 1: ASSET INVENTORY

The Seattle Center Monorail operates between downtown Seattle and Seattle Center, the former site of the 1962 Seattle World’s Fair. The two monorail trains (Red Train and Blue Train) have been in nearly continuous operation since 1962, each having logged over 1,300,000 miles.

Facilities include the Seattle Center Monorail Station (370 Thomas St) and the Westlake Center Monorail Station (400 Pine St). The train maintenance area is underneath the passenger platform at the Seattle Center Station. Administrative offices are adjacent to the Seattle Center Station platform. Ticket booths are located on the passenger platforms at both stations.

A fixed, dedicated and elevated one-mile dual beam guideway runs mostly above the street right-of-way and is supported by over 60 concrete columns and a few steel supports. The Monorail trains run on 700 volts of DC power, which is supplied to the trains through contact rails attached to each beam. Each station has an electrical room with switchgear to control the power to the guideway. The Monorail system has two portable non-revenue service vehicles that are placed on the guideway for inspection, maintenance, and repair using an overhead crane.

The following table shows a high-level inventory for the Seattle Monorail System:



## SECTION 2: ASSET CONDITION ASSESSMENT

Because of the historic nature and projected longevity of the Monorail system, Seattle Center and SMS use a condition-based assessment for the Monorail, rather than a useful life benchmark (ULB) metric. According to Federal Register Vol. 18, No. 143 dated Tuesday July 26, 2016 published at <https://federalregister.gov/a/2016-16883>, "FTA has provided flexibility for condition assessments so individual transit providers and sponsors can determine the most effective methodology to use for their circumstances," and also "FTA recognizes that age is not necessarily the most accurate performance measure available."

The first two tables below show the condition assessments for the rolling stock and subsystems, for the Seattle Center Monorail.

*Table 1. Rolling Stock Condition Assessment*

Year	Make & Model	Actual Life Odometer (as of Aug 2019)	Is Vehicle Safe?	Agency's ULB (year)	Maintenance Current?	Performs Designed Function?	Accessible (ADA)	Seating Capacity	Fuel Type
1962	Red Train Alweg	1,312,000	Yes	ULB of subsystems varies based on history of overhauls See following table for Subsystem ULBs	Yes	Yes	Yes	130	Electric
1962	Blue Train Alweg	1,354,000	Yes		Yes	Yes	Yes	130	Electric

*Table 2. Rolling Stock Subsystem Condition Assessment*

Subsystem	Last Replacement/Overhaul	Last Replacement/Overhaul Cost	Current Condition	Agency's ULB (year)	Next Overhaul
Bogies, Suspension & Drivetrain	2008 Blue 2010 Red	\$3M	Good	16-20 years	2023-2030
Propulsion	1994	Unknown	Good but facing obsolescence	25 years	2023-25
Pneumatics	2008 Blue 2010 Red	\$1M	Good	20 years	2028-30
Low Voltage Electrical	2008 Blue 2010 Red	\$2.5M	Good	20 years	2028-30

Facilities and infrastructure are given a score from 1-5 based on the Transit Economic Requirements Model (TERM) condition assessment scale. Under the TERM scale, an asset in need of immediate repair or replacement is scored as one (1), whereas a new asset with no visible defects is scored as five (5). An asset is deemed to be in good repair if it has a rating of 3, 4 or 5 on this scale. Likewise, a facility is deemed to be not in good repair if it has a rating of 1 or 2.

**Table 3. TERM Scale**

Rating	Condition	Description
5	Excellent	No visible defects, new or near new condition, may still be under warranty if applicable
4	Good	Good condition, but no longer new, may have some slightly defective or deteriorated component(s), but is overall functional
3	Adequate	Moderately deteriorated or defective components; but has not exceeded useful life
2	Marginal	Defective or deteriorated component(s) in need of replacement; exceeded useful life
1	Poor	Critically damaged component(s) or in need of immediate repair; well past useful life

**Table 4. Facility and Infrastructure Condition Assessment**

Category	Facility Name	Condition Rating (TERM Scale)	Year Built	Comments
Facility	Seattle Center Platform (SC)	3	1962	Areas identified for improvement include loading and unloading of trains and platform configuration.
Facility	Westlake Center Platform (WLC)	3	1987	Areas identified for improvement include increase passenger flow capacity, streamline loading and unloading of trains.
Facility	Administrative Offices (SC)	2	1962	Replace or refurbish.
Infrastructure	Guideway (Piers A-56)	3	1962	Resurfacing of the beam joints has been done along the guideway over the past 12 years, and annual inspections are done to prioritize and plan for future resurfacing work. Tie-down bolts are re-tensioned on a 10-year cycle.
Infrastructure	Guideway (Piers 57-64)	3	1987	Guideway repairs were performed in 2012 in this area. Inspected annually.
Infrastructure	Power Rails	4	1962, replaced 2010	Annually inspected and insulators cleaned.
Infrastructure	Electrical Rooms	2	1988	Improvements to 700VDC electrical equipment and air handling are scheduled for 2019-2021

## SECTION 3: DECISION-SUPPORT TOOLS

Seattle Center and SMS devote significant time to identifying, prioritizing, and monitoring Monorail capital and major maintenance projects. Through regular TAMP/CMMP meetings, technical expertise from staff and specialized consultants, and capital project implementation, the refinement of the TAMP/CMMP is a continuous process informed by past experience, new information and lessons learned, culminating in a published updated plan each year. The most important decision making tool is the existing TAMP/CMMP, which was developed by reviewing the history of Monorail capital improvements to inform the priority and timing for future investments. New studies and analyses are also important factors in shaping current and future TAMP/CMMP Plans. Current examples of that are the *Seattle Center Monorail Stations Reconfiguration Evaluation Report*, completed in 2018, and the *2019 Seattle Center Monorail Guideway Seismic Assessment*.

In developing and updating the 5-year TAMP/CMMP, Seattle Center and SMS consider the following factors:

1. Priority of a given project. Priority is a combined relative metric that combines urgency and importance.
2. Train operational limitations—maintain one train in service at all times and avoid work during peak ridership periods.
3. Timing and availability of funding.
4. Efficiency of implementation—bundle work wherever it makes sense.

The higher priority projects are generally scheduled in the plan as soon as funds and timing allow. Projects are also analyzed to find where procurement, design, and/or construction efficiencies could be realized if projects were sequenced or undertaken in groups.

The table below shows the current prioritized list of potential improvements along with recently completed CMMP projects.

Table 5. *Prioritized Project List as of 2019.*

List of Potential Improvements	Priority Ranking	Status
• <b>Guideway &amp; other concrete major maintenance:</b> Bottom beam repairs, Pier Crack Injection, Tie-down bolt re-tensioning, Pier Cleaning & Numbering, Top/Side Repairs		Last phase completed 2015-16. Next phase planned for 2022
• <b>Electronic Ticketing, Point Of Sale Update &amp; Computer Network Upgrade</b>		Completed 2018
• <b>Perform Study/Design for Station Upgrades</b> to connect with Metro, Street Car, Light Rail, and increase capacity		Completed 2018

List of Potential Improvements	Priority Ranking	Status
•Load Tire Wheel Rim Design Revision and Fabrication		Completed 2019
•Electrical Room Upgrades: New AC electrical feed at SC for 700VDC, Uninterruptible Power Supply System, Emergency Lighting, Fire Detection System, HVAC System Improvements, Seal rooms from water, update ramp PLCs, Intrusion Alarms	1	Design Completed. Out for Bid. Work planned for 2020-21.
•Switchgear upgrade	1	Bundled with Electrical Room Upgrades. Planned for 2020-21
•Train Floor Replacement: Replace transit flooring and subfloor	2	Specifications written. Procurement in process. Work planned 2019-2020
•Elevator Improvements at Westlake Station	3	Initial work completed 2019. Second phase of work 2020.
•Seismic Evaluation	4	Phase 2 Analysis completed in 2019. Funding sources being identified. Upgrades: TBD
•Station Improvements: Update Look & Feel, Platform Resurfacing, Accessibility Improvements, Station Lighting; POS Redesign, Passenger Experience, and Capacity Improvements	5	Planned for 2020+
•Improve visibility, wayfinding, and accessibility to/from Seattle Center Campus & Westlake Center	5	Part of station improvements 2020+
•Bogie Suspension Arm Spares	6	2020
•Passenger Door Upgrades (improvements to actuators, sensitive edges, latching, rollers, tracks, etc.)	7	Planned for 2020-21
•Seismic Mitigation Work	8	Funding sources being identified.
•Propulsion system design	9	Planned for 2020-22
•Propulsion system replacement	9	Planned for 2023-25
•Train Electrical System Updates (PLC, Touch panel, console)	9	Bundled with Propulsion System design and Replacement
•System Status Monitoring: Vibration, temperature, pressure, location monitoring	9	Bundled with Propulsion System design and Replacement.
•Collector System Overhaul	9	Planned with propulsion system work.
•Train Exterior Skin Paint	10	2021
•Next Phase Guideway Beam Joint Resurfacing	11	2022-23

<b>List of Potential Improvements</b>	<b>Priority Ranking</b>	<b>Status</b>
•Extend canopies to cover entire train in both stations	12	May be implemented as part of station improvements
•Train Heating and Ventilation Improvements	12+	Heated floors integrated with floor project. Other train ventilation improvements TBD
•Windshield Windows	12+	TBD
•Train Frame Inspections and Paint	12+	2024+
•Bogie Inspections & Repairs	12+	2023+
•Intercar link inspections & Bearing Replacement	12+	2024+
•Exterior Skin Inspections and Repair	12+	2024+
•Pier Painting	12+	Last done in 2016 with guideway work.
•Bellows Replacement	12+	TBD
•Beam/power-rail snow removal	12+	TBD

## SECTION 4: INVESTMENT PRIORITIZATION

### TAMP/CMMP PLAN APPROACH

The table below shows the investment prioritization for the 2019 TAMP/CMMP Plan based on the decision-making list in Section 3. The Plan is built upon previous Plans and revised based on technical expertise from staff and specialized consultants, past experience, new studies and analyses, and regular TAMP/CMMP meetings between Seattle Center and SMS. The timing and prioritization of projects is also based on projected availability of funding to carry out the Plan.

The 2018 Stations Reconfiguration Evaluation Report examined how to improve system accessibility and capacity, and specifically examined the merits and feasibility of various station improvement alternatives. The study concluded that Monorail capacity could be doubled to 6,000 passengers per hour per direction (from the current 3,000) with a relatively modest investment. The evaluation was particularly timely given that a new Seattle Center Arena is being privately developed to serve as a premier entertainment and sports venue, opening in 2021 as home to concerts, the WNBA Champion Seattle Storm, and a new National Hockey League team. The redeveloped arena is expected to host twice as many events as the former arena, and the Monorail will be a key transportation link to carry arena patrons between Seattle Center and downtown, connecting with the region's expanding light-rail transit system and downtown amenities.

### ESTIMATED COSTS AND TIMELINE

Estimated costs and timing of projects are incorporated in the table on the following page. Cost estimates in the TAMP/CMMP are generally planning level estimates, which are considered AACE Class 5 estimates. As more information becomes available, such as more detailed project scopes or engineer's estimates, cost estimates are updated.

The timing of projects is based on a number of factors, including:

1. Priority of a given project
2. Interrelation with other projects (both Monorail and otherwise)
3. Train operational limitations—maintain one train in service at all times and avoid work during peak ridership periods
4. Timing and availability of funding
5. Efficiency of implementation—bundle work wherever it makes sense

Design and procurement take place throughout the year, but the higher impact projects generally occur during periods of lower passenger volumes (late fall, winter, and early spring).

Table 6. Estimated TAMP/CMMP Plan Project Costs by Year

Category	Group	LTD (2015-18)	2019	2020	2021	2022	2023	2024	Totals
Trains	CMMP Planning	131,579	50,000	50,000	50,000	50,000	50,000	50,000	\$431,579
Elevated	Guideway Work	635,228	-	-	-	500,000	-	-	\$1,135,228
Stations	Electrical Rm & Switchgear Updates	275,391	300,000	2,500,000	-	-	-	-	\$3,075,391
Stations	Replace Ticketing System	310,166	-	-	-	-	-	-	\$310,166
Trains	Monorail Load Tire Wheel Rims	27,690	68,180	-	-	-	-	-	\$95,870
Stations	Station Feasibility Study	323,807	30,000	-	-	-	-	-	\$353,807
Stations	WLC Elevator Modifications	-	350,000	200,000	-	-	-	-	\$550,000
Stations	Station Improvements	-	-	1,000,000	2,500,000	-	-	-	\$3,500,000
Trains	Train Floor Replacement	98,760	51,240	750,000	-	-	-	-	\$900,000
Trains	Passenger Door Refurbishment	-	50,000	600,000	600,000	-	-	-	\$1,250,000
Stations	ORCA Start-up (allowance)	-	100,000	-	-	-	-	-	\$100,000
Trains	Propulsion, Collector & Control System Design	-	-	50,000	50,000	250,000	-	-	\$350,000
Trains	Propulsion, Collector & Control System Replacement	-	-	-	-	-	800,000	1,100,000	\$1,900,000
Trains	Bogies Suspension Arm Spares, Bogie Inspections & Repairs	-	50,000	100,000	-	-	400,000	400,000	\$950,000
Trains	Train Exterior Coating	-	-	-	100,000	-	-	-	\$100,000
Elevated	Seismic Evaluation Phase 2	137,075	70,000	37,925	-	-	-	-	\$245,000
Elevated	Guideway Seismic Retrofit	-	-	-	-	300,000	10,000,000	-	\$10,300,000
Trains	General Program Contingency	-	50,000	200,000	150,000	50,000	50,000	50,000	\$550,000
	<b>Total Costs</b>	<b>\$1,939,696</b>	<b>\$1,169,420</b>	<b>\$5,487,925</b>	<b>\$3,450,000</b>	<b>\$1,150,000</b>	<b>\$11,300,000</b>	<b>\$1,600,000</b>	<b>\$26,097,041</b>
<b>Spending by Fund</b>									
	<b>FTA Formula Funds</b>	1,448,669	575,536	3,470,340	2,723,389	920,000	1,040,000	1,053,632	\$11,191,566
	<b>IRA Match (20% of FTA)</b>	362,167	143,884	857,585	680,847	230,000	260,000	263,408	\$2,797,892
	<b>Vehicle License Fees</b>	-	100,000	-	-	-	-	-	\$100,000
	<b>NODO MAP</b>	-	-	1,000,000	-	-	-	-	\$1,000,000
	<b>City of Seattle ADA Barrier Removal Funds</b>	-	350,000	200,000	-	-	-	-	\$550,000
	<b>Seismic Funding--Source TBD</b>	-	-	-	-	-	10,000,000	-	\$10,000,000
	<b>Irrevocable Marketing Account (IMA)</b>	70,290	-	-	-	-	-	-	\$70,290
	<b>Other IRA Draw</b>	58,570	-	-	45,764	-	-	282,960	\$387,294
	<b>Total</b>	<b>\$1,939,696</b>	<b>\$1,169,420</b>	<b>\$5,487,925</b>	<b>\$3,450,000</b>	<b>\$1,150,000</b>	<b>\$11,300,000</b>	<b>\$1,600,000</b>	<b>\$26,097,041</b>

## COSTS PER ALI

Table 7 groups the TAMP/CMMP Plan projects into the three main FTA Activity Line Items (ALIs) for the Monorail—Rehab/Renov Elevated Structures, Rehab/Renov Rail Stations, and Vehicle Overhaul (Trains). These totals are broken into anticipated yearly costs in these three categories (ALIs).

Table 7. Project Costs Per Year According to Grant Categories

	LTD 2015-18	2019	2020	2021	2022	2023	2024	Totals
<b>Elevated Structures</b>	772,303	70,000	37,925	-	800,000	10,000,000	-	\$11,680,228
<b>Stations</b>	909,364	780,000	3,700,000	2,500,000	-	-	-	\$7,889,364
<b>Trains</b>	258,029	319,420	1,750,000	950,000	350,000	1,300,000	1,600,000	\$6,527,449
<b>Totals</b>	\$1,939,696	\$1,169,420	\$5,487,925	\$3,450,000	\$1,150,000	\$11,300,000	\$1,600,000	\$26,097,041

## **SECTION 5: TRANSIT ASSET MANAGEMENT AND STATE OF GOOD REPAIR POLICY**

### **VISION**

The vision of the TAMP/CMMP is to shepherd a thoughtful and strategic capital and major maintenance program so the Monorail remains continually in a state of good repair.

Because of the historic nature of the system and value of maintaining continuous service, the TAMP/CMMP approach is not one of train replacement, but rather of strategic overhaul or replacement of train systems and components. Station improvements prioritize increasing capacity and better connections to light rail and buses, and guideway investments focus on structural integrity and a smooth ride. Realizing this vision requires a clear and dynamic plan that is regularly updated and persistently pursued over many years, in discrete and strategic increments, with each successive project building on its predecessors.

### **GUIDING PRINCIPLES**

The following are guiding principles for the TAMP/CMMP. Each project decision should be considered in light of these principles:

- Support a positive passenger experience
- Ensure reliability and safety
- Optimize capacity
- Increase longevity
- Enhance maintainability
- Respect overall look and feel of original trains
- Minimize disruption to passenger service while work is performed
- Optimize operating costs
- Minimize environmental impact
- Align with the goal of achieving a “State of Good Repair”

### **MAIN FOCUS AREAS**

Four main focus areas are:

- Enhance Experience (remove obstacles)
- Extend Longevity (state of good repair)
- Amplify Impact (leverage the asset)
- Improve Safety and Security (minimize risk)

Most projects will address more than one focus area, with some projects advancing all four.

## **STATE OF GOOD REPAIR POLICY STATEMENT**

A **State of Good Repair** is the condition in which a capital asset is able to operate at a full level of performance, providing its intended function. A capital asset is in a state of good repair when that asset:

1. Is able to perform its designed function and meets its performance targets.
2. Does not pose a known unacceptable safety risk.
3. Scheduled maintenance is up to date and being performed in accordance with the reliability centered maintenance plan.
4. Rehabilitation and subsystem replacements are planned and implemented to maintain and enhance system performance and reliability.

## **ROLES & RESPONSIBILITIES**

Roles and Responsibilities for the TAMP/CMMP are defined in the Monorail System Concession Agreement, in CMMP Project Agreements, and in the Monorail System Safety Program Plan (SSPP), a document that is reviewed by the FTA and WSDOT on a periodic basis.

### **ACCOUNTABLE EXECUTIVE**

The Accountable Executive for the Seattle Center Monorail is the Seattle Center Director.

### **PROJECT SPECIFIC ROLES**

Specific project roles for SMS and Seattle Center are defined in each CMMP Plan Project Agreement. Below is an example of typical roles for a given project, but may vary depending on the specific project and will be stipulated in each project agreement.

*SMS Role Owner's Representative; scope definition; engineering design review; assist with development of procurement documents and review of proposals and bids; project management; system integration; testing and verification.*

*Seattle Center Role Owner; assist with procurement documents; project management; schedule coordination; work acceptance; provide close-out project documents; project oversight; approval of project scope, budget, and documents; post bid documents on ebid; request for contract award; issue notices to proceed to contractor(s). Review, approve, and pay invoices. Submit requests for FTA grant reimbursement.*

## SECTION 6: IMPLEMENTATION STRATEGY

The asset management plan for the Seattle Center Monorail has two major components: ordinary maintenance and capital improvements. A reliability-centered ordinary maintenance plan is carried out by Seattle Monorail Services (SMS) in accordance with the Monorail System Concession Agreement and overseen by Seattle Center as part of Seattle Center’s Third Party Operator Oversight Checklist for the Seattle Center Monorail. Capital investments in the Monorail are guided by this TAMP/CMMP Plan. The structure and team to implement and oversee the TAMP/CMMP is already in place. The TAMP/CMMP will be monitored throughout the year by the asset management team.

When a TAMP/CMMP project is ready to move forward, Seattle Center and SMS execute a Project Agreement, which details the scope, schedule, budget, funding sources, and procurement methods. A key objective of the TAMP/CMMP Plan is for the Monorail system and all system elements to meet their respective performance targets as outlined in the following table:

Table 8. Performance Targets

Asset Category	Asset Class	Individual Asset	Performance Measure	Performance Targets
Equipment	Construction	Crane	Number of vehicles operable at any point in time	At least one asset must be safely operable at any given time
	Non-revenue Service Vehicles	Track Maintenance Vehicle		
Rolling Stock	Revenue Vehicles	Red Train Subsystems	Meet Service Requirements	Perform four (4) roundtrips per hour with 99% uptime
		Blue Train Subsystems		Less than 10% operating mileage difference between trains in a year
Infrastructure	Fixed Guideway	Red & Blue Guideway Support Columns Power Rail	Areas with performance restrictions	Restrictions don't hinder ability to perform four (4) roundtrips per hour
	Electrification	Electrical Vaults & Switchgear		Fewer than 50% of sections with performance restrictions
Facility	Support Facilities	Maintenance Facility & Storage	Percentage of facilities below condition 3 on the TERM scale	20% below 3 on the TERM scale
		Administrative Offices		
	Passenger Facilities	Westlake Center (WLC) Platform Seattle Center (SC) Platform		

## SECTION 7: KEY ACTIVITIES

### TRANSIT ASSET MANAGEMENT PLAN POLICIES

Seattle Center and SMS establish and update asset management policies through several mechanisms, beginning with the concession agreement between them. These policies are further articulated in this Plan, which is signed by both the Seattle Center Director and SMS's Managing Director.

The asset management plan is defined in the concession agreement as *"...the rolling five-year plan cooperatively prepared by the City and the Concessionaire which identifies, sequences, and prioritizes current, future and potentially emergent Capital Improvement and Major Maintenance projects, including FTA eligible improvements, needed by the Monorail System...These projects generally are intended to enhance the function and operation, add to the value of or extend the useful life of the Monorail System, improve the attractiveness of the Monorail System to users and the general public, and/or improve Monorail System operational, mechanical or financial performance."*

The concession agreement goes on to stipulate the purpose, funding sources, content, update frequency (annual), project criteria, and project implementation requirements of the asset management plan.

### TRANSIT ASSET MANAGEMENT TEAM

To accomplish the work described in the TAMP/CMMP, Seattle Center and SMS have a standing TAMP/CMMP team that is responsible for implementing, overseeing and updating the plan, and determining the scope, approach, and budgets for individual projects. The Team augments itself with outside expertise when necessary. Standing members of the Team include:

#### Seattle Center

- Redevelopment Director
- Assistant Director for Redevelopment/Capital Budget
- Capital Projects Coordinator
- Monorail Oversight Manager

#### SMS

- Managing Director
- General Manager
- Chief Systems Engineer
- Capital Projects Assistant
- Maintenance Manager

The team has standing quarterly meetings and meets more frequently when necessary.

## **ANNUAL AND ONGOING ASSET MANAGEMENT ACTIVITIES**

Major annual activities that are part of ongoing asset management of the Seattle Center Monorail include:

- Quarterly Asset Management Plan Team Meetings (Ongoing)
- Completion of Seattle Center Annual Third Party Operator Checklist for the previous year (February)
- SMS submits Maintenance Reports to Seattle Center (Monthly)
- Updates to the Monorail Asset Inventory and Condition Assessment (Section 2 of this document) and submission to the Washington Department of Transportation
- Report asset data to the National Transit Database (April)
- Develop, execute, and revise as necessary TAMP/CMMP Project Agreements (Ongoing)
- Review and update TAMP/CMMP projects and prioritization and update the TAMP/CMMP Plan (3rd<sup>th</sup> Quarter)

## SECTION 8: SUMMARY OF RESOURCES

### TAMP/CMMP PLAN FUNDING SUMMARY

The table below shows the projected funding sources for the TAMP/CMMP Plan. The lead funding source is FTA formula grant funds allocated through the Puget Sound Regional Council. The 20% local match for FTA grant funds comes from the Irrevocable Renewal Account (IRA). In accordance with the Monorail System Concession Agreement, a percentage of ridership revenues are set aside in the IRA for projects identified in the CMMP Plan and for a contingency to fund emergency maintenance. In addition, the City of Seattle has allocated \$100,000 in vehicle license fees for one-time start-up costs associated with bringing the Monorail into the regional ORCA system.

In 2019, City of Seattle ADA Barrier Removal funds were allocated to improve the performance and reliability of the Westlake Center Station elevator. A report issued in 2019 by the North Downtown Mobility Action Plan (NODO MAP) working group allocated \$1 million for the Seattle Center Monorail station. Projected TAMP/CAMP funding through 2024 is shown below.

Table 9 - Projected Funding through 2024

Fund Sources	Through 2018	2019	2020	2021	2022	2023	2024	Totals
FTA Formula Funds	5,170,593*	998,745	1,004,052	1,004,544	1,004,544	1,004,544	1,004,544	\$11,191,566
IRA 20% Local Match	1,273,679	268,656	251,013	251,136	251,136	251,136	251,136	\$2,797,892
Vehicle License Fees	-	100,000	-	-	-	-	-	\$100,000
NODO MAP	-	-	1,000,000	-	-	-	-	\$1,000,000
City of Seattle ADA Barrier Removal Funds	-	350,000	200,000	-	-	-	-	\$550,000
Seismic Upgrades Funding--Source TBD	-	-	-	-	-	10,000,000	-	\$10,000,000
IMA	70,290	-	-	-	-	-	-	\$70,290
Other IRA	58,570	36,344	89,412	116,924	34,932	41,051	59,823	\$437,056
<b>Totals</b>	<b>\$6,573,132</b>	<b>\$1,753,745</b>	<b>\$2,544,477</b>	<b>\$1,372,604</b>	<b>\$1,290,612</b>	<b>\$11,296,731</b>	<b>\$1,315,503</b>	<b>\$26,146,804</b>

\* Includes remaining grant funds from prior years.

### OTHER POTENTIAL FUNDING SOURCES

As indicated in Table 9, funding for seismic upgrade work is yet to be determined. The City of Seattle and SMS are exploring funding options, including FTA and other public capital funding

that is earmarked for seismic upgrade projects.

The *Seattle Center Monorail Stations Reconfiguration Evaluation Report* completed in 2018 presents recommendations for improving peak passenger capacity, connections to other transit modes, and the overall passenger experience. The cost of recommended improvements exceed the current capacity of the TAMP/CMMP. Other funding sources for station improvements are being explored.

## **SECTION 9: MONITORING, UPDATING, AND EVALUATION OUTLINE**

Implementation of the TAMP/CMMP Plan is monitored and evaluated throughout the year by the Monorail TAMP/CMMP Team through its regular meetings, including project implementation and financial updates. This ongoing evaluation and monitoring culminates in an annual update to the TAMP/CMMP Plan. Between annual Plan updates, TAMP/CMMP Project Agreements that identify the scope, schedule, estimated cost, funding sources, and contracting method for projects are commonly executed and revised during the Plan year.

To preserve the capital investment in the Monorail system prioritized in the TAMP/CMMP Plan, a reliability-centered ordinary maintenance plan is carried out by Seattle Monorail Services (SMS) in accordance with the Monorail System Concession Agreement and overseen by Seattle Center as part of Seattle Center's Third Party Operator Oversight Checklist for the Seattle Center Monorail. Specific performance measures tracked include:

- Technician hours for routine maintenance
- Number of "breakdowns" causing service failure
- Number of missed trips due to equipment failure
- Percent of scheduled routine maintenance done on time

Over time, these measures help inform the TAMP/CMMP Team of the effectiveness of the TAMP/CMMP. Given the objective for the Monorail to operate in perpetuity, the TAMP/CAMP Team also assesses and monitors, among other factors:

- Condition of each major subsystem, including in some cases at the component level
- Potential for component or subsystem obsolescence due to lack of replacements or parts
- Potential impact of adjacent construction projects
- System resiliency
- Administrative effectiveness in complying with all regulations pertaining to procurement and public works

The TAMP/CMMP Team considers all the above in evaluating the TAMP/CMMP and its own effectiveness. It does so annually as part of the Plan updating effort and uses the review to inform improvements to the Plan, the asset management tools, and the Team's approach.

**Project Title (WIN):** Seattle Center Monorail Station Improvements - Phase 1

**Location:** Seattle Center Station

**Level of Estimate:** Scoping

(AACE Level IV)

**Estimate Datum Date:** March-2018

**Revision Number:** 1

**Revision Date:** May-18

**Primarily Consultant Designed?** No



<b>SUMMARY (Basis for Capital Cost Summary Table) w/ Markups</b>			
<b>(1) Construction Base Cost</b>		\$	<b>1,127,285.00</b>
<b>(2) Design Contingency (Misc. Item Allowance)<sup>1,4</sup></b> - Percentage Applied to No. 1	<b>25.00%</b>	\$	281,821.25
<b>Subtotal Sum of (1) &amp; (2)</b>		\$	<b>1,409,106.25</b>
General Conditions and Requirements (applied to subtotal)	18%	\$	253,639.13
Fee - OH&P (applied to subtotal)	5%	\$	70,455.31
Bonding & Insurance (applied to subtotal)	2%	\$	28,182.13
<b>(3) Contract Total</b> - Sum of (1) & (2)		<b>Subtotal \$</b>	<b>1,761,382.81</b>
<b>(4) Sales Tax</b> - (Location Dependant) Percentage Applied to No. (3)	<b>10.1%</b>	\$	177,899.66
<b>(5) Estimated Construction Contract Total</b> - Sum of (3) & (4)		<b>Subtotal \$</b>	<b>1,939,282.48</b>
<b>(6) Construction PM/Engineering<sup>2</sup></b> - Percentage Applied to No. (5), & Bid Items # 700-799	<b>12.0%</b>	\$	249,998.05
<b>(7) Construction (Change Order) Contingency<sup>2,5</sup></b> - Percentage Applied to No. (5) & Bid Items # 700-799	<b>10.0%</b>	\$	208,331.70
<b>(8) Other Construction (Below-the-line items)<sup>5,7</sup></b>			
BI # 700-799: Work by Others (Non-WSDOT) - Construction Engineering and Construction (Change Order) Contingencies Apply <sup>7</sup>			
<b>A Permits (2.5%)</b>		\$	44,034.57
<b>B</b>			
<b>C FF&amp;E Allowance - Ticketing Machines &amp; Platform Furniture</b>		\$	100,000.00
BI # 800-899: Work to be performed by or materials furnished by WSDOT - Construction PM/Engineering and Construction (Change Order) Contingencies Do Not Apply <sup>7,8</sup>			
<b>D Public Art (1% of Total Project)</b>		\$	30,320.00
<b>E</b>		\$	-
<b>F SMS Construction Support - Additional Staff (2% Assumed)</b>		\$	35,227.66
<b>(9) Construction Phase (CN) Total<sup>7</sup></b> - Sum of (5), (6), (7), & (8)			<b>\$2,607,000</b>
<b>(10) PM/Design (Arch./Engineering)<sup>1,5</sup></b> - Percentage Applied to No. (5) for Planning & Scoping Level Estimates, Otherwise Use Actual from PMP	<b>15.0%</b>	\$	290,892.37
<b>Includes:</b> Project Management (SC & SMS) Design Work (A&E) Haz Mat Testing & Inspection Project Management Software Reproduction/Bidding/Preconstruction Services			
<b>(11) Other Design Expenses</b>			
<b>G</b>			
<b>H Consultant Design Markup - See Note 9</b>		\$	-
<b>I Systems Integration Allowance (25% of Gate Cost)</b>		\$	60,000.00
<b>(12) Preliminary Engineering (PE) Phase Total</b> - Sum of (10) & (11)			<b>\$351,000</b>
<b>(13) Right Of Way (ROW) Phase Total - No Property Acquired</b>			<b>\$0</b>
<b>(14) Subtotal Cost</b> - Sum of Construction, Design & ROW		\$	<b>2,958,000</b>
<b>(15) CIP Indirect Costs (5%)</b>		\$	<b>147,900</b>
<b>(16) Total Project Cost</b>		\$	<b>3,105,900</b>

**Miscellaneous Item Allowance (Design Contingency) Includes (and Other Notes):**

Miscellaneous Item Allowance (Design Contingency) per AACE and WSDOT M 3034 Guidelines (Based on Level of Design)  
 Mark-ups for PE and CE assumed based on correlation of Project scope/type with WSDOT published guidance.  
 Design Engineering Percentages (PE) determined utilizing WSDOT M 3034 Table 3; Subprogram I1 Category IA  
 Construction Engineering Percentages (CE) determined utilizing WSDOT Ebase User's Guide Appendix B; Subprogram I1, Category IA

<sup>1</sup> Per Cost Estimating Manual for WSDOT Projects M 3034 (Table 2)

<sup>2</sup> Per WSDOT Ebase User's Guide Appendix B

<sup>3</sup> Industry Standard - See DCW Cost Report

<sup>4</sup> Typical "Design Contingency" used for AACE Level IV/WSDOT Scoping Level Estimate

<sup>5</sup> Per WSDOT Estimate Order of Calculations, Tax Rates, and 700 & 800 Items Document

<sup>6</sup> Not Used

<sup>7</sup> Standard for Public Agency-funded facilities renovation or underground work

<sup>8</sup> 800-859 Level Items Apply to Federal Aid Projects; 860-899 Level Items Apply to Non-Federal Aid Projects

<sup>9</sup> Consultant Design Project Markups determined utilizing WSDOT M 3034.02 Table 3 Note 5 (if applicable) - typically a Factor of 1.8 (80% Markup)

**Project Title (WIN):** Seattle Center Monorail Station Improvements - Phase 2

**Location:** Seattle Center Station

**Level of Estimate:** Scoping (AACE Level IV)

**Estimate Datum Date:** March-2018

**Revision Number:** 1

**Revision Date:** May-18

**Primarily Consultant Designed?** No



<b>SUMMARY (Basis for Capital Cost Summary Table) w/ Markups</b>			
<b>(1) Construction Base Cost</b>		<b>\$</b>	<b>1,507,557.00</b>
<b>(2) Design Contingency (Misc. Item Allowance)<sup>1,4</sup></b> - Percentage Applied to No. 1	<b>25.00%</b>	<b>\$</b>	<b>376,889.25</b>
<b>Subtotal Sum of (1) &amp; (2)</b>		<b>\$</b>	<b>1,884,446.25</b>
General Conditions and Requirements (applied to subtotal)	18%	<b>\$</b>	339,200.33
Fee - OH&P (applied to subtotal)	5%	<b>\$</b>	94,222.31
Bonding & Insurance (applied to subtotal)	2%	<b>\$</b>	37,688.93
<b>(3) Contract Total</b> - Sum of (1) & (2)		<b>Subtotal \$</b>	<b>2,355,557.81</b>
<b>(4) Sales Tax</b> - (Location Dependant) Percentage Applied to No. (3)	<b>10.1%</b>	<b>\$</b>	<b>237,911.34</b>
<b>(5) Estimated Construction Contract Total</b> - Sum of (3) & (4)		<b>Subtotal \$</b>	<b>2,593,469.15</b>
<b>(6) Construction PM/Engineering<sup>2</sup></b> - Percentage Applied to No. (5), & Bid Items # 700-799	<b>12.0%</b>	<b>\$</b>	<b>318,282.97</b>
<b>(7) Construction (Change Order) Contingency<sup>2,5</sup></b> - Percentage Applied to No. (5) & Bid Items # 700-799	<b>10.0%</b>	<b>\$</b>	<b>265,235.81</b>
<b>(8) Other Construction (Below-the-line items)<sup>5,7</sup></b>			
<small>BI # 700-799: Work by Others (Non-WSDOT) - Construction Engineering and Construction (Change Order) Contingencies Apply<sup>7</sup></small>			
<b>A Permits (2.5%)</b>		<b>\$</b>	<b>58,888.95</b>
<b>B</b>			
<b>C</b>			
<small>BI # 800-899: Work to be performed by or materials furnished by WSDOT - Construction PM/Engineering and Construction (Change Order) Contingencies <b>Do Not</b> Apply<sup>7,8</sup></small>			
<b>D Public Art (1% of Total Project)</b>		<b>\$</b>	<b>38,026.50</b>
<b>E</b>		<b>\$</b>	<b>-</b>
<b>F</b>			
<b>(9) Construction Phase (CN) Total<sup>7</sup></b> - Sum of (5), (6), (7), & (8)			<b>\$3,274,000</b>
<b>(10) PM/Design (Arch./Engineering)<sup>1,5</sup></b> - Percentage Applied to No. (5) for Planning & Scoping Level Estimates, Otherwise Use Actual from PMP	<b>15.0%</b>	<b>\$</b>	<b>389,020.37</b>
<b>Includes:</b> Project Management (SC & SMS) Design Work (A&E) Haz Mat Testing & Inspection Project Management Software Reproduction/Bidding/Preconstruction Services			
<b>(11) Other Design Expenses</b>			
<b>G</b>			
<b>H Consultant Design Markup - See Note 9</b>		<b>\$</b>	<b>-</b>
<b>I</b>			
<b>(12) Preliminary Engineering (PE) Phase Total</b> - Sum of (10) & (11)			<b>\$389,000</b>
<b>(13) Right Of Way (ROW) Phase Total - No Property Acquired</b>			<b>\$0</b>
<b>(14) Subtotal Cost</b> - Sum of Construction, Design & ROW		<b>\$</b>	<b>3,663,000</b>
<b>(15) CIP Indirect Costs (5%)</b>		<b>\$</b>	<b>183,150</b>
<b>(16) Total Project Cost</b>		<b>\$</b>	<b>3,846,150</b>

**Miscellaneous Item Allowance (Design Contingency) Includes (and Other Notes):**  
 Miscellaneous Item Allowance (Design Contingency) per AACE and WSDOT M 3024 Guidelines (Based on Level of Design)  
 Mark-ups for PE and CE assumed based on correlation of Project scope/type with WSDOT published guidance.  
 Design Engineering Percentages (PE) determined utilizing WSDOT M 3034 Table 3; Subprogram I1 Category IA  
 Construction Engineering Percentages (CE) determined utilizing WSDOT Ebase User's Guide Appendix B; Subprogram I1, Category IA

<sup>1</sup>. Per Cost Estimating Manual for WSDOT Projects M 3034 (Table 2)  
<sup>2</sup>. Per WSDOT Ebase User's Guide Appendix B  
<sup>3</sup>. Industry Standard - See DCW Cost Report  
<sup>4</sup>. Typical "Design Contingency" used for AACE Level IV/WSDOT Scoping Level Estimate  
<sup>5</sup>. Per WSDOT Estimate Order of Calculations, Tax Rates, and 700 & 800 Items Document  
<sup>6</sup>. Not Used  
<sup>7</sup>. Standard for Public Agency-funded facilities renovation or underground work  
<sup>8</sup>. 800-859 Level Items Apply to Federal Aide Projects; 860-899 Level Items Apply to Non-Federal Aide Projects  
<sup>9</sup>. Consultant Design Project Markups determined utilizing WSDOT M 3034.02 Table 3 Note 5 (if applicable) - typically a Factor of 1.8 (80% Markup)

Seattle Department of Transportation

# NORTH DOWNTOWN MOBILITY ACTION PLAN

## Final Report



DECEMBER 2019



**Seattle**  
Department of  
Transportation

# ACKNOWLEDGMENTS

**Special thanks to the entire North Downtown community for their attendance and active participation in Mobility Action Plan events, meetings, and surveys.** We would like to thank the following people and groups for their involvement in the development of the Mobility Action Plan:

## **Community Organizations**

belltown20|20

Belltown Community Council

South Lake Union Community Council

Uptown Alliance

Arena Transportation Mobility Subcommittee

Community Outreach Liaisons, Department of Neighborhoods

Mercer Stakeholder Group

## **Interagency Working Group**

Councilmember Bagshaw's Office

Department of Construction and Inspections

Department of Neighborhoods

Department of Transportation

King County Metro

Office of Economic Development

Office of Planning and Community Development

Port of Seattle

Seattle Center

Seattle Monorail

Seattle Public Schools

Sound Transit

## **SDOT**

Ian Macek, Project Manager

Lizzie Moll, Deputy Project Manager

Jonathan Lewis, Transportation Planning Manager

Tracy Krawczyk, Policy & Planning Division Director

## **Nelson\Nygaard**

# LIST OF ABBREVIATIONS

BMP: Bicycle Master Plan

CL: Community Liaison

EIS: Environmental Impact Statement

FMP: Freight Master Plan

MAP: Mobility Action Plan

MUP: Master Use Permit

MOU: Memorandum of Understanding

OED: Office of Economic Development

OVG: Oak View Group

PMP: Pedestrian Master Plan

SDOT: Seattle Department of Transportation

SHA: Seattle Housing Authority

SR 99: State Route 99

TMP: Transit Master Plan

WSDOT: Washington State Department of Transportation



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## CHAPTER 1

# INTRODUCTION

### PURPOSE

The purpose of the North Downtown Mobility Action Plan (NODO MAP) is to support access and livability in North Downtown, which includes the Uptown, Belltown, and South Lake Union neighborhoods (see Figure 1). The plan builds on existing community planning efforts, and identifies and prioritizes transportation improvements for all modes. Completed in partnership with neighborhood groups and community members, the MAP:

- **Reviews existing community plans and planned projects**
- **Identifies ways to improve how we move, connect, and experience our streets and public places**
- **Evaluates and prioritizes potential projects**



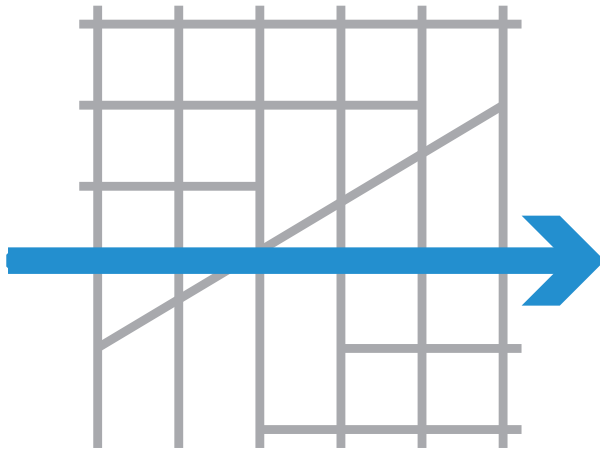
THE PURPOSE OF THE NORTH DOWNTOWN MOBILITY ACTION PLAN IS TO SUPPORT ACCESS AND LIVABILITY IN NORTH DOWNTOWN, WHICH INCLUDES THE **UPTOWN, BELLTOWN, AND SOUTH LAKE UNION** NEIGHBORHOODS.”

The NODO MAP is closely linked to the redevelopment of the Seattle Center Arena. The City of Seattle is working with Oak View Group (OVG) as the arena developer on this project. The official agreement between the two parties is the Transaction Documents which includes the Lease, Development Agreement, and Integration Agreement. The Transaction Documents were approved by the Seattle City Council. They outline several items important to development of the NODO MAP.

1. The Transaction Documents state the need to develop the NODO MAP and establishes the guiding principles for the project.
2. The Transaction Documents establishes a City (Arena) Transportation Fund, committing the developer to provide \$40 million over 39 years for mobility improvements that



# WHY DEVELOP A MOBILITY ACTION PLAN?



## Existing transportation challenges

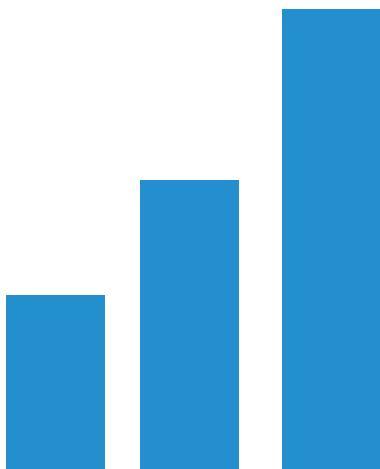
North Downtown has several unique mobility challenges including:

- A lack of east-west connections
- A street grid shift creating bottleneck intersections
- Disconnected bicycle routes
- High-traffic arterials difficult for pedestrians to cross
- Increased demands for urban goods delivery
- Significant barriers, such as SR 99 and railroad tracks, divide neighborhoods and impact waterfront access
- Freight movement between the City's manufacturing/industrial centers

Each North Downtown neighborhood has its own unique mobility assets and challenges. However, as a whole North Downtown relies on Mercer St and Denny Way for east-west travel. Denny Way is a major truck street and the only street to provide transit service and connect across I-5. The opening of the SR 99 tunnel and North Portal has changed how people access SR 99 in the neighborhoods.

## Significant growth anticipated in North Downtown

By 2035, 15,000 new households and 20,000 new employees will be added to NODO. In South Lake Union, those growth estimates represent nearly a doubling of the number of housing units and a 35% increase in jobs over current levels. Planned construction and the increased number of people living and working in the North Downtown neighborhoods will mean increased travel demands in a constrained right-of-way.



15,000 NEW HOUSEHOLDS AND  
20,000 NEW EMPLOYEES WILL BE  
ADDED TO NODO BY 2035.”



### **Address community transportation concerns and needs**

The NODO MAP builds on long-standing community plans and visions established by the community members and neighborhood groups. Through a synthesis of the mobility needs and solutions proposed in these established plans, and through active engagement and collaboration with community members, the NODO MAP prioritizes local solutions that best address the on-the-ground mobility challenges experienced throughout North Downtown.



### **New Seattle Center Arena will serve more people, more often**

Event-related impacts from the redevelopment of the Seattle Center Arena will compound NODO's current mobility challenges. The new arena will have 3,000 more seats and host double the number of annual events, attracting thousands of attendees to North Downtown four to five times per week. Weekday evening arena events will sometimes overlap with evening rush hour, adding to early evening traffic and causing post-event influxes on surrounding streets and transit services. The Arena EIS identified ways to address many of these anticipated challenges. OVG will implement specific measures, and others will be a shared responsibility to fund with City (Arena) Transportation Fund investments, other city funds, Port of Seattle investments, and/or partnerships with other agencies.

**Growth in the North Downtown neighborhoods combined with more frequent and larger events at the redeveloped Seattle Center Arena means more people than ever traveling to, through and within North Downtown.**

## GUIDING PRINCIPLES

The MOU contained five guiding principles that provide a foundation for the MAP. They were collaboratively developed by the three neighborhoods and refined through early NODO MAP outreach and engagement. The guiding principles and the plan's development were the basis for the criteria used to evaluate potential projects as outlined in Chapter 5.



### **BUILD ON COMMUNITY VISION**

Align mobility improvement implementation with community priorities and vision.



### **IMPROVE CONNECTIVITY**

Enhance connections within and between North Downtown and to adjacent neighborhoods.



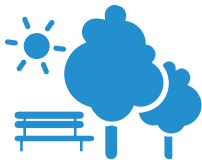
### **PRIORITIZE SUSTAINABLE TRANSPORTATION OPTIONS**

Increase accessibility and convenience for people walking, biking, and taking transit between North Downtown and adjacent areas to support growth and accommodate Seattle Center events, while reducing automobile trips.



### **INCREASE SAFETY**

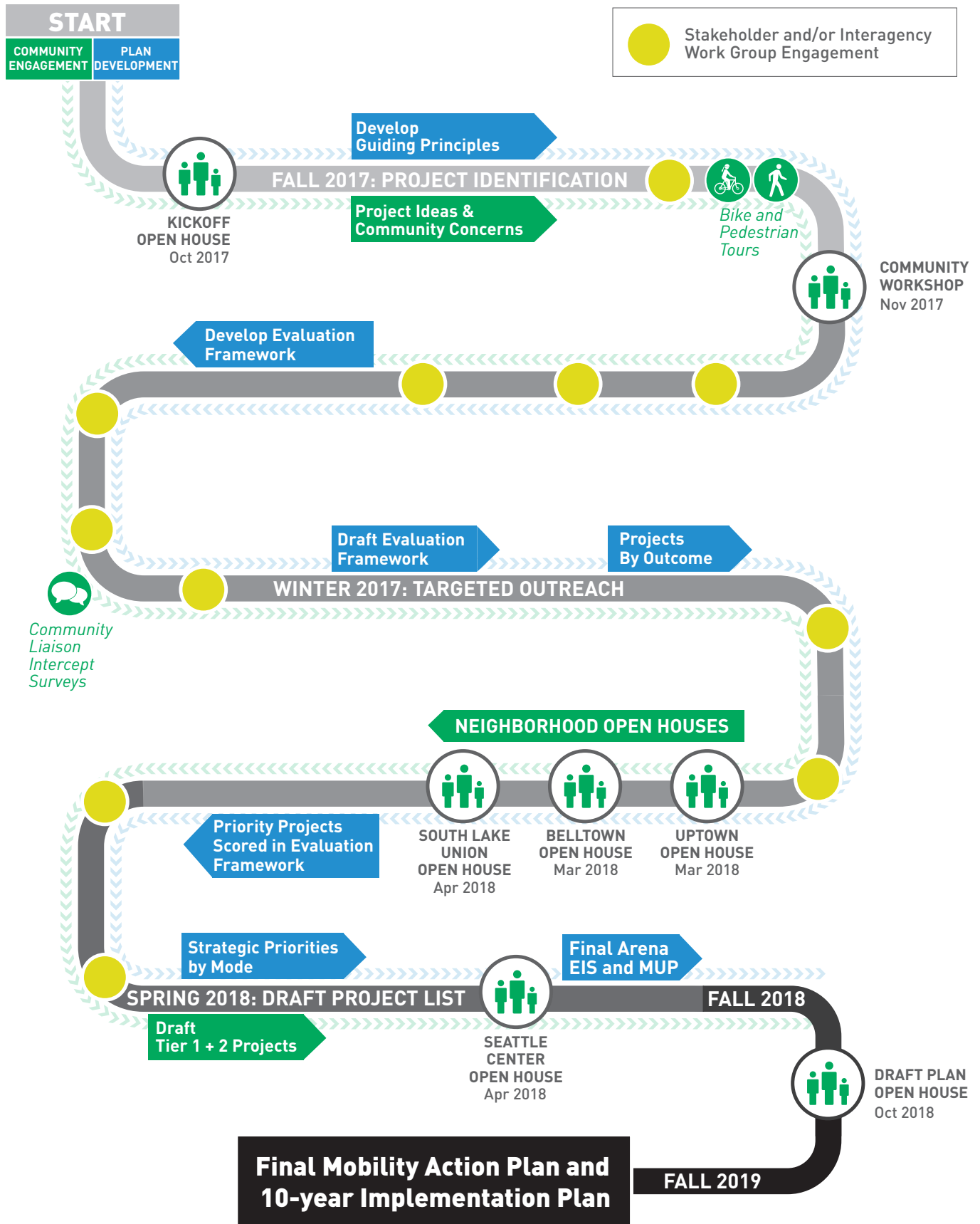
Enable safe access for all, regardless of age, ability, or transportation mode choice.



### **ENHANCE THE PUBLIC REALM**

Create attractive places to walk, bike, ride transit, and play in North Downtown.

# PROJECT TIMELINE & KEY MILESTONES





## COMMUNITY ENGAGEMENT

2017



### Fall 2017: Community Kick-off Meeting and All-day Workshop

Two community events helped launch the project: a community kick-off open house in October and an all-day workshop in November. We engaged community members to further develop desired outcomes of the Mobility Action Plan, confirm areas of focus, and identify key mobility and public realm challenges for improvement in North Downtown.



### Winter 2017: Target Outreach and Collaboration with Stakeholders

The winter was spent gathering project ideas and potential solutions through review of existing community plans, targeted outreach, and collaboration with neighborhood stakeholders. Feedback from our fall outreach was used to develop specific evaluation criteria based on guiding principles.



### Late Winter 2018: Neighborhood Open Houses

In late winter, we shared a draft list of projects, identified alignment with evaluation criteria, and used community feedback to refine and prioritize the project list.



### Spring and Summer 2018: Seattle Center Open House

During spring and summer, while the arena mitigation was finalized, we refined the MAP project list to coordinate and leverage funding and implementation opportunities.



### Fall 2018: Draft Plan Open House

The Mobility Action Plan culminated in the fall with a draft plan for public review. We attended a series of neighborhood meetings to share the priority recommendations and thank the community for their collaboration and contributions. The draft MAP built on the Seattle Center Arena master use permit conditions (issued in September).



### Winter 2019: Draft Implementation Schedule

We developed the project implementation schedule for the first 10 years of the CATF. This included a review and revisions of the funding assumptions, assessment of staff capacity, and changes to the project list to align with our abilities to implement.



### Spring-Fall 2019: Completion of Final Mobility Action Plan and 10-year Implementation Prioritization

The Mobility Action Plan continues as a program for implementing the prioritized project: NODO Mobility Action 10-year Implementation Program.

2019

The results of our conversations, and how the feedback shaped the priority recommendations, are described in Chapter 4.



## Engagement Activities

Outreach Event	Location	Date(s)
Fall 2017 – Project Kickoff, Community Workshop, and Plan Review		
Kickoff Open House	Seattle Center Armory	October 23, 2017
Arena Design Open House	Cornish Playhouse	October 28, 2017
Arena Transportation Mobility Subcommittee	Seattle Center Armory	November 15, 2017
Community Workshop	Seattle Center Armory	November 18, 2017
Interagency Work Group	Seattle Municipal Tower	November 29, 2017
Winter 2017 – Project Development and Evaluation		
Freight Advisory Board	City Hall	December 12, 2017
Transit Advisory Board	City Hall	December 20, 2017
Bicycle Advisory Board	City Hall	January 3, 2018
Belltown Community Council	Belltown Community Center	January 10, 2018
Interagency Work Group	Seattle Municipal Tower Bank of America Building	January 25, 2018 March 5, 2018
Planning Commission	City Hall	January 25, 2018
Arena Transportation Mobility Subcommittee	Seattle Center Armory	January 29, 2018 March 7, 2018
South Lake Union Community Council-Transportation Committee	Fred Hutch	January 29, 2018
Mercer Stakeholders Group	Center for Infectious Disease Research	February 6, 2018 March 15, 2018
Pedestrian Advisory Board	City Hall	February 14, 2018
Terminal-91 Customer Meeting	Port of Seattle T-91	February 15, 2018
Community Liaison Intercept Surveys	Uptown Belltown South Lake Union	February 24 and 25, 2018 March 10, 2018 February 28, 2018 March 20, 2018 February 26 and 28, 2018 March 15, 2018
Spring and Summer 2018 – DRAFT Prioritized Project List		
Walking/Biking Happy Hour	Belltown Brewing	March 8, 2018
Neighborhood Open Houses (3)	Uptown: KEXP Space Belltown: Belltown Community Center South Lake Union: WeWork	March 13, 2018 March 14, 2018 April 3, 2018
Senior Living Communities	Michaelson Manor	March 28, 2018
Queen Anne Community Council	Queen Anne Manor	April 4, 2018
Seattle Housing Authority	Seattle Housing Authority Downtown Office	April 11, 2018
Downtown Transportation Alliance	Commute Seattle	April 24, 2018

Outreach Event	Location	Date(s)
NODO MAP Open House	Seattle Center Armory	April 25, 2018
Interagency Work Group	Seattle Municipal Tower	April 25, 2018
Mercer Stakeholders Group	Center for Infectious Disease Research	May 10, 2018
Arena Transportation Mobility Subcommittee	Seattle Center Armory	June 14, 2018
South Lake Union Community Council-Transportation Committee	Fred Hutch	June 27, 2018
Fall 2018 – DRAFT Mobility Action Plan Release and Public Review		
Arena Transportation Mobility Subcommittee	Seattle Center Armory Seattle Center Armory	July 19, 2018 August 9, 2018
Interagency Work Group	Seattle Municipal Tower	August 7, 2018
NODO MAP Open House	Seattle Center Armory	October 11, 2018
South Lake Union Community Council Transportation Committee	Fred Hutch	November 2018
Uptown Alliance	St. Paul's Episcopal Church	November 2018

Engagement activities took various forms, ranging from hosting community open houses to discussions at community organization meetings convened by others to presentations to standing advisory boards and commissions. Key community groups included the Uptown Alliance the Belltown Community Council, belltown20|20, the South Lake Union Community Council, Mercer Stakeholders, and the Arena Transportation Mobility Subcommittee.

Additionally, there was an Interagency Working Group comprised of representatives from the Port of Seattle, Sound Transit, King County Metro, Seattle Monorail, Seattle Public Schools, Seattle Center, and Councilmember Sally Bagshaw’s Office. Other participating City partners included the Office of Economic Development, Office of Planning and Community Development, Seattle Department of Construction and Inspections, Department of Neighborhoods, and Seattle Department of Transportation (project lead agency).



## CHAPTER 2

# NEIGHBORHOOD BACKGROUND AND COMMUNITY PLANS

*Uptown, Belltown, and South Lake Union are neighborhoods with their own distinct character and identity.*

NEIGHBORHOOD <sup>1</sup>	AREA (ACRES)	POPULATION	PERCENT SENIORS	MEDIAN INCOME	EMPLOYMENT <sup>2</sup>
Uptown	293	4,508	12%	\$99,720	15,541
Belltown	161	5,072	13%	\$81,779	21,021
South Lake Union	342	5,882	14%	\$89,026	44,060

<sup>1</sup>American Community Survey 2016, 5-Year Estimates by Census Tract

<sup>2</sup>Seattle 2035, Urban Village Indicators Monitoring Report (2018)



Belltown

Source: Nlson Boyd



Uptown

Source: NFFTY



South Lake Union

Source: Amazon

## UPTOWN

The Uptown neighborhood is a growing urban center estimated to gain 3,000 households and 2,500 jobs by 2035. The regional hub is anchored by a vibrant arts and culture district and Seattle Center, a public campus and regional destination that attracts 12 million visitors every year. Uptown is home to destinations such as Seattle’s Space Needle, Pacific Science Center, the Museum of Pop Culture, KEXP, Seattle International Film Festival (SIFF), and an active, pedestrian-oriented commercial district.

The Seattle Center Monorail connects over 2 million patrons each year from Seattle Center to Westlake Center. Uptown’s major employers include the Gates Foundation and the future Expedia campus. Housing in Uptown is predominantly multi-family residential rental with nearly half of units built in the last decade. Access to the Ballard-Interbay-Northend Manufacturing/Industrial Center and cruise ship terminals at T-91 occur through Uptown.

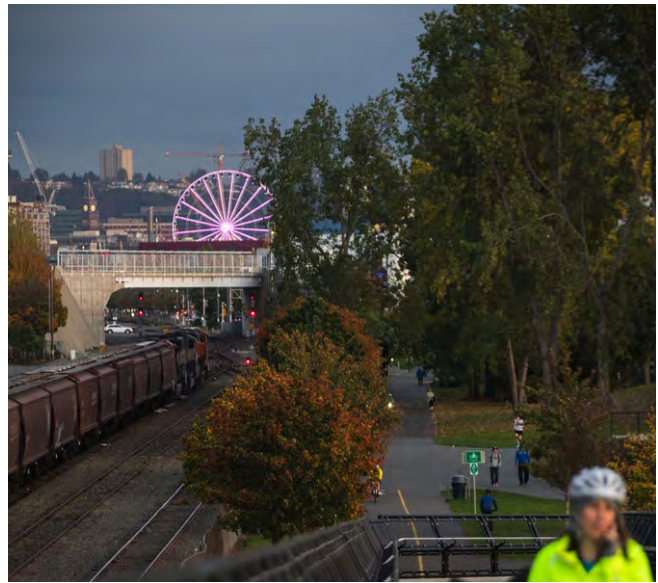


Up Garden, Mercer Garage, Uptown

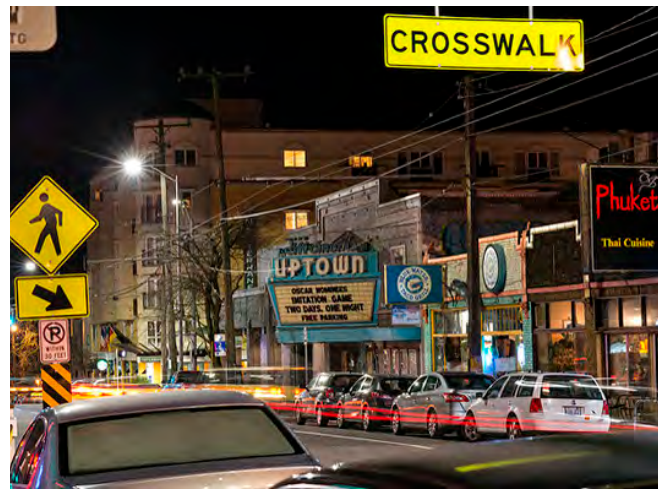
Source: Eric Higbee

Unique mobility assets and challenges in Uptown include:

- The busy **Mercer Corridor** runs through the heart of Uptown and is the predominant east-west connection between Elliott Ave W and I-5.
- **Seattle Center**, an important open space and public realm asset, interrupts Uptown's street grid, placing significant demand on the few continuous north-south and east-west routes through the neighborhood.
- The **BNSF Mainline** is a barrier for bikes, pedestrians, and vehicles between the neighborhood and the waterfront. The **Thomas St Overpass and Helix Pedestrian Bridge** provide the only direct walking and biking connections to the Elliott Bay waterfront.
- **RapidRide high-capacity transit** along Queen Anne Ave N and 1st Ave N connect north to Ballard and south to Downtown.
- The **reconnection of east/west streets** Harrison, John, and Thomas will provide direct connections between Uptown and Seattle Center and South Lake Union.



Source: Lindsey Wasson



Source: Curtis Perry



Source: Seattle Bike Blog

## BELLTOWN

Belltown is Seattle's densest residential neighborhood with 47,000 people per square mile.<sup>3</sup> With its proximity to job centers in South Lake Union and downtown, Belltown is anticipated to gain 3,500 households over the next twenty years.

Several unique green streets and public spaces are vital neighborhood assets, including Growing Vine St, Bell Street Park, the Olympic Sculpture Park, and the Elliott Bay waterfront and trail. Known for its nightlife and entertainment district along 2nd Ave, Belltown proudly maintains a historic, quirky neighborhood character. Iconic and eclectic entertainment anchors in Belltown include Cinerama Theater, the historic Moore Theatre, and Jazz Alley, along with numerous restaurants, bars, and clubs.

Belltown hosts many social service providers and income-restricted affordable housing. People currently or recently experiencing homelessness or recovering from addiction are important members of the Belltown community.

Unique mobility assets and challenges in Belltown include:

- Belltown's street network is comprised of **busy north-south arterial avenues, calm east-west streets** that are steep in locations, and a network of alleys. Desire for safer pedestrian crossings of arterial avenues and alley activation are themes in Belltown community plans.



Source: Friends of Historic Belltown

<sup>3</sup>Belltown & Denny Triangle Connected Public Realm (July 2015)

- **Located between Pike Place Market, Seattle Center, and the waterfronts on Lake Union and Elliott Bay**, community plans have identified priority pedestrian routes and public realm strategies to enhance connections between important destinations, including Lake2Bay and Market to MOHAI.
- The **Seattle Center Monorail** runs through Belltown along and above 5th Ave but does not directly serve the Belltown neighborhood with a station.
- **RapidRide high-capacity transit** runs along 3rd Ave, Broad St, and Battery St providing frequent transit connections to destinations north along Aurora Ave or Elliott Ave and south into Downtown.
- The **BNSF Mainline railway** runs at surface level along the western edge of Belltown, at times creating a barrier between Belltown and the Elliott Bay waterfront. Direct walking and biking connections over the railway are at the Olympic Sculpture Park, Bell St, and Lenora St. Belltown community members desire enhanced connections to the waterfront.
- The **2nd Ave protected bike lane** runs north-south through Belltown connecting Pike Place Market and Seattle Center with an all ages and abilities bike facility.
- Belltown is home to Seattle’s first curbsless shared street, **Bell Street Park**, which some refer to as Belltown’s outdoor living room. Bell Street Park provides a park-like setting with seating, lighting, and plantings, along with flexible event space that invites businesses and residents onto the street.



Source: Friends of Historic Belltown

## SOUTH LAKE UNION

South Lake Union (SLU) is a dynamic, young, employment-rich urban center, home to 44,000 jobs and nearly 10,000 housing units. It is one of Seattle's fastest growing urban centers, having reached nearly 50% of its 20-year housing growth estimate in the last few years. SLU is expected to gain 7,500 more housing units and 15,000 more jobs by 2035.<sup>4</sup>

Now a nationally recognized urban technology hub, Amazon is most well-known for catalyzing the growth in SLU over the last fifteen years. SLU is home to Amazon's ever-expanding headquarters and other tech and bio-tech companies, including the Fred Hutchinson Cancer Research Center (Fred Hutch), Seattle Cancer Care Alliance, and University of Washington Medicine campuses.

The Cascade neighborhood between Eastlake and Fairview Aves has been SLU's historic residential core and includes Cascade Park and People's Center. The Lake Union waterfront and park, encircled by the Cheshiahud Loop urban trail and home to the Museum of History and Industry (MOHAI) and the Center for Wooden Boats, is a neighborhood open space with a regional draw. Historic Denny Park, as well as green streets and pocket parks throughout the neighborhood, add to SLU's thriving public realm.



Source: South Lake Union Community Council

<sup>4</sup>Seattle 2035, Urban Village Indicators Monitoring Report (2018)

Unique mobility assets and challenges in SLU include:

- The **South Lake Union Streetcar** runs north-south along Westlake and Terry Aves N connecting Lake Union Park and Fred Hutch with Westlake Center at McGraw Square.
- **Mercer St and Denny Way are the only continuous east-west connections** through SLU to neighborhoods beyond. King County Metro Route 8 operates on Denny Way and is the only transit connection across I-5 to Capitol Hill. High traffic volumes combined with the shift in the street grid make pedestrian and bike crossings of Denny Way challenging.
- **I-5 and SR 99 have been historic barriers** isolating South Lake Union from Capitol Hill and Queen Anne. The SR 99 tunnel project created access points to the tunnel north portal in the vicinity of Aurora Ave N and Republican St. New surface street connections at Harrison, John, and Thomas Sts will reconnect South Lake Union and Uptown.
  - » **Thomas St is envisioned as a green street** that will be designed to prioritize people walking and bicycling between Uptown and SLU.
  - » **Harrison St is envisioned as a transit pathway** providing new east-west transit connections and a mobility hub at the intersection of high-capacity transit lines at the future north portal.
- **Terry Ave N is identified as the “heart” street in the SLU Neighborhood Plan** and functions as a slow-speed pedestrian-priority street. Several adopted street concept plans for the streets outline visions for SLU streetscapes to function as attractive public amenities.
- **Market to MOHAI and Lake2Bay** priority pedestrian routes and public realm strategies connect key SLU destinations.



Source: Curtis Perry



Source: People for Bikes



Source: Bettina Hanson



Alaskan Way Viaduct Demolition

Source: Seattle PI

## PROJECTS UNDERWAY

Many projects are in the works to improve mobility through and access within North Downtown neighborhoods. Over the next 20 years, many transformational projects will be funded and implemented by a variety of partners and agencies in North Downtown (see Figure 2). NODO MAP's priority projects build upon these numerous plans and projects already in motion and will strategically fill the gaps where Arena mitigation or existing modal plans lack scope or funding to address North Downtown's mobility and public realm needs. The MAP will supplement and partner with efforts in the works to deliver more complete solutions.

Below are additional projects and milestones that are likely to transform the public realm and how people get to North Downtown, particularly the Arena opening (2021), completion of ST2 Link light rail expansion (2024), and the ST3 Link light rail station at Seattle Center (2035).

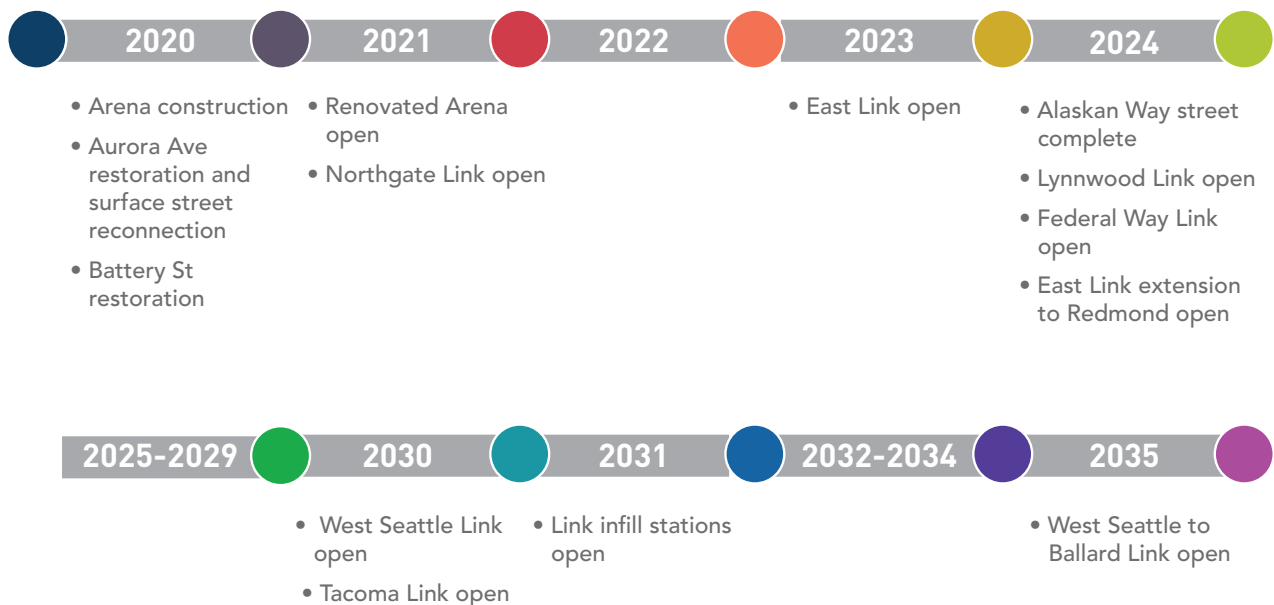
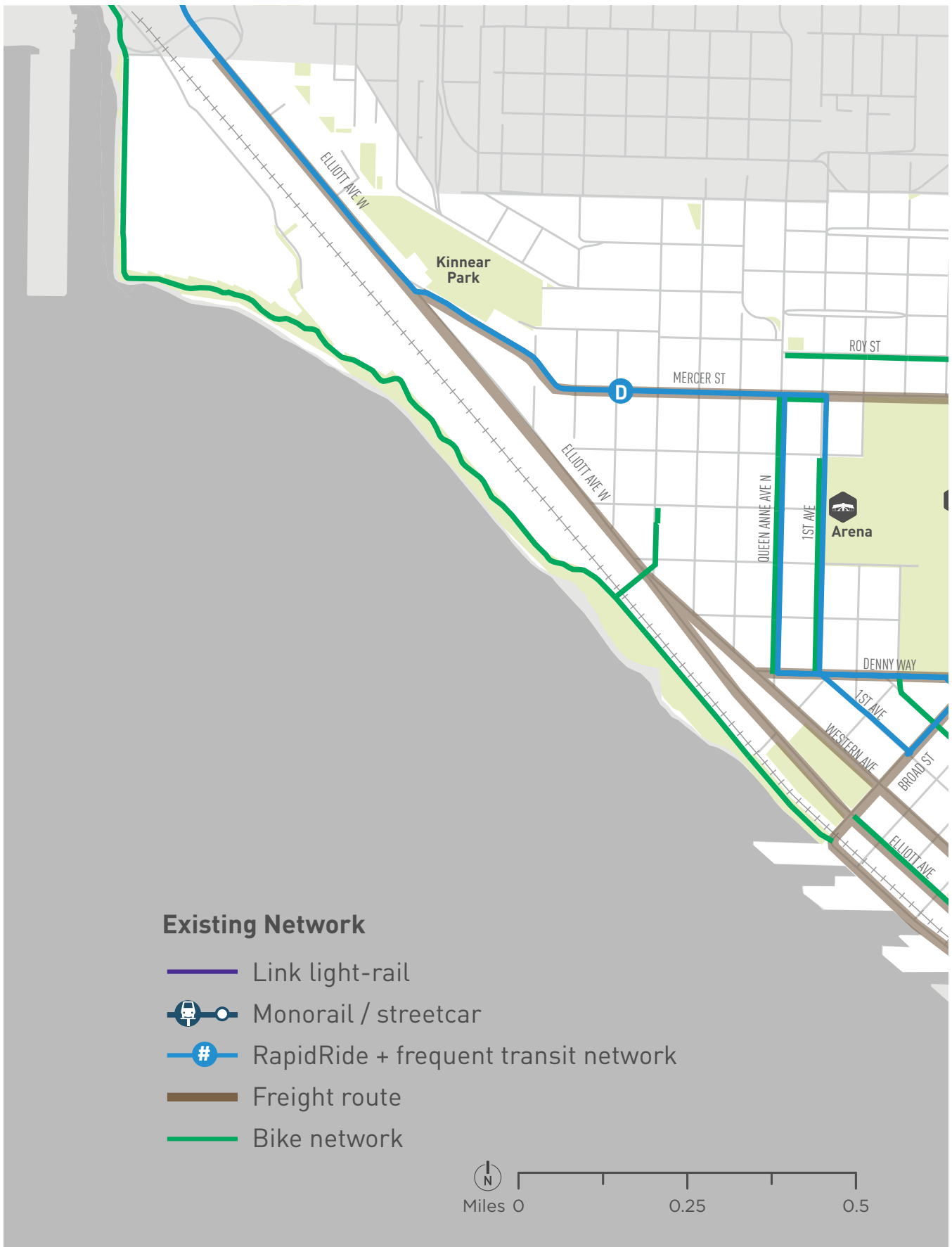
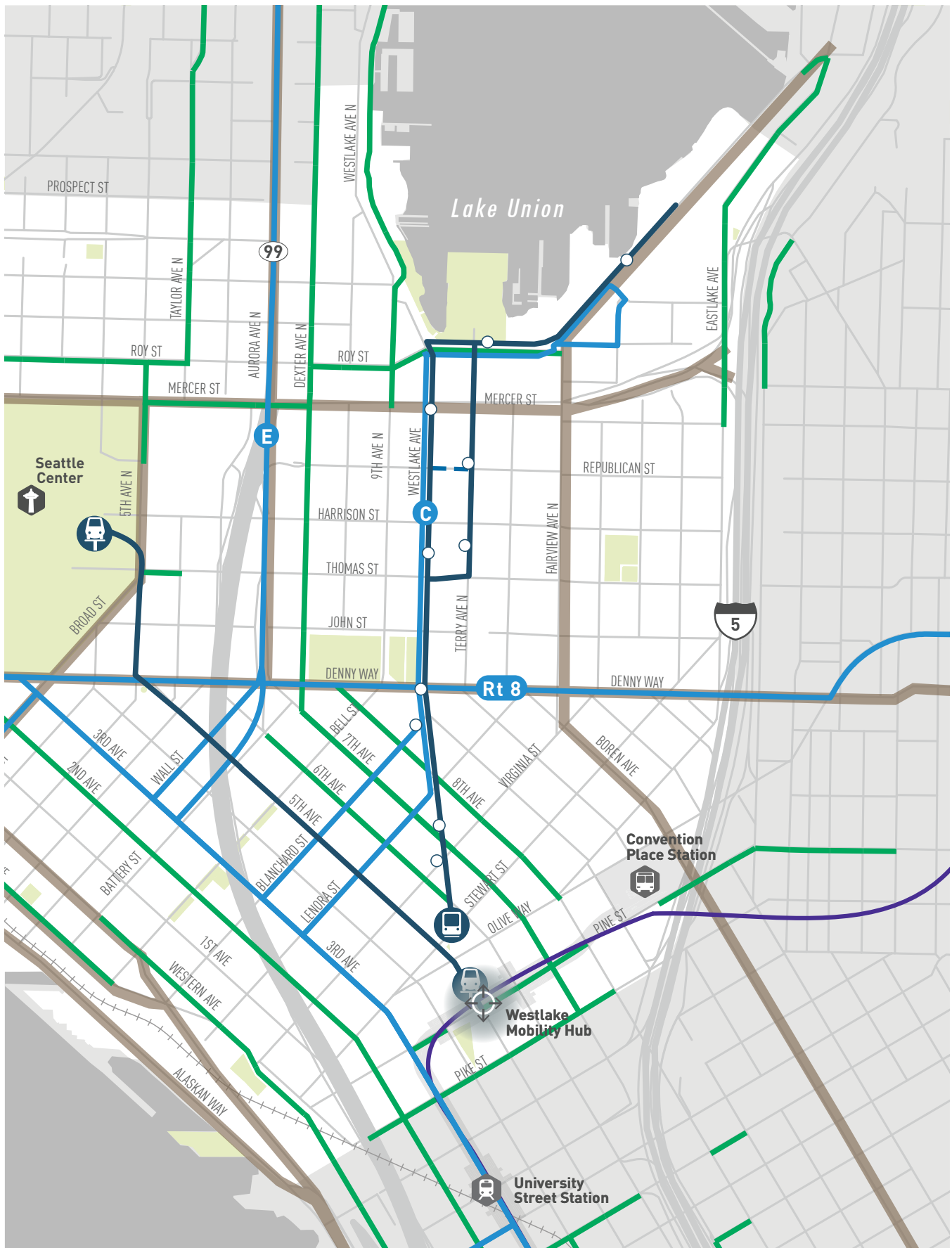
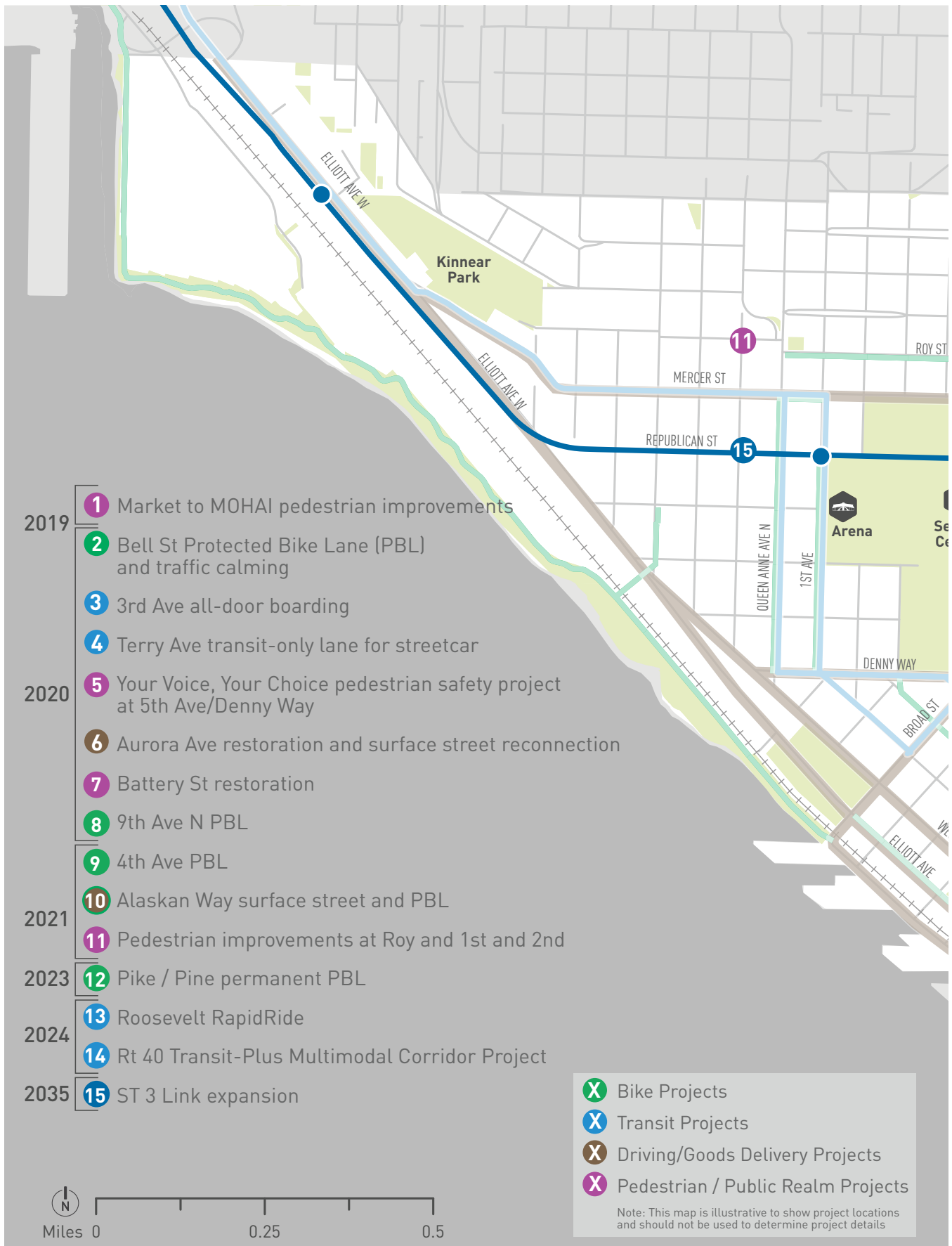


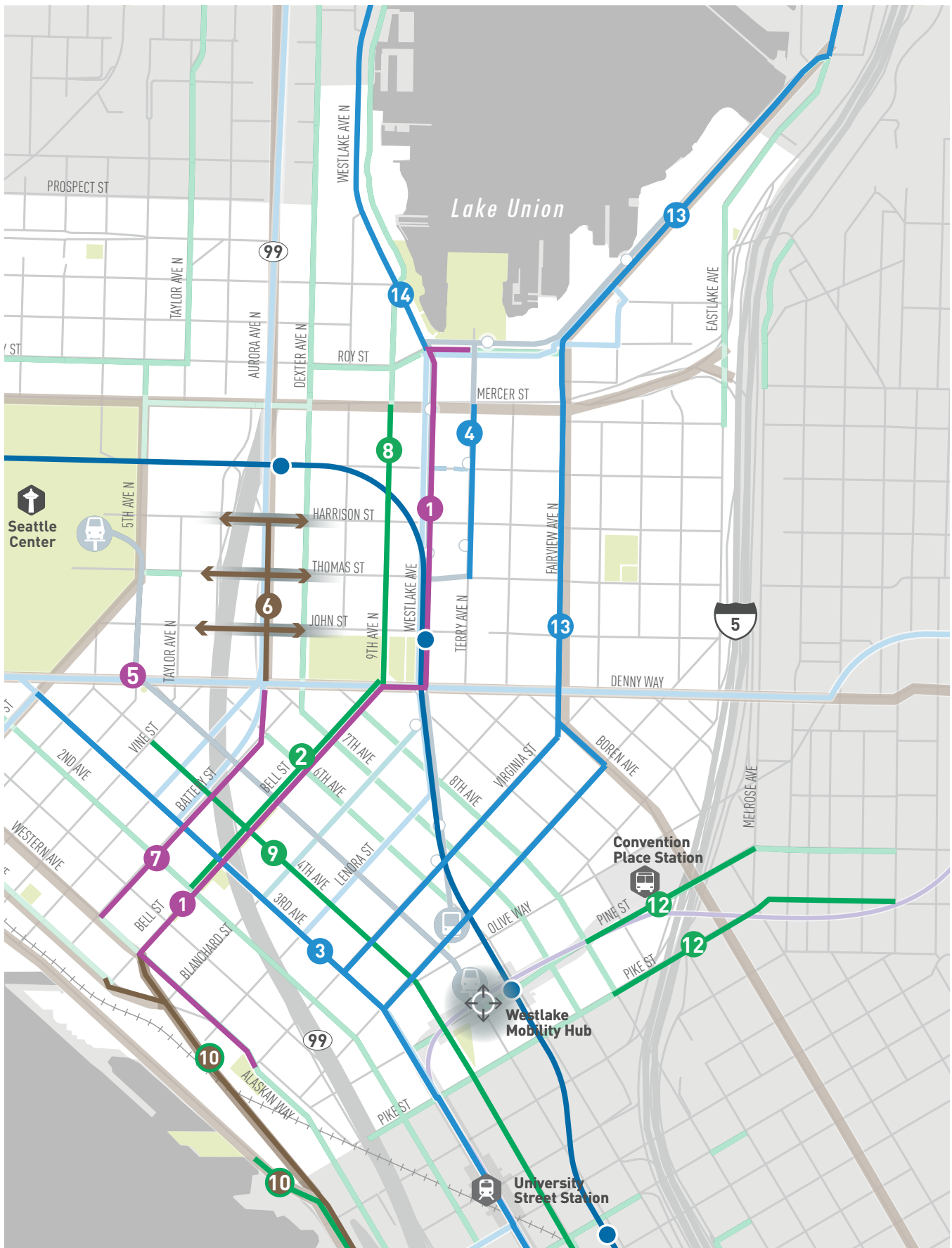
Figure 2 Existing Conditions in North Downtown





**Figure 3 Major Capital Projects Underway in North Downtown**





## PLANNING CONTEXT

The project team reviewed an extensive number of existing plans and community vision documents, ranging from citywide master plans to neighborhood plans to street concept plans authored by neighborhood groups, the City of Seattle, and other agencies.

### City of Seattle Modal Plans

Seattle's citywide plans, like the Seattle 2035 Comprehensive Plan or our modal master plans, form the basis of the multimodal transportation network and set the course for the future of Seattle's streets. These plans are based on substantial public engagement and data-driven technical analysis. Modal plan policies, programs, and projects address many of the mobility challenges cited by community members in North Downtown. The NODO MAP builds on the following modal plans to support the establishment of a well-connected mobility network, and leverage implementation.

- Bicycle Master Plan (2014)
- Transit Master Plan (2016)
- Freight Master Plan (2016)
- Pedestrian Master Plan (2017)

Seattle 2035 (Comprehensive Plan), the New Mobility Playbook, street concept plans, and METRO CONNECTS were also reviewed, with relevant projects in the North Downtown area carried forward in NODO MAP.

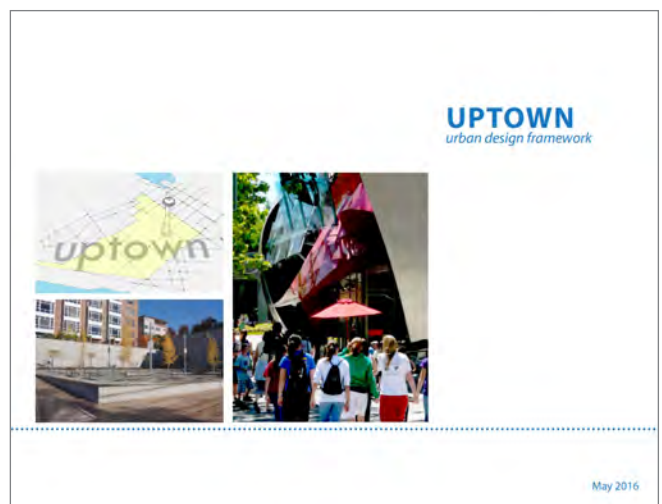
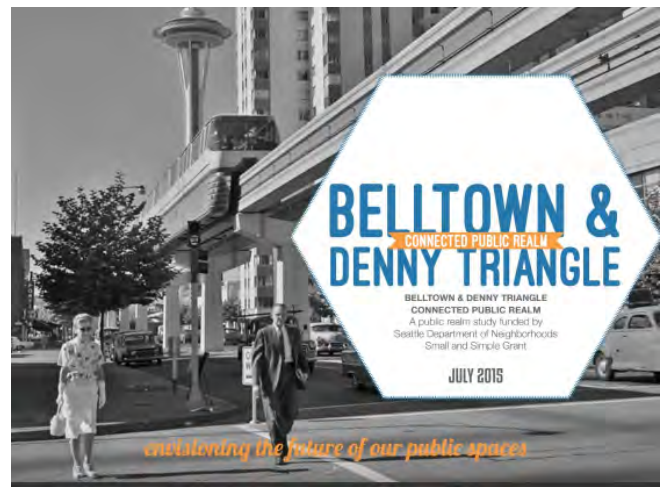
### Recent Community Plans

Recent neighborhood and topic-specific plans also add to the body of transportation and public realm improvements planned in North Downtown. Neighborhood groups and community members authored or actively contributed to these plans and vision documents. Rich with compilations of local knowledge, they represent deep familiarity with existing conditions in North Downtown and are an important source for community ideas about how to improve North Downtown mobility.

The community plans listed below articulate desired outcomes and propose locally-vetted solutions that were integrated into the NODO MAP project selection process.

- South Lake Union Transportation Study (2004)
- South Lake Union Urban Center Neighborhood Plan (2007)
- Uptown Triangle On-St Parking Study (2008)
- Seattle Center Master Plan and EIS (2008)
- South Lake Union Mobility Plan (2010)
- South Lake Union Urban Design Framework (2010)
- South Lake Union and Uptown Triangle Mobility Study (2011)
- SDOT Downtown Access Strategy (2013)
- Belltown & Denny Triangle Connected Public Realm (2015)
- Uptown Urban Design Framework (2016)
- Seattle Center Monorail ORCA Ridership and Revenue Studies (2016-2017)
- Uptown Preliminary Rezone Recommendation Director's Report (2017)
- Uptown and Seattle Center Strategic Parking Study (2017)
- Seattle Center Monorail Stations Reconfiguration Evaluation Report (2018)

One Center City Near-Term Action Plan (2019): A significant level of investment is underway in Seattle’s center city neighborhoods, including those in North Downtown. One Center City (OCC) is a public/private partnership between the City of Seattle, King County Metro, Sound Transit and the Downtown Seattle Association. These agency partners are working together to deliver mobility and public space investments that help ensure Center City neighborhoods continue to thrive during the next five years, a period where the transportation system will be constrained due to a number of major public projects and by significant private development activity.

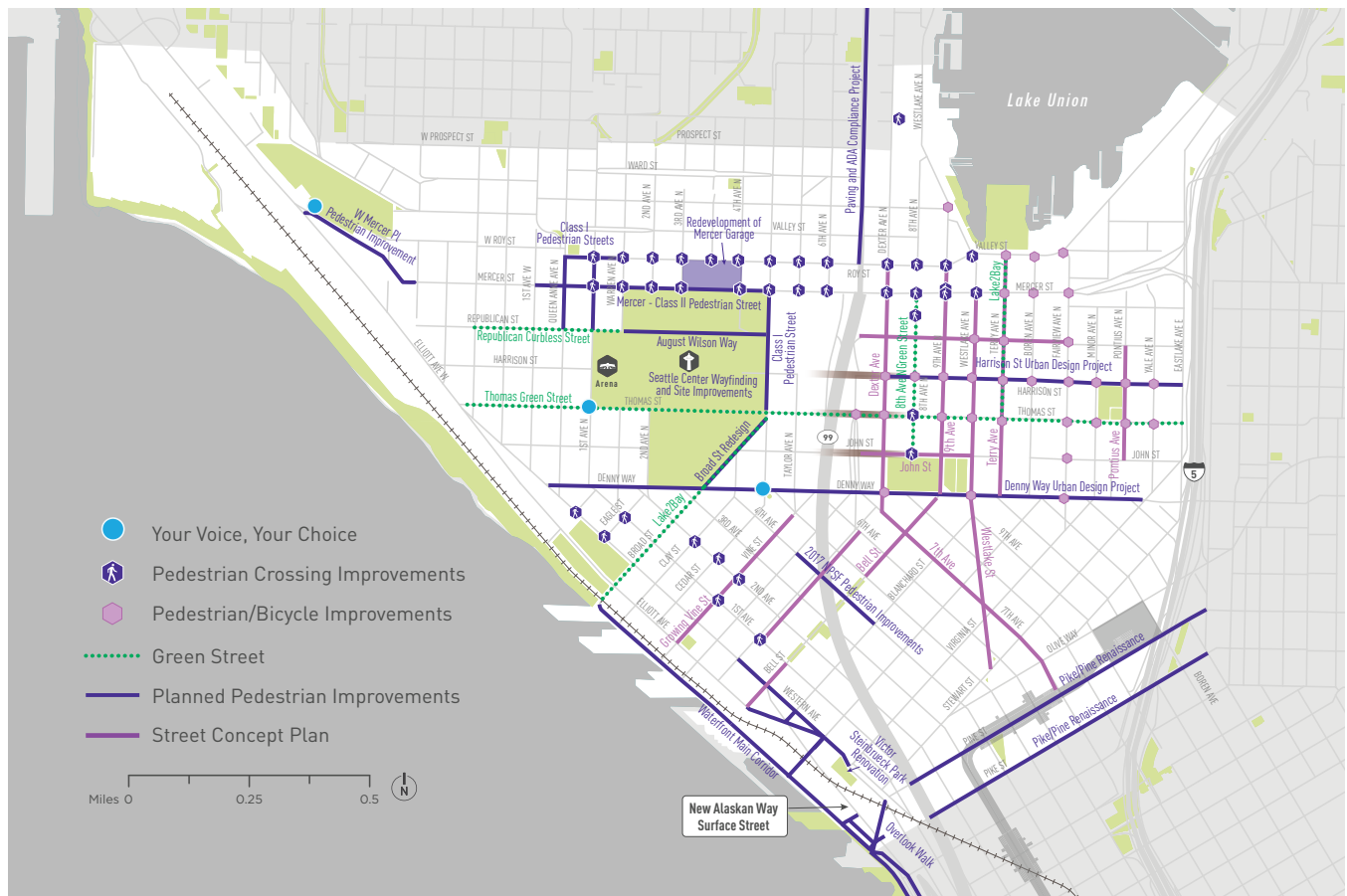


The following pages are a compilation – organized by mode - of the improvements identified in existing North Downtown plans. A visual synthesis of our review and integration of projects from existing plans, this group of projects served as the starting point for project identification and prioritization. Throughout development of the MAP, community members contributed more project ideas, commented on these previously-identified projects, and weighed-in on how these planned projects aligned with the MAP’s guiding principles.



**A few of the many community plans that contributed to NODO MAP.**

**Figure 4 Pedestrian and Public Realm**

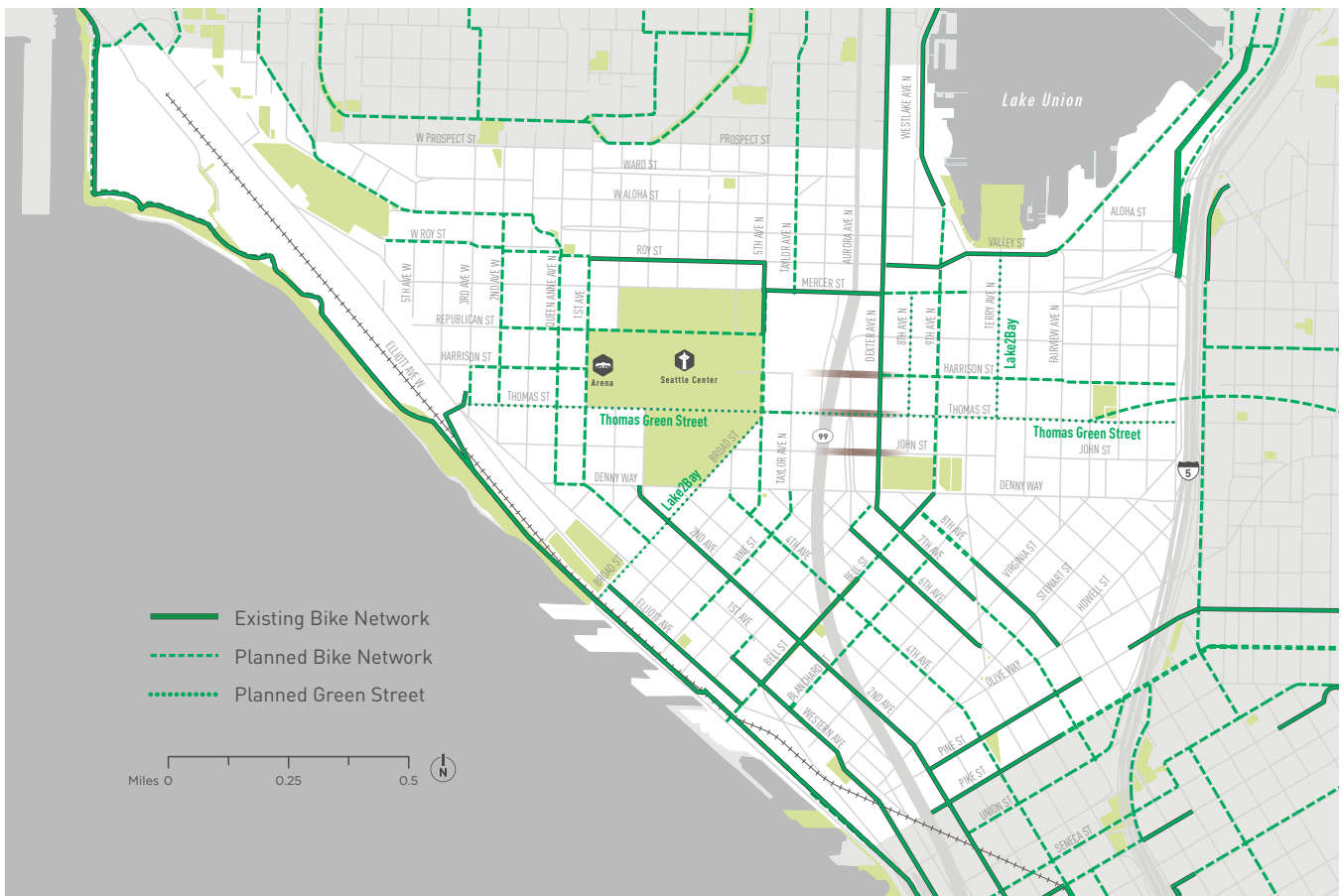


Key pedestrian and public realm improvements identified in existing plans for North Downtown include:

- Class I Pedestrian Streets identified in the Uptown Urban Design Framework
- Pedestrian crossing and intersection improvements identified in the South Lake Union (SLU)/Uptown Triangle Mobility Plan
- Pedestrian connections and corridor visions from street concept plans such as the Republican Urban Curbless Street, Thomas Green Street, South Lake Union Street Concepts, and the Lake2Bay and Market to MOHAI routes
- Improvements identified for implementation by citywide programs including Pedestrian Master Plan Implementation, Your Voice, Your Choice, Move Seattle, and the SDOT Capital Improvement Plan



**Figure 5 Bicycle Network**

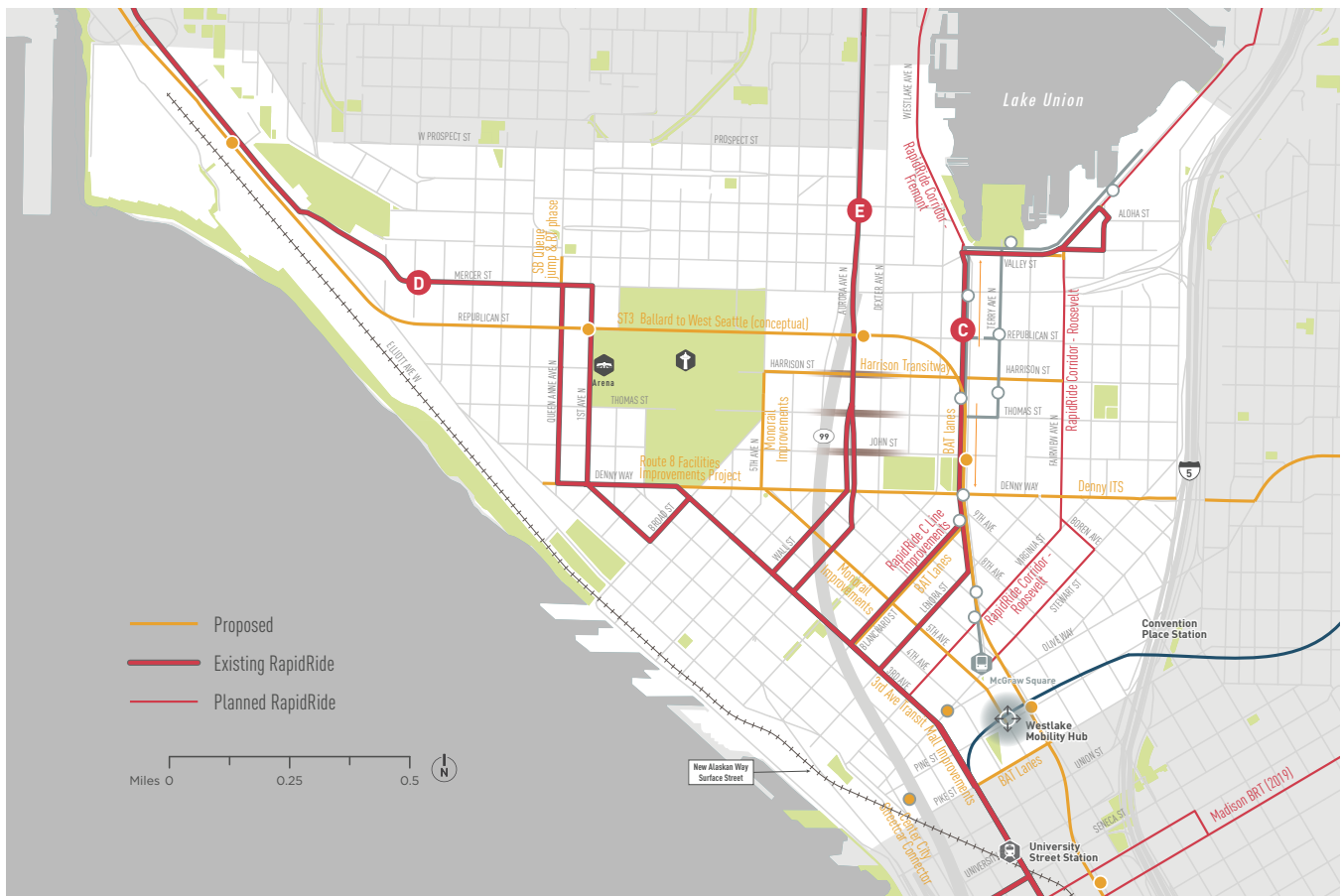


Key bike improvements identified in existing plans for North Downtown include:

- The citywide bike network as identified in Seattle’s Bike Master Plan (BMP) as well as near-term projects from the 2017-2021 BMP Implementation Plan.
- A joint proposal from Seattle Neighborhood Greenways and Cascade Bicycle Club, *Improving Seattle Center Arena Mobility through Bicycling*, identifying priority connections to complete a connected bike network throughout North Downtown.
- Bicycling connections proposed as a part of street concept plans and the Uptown Urban Design Framework.



**Figure 6 Transit**



Key transit improvements identified in existing plans for North Downtown include:

- Improvements to transit service as identified in the Seattle Transit Master Plan; King County Metro’s long range plan, METRO CONNECTS, and Waterfront & North Belltown Transit Study; and Sound Transit’s ST2 and ST3 light rail network expansion plans.
- Through the RapidRide Expansion Program, more and improved high-capacity transit service is planned for North Downtown over the next 20 years, including transit speed and reliability improvements and the expansion of the RapidRide network with new lines currently in development.
- The Seattle Center Monorail recently evaluated and proposed improvements to increase capacity, improve accessibility and better connect the Monorail to the regional

transit network and downtown transportation infrastructure.

- With the completion of the SR 99 tunnel by the WSDOT, new east-west street connections will exist between Uptown and South Lake Union, with Harrison St planned as a transit pathway.
- One Center City near-term strategies include all-door boarding, including the installation of off-board fare collection with ORCA readers at all stops along 3rd Ave by 2020.



**Figure 7 Driving and Goods Delivery**



Key driving and goods delivery improvements identified in existing plans for North Downtown include:

- Seattle’s Freight Master Plan identifies key corridors throughout North Downtown as freight routes and major truck streets. Implementation of truck lanes and operational and signal improvements along key congested corridors are planned, including Elliott Ave and 15th Ave, Mercer St, and Denny Way.
- The decommissioning of the Battery St Tunnel and reconnection of Harrison, Thomas, and John streets as a part of the WSDOT SR 99 project are significant projects that affect driving and goods delivery in North Downtown.



## CHAPTER 3

# EXISTING CONDITIONS & MOBILITY CHALLENGES

Using technical analysis and quantitative data from existing plans, the Seattle Center Arena Renovation Project Final Environmental Impact Statement transportation analysis, and concerns from community members, the project team identified mobility and public realm gaps or deficiencies in North Downtown. Feedback from community members coupled with technical analysis forms a more complete picture of the major mobility, access, and public realm challenges that exist today and are likely to worsen in the future if no action is taken.

The Arena EIS provides technical analysis that confirms many of the concerns and challenges cited by community members during Mobility Action Plan outreach, including:

- **Pedestrian crossings of busy streets are difficult, dangerous, and poorly timed** (e.g., Mercer St, Denny Way)
- **North Downtown has a disconnected bike network** where facilities end before connecting to other safe facilities
- **Transit services are slow and unreliable** because of traffic volatility and congestion, overcrowding on buses, and a lack of transit priority features

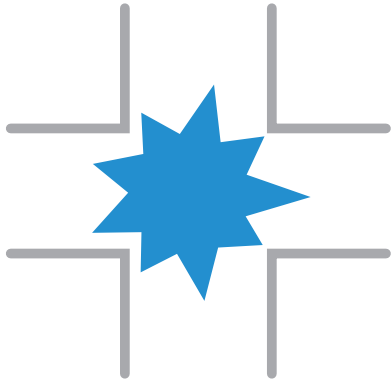
- **There are gaps in the transit network**, and it is difficult and inconvenient to transfer between modes
- **There are not enough east-west bicycle and transit connections** in North Downtown
- **Vehicle congestion consistently halts traffic on major roadways** (e.g., I-5, SR 99, Denny Way, Mercer St, Elliott Ave) and impacts freight reliability and goods movement, especially during peak periods
- **Pedestrians and vehicles experience conflicts at high-volume intersections**, especially with vehicles blocking the box or turning across crosswalks when pedestrians have the right of way
- **Transit stops and hubs feel unclean and unsafe**
- **Public open spaces are limited and underutilized** in North Downtown

The next several pages detail the anticipated mobility challenges identified in the technical analysis and confirmed by the themes that emerged through community outreach.



## PEDESTRIAN & PUBLIC REALM

### Challenges Identified in Technical Analysis



#### Several key intersections have high numbers of pedestrian collisions.

The Arena EIS analysis identifies several key intersections throughout North Downtown that have a history of high numbers of pedestrian collisions, including Mercer St/Queen Anne Ave N, Mercer St/1st Ave N, Mercer St/Terry Ave N, and Denny Way/Westlake Ave N. Seattle's Bicycle and Pedestrian Safety Analysis (2016) found that the majority of pedestrian crashes happen at intersections *with* a traffic signal (67%) versus unsignalized intersections.



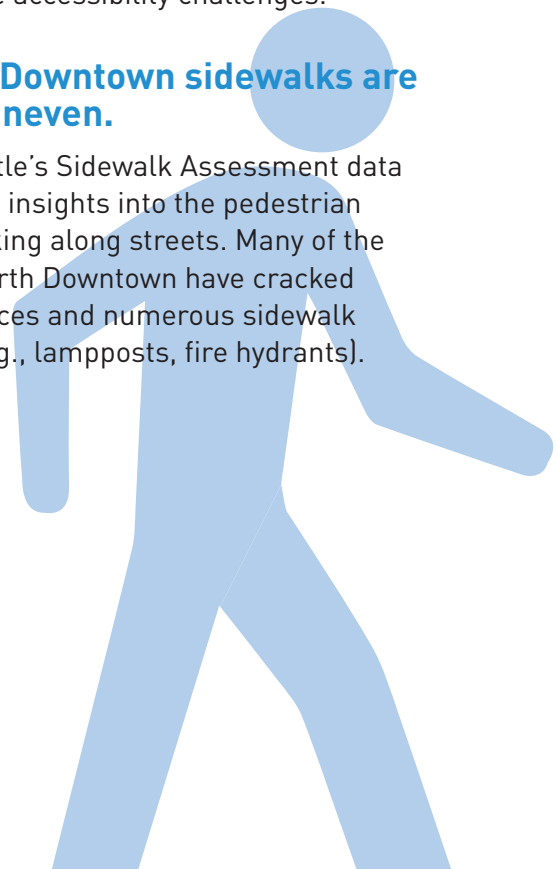
#### Lack of crosswalks or obstructions in the sidewalk impede pedestrian movement.

While the pedestrian network throughout North Downtown is well-established, many intersections lack crosswalks or controlled crossing opportunities. Often sidewalks are temporarily closed due to construction or obstacles create accessibility challenges.



#### Many North Downtown sidewalks are cracked or uneven.

The City of Seattle's Sidewalk Assessment data provides helpful insights into the pedestrian experience walking along streets. Many of the sidewalks in North Downtown have cracked or uneven surfaces and numerous sidewalk obstructions (e.g., lampposts, fire hydrants).



## Pedestrian Themes from Outreach

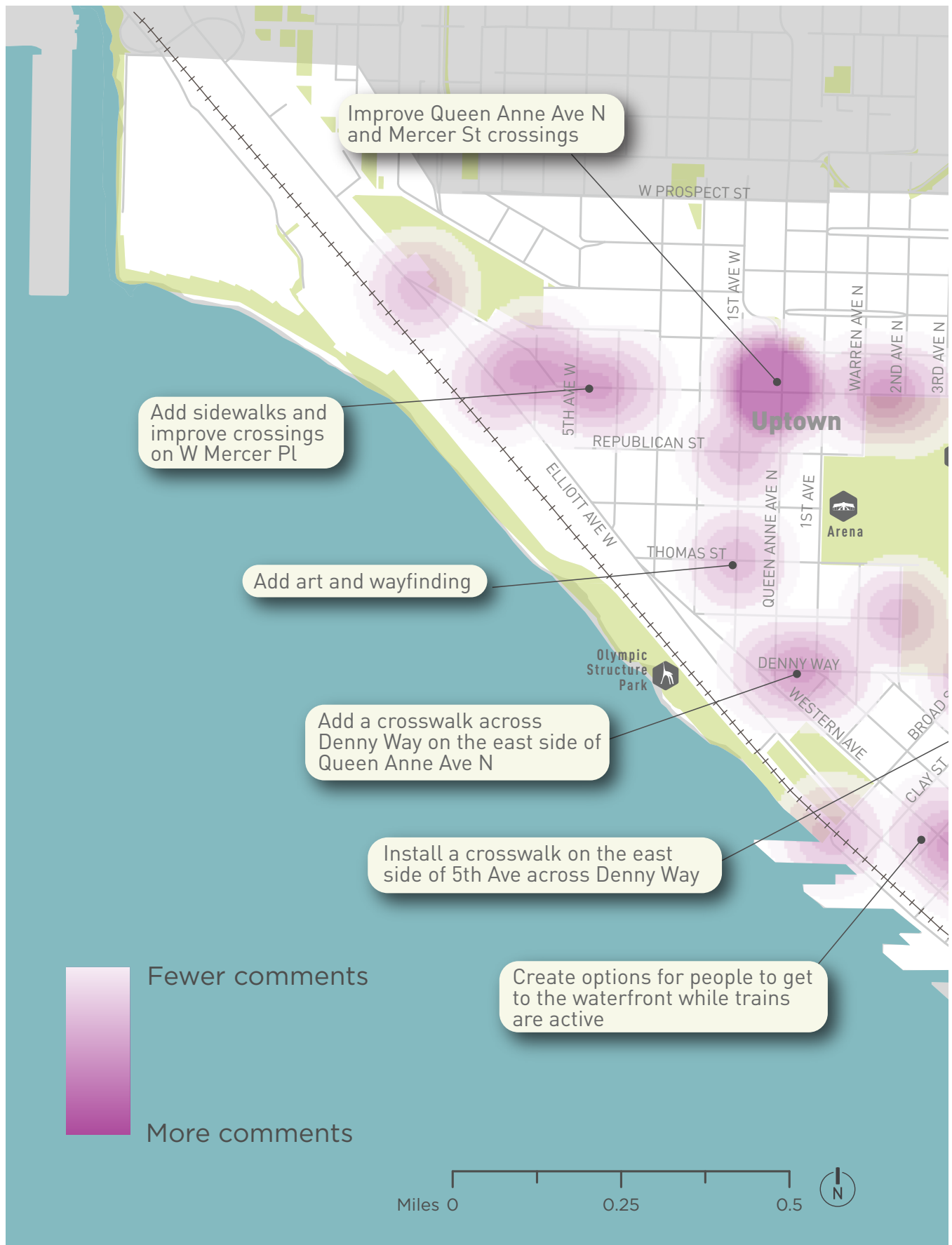
- **Improve pedestrian crossings of arterial streets in North Downtown.** Overwhelmingly, community members cited the need to make crossing busy streets easier for people walking. Suggestions included upgrading intersections to prioritize people crossing the street with longer and more frequent pedestrian phases and separating turning movements to reduce conflicts between turning vehicles and people in the crosswalk, especially in the heart of Uptown at Queen Anne Ave N and 1st Ave N at Mercer St. Additionally, people said many intersections need crosswalks installed or restriped, especially along north-south Aves in Belltown.
- **Improve pedestrian safety throughout North Downtown and along walking connections between neighborhoods, especially between downtown and Seattle Center through Belltown.** Community members indicated that better pedestrian lighting and more safe crossings (especially across Denny Way) are needed to enhance pedestrian safety through Belltown. Construction can create confusion and unpredictable walking routes for pedestrians. They suggested improvements that would enhance predictability between people walking, riding bicycles, and driving by reviewing stop control on local streets in residential neighborhoods.
- **Create high-quality, safe, pleasant connections between North Downtown neighborhoods.** Community members cited several corridors that could use improvements to enhance the pedestrian experience along these key arterials connecting neighborhoods, including Denny Way, Mercer St and Thomas St. Other specific needs mentioned were to maintain unimpeded walking paths by filling gaps in the sidewalk network (especially along W Mercer Place), maintaining an even sidewalk surface, and providing convenient, safe

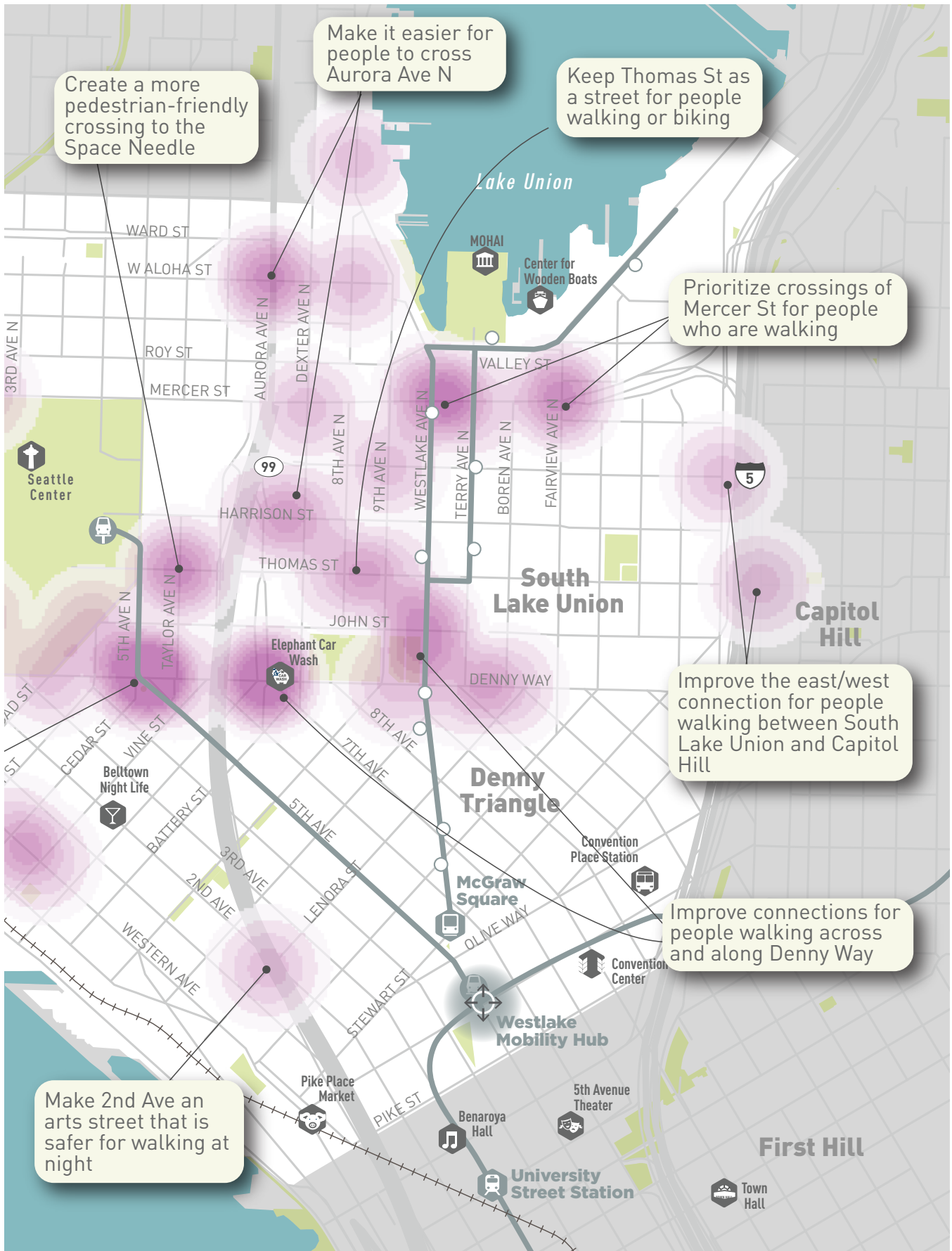
alternate routes if the sidewalk is obstructed by construction activity.

- **Enhance and activate public open space in North Downtown.** Community members want to keep public spaces clean and attractive with more frequent maintenance. Other needs mentioned were to improve lighting at parks and add more amenities and site furnishings in the right-of-way including benches and waste bins. Deploying neighborhood ambassadors could help connect people experiencing homelessness to services and increase the sense of public safety.
- **Enhance neighborhood character with pedestrian and public realm improvements.** People suggested that Belltown's nightlife could be supported by enhancing 2nd Ave as an entertainment corridor. There was support for implementing the Lake2Bay and Market to MOHAI concept plans to create high-quality, branded, and well-lit pedestrian connections between SLU, Uptown, Belltown, and the waterfront.



Figure 8 Pedestrian Public Comments





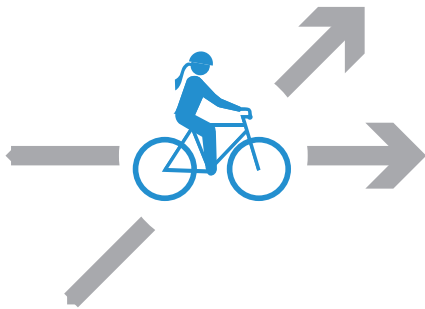
## BICYCLE

### Challenges Identified in Technical Analysis



#### **North Downtown lacks a connected network of in-street protected bicycle infrastructure.**

The 2nd Ave protected bike lane through Belltown is the most continuous piece of protected bicycle infrastructure in North Downtown. Short segments of protected bicycle infrastructure exist along Mercer St between Dexter Ave N and 5th Ave N and along 5th Ave N between Mercer St and Republican St. Community members stated they would consider traveling by bicycle if they could do so in a protected bike lane fully separated from traffic.



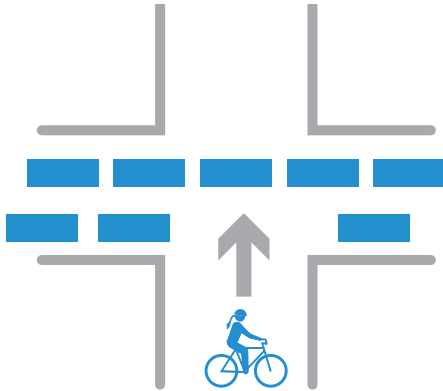
#### **North Downtown needs more east-west and northeast-southwest bicycle connections.**

No protected bicycle infrastructure exists between Seattle Center and the Elliott Bay waterfront. There is no continuous all ages and abilities bicycle connection between Uptown and South Lake Union. Bicycling is permitted across Seattle Center campus; however, no established bicycle connection exists.



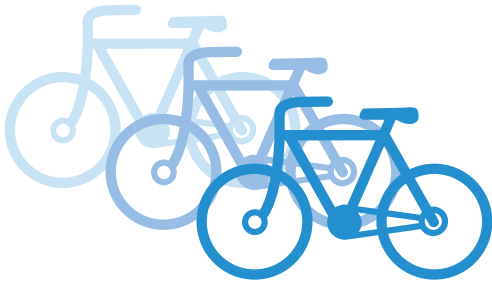
#### **Bicycle facilities in North Downtown are disconnected.**

While the bicycle network in North Downtown is well-developed along some corridors, it is lacking along others. Many of the bicycle facilities end or become sharrows before connecting to major destinations or another bicycle facility. For example, the Roy St protected bike lane does not connect to the Mercer St protected bike lane. The 2nd Ave protected bike lane does not connect across Denny Way to Seattle Center. The 5th Ave N protected bike lane does not connect across Denny Way to bike facilities into downtown.



**Bicyclists often have trouble crossing major arterials during peak periods due to vehicles that block the intersection.**

Despite the presence of “Do Not Block Intersection” signs, vehicles often block the box at Mercer St and Denny Way, impeding people riding bikes from proceeding across the intersection and often forcing them to veer into the travel lane to get around.



**Dockless bike share bikes often impede pedestrian movement along sidewalks.**

Bike share bikes are often parked outside of the sidewalk’s furniture zone and affect pedestrian flow during busy periods.



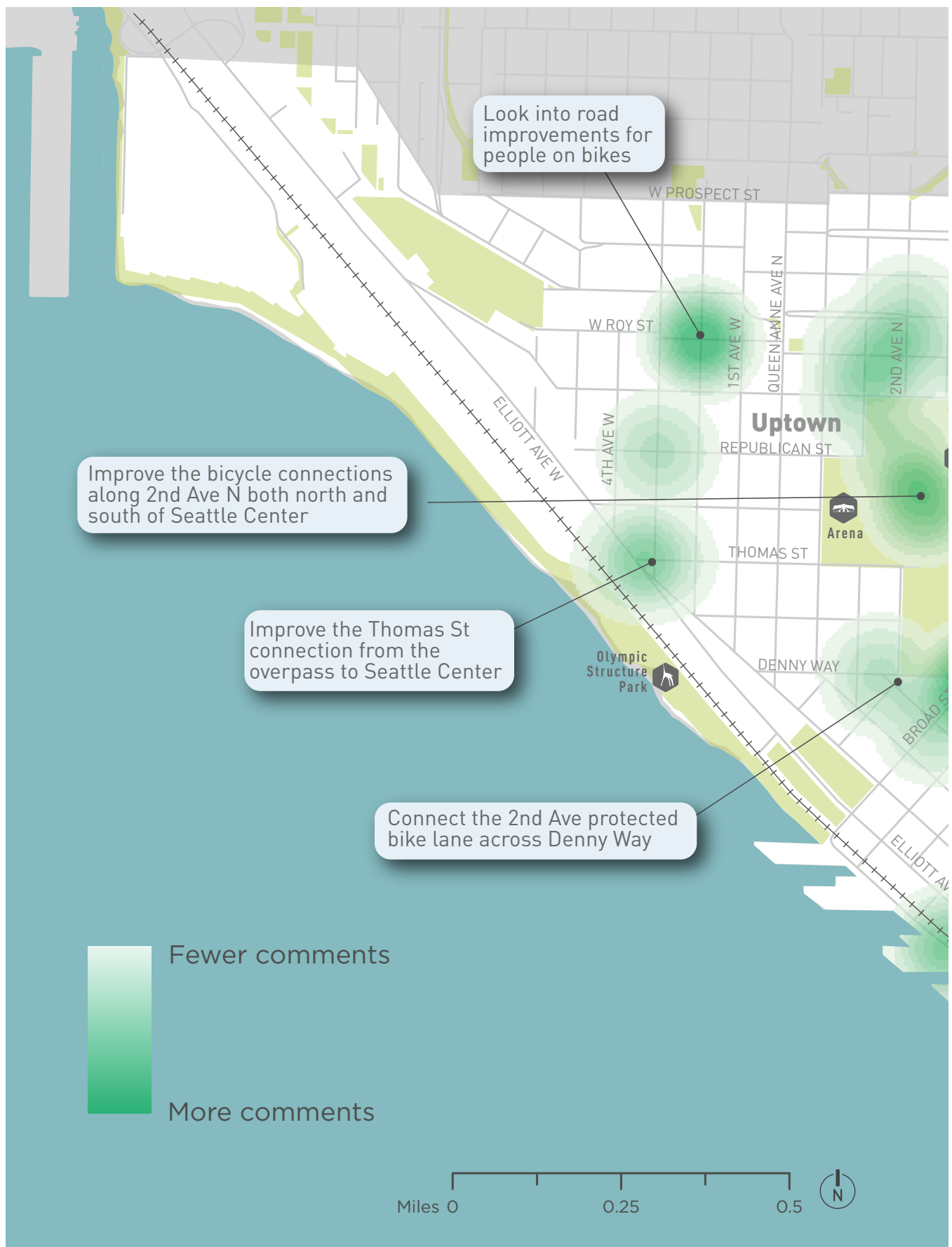
## Bicycle Themes from Outreach

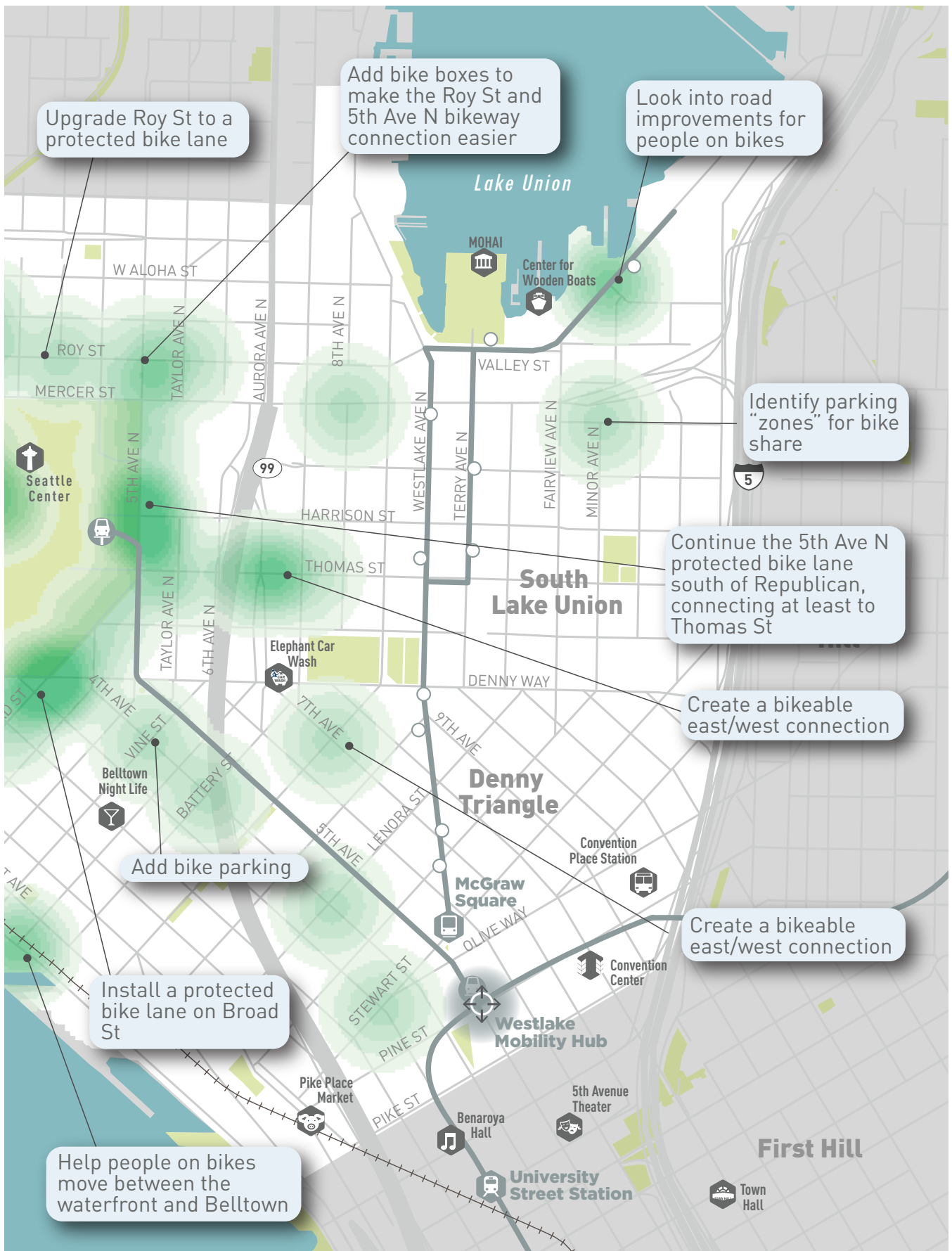
- **Create visible, separate street space for people riding bikes.** Build new or upgrade current bike facilities to be fully protected from traffic. For example, create protected bike lanes along 1st Ave N and Queen Anne Ave N in Uptown. Upgrade Roy St to a fully protected bike lane connecting from the Mercer St green path to Kinnear Park.
- **Connect protected bike facilities to create a continuous network.** Community members iterated that they would be more likely to use a bicycle for transportation if they were confident they could get to their destination via a network of safe, protected bike lanes. Desired connections include completing the connection from the 2nd Ave protected bike lane into Seattle Center or connecting the 5th Ave N protected bike lane from Roy St across Denny Way to bike routes into downtown.
- **Create east-west bicycle connections across Seattle Center between Uptown and South Lake Union.** People frequently cited the lack of safe and comfortable east-west bike routes through North Downtown, as there is no designated space on much of Mercer St or Denny Way for people riding bikes. Community members suggested that Thomas St and August Wilson Way across Seattle Center could be improved to prioritize people walking and bicycling. A new bicycle and pedestrian-only crossing is planned across the future Aurora Ave N surface street.
- **Improve bicycle connections between the Central Waterfront, Belltown, and Uptown.** Many community members cited confusion when looking for a preferred bicycle connection across Denny Way between Belltown and Uptown, and from Seattle Center to the waterfront. Ideas from the community for better connections include improvements along Republican St and 3rd Ave West in Uptown to create a safe connection between Seattle Center and the Thomas St overpass. Implementation of the Lake2Bay Corridor Concept Plan would also designate space on Broad St for people riding bikes.
- **Encourage bicycling as a preferred access mode with wayfinding, amenities and programs.** Community members shared ideas for a bike station at Seattle Center, bike valet parking at Arena events, improved route signage from downtown to Seattle Center, and coordinated bike share availability to connect Seattle Center event attendees to Westlake transit connections.





Figure 9 Bicycle Public Comments





Upgrade Roy St to a protected bike lane

Add bike boxes to make the Roy St and 5th Ave N bikeway connection easier

Look into road improvements for people on bikes

Identify parking "zones" for bike share

Continue the 5th Ave N protected bike lane south of Republican, connecting at least to Thomas St

Create a bikeable east/west connection

Add bike parking

Create a bikeable east/west connection

Install a protected bike lane on Broad St

Help people on bikes move between the waterfront and Belltown

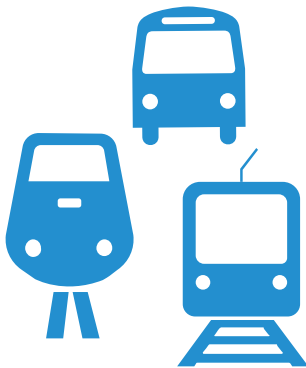
# TRANSIT

## Challenges Identified in Technical Analysis



### North Downtown lacks high-capacity frequent east-west transit service between Uptown and South Lake Union.

Denny Way provides the only east-west transit connection between North Downtown and destinations east of I-5, and it often experiences delay. Transit service through North Downtown mostly exists on north-south or northwest-southeast arterials.



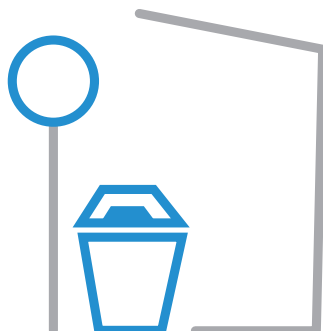
### A variety of transit types serve North Downtown and see varying levels of ridership.

RapidRide bus service, frequent and local bus service, streetcar, and the Monorail all serve North Downtown. The RapidRide D-Line through Uptown and Belltown experiences the highest levels of ridership and overcrowding at peak hours near Seattle Center.



### Buses along Denny Way experience delay caused by congestion.

Denny Way and the Queen Anne Ave N and 1st Ave N couplet see the highest bus volumes near the Seattle Center Arena.



### North Downtown bus stops have varying levels of rider amenities

Shelters and benches are provided at many, but not all bus stops. RapidRide stops provide the most enhanced passenger waiting environment.



**Only RapidRide stops have features that enhance transit speed and reliability.**

Some bus stops allow buses to stop in the travel lane while others have pull-outs. RapidRide stops expedite passenger boarding and alighting with off-vehicle fare payment and all-door boarding.



**North Downtown is home to some of the *least* and *most* transit dependent residents in Seattle.**

Seattle’s Transit Master Plan found that access to a private vehicle also varies considerably across North Downtown neighborhoods, emphasizing the need for other transportation options like transit, shared mobility services, or bicycle facilities.



## Transit Themes from Outreach

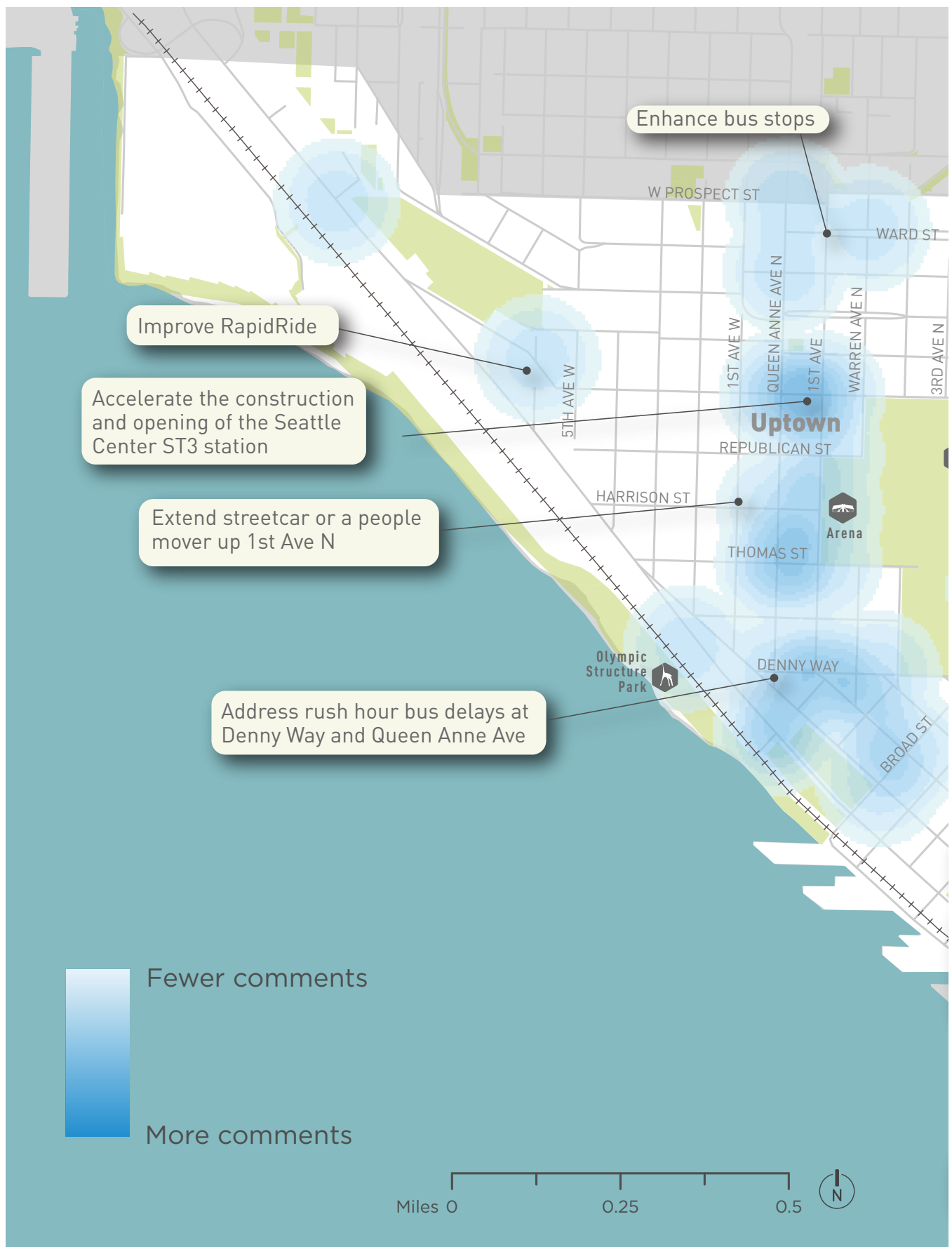
- **Improve east-west transit service and reliability between Uptown, SLU and Capitol Hill.** Community members often expressed frustration with Route 8 delays along Denny Way that could be remedied with transit priority features and speed and reliability improvements. Upon completion of the SR 99 tunnel, Harrison St could also function as a transitway providing desirable east-west transit connections. Notably, there was a recent slate of speed and reliability improvements to Route 8.
- **Improve transit speed and reliability between downtown, Belltown, and Uptown.** North Downtown transit riders cited several ideas for improving transit speed and reliability along key corridors, including more bus-only lanes and transit priority at intersections, especially along Denny Way. They suggested temporary transit priority features to make transit the preferred travel mode for Arena event attendees. Community members also mentioned they would use the Monorail more if it were easier to access and had increased capacity and frequency.
- **Create new high-capacity transit connections between downtown and North Downtown neighborhoods.** Many ideas for new transit connections emerged during the action plan development including a street car extension connecting Seattle Center and South Lake Union, adding a new Monorail stop in Belltown, and accelerating the construction and opening of LINK light rail at Seattle Center.

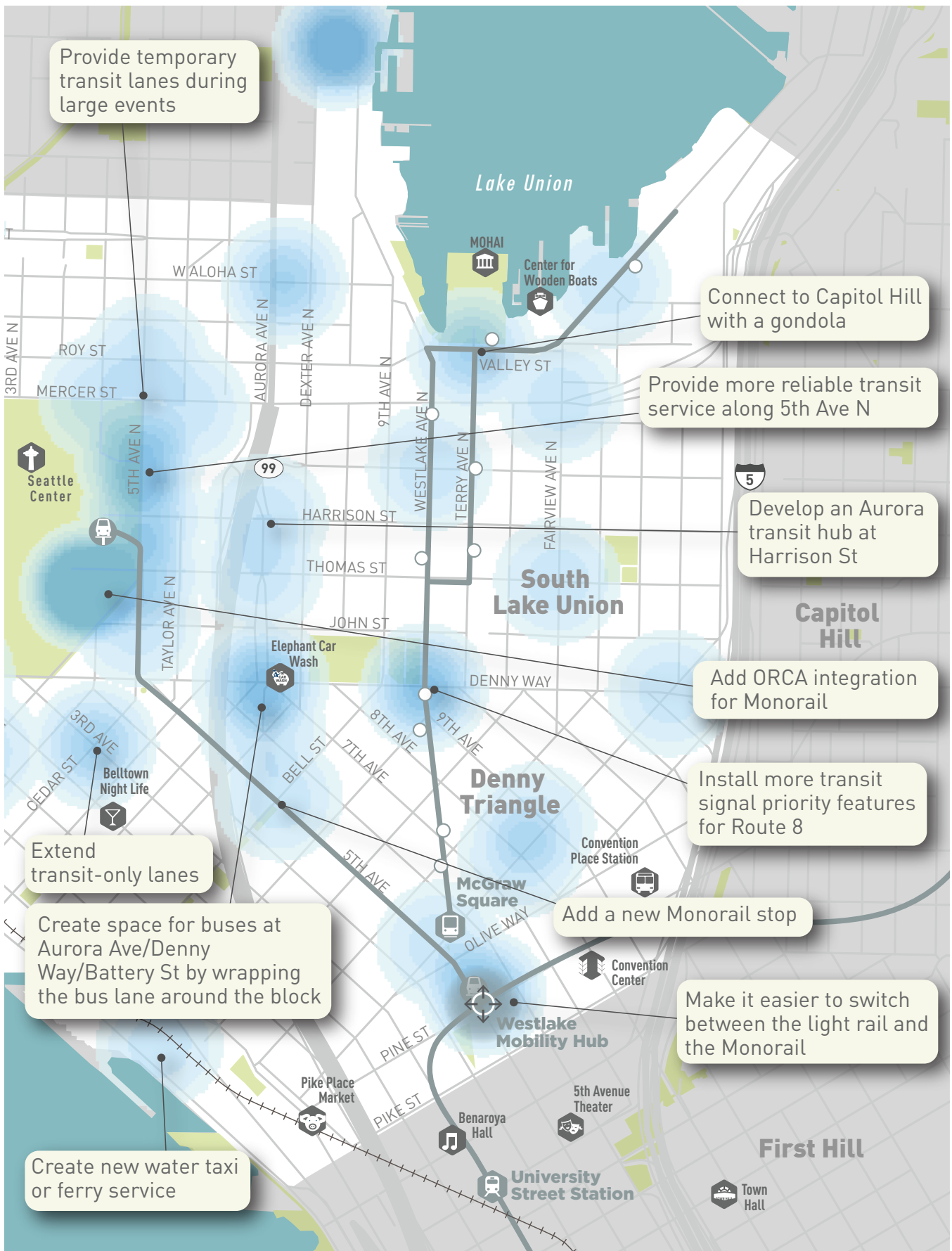
- **Improve passenger experience at transit stops and stations.** To make transit a preferred travel mode to and through North Downtown, community members cited the need for enhanced cleanliness and sense of safety at bus stops and stations. Improved lighting, accurate real-time information, and comfortable seating are highly desired amenities.
- **Utilize fast ferry service and the existing rail line along Elliott Bay to connect people to and from North Downtown.** Community members suggested leveraging existing assets including the waterfronts in North Downtown and the existing Amtrak and Sounder rail line to enhance mobility. For example, a new intermodal hub at the Thomas St overpass served by Amtrak, Sounder, and water taxi could provide direct connections to future Arena events.
- **Create mobility hubs that bring shared mobility services together at major transit junctions or station areas.** Community members would like to see enhanced transit hubs to facilitate seamless connections between modes, including shared mobility services. A more intuitive, direct connection between LINK light rail and the Monorail is a top priority for North Downtown transit riders. People indicated that future hub locations at the intersection of high-capacity transit modes, including Harrison St and SR 99 and the Seattle Center LINK station/ RapidRide D-Line, should seamlessly integrate a wide range of mobility options and wayfinding.





Figure 10 Transit Public Comments





Provide temporary transit lanes during large events

Connect to Capitol Hill with a gondola

Provide more reliable transit service along 5th Ave N

Develop an Aurora transit hub at Harrison St

Add ORCA integration for Monorail

Install more transit signal priority features for Route 8

Extend transit-only lanes

Create space for buses at Aurora Ave/Denny Way/Battery St by wrapping the bus lane around the block

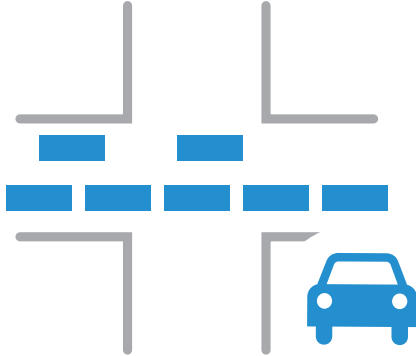
Add a new Monorail stop

Make it easier to switch between the light rail and the Monorail

Create new water taxi or ferry service

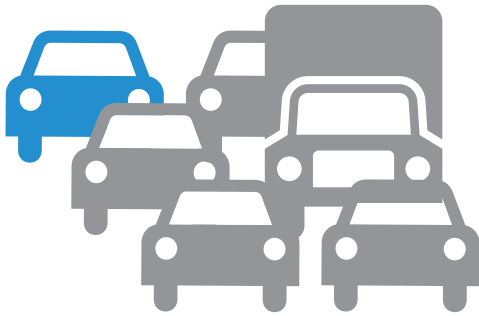
## DRIVING AND GOODS DELIVERY

### Challenges Identified in Technical Analysis



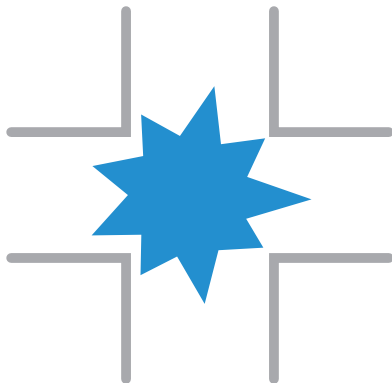
**During the peak of the evening rush hour, a number of intersections along Mercer St and Denny Way have significant traffic delays heading eastbound.**

Travel times along Mercer St between Fairview Ave N and 4th Ave N average 22 minutes at 2 miles per hour. Travel times along Denny Way between Yale Ave and Stewart St and Taylor Ave N average 17 minutes at 3 miles per hour. Congestion on I-5 causes substantial traffic back-ups in the eastbound direction, contributing to traffic delays.



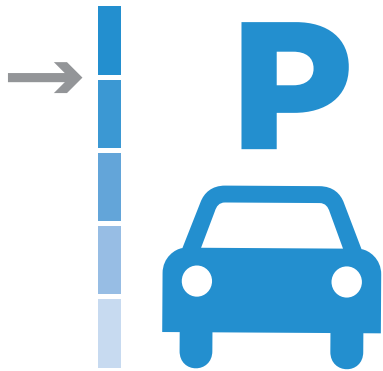
**Substantial traffic back-ups congest Mercer St and Denny Way, as well as their side-street approaches.**

Eastbound traffic headed toward I-5 from Mercer St creates substantial back-ups along the corridor during rush hours. Similar conditions exist in the eastbound direction of Denny Way. Additionally, weekday peak hour congestion on I-5 causes back-ups onto Mercer St and Denny Way. This impacts freight reliability and goods movement along these corridors.



**Several intersections along Denny Way are high collision locations.**

These intersections are concentrated between 5th Ave N and Stewart St. Left-turn and angled vehicular collisions are the most common collision types. The intersections of Mercer St/ Fairview Ave N, 5th Ave/Olive Way, 4th Ave/Battery St, and Yale Ave/Stewart St are also high collision locations.



**On-street parking demand near Seattle Center is highest during Saturday evening Arena events that overlap with peak travel periods, while garages remain modestly utilized.**

Saturday evening occupancy for on-street parking near Seattle Center increases to 81% versus 67% on a typical weekday evening. However, off-street parking occupancy only increases to 22% versus 11% on a typical weekday evening. There are approximately 5,000 off-street parking stalls near Seattle Center and approximately 3,000 on-street parking spaces.



**Seattle's street segments with the highest concentration of truck collisions are located in North Downtown.**

The 2016 Seattle Freight Master Plan found that in general, locations with high truck collisions correspond to facilities with a high volume of trucks. While safety improvements have been made to specific high-collision locations, the impacts have yet to be evaluated.



**Significant freight bottlenecks are located in North Downtown's north-south arterials.**

Seattle's Freight Master Plan found that freight congestion occurs on north-south segments of the freight network, which also overlaps with pedestrian and bicycle crashes during the study period. These findings illustrate a need for more predictable movement for goods and delivery, and facilities that minimize conflicts with pedestrians and movement of people.

## Driving and Goods Delivery Themes from Outreach

- **Improve signals on key corridors connecting North Downtown neighborhoods.**

Community members often cited significant levels of traffic delay and congestion during peak hours throughout North Downtown. The increased delay makes freight movement and goods delivery more difficult, as cited by stakeholders in the Ballard-Interbay-Northend Manufacturing/Industrial Center. Signalization improvements and signal timing coordination along key corridors were frequently suggested as potential solutions. Ensuring reliability along freight corridors was also cited as a top priority.

- **Improve traffic operations throughout North Downtown.**

Several improvements aimed at reducing congestion and increasing safety came up during plan development, including separating turning movements to eliminate conflicts between crossing pedestrians and turning vehicles, installing new signals and more visible signage, lengthening vehicular left-turn phases, and better organizing street space among travel modes in frequently congested streets.

- **Increase enforcement to ensure people travel safely.**

Peak-hour enforcement and turning restrictions to prevent vehicles from blocking the box at intersections was one of the most frequently suggested improvements. In addition, calming traffic in residential areas with high pedestrian volumes and access management along Bell Street Park were also cited.

- **Review curbspace needs throughout North Downtown.**

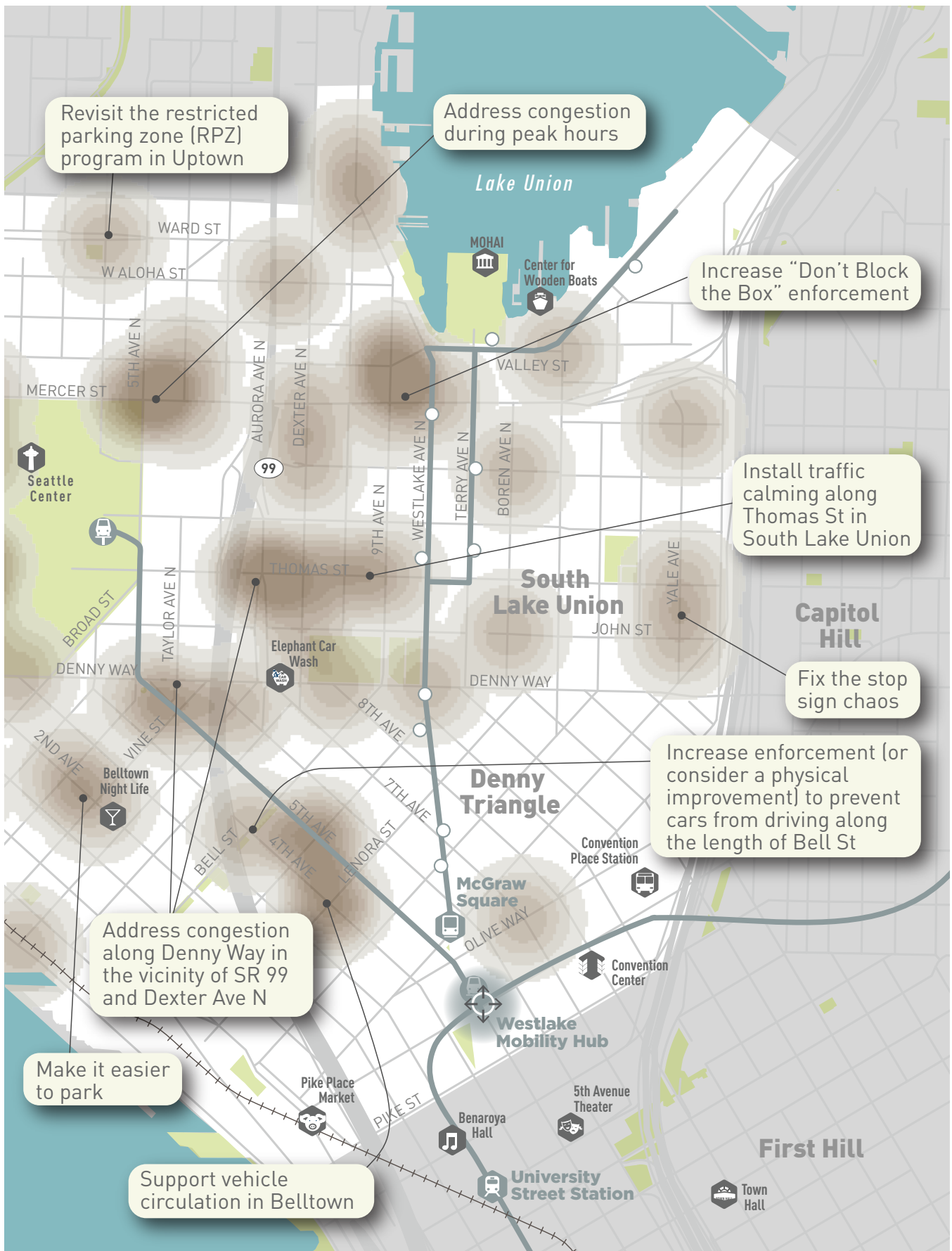
Community members cited the many competing needs for curbspace throughout downtown, from rideshare pick-up/drop-off to goods delivery to on-street parking. An overall strategy is needed in North Downtown to designate curbspace to serve the most people and those without alternatives, including local businesses reliant on goods delivery and people with mobility restrictions.





Figure 11 Driving and Good Delivery Comments





## CHAPTER 4

# PROJECT DEVELOPMENT & EVALUATION

The NODO MAP was developed through extensive community outreach. An evaluation framework was developed and used to rate and rank candidate projects and programs. The evaluation framework was guided by community-developed guiding principles (see right of page). Equity, safety, and access to opportunity were central to the evaluation, ensuring the City's commitment to North Downtown's most vulnerable residents, workers, and visitors.

Over 500 project and program ideas were identified through existing plans and MAP outreach. An initial screen was conducted based on:

- Alignment with Guiding Principles (High/Medium/Low)
- Identified in Existing Plans (Y/N)
- Anticipated Costs (\$-\$\$\$\$)
- Level of Community Support (Y/N)

The top tier of projects was presented to the public and key stakeholder groups for review and input. Further technical study, including results of the Arena EIS transportation analysis, and evaluation of funding opportunities narrowed that candidate project list.

The team identified an implementation pathway for most of the top tier projects (see Appendix for a list of projects). The final list of recommended projects is bounded by anticipated funding from the City (Arena) Transportation Fund (\$40M over 39 years) and a \$5M anticipated contribution from the Port of Seattle.

## GUIDING PRINCIPLES



### BUILD ON COMMUNITY VISION

Align mobility improvement implementation with community priorities and vision.



### PRIORITIZE SUSTAINABLE TRANSPORTATION OPTIONS

Increase accessibility and convenience for people walking, biking, and taking transit between North Downtown and adjacent areas to support growth and accommodate Seattle Center events, while reducing automobile trips.



### ENHANCE THE PUBLIC REALM

Create attractive places to walk, bike, ride transit, and play in North Downtown.



### IMPROVE CONNECTIVITY

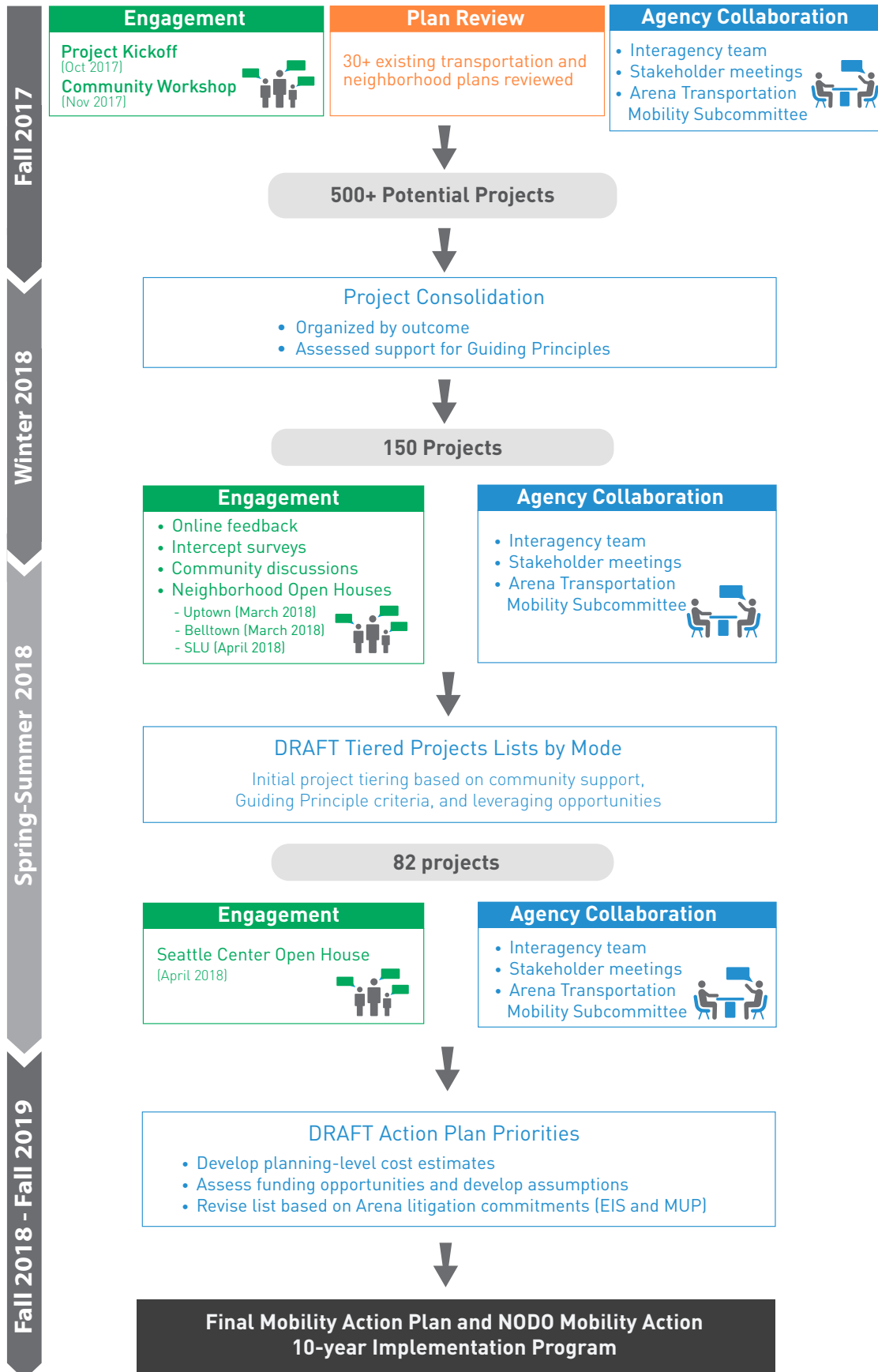
Enhance connections within and between North Downtown and to adjacent neighborhoods.



### INCREASE SAFETY

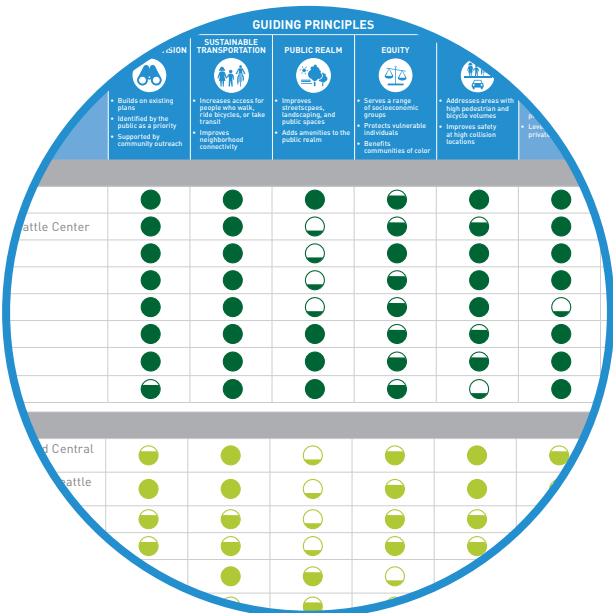
Enable safe access for all, regardless of age, ability, or transportation mode choice.

# PROJECT DEVELOPMENT PROCESS



# PROJECT EVALUATION

Selecting projects most responsive to community needs requires an evaluation driven by community input and direction. Guiding principles developed and tested for community support formed the backbone of the project evaluation approach. Specific evaluation criteria were organized to support these principles and City priorities around equity. Criteria were applied to each project and overall ratings used to guide project selection.



Projects were evaluated using criteria develop to align with community-developed guiding principles.

# EVALUATION CRITERIA



## COMMUNITY VISION

- Builds on existing plans
- Identified by the public as a priority
- Supported by community outreach

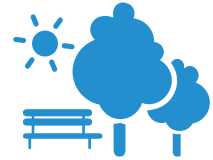


## SUSTAINABLE TRANSPORTATION



## IMPROVE CONNECTIVITY

- Increases access for people who walk, ride bicycles, or take transit
- Improves neighborhood connectivity



## PUBLIC REALM

- Improves streetscapes, landscaping, and public spaces
- Adds amenities to the public realm



## EQUITY

- Serves a range of socioeconomic groups
- Protects vulnerable individuals
- Benefits communities of color



## SAFETY

- Addresses areas with high pedestrian and bicycle volumes
- Improves safety at high collision locations

## STRATEGIC PRIORITIES BY MODE

The following strategic priorities reflect the community's desired outcomes for the NODO MAP's projects and programs. Projects and programs that rated highest in the evaluation framework and best achieve these strategic priorities were recommended for implementation in the first 10 years of the CATF.



### Bicycle Projects: Strategic Priorities

- Create east/west bicycle connections across Seattle Center between Uptown and South Lake Union
- Improve bicycle connections between the Central Waterfront, Belltown, and Uptown
- Upgrade and complete bicycle connections in Uptown
- Encourage bicycling as a preferred access mode with wayfinding, amenities, and programs



### Transit Projects: Strategic Priorities

- Improve east/west transit service and reliability between Uptown, South Lake Union, and Capitol Hill
- Improve transit speed and reliability between Downtown, Belltown, and Uptown
- Create new transit connections serving North Downtown neighborhoods
- Create mobility hubs that centralize and connect transportation services at major transit junctions or station areas
- Improve passenger experience at transit stops and stations
- Continue to reduce drive alone mode share in North Downtown



### Driving/Goods Delivery Projects: Strategic Priorities

- Improve operations on key corridors connecting North Downtown neighborhoods, including use of Intelligent Transportation System (ITS) features
- Implement peak hour enforcement and turning restrictions to ensure people travel safely
- Review curbspace needs throughout North Downtown neighborhoods
- Improve traffic operations throughout North Downtown
- Decrease drive-alone mode share and improve safety and accessibility for all people using the transportation system



### Public Realm Projects: Strategic Priorities

- Create high-quality, safe, pleasant connections between North Downtown neighborhoods
- Enhance neighborhood character with pedestrian and public realm improvements
- Enhance and activate the public open spaces in North Downtown
- Create vibrant places for people to walk, rest, socialize, and access mobility services throughout North Downtown



### Pedestrian Projects: Strategic Priorities

- Improve pedestrian crossings of arterial streets in North Downtown
- Improve pedestrian safety throughout North Downtown and walking connections between neighborhoods
- Improve the pedestrian experience along key North Downtown arterials
- Educate, encourage, and empower people to walk to and throughout North Downtown

## FUNDING ASSUMPTIONS

*As part of the Seattle Center Arena Transaction Documents, OVG will contribute \$40 million over 39 years to a City Transportation Fund*

(\$1,025,000 each per year, with no allowances for inflation).

SDOT looked at a number of different ways to fund the projects outlined in the plan. Including:

- Assigning various project improvements to leverage existing SDOT funding and use the OVG funding to augment existing funding to complete the improvements.
- Borrowing a large sum (or annual borrowing in a series for a similar amount), then using the OVG funding to service the debt (paying back the borrowed principle, with interest and fees included).
- Using a pay-as-you-go scenario, using the OVG funding to closely match the work being completed on a yearly basis.
- A hybrid approach, using one or more of the methods above based on the best suited approach.

After additional analysis and discussions, it became clear that no one single approach was best for funding all improvements. While the pay-as-you-go approach seems to make the most sense, it also limits the scale of improvements that are needed early on in the process. Similarly, borrowing had some serious limitations that require the useful life of the improvements to be equal or greater than the term of the borrowing note – while some of the improvements will use have a useful life in excess of the note -most of these costs would not. In the end, the hybrid approach seemed to make the most sense for funding these improvements.



Based on these assumptions, we anticipate nearly \$9 million dollars in improvements being made in the between now and 2021 – with improvements made on a prioritized basis – and around \$28 million in the first 10 years when combined with a number of existing programs, mitigation resources and other funding sources.

In addition, SDOT and the Port of Seattle are partnering for freight mobility improvements in the North Downtown area, including the critical corridors for the Ballard Interbay Manufacturing Industrial Center along the 15th Ave W/Elliott Ave W/Mercer St, with North Waterfront Access Improvements on Broad and Denny Way corridors.

## CHAPTER 5

# PRIORITY PROJECTS & PROGRAMS

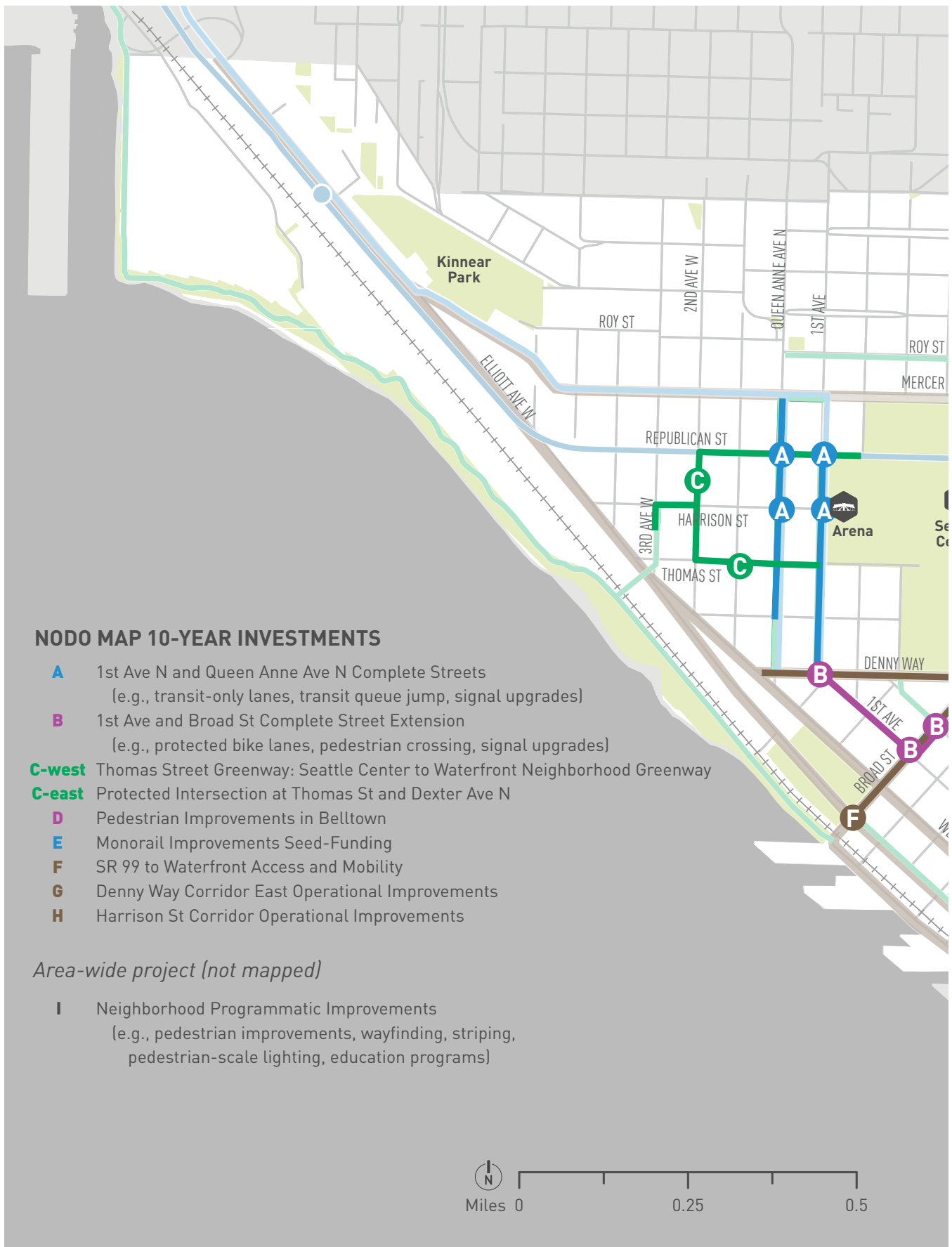
The NODO MAP relied on the project evaluation and funding assumptions outlined in Chapter 4 to determine the priority projects and programs recommended to be funded in the next 10 years by the City (Arena) Transportation Fund. Many of the Tier 1 projects were incorporated into the priority projects and/or are being carried forward through other SDOT programs.

The priority projects make key network connections when combined with existing facilities and up-coming planned investments. These connections fill gaps in the bicycle network, make key investments along freight and transit routes, and improve pedestrian safety and mobility at priority intersections.

Several of the projects also align with the mitigation identified in the arena master use permit (MUP) conditions. These projects include fair-share contributions from both Oak View Group (OVG) and the City. Projects that had a City fair-share contribution, were identified through the NODO MAP process, and align with the NODO guiding principles, were included in the priority projects selected for the City (Arena) Transportation Fund.

Priority projects and programs are shown on the following map and described further in this chapter.

**Figure 12 Recommended Project Map**





# A 1ST AVE N AND QUEEN ANNE AVE N COMPLETE STREETS

## Project Description

1st Ave N and Queen Anne Ave N are key north-south corridors that connect Belltown and Uptown and serve the front door of the Seattle Center arena. The project will prioritize people taking transit, walking, and bicycling by including transit-only lanes and protected bicycle lanes. Intersection improvements include new signals to improve pedestrian safety, curb bulbs at select intersections, a transit queue jump to benefit transit speed and reliability, and signal upgrades to improve network connectivity through predictable bicycle and vehicular movements. Protected bike lanes on 1st Ave N and Queen Anne Ave N are consistent with the Bicycle Master Plan.

### Transit-only lanes

- 1st Ave N between Denny Way and Republican St
- Queen Anne Ave N between Mercer St and John St

### Protected bicycle lanes\*

- Queen Anne Ave N
- 1st Ave N

### Curb bulbs\*

- 1st Ave N and Harrison St
- 1st Ave N and Republican St

### New signals\*






- Queen Anne Ave N and Thomas St
- 1st Ave N and Thomas St

### Signal upgrades

- Queen Anne Ave N and Harrison St
- 1st Ave N and Harrison St
- Queen Anne Ave N and Republican St
- 1st Ave N and Republican St (with transit queue jump)

*\*OVG funded per master use permit condition*

## Strategic Priorities Addressed

-  Upgrade and complete bicycle connections in Uptown
-  Improve bicycle connections between the Central Waterfront, Belltown, and Uptown
-  Improve transit speed and reliability between Downtown, Belltown, and Uptown
-  Decrease drive alone mode share and improve safety and accessibility for all people using the transportation system
-  Improve traffic operations throughout North Downtown

## Tier 1 Projects Incorporated

1st Ave N and Queen Anne Ave N Protected Bike Lanes

Improve RapidRide C, D, and E Lines Speed, Reliability and Passenger Experience

Pedestrian Improvements at Unsignalized Crossings



**Figure 13 1st Ave N and Queen Anne Ave N Complete Streets**



**Community Support**



**Planning-Level Cost Estimate**



**Guiding Principles /Evaluation Framework**

	Community Vision	
	Sustainable Transportation	
	Public Realm	
	Equity	
	Safety	

**Funding Sources**

- City Transportation Fund
- Oak View Group



# B 1ST AVE AND BROAD ST COMPLETE STREET EXTENSION

## Project Description

Leverage improvements along 1st Ave N and Queen Anne Ave N to complete the bicycle connection between the 2nd Ave protected bike lane (PBL) and the future 1st Ave N PBL. The project will also upgrade signals to add a new pedestrian crosswalk at 1st Ave and Denny Way, provide bicycle signals, and enhance transit speed and reliability between 3rd Ave and 1st Ave N.






### Protected bicycle lanes

- Two-way PBL along Broad St between 2nd Ave and 1st Ave
- Two-way PBL along 1st Ave between Broad St and Denny Way
- Bike boxes and bicycle crossing markings

### Signal upgrades

- Denny Way and 1st Ave
- Broad St and 1st Ave
- Broad St and 2nd Ave

## Strategic Priorities Addressed

-  Improve bicycle connections between the Central Waterfront, Belltown, and Uptown
-  Improve transit speed and reliability between Downtown, Belltown, and Uptown
-  Decrease drive alone mode share and improve safety and accessibility for all people using the transportation system
-  Improve traffic operations throughout North Downtown
-  Improve pedestrian safety throughout North Downtown and walking connections between neighborhoods

### Tier 1 Projects Incorporated

Improve RapidRide C, D, and E Lines Speed, Reliability and Passenger Experience

Improve Pedestrian Environment at Denny Way Intersections

Pedestrian Crossing Improvements at High Priority Signalized Intersections

### Tier 2 Projects Incorporated

Connect 2nd Ave PBL to 1st Ave N and Queen Anne Ave N PBLs



**Figure 14 1st Ave and Broad St Complete Street Extension**



**Community Support**



**Planning-Level Cost Estimate**



**Guiding Principles /Evaluation Framework**

	Community Vision	
	Sustainable Transportation	
	Public Realm	
	Equity	
	Safety	

**Funding Sources**

City Transportation Fund

# THOMAS ST GREENWAY

## Project Description

### C-west: Seattle Center to Waterfront Greenway

Improve and highlight the walking and bicycling connections between the Seattle Center and the Central Waterfront via the Thomas St overpass.

Build upon the longstanding vision for the Thomas Green Street and leverage intersection improvements at Thomas St and 1st Ave N and Queen Anne Ave N to establish a safe and obvious walking and biking connection between Seattle Center and the Thomas St overpass.

Establish an all ages and abilities bicycle connection between the Thomas St overpass and Seattle Center by working with the topography to prioritize people riding bicycles along the least steep routes along 3rd Ave W.

### C-east: Protected Intersection at Dexter and Thomas

Implement a key element of the community's vision for a pedestrian and bicycle friendly Thomas Green Street. A protected intersection at Dexter and Thomas will include diverters to prohibit through vehicle travel across Aurora Ave N (now 7th Ave N) and a new signal.

#### Greenway treatments

- Thomas St from 1st Ave N to 3rd Ave W via 2nd Ave W, Republican St, and Harrison St

#### Bicycle connection to Seattle Center

- Wayfinding and greenway treatments from Thomas St overpass to Seattle Center via 3rd Ave W and Republican St

#### Traffic management in Uptown

- Stop signs, crosswalks, and signal modifications

#### New signals:

- Dexter Ave N and Thomas St
- Thomas St and 1st Ave N\*
- Thomas St and Queen Anne Ave N\*

## Strategic Priorities Addressed



Create high-quality, safe, pleasant connections between North Downtown neighborhoods



Create east-west bicycle connections across Seattle Center between Uptown and South Lake Union



Enhance neighborhood character with pedestrian and public realm improvements



Decrease drive-alone mode share and improve safety and accessibility for all people using the transportation system



Improve pedestrian safety throughout North Downtown and walking connections between neighborhoods

### Tier 1 Projects Incorporated

Thomas St Neighborhood Greenway

Bicycle Connection between Thomas St Overpass and Seattle Center

Pedestrian Safety and Crossing Enhancements between Seattle Center and Thomas St Overpass

Thomas Green Street Concept Plan

Lake2Bay and Market to MOHAI Age-Friendly Improvements

New signals on Thomas St

*\*OVG funded per master use permit condition*

**Figure 15 Thomas St Greenway**



**Community Support**



**Planning-Level Cost Estimate**



**Guiding Principles /Evaluation Framework**

	Community Vision	
	Sustainable Transportation	
	Public Realm	
	Equity	
	Safety	

**Potential Funding Sources and Partnerships**




- City Transportation Fund
- SDOT Neighborhood Greenways Program
- Private Development
- LCLIP
- Oak View Group

# D PEDESTRIAN IMPROVEMENTS IN BELLTOWN

## Project Description

Enhance pedestrian safety and comfort in Belltown at 1st Ave and Battery St, a high priority pedestrian crossing location. Intersection improvements include a new traffic signal, crosswalks, and potential paint-and-post curb bulbs to shorten pedestrian crossing distance and slow turning vehicles.

## Strategic Priorities Addressed

-  Improve pedestrian crossings of arterial streets in North Downtown
-  Improve pedestrian safety throughout North Downtown
-  Decrease drive alone mode share and improve safety and accessibility for all people using the transportation system

### New signal

- 1st Ave and Battery St

### Tier 1 Projects Incorporated

Traffic Calming and Pedestrian Crossing Improvements at High Priority Unsignalized Crossings

1st Ave at Battery St



**Figure 16 Pedestrian Improvements in Belltown**



**Community Support**



**Planning-Level Cost Estimate**



**Guiding Principles /Evaluation Framework**

	Community Vision	
	Sustainable Transportation	
	Public Realm	
	Equity	
	Safety	

**Funding Sources**

City Transportation Fund

# **E** MONORAIL IMPROVEMENTS

## Project Description

Support improvements to the Monorail that enhance sustainable transportation options, mobility, and convenience for North Downtown residents, workers, and commuters with connections to the Westlake Hub and light rail in downtown. Community outreach indicated wayfinding and accessibility improvements as priorities. The City Transportation Fund would provide \$1 million in seed funding to leverage other partner investments to fund the improvements identified in the Seattle Center Monorail Stations Reconfiguration Evaluation Report (2018). These recommended improvements will enhance sustainable transportation options, mobility, and convenience for North Downtown residents, workers, and commuters with connections to the Westlake Hub and light rail in downtown. Community outreach indicated wayfinding and accessibility improvements as priorities.

## Recommendations

### Phase 1: \$6,950,000

- Improvements to existing platforms at the Seattle Center station (\$3,100,000) and the Westlake station (\$3,850,000)




### Phase 2: \$13,050,000

- Improvements to increase capacity at Westlake (\$9,200,000)
- Entry and accessibility improvements at Seattle Center (\$3,850,000)

### Phase 3: \$3,000,000

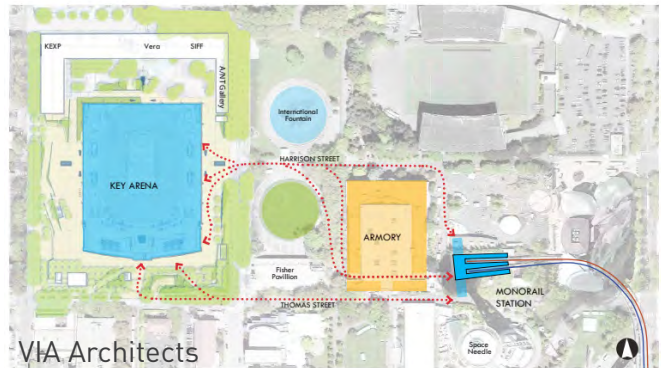
- Seattle Center station north entrance addition (\$3,000,000)

## Strategic Priorities Addressed

-  Improve transit speed and reliability between Downtown, Belltown, and Uptown
-  Create new transit connections serving North Downtown neighborhoods
-  Decrease drive alone mode share and improve safety and accessibility for all people using the transportation system

## Tier 1 Projects Incorporated

Seattle Center and Westlake Station Enhancements Recommended in the Seattle Center Monorail Stations Reconfiguration Evaluation Report



**Figure 17 Monorail Improvements**



**Community Support**



**Planning-Level Cost Estimate**



**Guiding Principles /Evaluation Framework**

	Community Vision	
	Sustainable Transportation	
	Public Realm	
	Equity	
	Safety	

**Funding Sources**

City Transportation Fund

*Funds would be used to leverage other partner investments*

# CORRIDOR OPERATIONAL IMPROVEMENTS

## Project Description

Operational improvements will be made along three corridors, and include updates to signal timing, vehicle detection, and fiber communications to improve traffic flow. As with all signal timing in the City, decisions on how to balance competing needs are made by applying policy guidance contained in the City's modal plans and by evaluating performance data, such as collision history and transit travel time. Advanced signal systems, including adaptive signals, allow for greater ability to meet those needs because we can develop many timing plan options, as well as incorporate external inputs, such as special event schedules.

Contributions from the Port of Seattle are proposed to help fund the SR 99 to Waterfront Access and Mobility project, which supports freight mobility with upgrades along Broad St and the western portion of Denny Way. The Freight Master Plan identified Denny Way intelligent transportation system (ITS) improvements as a priority project.

Figure 18 Corridor Operational Improvements



# F SR 99 to Waterfront Access and Mobility

Improve 11 signals connecting the 15th Ave corridor to the SR 99 north tunnel portal and the waterfront along Broad St and Denny Way:

- Broad St and Elliott Ave
- Broad St and Western Ave
- Broad St and 1st Ave\*
- Broad St and 2nd Ave\*
- Broad St and 3rd Ave
- Broad St and 5th Ave
- Broad St and Denny Way
- Broad St and John St
- Denny Way and Queen Anne Ave N/ Western Ave
- Denny Way and 1st Ave N
- Denny Way and 2nd Ave N

\*Broad St and 1st Ave and Broad St and 2nd Ave signals are funded through the City Transportation Fund as part of the 1st Ave and Broad St Complete Street extension project



Photo: SDOT

## Community Support



## Planning-Level Cost Estimate



## Funding Sources

- City Transportation Fund
- Provisional Port of Seattle
- SDOT
- Oak View Group

## Guiding Principles /Evaluation Framework

	Community Vision	
	Sustainable Transportation	
	Public Realm	
	Equity	
	Safety	

# CORRIDOR OPERATIONAL IMPROVEMENTS

## **G** Denny Way East (4th Ave N to I-5)

Upgrade 11 signals from 4th Ave N to I-5 to improve operating conditions in this key transit and freight corridor.

- Denny Way and 4th Ave
- Denny Way and 5th Ave
- Denny Way and Taylor Ave
- Denny Way and 6th Ave
- Denny Way and 7th Ave
- Denny Way and Dexter Ave
- Denny Way and 9th Ave
- Denny Way and Westlake Ave
- Denny Way and Terry Ave
- Denny Way and Fairview Ave
- Denny Way and Yale Ave/Stewart St



Photo: Urbanist

### Community Support



### Planning-Level Cost Estimate



### Funding Sources

- City Transportation Fund
- SDOT
- Oak View Group

### Guiding Principles /Evaluation Framework

	Community Vision	
	Sustainable Transportation	
	Public Realm	
	Equity	
	Safety	

## **H** Harrison St Corridor

Improve 4 signals between 5th Ave N and Dexter Ave N connecting to the SR 99 north tunnel portal. Harrison St is also a future transit corridor that will benefit from the signal upgrades.

- Harrison St and 5th Ave N
- Harrison St and 6th Ave N
- Harrison St and 7th Ave N
- Harrison St and Dexter Ave N



Photo: Flickr

### Community Support



### Planning-Level Cost Estimate



### Funding Sources

- City Transportation Fund
- SDOT
- Oak View Group

### Guiding Principles /Evaluation Framework

	Community Vision	
	Sustainable Transportation	
	Public Realm	
	Equity	
	Safety	

# I PROGRAMMATIC IMPROVEMENTS

## Pedestrian and Bicycle Wayfinding




### Project Description

Implement wayfinding along pedestrian priority routes connecting North Downtown neighborhoods and major destinations. This project is also a Pedestrian Master Plan strategy.

### Bicycle Wayfinding

Improve wayfinding and bike route signage throughout North Downtown. Highlight the all ages and abilities bike routes connecting North Downtown neighborhoods, the waterfront, and major destinations.

### Strategic Priorities Addressed

-  Educate, encourage, and empower people to walk to and throughout North Downtown
-  Create high-quality, safe, pleasant connections between North Downtown neighborhood
-  Encourage bicycling as a preferred access mode with wayfinding, amenities, and programs

### Community Support



### Tier 1 Projects Incorporated

- Bicycle Route Wayfinding
- Wayfinding along Pedestrian Priority Routes

### Guiding Principles /Evaluation Framework

	Community Vision	
	Sustainable Transportation	
	Public Realm	
	Equity	
	Safety	



# Pedestrian Improvements at High Priority Intersections





## Project Description

Enhance pedestrian comfort and safety at key intersections in North Downtown. Pedestrian crossing improvements aim to reinforce pedestrian priority in crosswalks, increase pedestrian visibility, shorten crossing distances, eliminate conflicts with turning vehicles, and provide more frequent and longer pedestrian signal phases.

### High priority intersections:

- Denny Way/Dexter Ave N/7th Ave: Explore signal modifications (e.g., RTOR restrictions, LPI), pavement spot improvements
- Denny Way and Cedar St: Curb bulbs, explore signal modifications (e.g., RTOR restrictions, LPI), and signage
- Denny Way and Queen Anne Ave N: Widen crosswalks and relocate stop bar, explore signal modifications and permanent or paint and post curb bulb opportunities
- Mercer St and Queen Anne Ave N: Paint and post curb bulbs, signage, explore signal modifications (e.g., RTOR restrictions, LPI), stop bars, and widened crosswalks
- Mercer St and 1st Ave N: Paint and post curb bulbs, signage, stop bars, and widened crosswalks
- Mercer St and Dexter Ave N: Explore signal modifications & lighting improvements, explore a planted buffer along PBL to SW corner for tighter turn radii/ped comfort
- W Roy St at 1st Ave W, 2nd Ave W, and 3rd Ave W: Curb ramps, curb bulbs, crosswalks, stop sign control at unsignalized intersections

## Strategic Priorities Addressed

-  Improve pedestrian crossings of arterial streets in North Downtown
-  Improve pedestrian safety throughout North Downtown and walking connections between neighborhoods
-  Improve the pedestrian experience along key North Downtown arterials
-  Create high-quality, safe, pleasant connections between North Downtown neighborhoods

## Tier 1 Projects Incorporated

Pedestrian Crossing Improvements at High Priority Signalized Intersections

Traffic Calming and Pedestrian Crossing Improvements at High Priority Unsignalized Crossings

Pedestrian Improvements on Mercer St and Denny Way

Improve Pedestrian Environment at Denny Way Intersections

## Guiding Principles /Evaluation Framework

	Community Vision	
	Sustainable Transportation	
	Public Realm	
	Equity	
	Safety	

# I PROGRAMMATIC IMPROVEMENTS

## North Downtown Education, Encouragement, and Enforcement Programs

### Project Description

#### Vision Zero Education and Encouragement

Education NODO residents, workers, and visitors about pedestrian and bicycle safety and new pedestrian improvements. Focus on vulnerable populations at high crash locations, including seniors.





#### Driver Education and Enforcement along Denny Way, Mercer St, and Westlake Ave

Develop a campaign to educate and enforce safe, compliant driver behavior at key congested intersections, especially along Mercer St, Denny Way, and Westlake Ave. Focus areas include Don't Block the Box, right-turn-on-red, transit only lanes, and peak period restrictions. Pursue policy changes to allow photo traffic enforcement.

#### Bicycle Encouragement Program

Partner with bike share providers provide education, in-app wayfinding and publicity for all ages and abilities routes, ride discounts, and cost-sharing. Ensure availability of bikes for making the connection between Westlake high capacity transit and Seattle Center.

### Strategic Priorities Addressed

-  Implement peak hour enforcement and turning restrictions to ensure people travel safely
-  Educate, encourage, and empower people to walk to and throughout North Downtown
-  Improve pedestrian crossings of arterial streets in North Downtown
-  Encourage bicycling as a preferred access mode with wayfinding, amenities, and programs

### Tier 1 Projects Incorporated

Driver Education and Enforcement along Denny Way, Mercer St. and Westlake Ave

North Downtown Vision Zero Focus Area

### Guiding Principles /Evaluation Framework

	Community Vision	
	Sustainable Transportation	
	Public Realm	
	Equity	
	Safety	

### Community Support



# Pedestrian Scale Lighting

## Project Description

Improve pedestrian-scale lighting along key corridors connecting North Downtown neighborhoods, Seattle Center, and the waterfront to encourage year-round pedestrian travel. Explore opportunities to partner with private development and other entities for implementation. This project is also a Pedestrian Master Plan strategy.

## Community Support



## Guiding Principles /Evaluation Framework

	Community Vision	
	Sustainable Transportation	
	Public Realm	
	Equity	
	Safety	

## Strategic Priorities Addressed

- Create high-quality, safe, pleasant connections between North Downtown neighborhoods
- Improve pedestrian safety throughout North Downtown
- Improve the pedestrian experience along key North Downtown arterials

## Tier 1 Projects Incorporated

Increase Lighting, Activation, and Sense of Safety in North Downtown Public Spaces




Pedestrian Lighting Improvements along Key Corridors

# CONTINGENCY PROJECT: CONNECT ROY ST PBL, MERCER GREEN PATH, AND 5TH AVE N PBL

## Project Description

Complete the connection between the Roy St buffered bike lane, the Mercer Green Path, and the 5th Ave N protected bike lane with a segment of protected bike lanes along 5th Ave N between Mercer St and Roy St, including intersection improvements at Mercer St and 5th Ave N, and Roy St and 5th Ave N to highlight to create visible, intuitive space for people riding bicycles.

## Strategic Priorities Addressed

-  Upgrade and complete bicycle connections in Uptown
-  Decrease drive alone mode share and improve safety and accessibility for all people using the transportation system
-  Improve traffic operations throughout North Downtown

### Protected bike lanes

- 5th Ave N between Roy St and Mercer St
- Bike boxes and bicycle crossing markings

### Intersection Improvements

- Curb bulb reconfiguration
- Protected signal phase of bicycle through movement

### Tier 1 Projects Incorporated

Roy St Bike Lane Upgrade

Enhance Predictability and Visibility of Uptown Local Streets



**Figure 19 Connect Roy St PBL, Mercer Green Path, and 5th Ave N PBL**



**Community Support**



**Planning-Level Cost Estimate**



**Guiding Principles /Evaluation Framework**




	Community Vision	
	Sustainable Transportation	
	Public Realm	
	Equity	
	Safety	

# CONTINGENCY PROJECT: EAST SEATTLE CENTER TO BELLTOWN BICYCLE CONNECTION

## Project Description

Connect Belltown to the eastern side of Seattle Center along Taylor Ave N and Vine St. The project will include greenway treatments (e.g., signage, striping, speed humps) along Taylor Ave N between Thomas St and Denny Way and provide a protected bicycle connection from the 2nd Ave PBL to Denny Way via Vine St. The project will coordinate with the Growing Vine Street Headwaters pavement to park implementation to determine what intersection improvements are needed at Denny Way and Taylor Ave N. Project is consistent with the Bicycle Master Plan, including connections to the Center City Bicycle Network.

## Strategic Priorities Addressed

-  Improve bicycle connections between the Central Waterfront, Uptown, and Belltown
-  Decrease drive alone mode share and improve safety and accessibility for all people using the transportation system
-  Create high-quality, safe, pleasant connections between North Downtown neighborhoods

## Tier 1 Projects Incorporated

East Seattle Center bicycle connection

### Greenway treatments

- Taylor Ave N between Thomas St and Denny Way

### Protected bicycle lanes

- Vine St between 2nd Ave PBL and Denny Way

### Intersection improvements

- Denny Way and Taylor Ave N



**Figure 20 East Seattle Center to Belltown Bicycle Connection**



**Community Support**



**Planning-Level Cost Estimate**



**Guiding Principles /Evaluation Framework**

	Community Vision	
	Sustainable Transportation	
	Public Realm	
	Equity	
	Safety	

## CHAPTER 6

# IMPLEMENTATION STRATEGY

The following table includes the priority projects that will be implemented in the initial 10-year timeframe, planning-level cost estimates, and anticipated funding sources. Planning-level cost estimates are based on the high-level project concepts included in the draft version of the North Downtown Mobility Action Plan, and include inflation, contingency, and outreach. Costs will be refined as project design takes place during implementation.

The Seattle Department of Transportation (SDOT) intends to partner with other projects and programs in North Downtown to leverage funding for prioritized projects. SDOT will work with the Seattle Center Monorail team, including Seattle Center and Seattle Monorail Services, to help leverage seed funding and private investment toward completing a larger scope of station improvements. SDOT will continue to coordinate with the Port of Seattle to finalize the scope of contribution for investment in freight access in North Downtown.

**Figure 21: Draft Implementation Schedule and Funding**

Project	Planning-level cost estimates <sup>1</sup>	Anticipated Sources
A: 1st Ave N & Queen Anne Ave N Complete Streets	\$3,870,000	CATF/OVG
B: 1st Ave & Broad St Complete Street Extension	\$1,870,000	CATF
C-East: Thomas St Greenway: Thomas/Dexter Protected Intersection	\$990,000	LCLIP
C-West: Thomas St Greenway: Seattle Center to Waterfront Neighborhood Greenway	\$2,200,000	CATF
D: Pedestrian Improvements in Belltown	\$730,000	CATF
E: Monorail Improvement Seed-funding	\$1,000,000	CATF
F: SR 99 to Waterfront Access and Mobility <sup>2,3</sup>	\$5,000,000	Port/OVG
G: Denny Way Corridor East Operational Improvements <sup>3</sup>	\$10,080,000	SDOT/Grants/OVG
H: Harrison St Corridor Operational Improvements <sup>3</sup>	\$2,880,000	CATF/SDOT/OVG
I: Neighborhood Programmatic Improvements	\$850,000	CATF

1. Excludes infrastructure improvements done by others

2. Anticipated date pending further coordination with the Port of Seattle

3. Operational improvements will be made along three corridors, and include updates to signal timing, vehicle detection, and fiber

The 10-year implementation plan accounts for projects for the first ten years. The Memorandum of Understanding with Oak View Group provides \$40 million over 39 years. There will need to be further planning and program management beyond this ten-year priority project delivery. The appendix to this plan includes other potential projects that could potentially be implemented after the first ten years.



Year									
2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Planning	Design	Construction							
Planning	Design	Construction							
Planning	Design	Construction							
Construction	Planning	Design	Construction						
					Planning	Design	Construction		
	Seed Funding								
	Planning	Design	Construction						
Design	Design	Construction							
		Planning	Design	Construction					
		Planning	Design	Construction	Construction	Construction	Construction	Construction	Construction

## APPENDIX

# PROJECT LISTS BY MODE

Community input and review of existing plans provided the basis for potential projects and resulted in identification of over 500 potential project ideas or concepts. These elements were then consolidated into 150 projects and assessed for alignment with the community's guiding principles. After further input and review, the projects were culled to 82 projects (organized by mode) and were stratified into two tiers based on how well they aligned with the guiding principles. Both Tier 1 and Tier 2 projects were presented to the community for validation in April 2018.



## Bicycle Projects: Strategic Priorities

- Create east/west bicycle connections across Seattle Center between Uptown and South Lake Union
- Improve bicycle connections between the Central Waterfront, Belltown, and Uptown
- Upgrade and complete bicycle connections in Uptown
- Encourage bicycling as a preferred access mode with wayfinding, amenities, and programs

### Tier 1 Projects

ID	Title	Description	Cost
1	Thomas St Neighborhood Greenway	Prioritize the reconnected Thomas St crossing of Aurora Ave N for people bicycling and walking by installing diverters to minimize motorized vehicle volumes along Thomas St.	\$\$
2	Bicycle connection between Thomas St overpass and Seattle Center	Improve the bicycle connection from Seattle Center to the Thomas Street overpass via Republican St and 3rd Ave W.	\$
3	1st Ave N and Queen Anne Ave N Protected Bike Lanes	Upgrade 1st Ave N and Queen Anne Ave N bike lane couplet to protected bike lanes between Roy St and Denny Way.	\$\$
4	5th Ave N Protected Bike Lane Extension	Extend the existing protected bike lane along 5th Ave N both north to Roy St and south to Denny Way.	\$\$
5	Intersection Improvement at 5th Ave N and Mercer St	Improve the intersection of 5th Ave N and Mercer St for people riding bicycles.	\$
6	August Wilson Way Bicycle Connection	Study and implement improvements along August Wilson Way to create a low-stress bike connection in coordination with Memorial Stadium redevelopment.	\$\$
7	Bike Route Wayfinding	Improve wayfinding and bike route signage throughout North Downtown and Seattle Center, including highlighting the connection to the waterfront and Elliott Bay Trail via the Thomas Street overpass.	\$
8	Enhance Bicycle Storage and Bike Valet at Arena Events	Provide enhanced bicycle storage and bike parking in North Downtown, including bike valet services in coordination with Arena events.	\$



## Bicycle Projects: Strategic Priorities

- Create east/west bicycle connections across Seattle Center between Uptown and South Lake Union
- Improve bicycle connections between the Central Waterfront, Belltown, and Uptown
- Upgrade and complete bicycle connections in Uptown
- Encourage bicycling as a preferred access mode with wayfinding, amenities, and programs

### Tier 2 Projects

ID	Title	Description	Cost
9	Bicycle Connection between 2nd Ave Protected Bike Lane and Central Waterfront	Connect the 2nd Ave protected bike lane to the Central Waterfront and Elliott Bay Trail via Broad St.	\$\$
10	Bicycle Connection between 2nd Ave Protected Bike Lane and Seattle Center	Connect the 2nd Ave protected bike lane to Seattle Center.	\$
11	Roy St Bike Lane Upgrade	Upgrade Roy St to a protected bike lane and extend the bicycle connection across Queen Anne Avenue N to Kinnear Park.	\$\$
12	Enhance Predictability and Visibility of Uptown Local Streets	Enhance predictability and visibility at intersections of local streets in Uptown.	\$
13	Bike Share Staging between Westlake and Seattle Center for Arena Events	Work with bike share providers to ensure bike availability for connecting Arena event attendees from the Westlake Mobility Hub.	\$
14	Protected Bicycle Lane Education	Increase awareness and proper use of protected bike lanes to reduce conflicts between people walking, biking, and delivering goods.	\$



### Transit Projects: Strategic Priorities

- Improve east/west transit service and reliability between Uptown, South Lake Union, and Capitol Hill
- Improve transit speed and reliability between Downtown, Belltown, and Uptown
- Create new transit connections serving North Downtown neighborhoods
- Create mobility hubs that centralize and connect transportation services at major transit junctions or station areas
- Improve passenger experience at transit stops and stations
- Continue to reduce drive alone mode share in North Downtown

Tier 1 Projects			
ID	Title	Description	Cost
1	Denny Way Transit Speed, Reliability, and Frequency Improvements	Improve bus speed and reliability along Denny Way by implementing transit priority features and improvements to Route 8. Improvements could include transit-only lanes, transit signal priority, and more frequent service.	\$\$
2	Harrison St Transit Pathway and Mobility Hub	Establish a transit-priority pathway along Harrison St, and explore opportunities to provide additional service connecting Uptown and South Lake Union. Develop a mobility hub in the vicinity of the SR 99 North Portal to facilitate seamless transfers and connections between transit and shared mobility services.	\$\$\$
3	Seattle Center and Westlake Station Enhancements Recommended in the Monorail Feasibility Study	Improve access, speed, and reliability of the Monorail by implementing the findings of the Monorail Feasibility Study (2018).	\$\$\$
4	Improve RapidRide C, D, and E Lines Speed, Reliability, and Passenger Experience	Improve the speed, reliability, and passenger experience of RapidRide C, D, and E Lines through Belltown, Uptown, and along Aurora Ave N by implementing the findings of the RapidRide Improvement Study (2018). Improvements could include transit priority features and station improvements/expansion, transit-only lanes, transit signal priority, and station lighting improvements.	\$\$
5	3rd Ave Transit Speed and Reliability Improvements in Belltown	Enhance transit speed and reliability along 3rd Ave through Downtown and Belltown. Improvements could include extending bus-only restrictions, off-board fare payment, implementing “block the box” enforcement at peak hours, and other transit priority features.	\$\$
6	Feasibility Study of 1st Ave Streetcar Extension to Seattle Center	Study a streetcar alignment along the 1st Ave corridor to connect Downtown and Uptown/Seattle Center; consider rubber-tired alternatives.	\$\$\$
7	Seattle Center Mobility Hub	Establish a Seattle Center Mobility hub that centralizes connections between transit and shared mobility services near the northwest corner of Seattle Center. The hub should be accessible for people of all ages and abilities, and may include real-time travel information, seating and site furnishings, traveler services and amenities, and rideshare/Transportation Network Company (TNC) passenger pick-up/drop-off.	\$\$



### Transit Projects: Strategic Priorities

- Improve east/west transit service and reliability between Uptown, South Lake Union, and Capitol Hill
- Improve transit speed and reliability between Downtown, Belltown, and Uptown
- Create new transit connections serving North Downtown neighborhoods
- Create mobility hubs that centralize and connect transportation services at major transit junctions or station areas
- Improve passenger experience at transit stops and stations
- Continue to reduce drive alone mode share in North Downtown

#### Tier 1 Projects

ID	Title	Description	Cost
8	North Downtown Bus Stop and Rider Experience Improvements	Improve transit stops and passenger experience through regular maintenance, improved lighting, and additional fare enforcement.	\$

#### Tier 2 Projects

ID	Title	Description	Cost
9	Seattle Center – SLU – Capitol Hill Gondola Feasibility Study	Explore the feasibility of a gondola connecting Seattle Center, South Lake Union, and Capitol Hill.	\$\$\$
10	Additional Transit Service Connecting Downtown, Belltown, and Uptown	Explore options to provide transit service that connects Downtown, Belltown, and Uptown. Options could include 1st Ave, 5th Ave, and the waterfront.	\$\$
11	Belltown Monorail Infill Station	Explore a Monorail infill station in Belltown.	\$\$\$
12	North Downtown Fast Ferry Service from Pier 66/69 Vicinity	Study fast ferry service to connect people to and from North Downtown. Potential routes could connect to Eastside communities, Ballard, and/or Kitsap County.	\$\$\$
13	Sounder/Amtrak Infill Station and Regional Mobility Hub	Establish a regional transportation hub with a Sounder/Amtrak infill station in the vicinity of the Thomas St overpass.	\$\$\$
14	SLU Streetcar Stop Seating	Add seating at SLU Streetcar stops.	\$
15	Denny Way Bus Stop and Passenger Experience Improvements	Improve transit stops along Denny Way with transit shelters, off-board fare payment, seating and other furnishings, and real-time transit information.	\$
16	North Downtown Mobility as a Service (MaaS) Platforms	Develop Mobility as a Service (MaaS) platforms to better connect travelers to a broad range of shared mobility services (including transit) with trip and cost planning services.	\$



### Driving/Goods Delivery Projects: Strategic Priorities

- Improve operations on key corridors connecting North Downtown neighborhoods, including use of Intelligent Transportation System (ITS) features
- Implement peak hour enforcement and turning restrictions to ensure people travel safely
- Review curbspace needs throughout North Downtown neighborhoods
- Improve traffic operations throughout North Downtown
- Decrease drive-alone mode share and improve safety and accessibility for all people using the transportation system

Tier 1 Projects			
ID	Title	Description	Cost
1	Mercer St Adaptive Signal System Improvements for Pedestrian Crossings and Left Turns	Improve adaptive signal system along Mercer St, including creating more frequent and longer pedestrian signal phases and evaluating wait time for left-turning vehicles.	\$\$
2	Intelligent Transportation System Upgrades along Denny Way	Install Intelligent Transportation System (ITS) upgrades to the signals along Denny Way.	\$\$
3	Actively Manage On-Street Parking in Uptown	Expand the area of actively managed parking in Uptown.	\$\$
4	New Traffic Signals on Republican St and Thomas St	Install new traffic signals at select locations along Republican St and Thomas St to improve predictability and travel flow.	\$\$
5	Study Two-Way Conversion of Queen Anne Ave N and 1st Ave N	Study the conversion of Queen Anne Ave N and 1st Ave N from one-way streets to two-way streets. Look for opportunities to incorporate transit-only lanes and protected bike lanes.	\$\$
6	Rechannelize W Mercer Pl for Safety, Bus Reliability, and Goods Movement	Explore opportunities along W Mercer Pl to improve safety for freight vehicles and buses.	\$
7	Driver Education and Enforcement along Denny Way, Mercer St, and Westlake Ave	Implement driver education and enforcement, especially along and on side streets intersecting Denny Way, Mercer St, and Westlake Ave N. Focus areas include transit only lanes, peak period restrictions, and don't "block the box." Pursue policy changes to allow photo traffic enforcement.	\$
8	Improve Goods Access and Reliability	Maintain and improve goods access through implementation of innovative goods delivery programs, especially in areas of North Downtown where small and local businesses are impacted.	\$
9	Optimize Curbspace Use	Implement programs and policies to maximize convenience, promote efficient use of curb space for business deliveries, and reduce search-for-parking traffic.	\$
10	North Downtown Travel Demand Management (TDM) Programming for Residents and Seattle Center Visitors	Invest in Transportation Demand Management (TDM) programming, highlighting all options for getting residents and visitors to and from North Downtown.	\$
11	North Downtown Employer-Provided Alternative Commute Benefits (non-drive alone)	Expand partnerships with North Downtown employers to develop Commute Trip Reduction programs that include employer-provided transit benefits and ORCA passes.	\$



### Driving/Goods Delivery Projects: Strategic Priorities

- Improve Intelligent Transportation System (ITS) features on key corridors connecting North Downtown neighborhoods
- Implement peak hour enforcement and turning restrictions to ensure people travel safely
- Review curbspace needs throughout North Downtown neighborhoods
- Improve traffic operations throughout North Downtown
- Decrease drive alone mode share and improve safety and accessibility for all people using the transportation system

Tier 2 Projects			
ID	Title	Description	Cost
12	Bell St Volume Management	Improve access management along Bell St to prioritize sustainable transportation modes.	\$
13	5th Ave Signal Timing and Coordination	Synchronize signal timing along 5th Avenue through Belltown.	\$
14	Driver Education and Enforcement: Don't Block the Box at Taylor Ave N and Roy St	Enforce four-way stop and "Block the Box" compliance at Taylor Ave N and Roy St.	\$
15	No Turn on Red Restrictions for Side Street Approaches to Mercer St	Implement "No Turn on Red" restriction from side streets onto Mercer St, especially during peak and event hours.	\$
16	Peak Hour Left Turn Restrictions	Explore peak hour left turn restrictions along key corridors in North Downtown, including 1st Ave in Belltown.	\$
17	Intersection Improvement at Fairview Ave and Valley St	Explore ways to organize car, pedestrian, and streetcar space in the vicinity of Fairview Ave N and Valley St.	\$\$
18	All-Way Stop Control in Cascade	Review stop control in the Cascade neighborhood.	\$
19	New Traffic Signals at Vine St/3rd Ave and Boren Ave/Harrison St	Install new traffic signals at Vine St/3rd Ave and Boren Ave/Harrison St to improve predictability and travel flow.	\$\$



## Public Realm Projects: Strategic Priorities

- Create high-quality, safe, pleasant connections between North Downtown neighborhoods
- Enhance neighborhood character with pedestrian and public realm improvements
- Enhance and activate the public open spaces in North Downtown
- Create vibrant places for people to walk, rest, socialize, and access mobility services throughout North Downtown

### Tier 1 Projects

ID	Title	Description	Cost
A	Improve Pedestrian Environment at Denny Way Intersections	Review opportunities to repurpose the right-of-way at Denny Way intersections to improve the pedestrian environment.	\$\$
B	Thomas Green Street Missing Segments	Evaluate the completed portions of the Thomas Green Street through South Lake Union and Uptown to determine where additional improvements are needed.	\$\$
C	Lake2Bay and Market to MOHAI Age-Friendly Improvements	Determine where age-friendly elements are needed, including curb ramps, curb bulbs, signal timing, and pedestrian lights.	\$\$
D	Broad St Pedestrian and Public Realm Improvements	Enhance pedestrian connections to Seattle Center by making improvements to Broad St between 5th Ave N and Denny Way.	\$\$
G	Increase Lighting, Activation, and Sense of Safety in North Downtown Public Spaces	Increase lighting, activation, and sense of safety in North Downtown parks and open spaces, including Regrade Park, Denny Park, and Kinneer Park.	\$
E	Make Growing Vine St Pavement to Park Permanent	Advance implementation of permanent open space at the Growing Vine Pavement to Park at Taylor Ave and 5th Ave.	\$\$
F	Republican St "Urban Curbless Street" Implementation and Activation	Implement and activate a curbless street along Republican St between Warren Ave N and Queen Anne Ave N.	\$\$

### Tier 2 Projects

ID	Title	Description	Cost
H	Pedestrian Experience and Public Realm Improvements along Key Uptown Streets	Enhance the Uptown neighborhood character through pedestrian and public realm improvements along certain segments of Mercer St, Roy St, Queen Anne Ave N, 1st Ave N, and 5th Ave N.	\$\$
I	Belltown Entertainment District: 2nd Ave Pedestrian and Public Realm Improvements	Enhance Belltown neighborhood's night life and entertainment character along 2nd Ave through pedestrian and public realm improvements.	\$\$
J	Public Art throughout North Downtown	Highlight and celebrate neighborhood character with artwork and activation of blank walls (e.g., along the Mercer St underpass and frontages under construction) using 1% for the Arts funding.	\$
K	Add Amenities to North Downtown Public Spaces	Provide additional amenities in North Downtown open spaces such as public restrooms, weather protection, seating and site furnishings, or a community center at Denny Park.	\$\$
L	Public Space Activation with Downtown Seattle Association (DSA) and SDOT in Coordination with Seattle Center Events	Encourage a variety of vending, activation, and programming in the right-of-way, especially along the perimeter of the Seattle Center campus in coordination with Seattle Center or Arena events.	\$
M	Develop New Public Spaces with Pavement to Parks Program	Repurpose street space to create activated urban parks with the Pavement to Parks program.	\$



## Pedestrian Projects: Strategic Priorities

- Improve pedestrian crossings of arterial streets in North Downtown
- Improve pedestrian safety throughout North Downtown and walking connections between neighborhoods
- Improve the pedestrian experience along key North Downtown arterials
- Educate, encourage, and empower people to walk to and throughout North Downtown

Tier 1 Projects			
ID	Title	Description	Cost
1	Pedestrian Signal Phasing Improvements along Corridors with Adaptive Signal Systems	Modify signal phasing along corridors with adaptive signal systems (e.g., Mercer St) to provide additional walking time, more frequent pedestrian phases, and default walk phases.	\$
2	Pedestrian Crossing Improvements at High Priority Signalized Intersections	<p>Improve pedestrian crossings at signalized intersections. Improvements may include default walk signal phases (eliminate need to press button), right-turn restrictions for vehicles, improved sightlines for pedestrian visibility, leading pedestrian intervals, longer walk phases, or all-walk phases.</p> <p>Priority intersections for evaluation include: Denny Way/Dexter Ave N/7th Ave, Denny Way/5th Ave N, Denny Way/Queen Anne Ave N/Western Ave, Denny Way/1st Ave N, Mercer St/Queen Anne Ave N, Roy St/Queen Anne Ave N, Elliott Ave W/W Mercer Pl, Mercer St/1st Ave N, and Mercer St/Dexter Ave N.</p>	\$\$
3	Traffic Calming and Pedestrian Crossing Improvements at High Priority Unsignalized Crossings	Identify opportunities to calm traffic and improve pedestrian crossings at unsignalized intersections along Roy St, John St, and 1st Ave.	\$\$
4	W Mercer Pl Sidewalk	Complete the sidewalk connection along W Mercer Pl and improve the crossing at Elliott Ave W.	\$\$\$
5	Add Stop Control on Uptown Local Streets to Increase Safety and Predictability	Review stop control on local streets in Uptown to provide more predictability and reduce conflicts for people walking.	\$
6	Pedestrian Safety and Crossing Enhancements between Seattle Center and Thomas St Overpass	Improve visibility and pedestrian crossings on W Harrison St and 3rd Ave W connecting Seattle Center to the Thomas St overpass.	\$
7	Pedestrian Improvements on Mercer St and Denny Way	Provide pedestrian improvements along Denny Way and Mercer St, wide, well-lit sidewalks buffered from traffic with plantings and furnishings.	\$\$
8	Pedestrian Lighting Improvements on Key Corridors	Improve pedestrian lighting along key corridors connecting North Downtown neighborhoods, through Seattle Center, and along the Elliott Bay Trail.	\$\$
9	Wayfinding along Pedestrian Priority Routes	Implement wayfinding along pedestrian priority routes connecting North Downtown neighborhoods and major destinations.	\$
10	Review and Enforce Traffic Control Plans at Construction Sites	Review, inspect, and enforce construction traffic control plans in North Downtown to maintain pedestrian routes during construction.	\$
11	North Downtown Vision Zero Focus Area	Implement a Vision Zero focus area in North Downtown to encourage and influence safer travel behavior for all modes.	\$



## Pedestrian Projects: Strategic Priorities

- Improve pedestrian crossings of arterial streets in North Downtown
- Improve pedestrian safety throughout North Downtown and walking connections between neighborhoods
- Improve the pedestrian experience along key North Downtown arterials
- Educate, encourage, and empower people to walk to and throughout North Downtown

### Tier 2 Projects

ID	Title	Description	Cost
12	Crosswalks at Unexpected Pedestrian Crossings	Install and maintain high-visibility crosswalks or pedestrian crossing signs at unexpected pedestrian crossings, including intersections of local streets, dead end streets with stairways, or driveways.	\$
13	Improve Lighting and Maintenance on North Downtown Hill Climbs and Stairways	Improve lighting, visibility, and maintenance of North Downtown hill climbs and stairways.	\$
14	Install and Improve High Visibility Crosswalks throughout North Downtown	Ensure high-visibility crosswalks are installed and well-maintained throughout North Downtown.	\$
15	Safety-Related Pedestrian Experience Improvements throughout North Downtown	Apply Crime Prevention Through Environmental Design (CPTED) principles, such as maintaining vegetation and landscaping for clear sightlines, increasing lighting, and ensuring cleanliness, especially on neighborhood streets.	\$
16	Pedestrian Experience Improvements at High Volume Intersections	Improve the pedestrian experience at high-pedestrian-volume intersections by providing ample waiting space, weather protection, accessible curb ramps, and default walk signal phases. Intersections for evaluation include: Mercer St/Dexter Ave N, Denny Way/Queen Anne Ave N, Denny Way/1st Ave N, Denny Way/Dexter Ave N/7th Ave, Mercer St/Queen Anne Ave N, and Mercer St/1st Ave N.	\$\$
17	Transit Stop Amenities along Key Corridors	Provide transit shelters and benches along key routes to and through North Downtown.	\$\$
18	Neighborhood Partnerships to Connect People Experiencing Homelessness with Resources	Develop neighborhood partnerships to connect people experiencing homelessness with resources and solutions.	\$
19	Find It, Fix It Neighborhood Walks	Educate and encourage people in North Downtown to organize and participate in neighborhood walks and request spot improvements through the Find It, Fix It mobile app.	\$

The Seattle Department of Transportation  
700 5th Ave, Suite 3800  
PO Box 34996  
Seattle, WA 98124-4996  
(206) 684-ROAD (7623)  
[www.seattle.gov/transportation](http://www.seattle.gov/transportation)



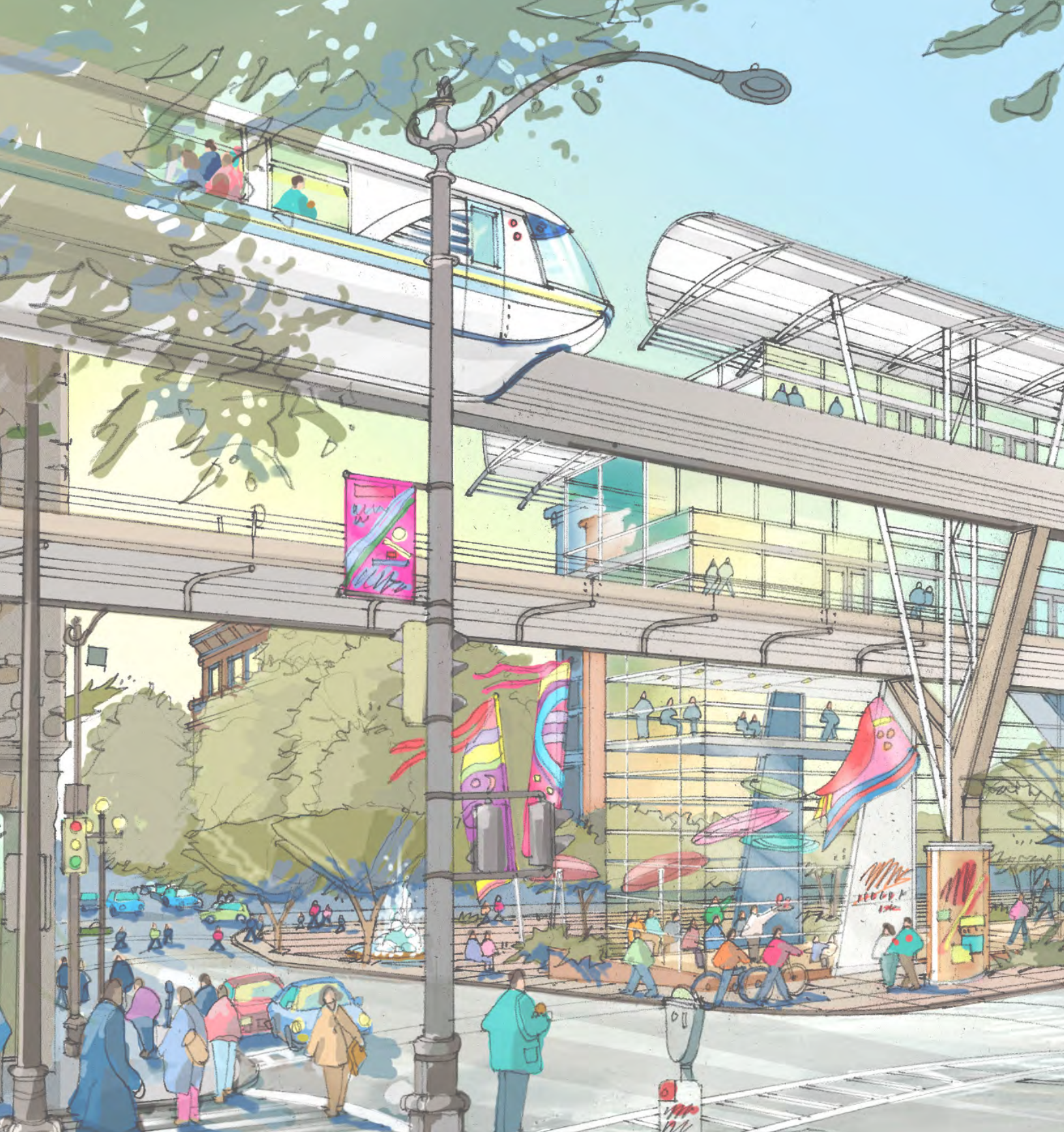
**Seattle**  
Department of  
Transportation

12.2019

Upgrades will be done at the Seattle Center Monorail Station to improve ingress and egress, passenger throughput, accessibility, safety, and security.



The current main entrance along Thomas Street is obscured, difficult to navigate due to passenger cross flows, and does not meet current ADA standards.



# SC-17-005

Seattle Center Monorail Stations  
Reconfiguration and Feasibility Study

October 17, 2017





October 17, 2017

Stephen Levensgood  
Project Manager  
Seattle Center Redevelopment Office  
City of Seattle

RE: Request for Qualifications: Consultant Contracting  
SC-17-005 Seattle Center Monorail Stations Configuration and Feasibility Study

Dear Stephen,

As long time supporters of transit and mobility, our team applauds this undertaking by the Seattle Center Redevelopment Office to improve the Monorail patron experience and to increase overall capacity, further strengthening our local and regional transportation network.

Our team is uniquely positioned to provide Seattle Center Monorail with options for retaining historic elements, and improving passenger flow, accessibility, and capacity at both stations and has unparalleled experience in consulting with major transit agencies to provide solutions in fare purchase modernization, wait time and headway reduction, and wayfinding/increased station legibility.

We understand that urban transit system design must be responsive to both physical and political context; solutions lie at the intersection of opportunities and issues to preserve and catalyze sustainable urban communities and the need to minimize disruption. For more than thirty years, our experience upgrading and reconfiguring continuously operating stations through advanced stakeholder engagement and thoughtful construction phasing has led to successful, celebrated projects with minimal or no negative impact to operations.

Our assembled, expert team will evaluate a range of configurations, coordinating across the team and stakeholders to incorporate all project insights, goal and expertise to create concept level sketches, drawings and cost estimates to develop the alternatives.

From experience, we have discovered that the “right” solution is the one that responds best to the project context, vision and values. We are confident, given our combined years of success in delivering successful alternatives that have been subsequently built, that our team will deliver the most optimal solutions to increase capacity, improve passenger flow, and enhance the passenger experience while celebrating the historic, iconic character of the Monorail.

Very sincerely,

A handwritten signature in black ink that reads 'Alan Hart'.

**Alan Hart** AIA, AIBC  
Founding Principal, VIA Architecture  
E | [ahart@via-architecture.com](mailto:ahart@via-architecture.com)  
D | 206.257.6595

**ALAN HART**  
ARCHITECT AIBC, AIA, AAA

ADDRESS  
VIA ARCHITECTURE  
1809 SEVENTH AVE. STE 800  
SEATTLE, WA 98101

TELE  
206.284.5624  
WEB  
[VIA-ARCHITECTURE.COM](http://VIA-ARCHITECTURE.COM)



2797-1 VIA ARCHITECTURE INCORPORATED  
1809 7TH AVE STE 800  
SEATTLE WA 98101-1382

DETACH BEFORE POSTING



STATE OF  
WASHINGTON

## BUSINESS LICENSE

Corporation

VIA ARCHITECTURE INCORPORATED  
1809 7TH AVE STE 800  
SEATTLE, WA 98101-1382

ARCHITECT FIRM #246 - ACTIVE

Unified Business ID #: 601979499

Business ID #: 001

Location: 0001

Expires: Sep 30, 2018

TAX REGISTRATION - ACTIVE

This document lists the registrations, endorsements, and licenses authorized for the business named above. By accepting this document, the licensee certifies the information on the application was complete, true, and accurate to the best of his or her knowledge, and that business will be conducted in compliance with all applicable Washington state, county, and city regulations.

Director, Department of Revenue

# CONSULTANT QUESTIONNAIRE FORM

## CITY OF SEATTLE CONSULTANT QUESTIONNAIRE

Consultant's Name: VIA Architecture Inc.

### 11.3. CITY OF SEATTLE CONSULTANT QUESTIONNAIRE

Please have an officer or person eligible to represent the Consultant firm fill out this form. Submittal of this Consultant Questionnaire with your proposal or contract is an attestation that the information in this Consultant Questionnaire and within your submittal documents are true and valid. Provide prompt notice to the City if, at any time prior to contract award, any facts need to be corrected.

INSTRUCTIONS: **This is a mandatory form.** Submit this form with your response. Provide information to the extent this information is available. If your response is incomplete or requires further description, the City may request additional information within a specified deadline, or may determine the missing information is immaterial.

Consultant Information	
Consultant's Legal Name	VIA Architecture Inc.
"Doing Business Name" (dba) if applicable	NA
Mailing Address	1809 7th Avenue, Ste 800, Seattle WA 98101
Contact Person and Title	Alan Hart, Founding Principal
Contact Person's Phone Number	206-284-5624
Contact Person's Fax Number	206-284-5624
Contact Person's E-Mail Address	ahart@via-architecture.com
Dun & Bradstreet number (if available) (required for federal-aid contracts)	007943546
Identify the City and State of your company headquarters	Seattle WA

**Consultant Billing Contact Person: Identify the person who will prepare and manage your invoices. This helps the City contract manager offer instructions that ensure your invoices are promptly paid. Be aware that any subconsultants must be paid within 30 days of invoice, regardless of City payment to prime.**

Person and Title	Karim Dilawar, Project Accountant
Person's Phone Number	206-812-0485
Person's Fax Number	206-624-5624
Person's E-Mail Address	kdilawar@via-architecture.com

Consultant Registration with City of Seattle		
Verify your firm is registered into the City's Online Business Directory ( <a href="http://www.seattle.gov/obd">www.seattle.gov/obd</a> ) and that your Taxpayer ID number and WMBE status are accurate. For help, call 206-684-0383.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Most companies must hold a Seattle business license (if you have a facility/office in Seattle, conduct sales visits to Seattle, deliver products in your own trucks, or perform on-site work in Seattle). If you fall within that category, will you immediately seek a business license no later than your notice of award and ensure all city taxes are paid current?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

Ownership	
Is your firm is a sole proprietorship, partnership, corporation, limited liability company, subsidiary, parent, holding company, or affiliate of another firm? If yes, identify type and name of principal	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Corporation Principal: Alan Hart
What year was your firm, under the present ownership configuration, founded?	1984
How many years has your firm been in continuous operation without interruption?	32
What year did your firm begin providing without interruption the services desired for this contract?	1984

Financial Resources and Responsibility	Specify yes or no.
Within the previous five years has your firm been the debtor in a bankruptcy?	No
Is your firm in negotiations toward being sold?	No
Has your firm been debarred or found non-responsible for contracting with any local, state, or federal governmental agency within the past 5 years?	No
Within the previous five years has a governmental or private entity terminated your firm's	No

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# CONSULTANT QUESTIONNAIRE FORM

## CITY OF SEATTLE CONSULTANT QUESTIONNAIRE

Consultant's Name: VIA Architecture Inc.

contract prior to contract completion for failed performance?	
Within the previous five years has your firm used any subconsultant on a government contract when that subconsultant was debarred by a governmental agency?	No

<b>Social Equity compliance</b>	<b>Specify yes or no.</b>
Within the previous ten years has your firm been found to have violated any anti-discrimination laws or regulations, whether they be local, state, or federal?	No
Has your firm ever received an unsatisfactory rating from a city department for your performance in achieving women and minority firm good faith efforts?	No
Does your firm comply – to the extent required - with the following City of Seattle Labor Standards requirements from Seattle Municipal Code Chapter 14:  1) City Paid and Sick Time labor standards, providing paid sick and safe time to eligible employees? Most employers must provide employees who have work hours in Seattle, with accrued paid sick and safe time. Payment of prevailing wages does not ensure compliance (SMC 14.16). 2) Minimum Wage labor standards which set wages for employees working within city limits (SMC 14.19). 3) Wage Theft labor standards which establish basic requirements for payment of wages and tips for employees working within city limits, including providing various payment documentation to employees (SMC 14.20).  If "No" please provide an explanation of the circumstances. The City may audit payroll records or interview workers to ensure compliance. For more information regarding these requirements, see Municipal Code Chapter 14 or <a href="http://www.seattle.gov/laborstandards">http://www.seattle.gov/laborstandards</a> , or call the Office of Labor Standards at 206.684.4500.	Yes
Has your firm ever been found by the City or any government agency, to have underpaid your workers or employees (this includes instances where you may have provided the restitution to make the worker whole)?	No
<b>Disputes</b>	<b>Specify yes or no.</b>
Within the previous five years has your firm been the defendant in court on a matter related to payment to subconsultants or contract work performance?	No
Does your firm have outstanding judgments pending against it?	No
Within the previous five years, was your firm assessed liquidated damage on a contract?	No
Is your firm presently involved in a dispute (including litigation) regarding its right to provide the product or service being requested by the City for this contract, including but not limited to notice of and/or in litigation about patent infringement for the product and/or service that your firm is offering to the City?	No

<b>Involvement by Current and Former City Employees and Organizational Conflicts of Interest</b>	<b>Specify yes or no.</b>
Are any of your company's principals, officers or employees who will perform work for the City, a current or former City of Seattle employee or volunteer?	No
Will any of your principals, officers or employees who will perform work for the City work more than 1,000 hours (per rolling 12 months) within a City contract, combining the hours for work under this contract and any other? If so, identify the worker by name and advise the worker of their duty to comply with the City of Seattle's Code of Ethics, Seattle Municipal Code Chapter 4.16	No
Does any principal, officer or employee who will perform work for the City of your firm, have a business interest or a close family or domestic relationship with any City official, officer or employee who was, is, or will be involved in selection, negotiation, drafting, signing, administration or evaluation of the Consultant performance?	No
Consultant certifies that to the best of its knowledge and belief and except as otherwise disclosed, he or she does not have any organizational conflict of interest which is defined as a situation in which the nature of work to be performed under this proposed contract and the bidder's organizational, financial, contractual, or other interests may, without some restriction on future activities: (a) Result in an unfair competitive advantage to the Consultant; or, (b) Impair the Consultant's objectivity in performing the contract work.	Yes, we certify that there is no conflict of interest

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# CONSULTANT QUESTIONNAIRE FORM

## CITY OF SEATTLE CONSULTANT QUESTIONNAIRE

Consultant's Name: VIA Architecture Inc.

Miscellaneous Questions	Specify yes or no.
Within the previous five years, has your firm or any of its owners, principals, partners, or officers, been assessed penalties or found to have violated any laws, rules, or regulations of a government entity? This does not include owners of stock in your firm if your firm is a publicly traded corporation.	No
Within the past ten years, has any owner, principal, or officer who will perform any of the work for the City been convicted of a crime?	No
If a license is required to perform, within the previous ten years has your firm or any principal, officer or employee who will perform work for the City had a license suspended or been found to have violated licensing laws?	No
If hazardous materials are within the work to be performed, has any principal, officer or employee who will perform work for the City had violations of improper disposal of such materials or violations of associated laws, rules or regulations in the previous five years?	No
Is there any other information the City should be aware of regarding your financial, criminal or legal history that has bearing on the work that the City is considering you to perform? For example: conviction or civil judgement rendering against the firm for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government contract or subcontract; violation of federal or state antitrust or similar statutes, relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property, any present indictment for, or otherwise criminally or civilly charged by a government entity.	No
Consultant has not paid, nor will pay, federal appropriated funds, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with this solicitation or any other covered federal action, the Offeror shall notify the City of Seattle and complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities.	Yes, has not/will not
Consultant has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of competitive pricing in the preparation and submission of its Offer;	Yes, has not

Campaign Contributions	Specify yes or no.
Consultant complies with SMC 2.04.601 (I-122) which reads "The measure would limit election campaign contributions from entities receiving City contracts totaling \$250,000 or more, or from persons spending \$5,000 or more for lobbying; require 24-hour reporting of electronic contributions; require paid signature gatherer identification, limit lobbying by former City officials; create a voluntary program for public campaign financing through \$100 vouchers issued to registered voters funded by ten years of additional property taxes, with \$3,000,000 (approximately \$0.0194/\$1000 assessed value) collected in 2016.	Yes, complies

Business History	List or attach
Provide and/or attach a list contracts your local firm held in the past five years, with sufficient detail for the City to understand the depth and breadth of your experience, with a particular emphasis on contracts with public agencies. The City may use this to assess your capability and experience at this particular type of product provision or service work. Specify the name/contact that can serve as a reference for each. <ul style="list-style-type: none"> <li>If you have many such contracts, simply list.</li> <li>If you are a subsidiary of a national firm, summarize contracts for your local office.</li> </ul>	Public Agency List Attached

Proposal Expiration	
Consultant understands that Offers are valid until the City awards a Consultant Contract or rejects all offers	Yes, understands

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# CONSULTANT QUESTIONNAIRE FORM

## CITY OF SEATTLE CONSULTANT QUESTIONNAIRE

Consultant's Name: VIA Architecture Inc.

### City Non-Disclosure Request

If you believe any statements or items you submit to the City as part of this bid/response are exempt from disclosure under the Washington Public Records Act, RCW Chapter 42.56, you must identify and list them below **and provide the City with a copy of your bid/response with those portions redacted**. Should the City receive a public records request for your bid/response, the City will first release the redacted version of the proposal to the requester. Requesters may accept the redacted proposal or decide to challenge all or some of the exemptions applied by the vendor. If the requestor challenges the exemptions, the City provides you with notice and up to ten days to seek an injunction to prevent the release of the challenged portion of the record. This notice is a courtesy and not a legal obligation. Only records properly listed on this form and redacted will be protected and withheld for notice. All other records will be considered fully disclosable upon request.

The City will **not** withhold information or provide notice simply because your document is marked with a document header or footer, page stamp, or a generic statement that a document is non-disclosable, exempt, confidential, proprietary, or protected. You must very clearly and specifically identify each statement or item and the corresponding RCW exemption that applies. You may not identify the entire page, unless the entire page is within the exemption scope.

- I do not request any information be withheld.
- I request the following specific information be withheld. I understand that all other information will be considered public information. For each statement or item you intend to withhold, you must fill out every box below. You should not require an entire page withheld; only request the specific portion subject to the exemption.

<b>Document Page:</b> Specify the page number on which the material is located within your submittal package	<b>Statement:</b> Repeat the text you request to be held as confidential, or attach a redacted version.	<b>RCW Exemption:</b> Specify the RCW exemption including the subheading

For this request to be valid, you must specify the RCW provision or other State or Federal law that designates the documents as exempt from disclosure. Please refer to [Chapter 42.56 of the Revised Code of Washington](#) for the exemptions.

# CONSULTANT QUESTIONNAIRE FORM

## CITY OF SEATTLE CONSULTANT QUESTIONNAIRE

Consultant's Name: VIA Architecture Inc.

### Equal Benefits Compliance Declaration (contracts $\geq$ \$50,000)

Please declare *one (1)* option from the list below that describes the Contractor's intent to comply with Seattle Municipal Code Chapter 20.45 should you win the contract.

Equal Benefits applies to any contractor location in the United States where substantive contract work is being performed (work directly related in a substantial way to the contract scope and deliverables).

- Option A** The Contractor makes, or intends to make by the contract award date, **all benefits available on an equal basis** to its employees with spouses and its employees with domestic partners, and to the spouses and the domestic partners of employees, in every location within the United States where substantial work on contract will be performed.
- Option B** The Contractor **does not make benefits available** to either the spouses or the domestic partners of its employees.
- Option C** The Contractor **has no employees**.
- Option D Collective Bargaining Delay.** Benefits are available on an equal basis to non-union workers, but union workers are subject to a collective bargaining agreement that does not provide equal benefits.
- Option E Open Enrollment Delay.** The first open enrollment period for implementing Equal Benefits is not available until after contract execution and Contractor will provide a cash equivalent payment to eligible employees until Equal Benefits can be implemented.
- Option F Cash Equivalent Payment.** The Contractor intends to provide a cash equivalent payment to eligible employees in lieu of making benefits available.
- No United States Presence** The Contractor does not perform substantial work for the contract in any United State location.
- Non-Compliant** The Contractor does not comply and does not intend to comply, and refuses all options provided above.
- 

### Equal Benefits Instructions

Seattle Municipal Code Chapter 20.45 (SMC 20.45) requires companies executing a City contract to provide health and benefits that are the same or equivalent to domestic partners of employees as to spouses of employees, and of their dependents and family members.

1. Carefully fill out the Equal Benefits Declaration. It is essential to your standing in the evaluation process, so it is important to understand and complete the declaration properly.
2. The Buyer or Coordinator for the solicitation can answer any questions about this requirement or you may call the general office at 206-684-0444. Call before you submit your bid to ensure you've filled out the form correctly.
3. "Domestic Partner" is any person who is party to a same-sex or opposite-sex domestic partnership that is legally recognized in the place of jurisdiction where the union was established, including same-sex marriage, or registered as a Domestic Partner with the employer or government registry established by state or local law. If the employer does not have a registration system and does not intend to implement one, the City of Seattle has a registration system as an option: <http://www.seattle.gov/leg/clerk/dpr.htm>

The City will review your responses and make a final determination. If the information you supply is conflicting or not clearly supported by the documentation that the City receives, the City may reject your entire submittal (bid or proposal) or may seek clarification to ensure the City properly classifies your compliance.

Companies that select "Non-Compliant" will be rejected, unless there is no competitor that is compliant, responsive and responsible. The City may also find a Bidder "Non-Compliant" upon inspection of their program. Be prepared with documentation to support your declaration. All contracts awarded by the City may be audited for equal benefits compliance. Non-compliance may result in the rejection of a bid or proposal, or termination of the contract.

FAS Revised 4/20/2017

# CONSULTANT QUESTIONNAIRE FORM

City of Seattle Consultant Questionnaire  
Page 6 of 6

Consultant's Name: VIA ARCHITECTURE INC

<u>Year</u>	<u>Name</u>	<u>Delivery Method</u>	<u>Location</u>	<u>Client</u>
2013	Bellevue Station Area Planning	City of Bellevue	Washington	City of Bellevue
2013	Pt Defiance Triangle Masterplan	Metro Parks Tacoma	Washington	Metro Parks Tacoma
2013	Northgate TOD Urban Design Study-City	Sea DPD	Washington	Sea DPD
2013	Tacoma South Downtown	City of Tacoma	Washington	City of Tacoma
2013	Right Size Parking Phase I	King County	Washington	King County
2013	Right Size Parking Phase II	King County	Washington	King County
2013	Rainier Beach Urban Design Framework	City of Seattle	Washington	City of Seattle
2013	Northgate UDF	Sea DPD	Washington	Sea DPD
2014	Rainier Beach Urban Design Framework	Design-Bid-Build	Washington	City of Seattle
2014	Northgate UDF	Design-Bid-Build	Washington	City of Seattle
2014	Rainier Beach Food Innovation District	Design-Bid-Build	Washington	City of Seattle Planning Department
2014	Denny Substation EIS Visualization	Design-Bid-Build	Washington	City of Seattle; Seattle City Light
2014	Tacoma South Downtown	Design-Bid-Build	Washington	City of Tacoma
2014	Subconsultants	Design-Bid-Build	Washington	City of Tacoma
2014	Tacoma North Downtown/EIS Subarea Plan	Design-Bid-Build	Washington	City Of Tacoma
2014	Tacoma Hilltop Subarea Plan & EIS	Design-Bid-Build	Washington	City of Tacoma
2014	Right Size Parking Phase I	Design-Bid-Build	Washington	King County
2014	Right Size Parking - WO3	Design-Bid-Build	Washington	King County
2014	Right Size Parking - WO4	Design-Bid-Build	Washington	King County
2014	Seattle CC Streetcar	Design-Bid-Build	Washington	SDOT
2014	South King County HCT Study	Design-Bid-Build	Washington	Sound Transit
2015	Tacoma South Downtown	Design-Bid-Build	Washington	City of Tacoma, Community and Economic Development Dept.
2015	Right Size Parking - WO3	Design-Bid-Build	Washington	King County: Department of Transportation
2015	Right Size Parking - WO4	Design-Bid-Build	Washington	King County: Department of Transportation
2015	Denny Substation EIS Visualization	Design-Bid-Build	Washington	The City of Seattle, Seattle City Light Department
2015	Tacoma North Downtown/EIS Subarea Plan	Design-Bid-Build	Washington	City of Tacoma, Community and Economic Development Dept.
2015	South King County HCT Study	Design-Bid-Build	Washington	Sound Transit
2015	Tacoma Hilltop Subarea Plan & EIS	Design-Bid-Build	Washington	City of Tacoma Washington
2015	ST TOD On-Call	Design-Bid-Build	Washington	Sound Transit
2015	City of Tukwila - Planning and Building	Design-Bid-Build	Washington	City of Tukwila
2015	King County Park and Ride Pricing in Mul	Design-Bid-Build	Washington	King County: Department of Transportation
2015	ULI TAP	Design-Bid-Build	Colorado	City and County of Denver- Purchasing Division
2015	City of Tukwila-Comprehensive Plan updat	Design-Bid-Build	Washington	City of Tukwila
2015	Smart Growth Seattle Affordable Housing	Design-Bid-Build	Washington	Smart Growth Seattle
2016	Right Size Parking - WO3	Design-Bid-Build	Washington	King County: Department of Transportation
2016	Right Size Parking - WO4	Design-Bid-Build	Washington	King County: Department of Transportation
2016	ST TOD On-Call	Design-Bid-Build	Washington	Sound Transit
2016	King County Park and Ride Pricing in Mul	Design-Bid-Build	Washington	King County: Department of Transportation
2016	City of Tukwila-Comprehensive Plan updat	Design-Bid-Build	Washington	City of Tukwila
2016	Smart Growth Seattle Affordable Housing	Design-Bid-Build	Washington	Smart Growth Seattle
2016	East Main Area Plan	Design-Bid-Build	Washington	City of Bellevue
2016	East Main Area Plan; View Corridor Study	Design-Bid-Build	Washington	City of Bellevue
2016	King County Green Tools On Call	Design-Bid-Build	Washington	King County: Department of Transportation
2016	Fishermen's Terminal Strategic Long Rang	Design-Bid-Build	Washington	Port of Seattle
2017	ST TOD On-Call	Design-Bid-Build	Washington	Sound Transit
2017	King County Park and Ride Pricing in Mul	Design-Bid-Build	Washington	King County: Department of Transportation
2017	East Main Area Plan	Design-Bid-Build	Washington	City of Bellevue
2017	Fishermen's Terminal Strategic Long Rang	Design-Bid-Build	Washington	Port of Seattle



***Engineer or architect with minimum of 5-years experience in fixed-rail transit or people mover systems/stations***

VIA Architecture had over 30 years of fixed-rail transit design experience, beginning in 1986 with our work as the System Architect for the Expo Line SkyTrain Stations and encompassing alignment planning, station design and station area urban integration from our Vancouver, BC, Seattle, WA and Oakland, CA offices. Our proposed PIC, Alan Hart, is a founding principal of VIA and our Project Manager, Greg Ball, has decades of international transit design experience. Transit is at the center of VIA's culture and history and we celebrate this potential opportunity to work with Seattle Center Redevelopment Office and Monorail.

***Knowledge of NFPA 130: Standard for Fixed Guideway Transit and Passenger Rail Systems***

We have had to comply with NFPA 130 in the design of our over 100 station designs completed since 1986.

***Successfully participated in at least 2 facility design or reconfiguration projects that meet 2010 ADA requirements.***

Examples of 2 recent, related facility design and reconfiguration projects that meet 2010 ADA requirements:

**Freighthouse Square** – VIA is an integral team member charged with creating a new Amtrak Station within the historic Freighthouse Square building in Tacoma, Washington. The 7,000 square foot Freighthouse Square was built in 1909. The cultural significance to the Tacoma community made this project a sensitive one, inspiring our team to design the new station to reference the historic and traditional shape of the current historic building while meeting current standards for accessibility, seismic, thermal, and life safety performance. This project almost finished with construction terminating in early 2018.

**Angle Lake Station** – Angle Lake Station is an elevated center platform light rail rapid transit station at the interim terminus of Sound Transit's SeaTac to South 200th extension. This extension is comprised of 1.6 miles of elevated guideway with a single station and represents the latest phase of expansion for the Link Light Rail system. VIA was the architectural lead of a design-build team comprised of partners PCL and HDR. For the design phase, VIA incorporated an ambitious sustainability program, including a rooftop photovoltaic array that will generate 2.5% of the station's annual power needs and rainwater harvesting to serve 100% of the station's landscape irrigation needs. Completed in September 2016, the project is now certified LEED Gold.



***Experience working with multiple stakeholders on at least 3 projects.***

The majority of VIA's portfolio is comprised of complex public/private infrastructure and mixed use projects which necessitate complex teams of experts and stakeholders and impacted neighbors working together to achieve greater project outcomes than could an individual or one firm or group. We pride ourselves on the positive reputation we've built as a leader in collaboration and a collaborative project leader. All of the projects featured in our submittal were a product of collaboration across numerous agencies, consultants and stakeholder groups.

Below is a sample list of our recent work to include extensive stakeholder involvement:

- Civic Center Station Modernization -San Francisco
- Preliminary design of stations-Federal Way Extension to Link Light Rail-Seattle WA
- SR 520 Urban Design
- Metrotown Station upgrades-Vancouver BC
- Main Street station Upgrades-Vancouver BC
- Eglinton Yonge LRT/subway interchange station-Toronto, Ontario
- Seattle Monorail project - Seattle WA
- New Westminster station upgrades Vancouver BC

***Demonstrated track record of successful coordination of Consultant and Subject Matter Expert teams and ownership groups on at least 2 projects.***

When beginning work on the **Angle Lake Station** project, the VIA design team integrated with the broader team of subject matter experts to leverage design solutions that would address the ownership/client group's goals. Sound Transit used the station design process as a test of the design-build project delivery method. As a Final Engineering phase project, the challenge was to build upon the strategies established in the initial design phase, but within a competitive bid procurement. The VIA team analyzed the prescriptive elements of the preliminary station design, aligned constructibility efficiencies while streamlining circulation, and generated a final concept that addressed challenges of site placement and efficiencies. These solutions would not have been as successful had the team not been so effectively coordinated between all members.

Small adjustments made to the curvature of the guideway north of the station allowed the overall platform length to be reduced 20% from the original design concept. This change had a ripple effect through the entire design, resulting in reduced embodied materials energy, fewer systems such as light fixtures and speakers, reduced maintenance needs, and overall savings in construction cost.

The **Metrotown SkyTrain Station** upgrades and expansion project is also a good example of this. VIA helped to save TransLink upwards of \$10,000,000 by strategically locating vertical circulation and eliminating an expensive and disruptive mezzanine level. This added to an already substantial reduction of operational costs and safety risks due to VIA coordinating with consultants and subject matter experts to have a large amount of the roof built offsite and moved into place after hours.

***3-years experience with Environmental Graphic Design concepts, e.g. visual aspects of wayfinding, communicating identity and information, and shaping the idea of creating experiences that connect people to place.***

The VIA team has extensive experience in designing transit stations in a systematic way, proposing and testing station upgrade solutions that will improve the overall experience of transit users.

We have supported both transit agencies such as Sound Transit and TransLink in British Columbia as contributors to their facilities design manuals, standard drawings, standard specifications, and construction procurement reference drawings, including:

- TransLink's Station Signage Design and Implementation Manual (SSDIM)
- TransLink's Station Signage Design and Implementation Manual
- Millennium Line Design Manual
- TransLink Evergreen Wayfinding Signage Implementation
- Sound Transit Link Light Rail Facilities Design Manual
- BART Sustainability Standards and Policy
- Sound Transits Sustainability Standards and Policy
- TriMet's Sustainability measures for the PMLR extension

VIA's experience working with similar institutions includes San Francisco's BART system. VIA is developing the conceptual Civic Center Station and Concord Station Modernization programs where the team is working to deliver a comprehensive vision and conceptual designs for station improvements out to 2040. VIA designed the iconic entry canopies to BART/MUNI's Civic Center and Powell Street Stations on San Francisco's Market Street in support of the Better Market Street vision. Most recently, VIA is working with BART on its agency-wide sustainability program, documenting the Agency's policies and work practices with the objective of building upon these accomplishments by framing potential future strategies, initiatives, and policy developments.

***Experience supporting at least 3 construction projects***

- Amtrak Freighthouse Square, Tacoma, WA
- Angle Lake Station, SeaTac, WA
- Metrotown Station Upgrades, Main Street Station Upgrades

***Has developed project budgets and estimated construction costs for at least 3 projects***

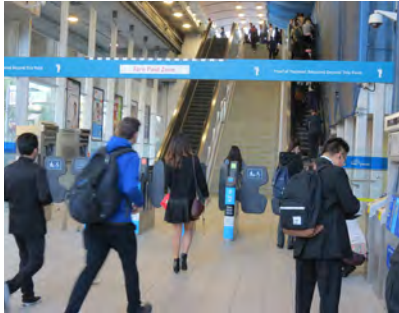
- Civic Center station Modernization Upgrades
- Market Street BART station entrances
- Metrotown SkyTrain Station/Amtrak Freighthouse Square/all of above stations

***Ability to meet insurance requirements.***

VIA regularly undertakes large scale infrastructure projects requiring the types of insurance outlined in section 6.10 of the RFQ. We carry these policies as a matter of necessity in our line of business. We agree to obtain at time of award and maintain in force, the minimum coverages and limits of liability of insurance requested in the RFQ.



A | SIMILAR EXPERTISE



**TRANSLINK FARE GATES RETROFIT - VANCOUVER, BC - \$174,300(CAN) (COMBINED FEE WITH HDR)**

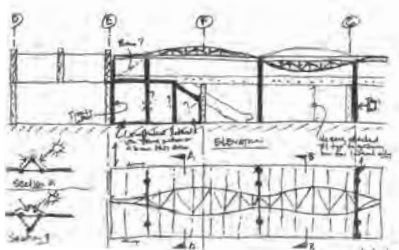
TransLink has gradually transitioned from a ‘proof-of payment’ system to a smart card and fare gate system with full gate closure. To accommodate this shift in operations Expo Line station entrances were required reconfiguration or expansion – for which VIA Architecture is providing a **system-wide assessment of faregate and atypical conditions**, preparing **conceptual sketches for typical stations** with equipment gates, preparing **conceptual plans for costing of atypical station types**, and cost-estimate support to 5 Expo line stations, three of which are among the busiest stations in Vancouver.

Some of the modifications for **smart card fare technology implementation** require station expansion while others require new station entrances. To address these issues, VIA is working with TransLink to develop **intuitive circulation and wayfinding** to improve station flow at existing and future stations, design solutions and mitigation strategies to address capacity limitations, congestion and other areas of concern at existing station fare gates, and updating the Design Manual standards and guidelines.



**METROTOWN STATION, BURNABY, BC - \$7.5M DESIGN CONTRACT**

TransLink, as part of a comprehensive program to upgrade several stations that have been inadequately planned for current conditions, is substantially reorganizing and expanding Metrotown Station. The vision is to create a transit hub designed for high volume pedestrian movements, intermodal transfers, and an **active and animated street life along with a dramatic capacity expansion** of the original station to match evolving land use.



VIA is working with TransLink to upgrade several aspects of the station Metrotown station, the busiest in the SkyTrain System and a major multimodal transit exchange with **many adjacent retail property connections that required negotiation**. In order to add platform capacity and improve vertical circulation, a west and an east entry with multiple escalators and a central entry will include fully accessible elevators with a stair. To the east will be a bicycle focused area with secure storage, a bicycle repair facility, public washrooms and a retail plaza.

Maintaining **original character of this historic station** while expanding and integrating new elements to improve operations was a necessity for the success of the project. Translink is using Metrotown as a prototype in the planned expansion of historic stations. The Metrotown Station Expansion is currently in its construction phase with an estimated completion date of Spring 2018. As planned, the station remains open and the system **operational throughout construction**.



**MAIN STREET STATION, VANCOUVER, BC - \$1.1M**

Main Street Station had long been an anomaly within the system of design thinking employed for the Expo Line. Opened in 1986 adjacent to a decommissioned concrete plant at the Expo Centre entrance to the Expo 86 World’s Fair, its **urban context had substantially changed** by the time of planning for the 2010 Olympics. A critical multimodal interface point, and with an **office tower inserted above and residential development abutting**, its functional design had to be addressed to accommodate the pedestrian, bus, vehicular and goods movements around one of the city’s busiest intersections.

VIA’s engagement to implement renovations expanded to a complete reconsideration of the station form and function (uniquely impacted by the associated development built in the interim around the



station). The resulting design, which **remained open throughout construction**, as designed in the phasing plan, radically streamlined the West Station House, eliminated the constricting intermediate concourse and created a full new station house on the East side of Main Street.

The result, a **catalyst for improvement of surrounding neighborhood**, is a vastly improved urban fit and greatly increased ridership capacity; a higher quality of design expression and patron amenity, and reorganization of pedestrian and vehicular movements at the constricted station perimeter to **improve universal access and safety, pedestrian movement and wayfinding**.

Main Street SkyTrain Station is a multiple-award winning project with awards including: 2016 Gold Winner, \$15 to \$45 Million, Vancouver Regional Construction Awards; 2016 Deputy Ministers Consulting Engineers Award, Ministry of Transportation and Infrastructure; 2016 Gold Winner (General Trade Category); Vancouver Regional Construction Association's Awards of Excellence; Interior Lighting Design Award of Merit; and Lighting Redesign BC Hydro Powersmart Award.



## MARKET STREET CANOPIES, SAN FRANCISCO, CA - \$225,000

In spring of 2015 VIA completed the design for iconic entry canopies to BART/MUNI's historic Civic Center and Powell Street Stations on San Francisco's Market Street in support of the Better Market Street vision.

**Introducing new materials and systems to the historic context** was part of VIA's design challenge, as well as balancing a safe, secure design that is also modern, light, and environmentally friendly. We helped to realize the **place-making goals of many competing interests** along the street by designing a canopy structure will both systematic and unique elements such as opportunities for public art. Options were explored for habitat, energy generation and storm water management.

The canopies are scheduled for construction in 2017, and will constitute the first prototypes of what might emerge as over 30 entrances along the corridor.



## SR520, SEATTLE, WA - \$230,000

WSDOT SR 520 connects the northern half of Seattle to its main suburbs – Redmond, Kirkland, and Bellevue. This 4.6 billion dollar project is the largest transportation investment in the history of the state. Over the ten year project duration, VIA's work focused primarily on the **interface between transit facilities and integrated development planning in consultation with impacted communities, coordinating design with design commission and multiple stakeholders**.



The long term, task-order based SOW (VIA had 26 task orders) included extensive collaboration between agencies and neighborhood groups. A key success was helping our client meet design challenges by developing solutions wherein the highway project **reconnected and repaired previously disrupted ecologies and neighborhoods**.

VIA worked in close collaboration with WSDOT bridge engineers to comprehensively understand the design constraints on the SR 520 West Approach Bridge. VIA also led design and refinement of the above-bridge elements on the bridge's "regional shared-use path", part of a five-mile bike and pedestrian connection between Seattle and the Eastside suburbs. VIA's multimodal facility design for the Montlake Lid **improved safety and accessibility and elevated user experience**



The team used **parametric design tools and 3D printing** to inform the design, as well as to provide public outreach visuals and facilitation and support decision making. Components were designed as a 'kit of parts' that integrate with other bridge systems while **accommodating maintenance and replacement** throughout the structures' 75-year lifespan.

## B | TRANSIT SYSTEMS EXPERIENCE

### ACCESSIBILITY & PATRON EXPERIENCE

Patron access and safety are linked to one another. Our team is well seasoned in designing for universal access and safety issues for pedestrians in proximity with trains and auto traffic. We are well versed with technical considerations such as providing maneuverable access and vertical circulation for various levels of patron mobility as well as visual access through signage, appropriate light levels at platform edge conditions, and incorporating color contrast and tactile changes in paving materials to guide the sight-impaired and warn of level changes in the walking surface. Sensitivity and awareness of these issues is vital to the success of transit design teams.

Understanding how crowds move through spaces and make choices, especially during peak periods, is essential for finding efficient solutions without congestion and conflicts. We often employ Legion modeling software to test station plans and refine circulation areas and vertical circulation components

**Retrofitting stations to provide accessible fare collection systems and circulation:** With full gate closure implemented as part of smart card fare automation at SkyTrain stations, several stations are experiencing critical issues with passenger flow at the gates which also poses mobility barriers to customers with locomotor disabilities. VIA is part of a team of consultants engaged to support TransLink policy for an accessible transportation system; engage customers and stakeholder groups on potential solutions in close association with Access Transit; and balance customer, stakeholder and financial objectives to determine the most effective approach in the near and long-term.

**Increasing capacity and circulation at existing stations:** VIA has designed many solutions for increasing physical capacity and circulation at operation stations including designing and phasing the addition of station entrances, escalators and elevators at continuously operating stations such as SkyTrain's Burrard, Main Street and Metrotown Stations.

**Improving wayfinding and visual access for upgraded circulation and enhanced performance:** In our 30+ years of serving public agencies, VIA has created a systems approach to station and alignment design, which includes a deep understanding of implementation and integration of wayfinding components. The Evergreen Extension Integration System Wayfinding project arose in response to the fact that with the new Evergreen Extension becoming operational in 2017, the current wayfinding throughout both the Expo and Millennium Lines would require revisions to account for the new Line. The task of VIA Architecture as set out in the scope was multifold, including updating the Expo Line wayfinding as provided by TransLink, creating new wayfinding for the Millennium Line. VIA coordinated with the graphic designer, lighting

designer, structural consultant, sign contractor, code consultant and cost consultant to generate over 2000 new signs. VIA Architecture worked with TransLink to assist in determining prioritization of signage implementation.

### EVENT CROWDS & PATRON FLOW

We understand the intricacies and dynamics involved with event crowds when it comes to optimizing for patron accessibility and movement. In Seattle, VIA worked with both the Mariners and Seahawks to develop an all elevator Stadium Station for the Seattle Monorail project. This involved an analysis of event planning and surge control techniques that both organizations participated in and signed off on.

In Vancouver, VIA designed the modified the Stadium SkyTrain station and added an event entrance to deal with the event crowds before and after an event in the new 20k hockey/basketball arena and existing 60k stadium. The design team also sized, programmed and designed all the external public spaces and pedestrian connections linking existing neighborhoods with the stadium. This also involved the development of a plan to use after hour private parking in adjacent areas to reduce congestion near the arena.

### URBAN INTEGRATION

VIA brings significant experience with joint-developments integrated into station sites, as well as associated catalyst projects designed to be in sync with existing urban neighborhoods. Where the urban fabric is evolving or new developments are being considered the scale of transit solutions must be especially considered to promote the evolution and growth goals of the surrounding area.

As such, VIA consistently works with project teams to discover win/win solutions such as co-location of public amenity, public space and commercial space. Our experience spans a range of complex and highly scrutinized projects from Market Street BART stations in downtown San Francisco and Burrard Station in downtown Vancouver, to transitioning neighborhoods such as Millennium Line's Broadway/Commercial Station, and Plaza 88, in New Westminster BC.

### SYSTEM CAPACITY AND AUTOMATION

A transit system is comprised of elements that help establish and reinforce identity, manage capital costs, respond to maintenance budgets, and provide a consistent level of quality. These elements of continuity allow a transit agency to develop, review, and update the following in a consistent way:

- Safety: illumination, durability, clarity
- Comfort: weather protection, information
- Operational Imperatives: boarding and deboarding, circulation

In order to achieve these objectives, a system-wide approach benefits greatly from the definition of the standard elements, such as signage, information kiosks, CCTV, speakers, lighting, wayfinding, and ticket machines, which all add to the ease of use, sense of safety, and legibility for transit patrons.



## ALAN HART ARCHITECT AIA, AIBC

### PRINCIPAL IN CHARGE

Alan Hart is a founding principal of VIA, creating communities that are more walkable, livable, sustainable, and better connected, for more than 35 years.

Alan's career has covered a broad spectrum of infrastructure, institutional, and mixed-use projects. A strong advocate for clarity and integrity in the design process, his expertise includes the creation of high quality urban environments from transit systems to urban development. His particular skills include finding opportunities for design innovation in unlikely places. Alan consistently serves as a champion for architectural and urban design of infrastructure as an integral part of a community vision. In a leadership role, he works closely with multi-disciplined teams to develop innovative methods of delivery, including design-build that not only put value on design, but also implement it. VIA's numerous pioneering projects reflect this standard of excellence.

## PROFESSIONAL QUALIFICATIONS

- Registered Architect, Alberta, 2005
- Registered Architect, Washington, 2000
- Registered Architect, British Columbia, 1988
- University of British Columbia (BArch), 1978
- McGill University, Montreal (BA Urban Systems), 1974

## SELECTED PROJECT EXPERIENCE

PiC - Surrey LRT / ALRT Planning, Surrey, BC	present
PiC - Metrotown Station + Bus Exchange Upgrades, Burnaby, BC	present
PiC - BART Civic Center Station Modernization, San Francisco, CA	present
PiC - BART Concord Station Bike Station, San Francisco, CA	2016
PiC - Main Street SkyTrain Station Renovations, Vancouver, BC	2015
PiC - Queensway Transit Exchange, Kelowna, BC	2015
PiC - SR-520 Bridge Replacement, Seattle, WA	2014
PiC - Evergreen ALRT Line, Metro Vancouver, BC	2011
PiC - U-Link Light Rail Extension, Seattle, WA	2010
PiC - Broadway Station Renovations, Vancouver, BC	2009
PiC - Canada Line LRT, Metro Vancouver, BC	2009
PiC - Burien Transit Center, Seattle, WA	2009
PiC - Bremerton Downtown Plan Update, Bremerton, WA	2008
PiC - Le Quartier, Montreal, QC	2008
PiC - GSA Border Crossing Facilities, Blaine, WA	2007
PiC - Laurelhurst Community Center, Seattle, WA	2007
PiC - UBC Plan, Vancouver, BC	2005
PiC - Southeast False Creek Master Planning, Vancouver, BC	2005
PiC - Seattle Waterfront Collaborative Planning, Seattle, WA	2005
PiC - Burrard Landing, Vancouver, BC	2004
PiC - Seattle Monorail Project, Seattle, WA	2004
PiC - OC Transportation Authority, Orange County, CA	2003
PiC - Millennium Line RTP, Metro Vancouver, BC	2002
PiC - Moscow Rapid Transit Link, Moscow, RU	2002
PiC - First Hill Link Light Rail Station, Seattle, WA	2000
PiC - Desert Willow Resort, Palm Desert, CA	1999
PiC - Vancouver-Richmond Rapid Bus, Metro Vancouver, BC	1997

*Dates shown indicate year work completed  
PiC denotes the role of Principal in Charge*

## SELECTED PROJECT EXPERIENCE

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### MAIN STREET SKYTRAIN STATION RENOVATION VANCOUVER, BC

Alan was a designer and Principal-in-Charge for this large-scale renovation project in the heart of Vancouver. VIA's work radically streamlined the station, improving accessibility, station flow, safety, natural lighting, pedestrian engagement, multimodal access, and more. A secure bike station was included at street-level, as well as improved retail and ticketing stations. Landscaping was improved to welcome the pedestrian realm into the station design and to create a welcoming focal point of its urban surroundings.



### EVERGREEN LINE ALRT METRO VANCOUVER, BC

VIA was one of the three firms comprising the MOT's Owner's Engineering team for the planning and design of the 11 km Evergreen Line. This project consisted of alignment planning, intermodal integration, public consultation process, and station architectural design concepts for: Lougheed Station (adding a side platform to an existing elevated); Burquitlam Station (side platform elevated); Port Moody Station (side platform at-grade); Loco Station (underground side platform); Coquitlam Centre Station (elevated side platform); Lincoln Station (elevated side platform); and Douglas College Station (elevated center platform). Alan served as Principal-in-Charge for this project.



### ANGLE LAKE STATION SEATTLE, WA

Alan is leading the VIA team in their work on Angle Lake Station, an elevated center platform light rail rapid transit station at the interim terminus of Sound Transit's SeaTac to South 200th Extension. This extension is comprised of 1.6 miles of elevated guideway, with a single station, and represents the next phase of expansion for the Link Light Rail system, with completion anticipated in 2015.



### SEATTLE MONORAIL PROJECT, 2002-2005 SEATTLE, WA

Alan served as the Lead Architect and Urban Designer for the \$1.75 billion Green Line of the new Seattle Monorail Project. This 14 mile project includes 19 elevated stations from Ballard through downtown Seattle and on to West Seattle. VIA developed the system-wide urban design, landscape and prototype station standards, as well as sustainability standards for the project.





**GREG BALL** AIBC, B ARCH

## PROJECT MANAGER

Greg is an award-winning Senior Architect with experience as a Designer and Project Manager for a wide range of projects in building architecture, public transportation, and urban planning and design.

His more than 30 years of experience include 20 years of design of mixed-use projects, light rail stations and airport terminals, including ten SkyTrain Stations in Vancouver, BC, eight Link Light Rail Stations in Seattle, WA, and associated bus exchanges. His recent project management experience includes his roles as Project Manager for the BB6 mixed office/ retail/ residential project in Seattle, and the Metrotown SkyTrain Station and Bus Exchange Renovations, the Evergreen Line Station Preliminary Design, Commercial/Broadway SkyTrain Station Phase II Schematic Design, Architectural Project Manager for two stations for Sound Transit's U-Link Project, and Station Design Lead for the Federal Way Link extension.

Greg's Vancouver heritage architecture experience includes the Vancouver heritage award-winning renovation of Quebec Manor, and his role as Project Manager for the Vancouver Heritage Inventory.

## PROFESSIONAL QUALIFICATIONS

- Registered Architect, British Columbia, 1983
- University of British Columbia (BArch), 1977
- University of British Columbia (BSc), 1972

## SELECTED PROJECT EXPERIENCE

Burrard Station upgrades	present
Centerm Buildings Design Pursuit, Vancouver, BC	present
Kent Des Moines Station, Des Moines, WA	present
BART Station Modernizations, Seattle, WA	present
Metrotown Station + Bus Exchange Upgrades, Burnaby, BC	present
BB6 Commercial/ Retail/ Office/ Residential Development, Seattle, WA	2015
Federal Way Link Extension, Seattle, WA	2014
Angle Lake Station, Link Light Rail, Seattle, WA*	2012
Eglinton-Yonge Station, Toronto, ON	2012
Evergreen Line Station Design, Metro Vancouver, BC	2012
Commercial / Broadway Station Upgrades, Vancouver, BC	2011
Sound Transit University Link, Seattle, WA*	2009
Capital Hill/ University of Washington Stations, Link Light Rail, Seattle, WA*	2006
SeaTac Airport Station, Link Light Rail, Seattle, WA*	2006
International Boulevard Station, Seattle, WA*	2006
Northlink Preliminary Engineering, Link Light Rail, Seattle, WA*	2006
Beacon Hill Station, Link Light Rail, Seattle, WA*	2004
Sound Transit Downtown Tunnel Station Renovations, Seattle, WA*	2003
Sound Transit Link Light Rail Overall System Design, Seattle, WA*	2002
Commercial SkyTrain Station, Vancouver, BC	2000
Millennium Line - Overall System Design, Metro Vancouver, BC	2000
Burnaby Aerial Guideway, Millennium Line Station, Burnaby, BC	1999
The Crystal Mixed-Use Project, Burnaby, BC	1999

*Dates shown indicate year work completed*

*\*Project completed while with other firm*

## SELECTED PROJECT EXPERIENCE

### METROTOWN STATION UPGRADES + BIKE STORAGE PARKADE BURNABY, BC

Greg was the design phase Project Manager responsible for design team leadership and client liason for this multi-million upgrade to Metrotown SkyTrain Station. One of the goals of this project is to improve intermodal connections, and to enhance the integration with the adjacent retail mall and high-density development while encourage efficient flows of traffic. Another goal of this project is to facilitate safe and comfortable pedestrian and bicycle activity with movements both to and from the adjacent community, from the BC Parkway, from Metrotown Mall, and from the buses and SkyTrain station by redesigning the ground floor hub.



### EVERGREEN LINE ALRT METRO VANCOUVER, BC

VIA was one of three firms comprising the MOT's Owner's Engineering team for the planning and design of the Evergreen Line. Greg was the RFP Documentation Lead for all stations, and Lead Architect responsible for 30% station design doorways, criteria and specifications. Greg participated in alignment planning, intermodal integration, public consultations and design concepts; Lougheed Station (side platform to existing elevated), Burquitlam Station (side platform elevated), Port Moody Station (side platform at-grade), Loco Station (underground side platform), Coquitlam Center Station (elevated side platform), Lincoln Station (elevated side platform), and Douglas College Station (elevated center platform).



### EGLINTON-YONGE STATION TORONTO, ON

VIA completed design development on one of the largest transit projects in Toronto – a multi-level underground transit hub that integrates an existing 1950s subway station with a new tunneled light rapid transit line passing underneath. Multiple entrances at grade level on four corners of a major intersection that provides pedestrians entry options from adjacent developments and connect with a bus exchange integrated within a neighboring development. This design will become the primary transfer hub in the new Eglinton-Scarborough Crosstown Line and will form part of the bid package for selecting a Design-Build team to build the entire \$5.5B construction project.



### SMARTCARDS / FARE GATES METRO VANCOUVER BC

As part of the consultant team headed by SNC Lavalin, VIA Architecture provided design, bid support and construction support for TransLink's Smartcard and Faregate project. Through VIA's role as Project Architect, we provided modifications to 5 Expo line stations so that they can accommodate the addition of the new faregates. Some of the modifications required station expansion while others required new station entrances. Greg was the Project Manager and Design Lead responsible for client contact, coordination with SNC Lavalin and sub-consultants, VIA team leadership.





**ERIC BIRKHAUSER** M ARCH

**LEAD DESIGNER**

With 10 years of experience as an Architectural Project Designer and Project Manager, as well as an additional five years of prior experience as a Design-Build Contractor, Eric’s combined experience provides for the capability to work at all scales. With a strong curiosity for the kinetics of humanity and poetics of structure, his work in transportation and bridge architecture has brought international awards and acclaim. He brings extensive experience in the design of bridges, transit stations, unique civic structures, mixed-use highrise, and large scale commercial buildings and facilities.

With an undergraduate training in ecological design and agro-ecology, Eric brings a holistic vision in approaching sustainability and building performance. His passion for innovation extends into industrial design in the investigation of material and form of bicycles, furniture, lighting, and urban objects.

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**PROFESSIONAL QUALIFICATIONS**

- Associate, American Institute of Architects
- University of Oregon (MArch), 2008
- College of the Atlantic (BA), 2002

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**SELECTED PROJECT EXPERIENCE**

Northgate Pedestrian & Bicycle Bridge, Seattle, WA	present
Totem Lake Non-Motorized Bridge, Kirkland, WA	present
2326 Sixth Avenue Towers, Seattle, WA	2016
BART Market Street Canopy, San Francisco, CA	2015
NE False Creek Detailed Design - Georgia Ramps + Steps, Vancouver, BC	2015
SR-520 Pedestrian Land Bridge, Seattle, WA	2014
Frederick Douglass Memorial Bridge, Washington, DC*	2014
Four Seasons Georgetown Pedestrian Bridge, Washington, DC*	2014
Meshroom Modular Urban Bicycle Parking Stations*	2014
31st Street Pedestrian Bridge, Washington, DC*	2014
Washington Metropolitan Prototypical Station Design, Washington, DC*	2013
River Edge Pedestrian Bridge, Aurora, IL*	2013
DC Metro Bike and Ride Prototypical Stations, Washington, DC*	2013
Silver Spring Transit Center, Silver Spring, MD*	2013
District 2 Police Training Facility, Springfield, VA*	2012
Bayview Pedestrian Bridge, Baltimore, MD*	2012
Greektown Viaduct, Baltimore, MD*	2012
Kennedy Center Pedestrian Access, Washington, DC*	2011
Purple Line Prototypical Station Design, Washington, DC*	2011
Rock Creek Pedestrian + Light Rail Bridges, Montgomery County, MD*	2011
Riverdale Park Station + Bridge, Baltimore, MD*	2011
Union Station Bus Terminal, Washington, DC*	2010
Bethesda Station, Baltimore, MD*	2010
Hillsboro Master Plan, Manilla, Philippines*	2010
Union Station Multimodal Expansion, Portland, OR*	2010
Darlene Hooley Pedestrian Bridge, Portland, OR*	2009

*Dates shown indicate year work completed*

*\*Project completed while with other firm*

## SELECTED PROJECT EXPERIENCE

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### BART/MUNI MARKET STREET CANOPIES SAN FRANCISCO, CA

In spring of 2015, Eric led the design of these iconic entry canopies for BART/MUNI's Civic Center and Powell Street Stations on San Francisco's Market Street in support of the Better Market Street vision. The canopies are scheduled for construction in 2017, and will constitute the first prototypes of what might emerge as over 30 entrances along the corridor. VIA helped to realize the place-making goals of many competing interests along the street by designing a canopy structure with both systematic and unique elements such as opportunities for public art. Options were explored for habitat, energy generation and storm water management.



### SR-520 PORTAGE BAY BRIDGE REPLACEMENT SEATTLE, WA

The new Portage Bay Bridge will be the final piece of the SR 520 Bridge Replacement project, thereby completing the connection between Seattle and the Eastside. Through an extensive community design process, WSDOT developed a preferred option for a box girder bridge. VIA worked with WSDOT's bridge engineering team to model the preliminary concept and develop solutions to public feedback calling for improved non-motorized connections. VIA developed options to incorporate required highway sign gantries, lighting, and a pedestrian bicycle path that completes the corridor's regional shared use connection.



### NORTHGATE PEDESTRIAN BRIDGE SEATTLE, WA

VIA was engaged by the Seattle Department of Transportation to design a new pedestrian bridge in the Northgate neighborhood of Seattle, creating a cohesive connection through a community historically split by Interstate-5. The bridge will link to the upcoming Northgate Link Light Rail Station on the eastern side to North Seattle College and the residential areas to the west. Eric led the process of developing a revised design with half of the original project budget. This process included a rapid interdisciplinary effort evaluating span locations and types that met the refined criteria. Once a cohesive strategy was developed, his role has included gaining approval from the Seattle Design Commission and gaining community support through a public outreach process and stakeholder meetings.



### TOTEM LAKE CONNECTOR PEDESTRIAN BRIDGE KIRKLAND, WA

The City of Kirkland has hired the consultant team of COWI, VIA, and MIG/SVR to design a safe and memorable crossing over its busiest corridor. As the key link in the Cross Kirkland Corridor, the Totem Lake Connector will act as a structurally dramatic bridge, to become an icon for the city and Totem Lake as one of the more dramatic experiences on the corridor. Eric is the design lead and project manager for this project. Eric engaged the community in open houses and presentations on the challenges and opportunities of the connection. Through a public voting process the team gained support for a preferred alternative. Eric's role also included developing a number of structural forms and expressions focused on engaging the context in a dynamic and memorable manner.



NAME	ROLE	SPECIALTY/RELEVANCE
<b>SUBCONSULTANT TEAM - PRACTICE AREA LEADS</b>		
Trish Drew <b>CW Cost Management</b>	Cost Estimating	Trish Drew, CPE, LEED AP brings 31 years of construction industry experience to our team, with over 21 years in construction cost management. She has been an active member of the design team achieving maximum design to budget results. Trish brings a depth of experience working on projects with varying project delivery methods and cost drivers.
Tedd Snyder <b>CH2M</b>	Operations & Systems	Tedd Snyder has more than 35 years of professional experience in system integration, design and engineering management, focusing on the design and testing of passenger transportation technologies such as Rail Rapid Transit, Communications Based Train Control (CBTC), Monorail, and Automated People Mover (APM) systems.
Jeanne Acutanza <b>Acutanza STS</b>	Civil Engineering	With over 30 years of experience, Jeanne Acutanza is a transportation planner and traffic engineer with project management, facilitation and technology expertise. She has worked on a variety of transportation projects, applying Context Sensitive Solutions applications, to convey complex technical analysis for a lay audience including the Mercer Street Corridor, University of Washington Campus Master Plan and the Transportation Analysis of the recent Uptown EIS. Jeanne's analysis skills are complemented by familiarity with regional and local transportation policies.
Mimi Sheridan <b>Sheridan Consulting</b>	Historic	Mimi Sheridan has extensive experience in evaluating historic resources for potential transportation projects. Her training and experience meet the Secretary of the Interior's qualification standards for assessing historic resources, buildings and districts, and to determine the potential effects caused by project operation and construction. She has worked on rail projects since 2005, providing a broad range of expertise as needed, including research, landmark nominations, determinations of eligibility and determinations of effect. She also assists agencies in working with historic review boards to get the necessary permissions for construction projects. She is very familiar with the historic resources in downtown Seattle, Belltown and the Seattle Center.
Eileen Forrester <b>True North</b>	Survey	Eileen has over 3 decades of experience in surveying and mapping and is licensed in the State of Washington. She has been Project Surveyor on multiple projects providing surveying and mapping of busy urban streets to assist in the design of transit and street improvements.
Andrew Coles <b>Jensen Hughes</b>	Code Review	Andrew Coles, PE, has extensive experience in smoke control optimization using computational fluid dynamics (CFD), passenger and evacuation modelling, and advanced flame spread modelling using CFD tools. Transit examples include Bay Area Rapid Transit, Transbay Transit Center, California High Speed Rail, Eglinton Stations, Evergreen Line, Queensland Rail, Medina Hajj City, and Makkah Public Transport Program.
Kevin Egli <b>Lerch Bates</b>	Vertical Circulation	Kevin Egli, Regional Manager, began working for Lerch Bates in 2007. He is currently working in the Lerch Bates Seattle Office providing vertical transportation consulting. As Regional Manager, Kevin is responsible for Vertical Transportation System Studies; Design, Contract Documents, and Construction Services for the Vertical Transportation Equipment; Vertical Transportation Maintenance Evaluations and Modernization Consulting Services
Mike Koski-Harja <b>Swift Company</b>	Landscape Architecture	Mike's experience as a landscape architect and project manager ranges from large to small landscape projects throughout the Puget Sound region. His work with multi-disciplinary design teams has focused on educational, healthcare and transportation facilities, many of which include a strongly sustainable approach. He applies a keen interest in the documentation and construction phases of projects, with special focus on design details.
Duane Palibroda <b>Fast &amp; Epp</b>	Structural (if needed)	Appointed a Principal of Fast + Epp in 2013, Duane serves as general manager of company operations and contributes more than 30 years of experience in his role as Project Leader on key projects. Duane has extensive experience in managing transit projects; he has led all major transit projects within the firm for the past 10 years, including the recently completed Evergreen Line, Canada Line and various station upgrades for TransLink in the lower mainland of BC. He has also been involved in the design of several pedestrian bridges and bus shelters
Weiming Bian <b>NW Civil Engineers</b>	Utilities Studies	Weiming Bian is a senior project engineer with 30 years of engineering planning, PS&E, construction support, and research & development experience in public transportation improvements. Over the years, she has obtained integrated experience and skills in engineering aspects of rail & light rail transit, rail & storage yards, stormwater & wet utilities, highways & freeways, and now civil engineering related to power distribution & streetlight.

## D | RESOURCES/CAPACITY

At VIA project teams are carefully assembled to efficiently execute detailed workplans, created in Deltek Vision, encompassing all production and schedule requirements. Weekly firm-wide project management meetings assess productivity, ensuring timelines keep pace with outlined milestones and deliverables. Our clients benefit

from the support of more than 60 individuals in VIA's three offices to provide additional production and support as needed, and draw upon their additional insight, knowledge and experience to supplement the core team.

## E | FEASIBILITY ASSESSMENTS

To begin any feasibility assessment, our team will first conduct an information audit – collecting information on existing facilities, policies and plans. We then identify all stakeholders and partners and establish clear project values and the corresponding measures of success. This helps up to set clear priorities and lines of communication and accountability milestones.

### OPERATING FACILITY RETROFITS IN A DENSE URBAN CORE

Working in an urban environment, it is essential to minimize negative impacts to street, transit, bike and pedestrian operations. This will be addressed through development of a detailed, proactive phasing plan that acknowledges and mitigates potential conflicts.

Our team has successfully implemented several strategies to maintain continuous transit operations during renovation and reconfiguration. These include performance of construction during off hours, utilization of temporary platforms, creation of “construction zones” which keep a portion of platform operational and pre-fabrication of components off-site to reduce construction duration, complexity and footprint.

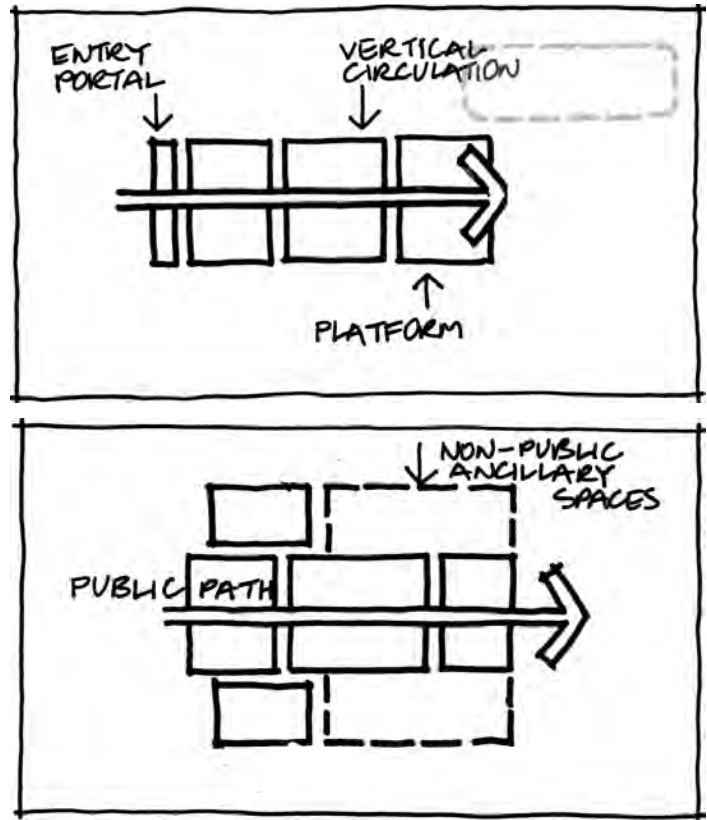
### CAPACITY AND PATRON FLOW

When it comes to improving system capacity, there are several system related to consider. Station performance (Patron flow) can be altered to minimize dwell time and reduce time patrons are in system. System automation can result in shorter headways and increased safety. Avoidance of complex mechanical systems reduces risk of equipment failure and vehicle design can be altered to carry a greater volume of passengers if additional capacity is desired beyond headway reduction and achievement of operational efficiencies.

Behavioral solutions are also important considerations in improving capacity. Patron flow can be improved by minimizing barriers, decision points and patron confusion. Understand frequent paths of travel and avoiding conflicts helps us to design an intuitive pedestrian flow. Consistent, system wide wayfinding/signage integrated across modes for tourists/occasional system users to reduce confusion

Streamlined fare collection can be achieved through understanding current and future patron needs (i.e. ORCA vs. Single Use Ticket) and strategies such as decoupling ticket sales and validation points and instituting in-vehicle check vs. access control. Fare and vehicle automation frees staff to manage crowds and answer questions

Planning for event crowds by creating surge areas and patron staging after large events helps to balance throughput and mitigate impacts of large event crowds on patron experience. Integration of station approach and the location of station entries and ramping through improved site design also beneficially impact crowd management.



### VERTICAL TRANSPORTATION

Glass enclosures and cabs provide a better patron experience and legibility and also increase safety by discouraging unlawful behaviors – see Sightlines and Safety below. Redundancy is desirable in order to maintain an accessible route during equipment failure or maintenance. **??? Alan and Greg please flesh out**

### MULTI-MODAL CONNECTIONS

We understand that your goal is to create a regional transit connection to Seattle Center/Arena in interim before new light rail service provides access to Seattle Center. Understanding existing service and relationships will allow us to optimize bus and rail connections, improving the connection with Westlake station, creating more legible connections to the street and becoming more visible from regional transit routes at Stewart and Olive. It is essential that we also anticipate demand for bicycle facilities to facilitate multi-modal connections and mitigate impacts to capacity and passenger experience caused by bikes-on-board.

### SIGHTLINES AND SAFETY

CPTED standards advise use of glass and attention to creation of clear sightlines for maximum transparency and safety. Low contrast lighting improves sight distance at night and station activation through retail uses, vending and station hosting contribute to a safer - and safer-feeling – environment. For BART’s Civic Center Retrofit VIA’s design team payed specific attention to sightlines analysis for security and created 3D visualizations to demonstrate transparency and sightlines form the patron perspective.

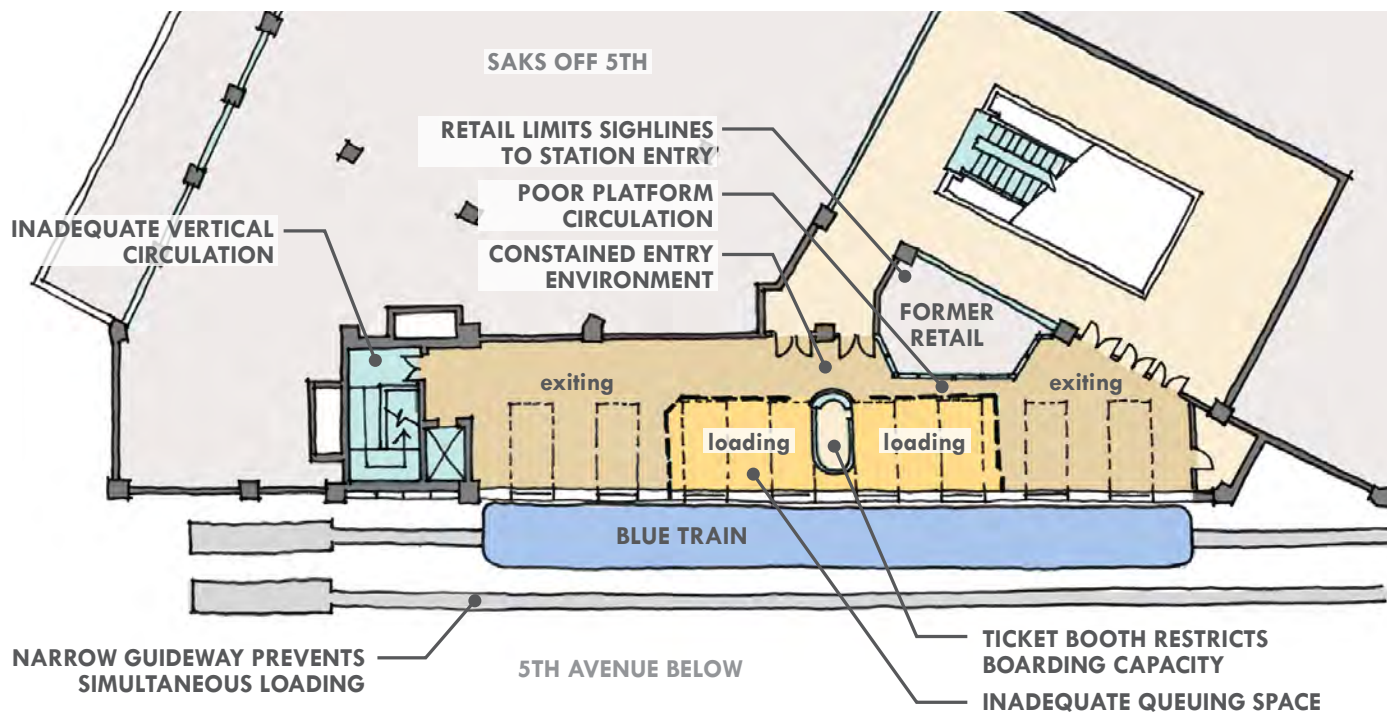


**CUSTOMER LEGIBILITY AND WAYFINDING**

As part of a successful wayfinding program it is essential to first focus on decision points – ensuring there are no more than two decisions at any one point along a path through the system. Station design must address legible placement of vertical circulation, fare vending and station entries and the presence of the facility must be legible from street or surrounding areas in both day and night conditions. VIA’s work in creation of the Translink Standards Manual was successful in integrating signage with a regional transit system, creating a seamless user experience.

**ADDITIONAL STATIONS**

We understand that there is neighborhood interest in evaluating the feasibility of an additional station along the alignment. Additional stations must be evaluated for potential impacts including property needed for station operation and construction, constructability in a tight urban context, and impacts to system performance metrics such as ridership and travel time. Technical feasibility and potential advantages of an additional station must be weighed against compatibility with system goals, for instance the degree to which additional travel time impacts the attractiveness of the monorail as a robust regional connection.



## F | CHALLENGES & OPPORTUNITIES

**System Identity:** One major goal for the project is to preserve the landmark historic identity for the Monorail. At the line’s southern terminus, the architectural heritage of the original station was lost during the construction of Westlake Center. Today, the architectural style of Westlake Center dominates the current station and does not match the style of historic Seattle Center station. One challenge for this project will be to determine how to bring Westlake Station into alignment with the Monorail identity while maintaining its contextuality. Another will be to determine how to build upon the historic character and identity of the Seattle Center station while improving functionality, accessibility and circulation.

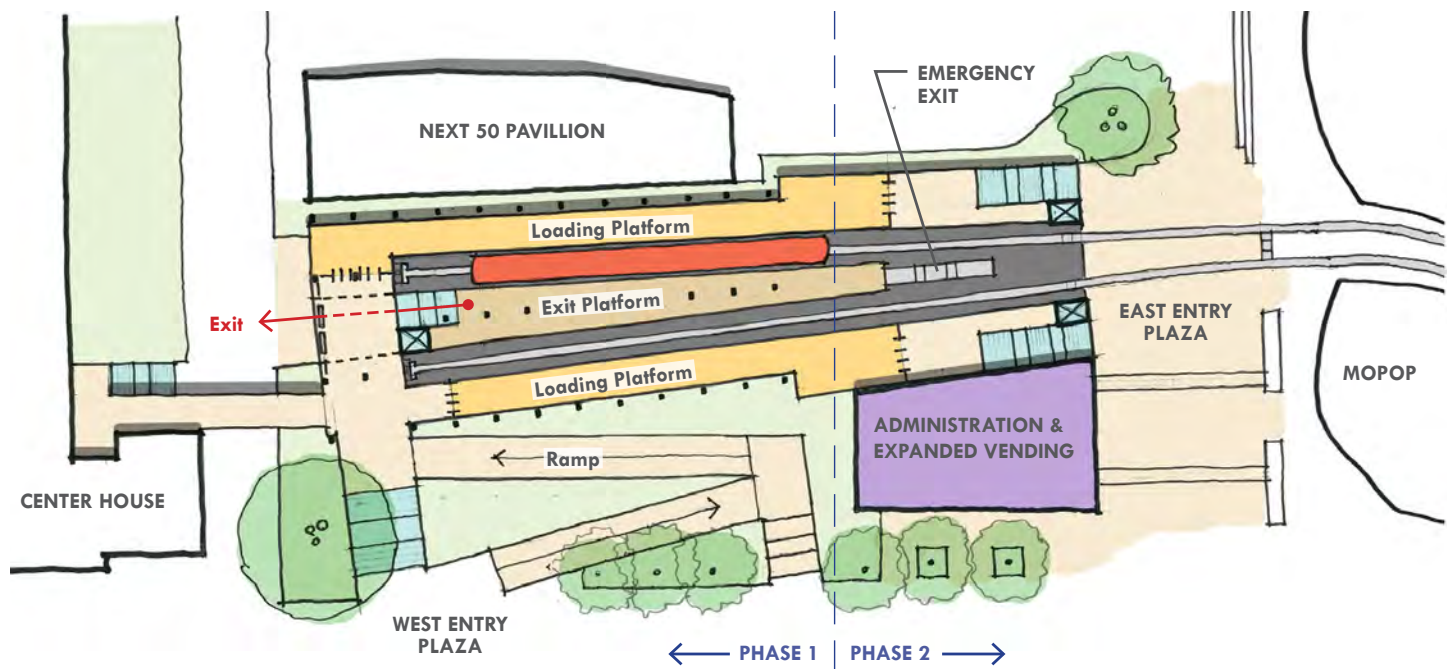
A systems approach to transit design provides a predictable and familiar environment for transit users and transit operators. We often characterize this systems approach into two categories: elements of continuity and elements of distinction. The elements of continuity help define the system as a whole whereas elements of distinction are unique and provide tools with which the design can relate to the context and community.

Elements of Distinction emphasize where patrons are within the overall regional transit system, providing opportunities for meaningful, contextual design. These design components offer the opportunity to create tangible connections, express the distinctive character of neighborhoods and communities, and are usually the result of a collaborative, community process. We pay respect to historic elements by adopting, echoing, or showcasing them to reinforce system identity.

Standardizing the platform experience between stations, including surface finishes, wayfinding and lighting, would strengthen the identity of the experience as a whole, while integrating signature architectural elements into Westlake and highlighting vertical circulation and entry points would add elements of distinction that strengthen both that station’s individual identity and its important role as part of the regional transportation network.

**System Capacity:** Another major goal for the project is to increase system capacity. Seattle Center will continue to be a regional cultural and recreational destination regardless of arena outcome. In addition, a proposed arena would bring multitudes of new visitors to Seattle Center each year. System wide challenges to accommodating growth and increased readership include the narrowing of guideway beam spacing at Westlake, which limits train operations and allows only one train at a time at Westlake Station, and inadequate facilities for train maintenance and office functions at the Seattle Center terminus.

At Westlake station the station and guideway design limits operations to one train at a time-limits train shuttling. Inadequate vertical connections between 5th Avenue, Westlake Tunnel Station and the monorail platform as well as restricted platform and queuing space physically limit station throughput. Mall lease renegotiation will be important to address.



Seattle Center Station has its own challenges including poor station and entrance visibility, inadequate provisions for ADA accessibility, and a limited number of entry points to accommodate customer flow from multiple desire lines. Other challenges include limited capacity of current (center) departure platform, operations for integrating new fare collection equipment and inadequate maintenance and office facilities for larger demand.

We see opportunities for improved platform flow and capacity through improved station configuration - Improved passenger flow and ADA accessibility can be achieved both physically through addition of vertical circulation, and technologically: an automated fare collection and vending system, for example, would allow for reconfiguration of current station orientation, creating more efficient throughput and freeing up queueing and platform space.

Streamlining operations by improving maintenance facilities and station infrastructure would beneficially impact system capacity in both the short and long term. More reliable operation could be achieved through potential elimination of mechanical boarding systems and the addition of CCTV and sensor equipment improves safety, both of which could pave the way for future automation.

Bringing robust regional connection to Seattle Center ahead of ST3 through improved monorail connections will leverage existing investments in regional transportation, reduce impacts from parking and additional car trips while expanding access to Seattle Center offerings to a wider audience.

**Passenger Experience:** A third major goal for the project is the enhancement of passenger experience. As with system capacity, passenger inexperience is currently negatively impacted by pas-

senger flow conflicts at stations due to vertical circulation capacity, platform capacity, conflicts between entraining and detraining passengers and inconsistent entrance and platform configurations.

Wayfinding plays a subtle but major role in passenger experience. Poor station visibility, lack of entrance markers and signage/inconsistent system and station identity, such as the poorly marked 5th Avenue and Westlake mall entrances and lack of system and street orientation information do not make for a seamless experience in locating station entries. Lack of logical and consistent station flow sequence - Entry > System information > Ticketing/Orca tap > Circulation to platform > Platform waiting > Boarding - further complicates the experience.

Opportunities for enhanced passenger experience can be created by designing for more intuitive entries and connecting people to place using wayfinding and environmental graphic design. Integrating new ticketing points of sale and access control systems could improve wayfinding and reduce wait times while creating 360 degree visual and physical access to stations would create a more inviting experience.

Integration with regional transportation system would provide better patron experience by improving performance and capacity during events. Accommodation of future ORCA and automated vending machines would improve passenger experience through increased efficiency in flow and throughput, with the added benefit that automated fare collection (and future potential vehicle automation) frees staff to serve patrons in client service rather than maintenance and operations.

**ALTERNATIVES EVALUATION**

One significant challenge in renovating existing stations in dense urban contexts is managing complexity during the decision making process. Station modifications often require extensive coordination with adjacent stakeholders and other public agencies during design and construction. Station retrofits also often involve risks and unknowns which must be carefully balanced against potential benefits and opportunities. Extensive evaluation of different options against project goals and objective comparison using agreed upon metrics is essential for achieving design excellence and reducing risk during the design process.

While both stations involve complex tradeoffs, Westlake Station in particular presents a challenge due to its constrained location within an operating commercial building. Due to this challenge the project team has developed several sketch concepts for station improvements to demonstrate how we would work with Seattle Center and Seattle Monorail Services to evaluate options for each station and assist in identifying a preferred alternative. These initial ideas are the results of an internal brainstorm session intended to capture a wide range of possibilities. We look forward to working with the full project team to explore design opportunities for expanding and improving the Monorail.

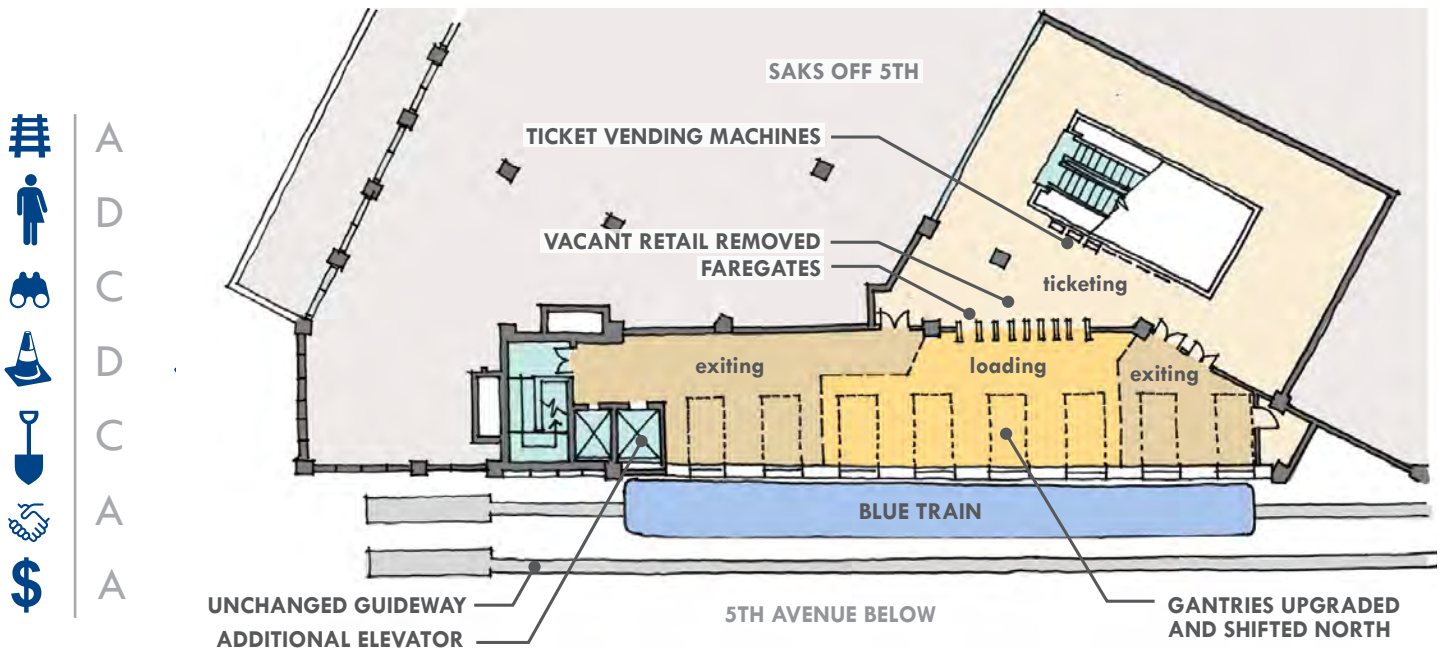
In developing sketch concepts, the following criteria were used for to determine the relative performance, cost and impacts of each idea. Each concept is ranked against each criterion with a letter grade, ranging from A (excellent) to D (challenged). While all options expand system capacity, each has unique strengths and weaknesses that help frame the tradeoffs the project team will help the Seattle Center and Seattle Monorail Services navigate. The criteria include:

-  Extent of Guideway Modification
-  Platform Capacity and Patron Flow
-  Station Legibility and Patron Experience
-  Operational Safety and Flexibility
-  Constructability and Operations Impact
-  Stakeholder Risk
-  Capital Cost

**CONCEPT A – UPGRADES TO EXISTING STATION**

Concept A provides modest patron capacity improvements at Westlake Station with the least amount of modifications to existing structures. The platform would be reconfigured and barriers removed to accommodate streamlined fare collection. Gantries would be upgraded to improve reliability and shifted north to accommodate an additional elevator connecting to 5th Avenue and Westlake Tunnel Station. Challenges for this concept include limited platform capacity, limited system capacity due to operational limitations posed by the existing guideway beams and reduced system reliability due to operational dependence on gantry equipment. Significant costs would include structural modifications to Westlake Tunnel Station and Westlake Center mall to accommodate expanded vertical circulation as well as significant changes to the structure underneath the existing platform to accommodate new gantry locations.

**CONCEPT A – UPGRADES TO EXISTING STATION**



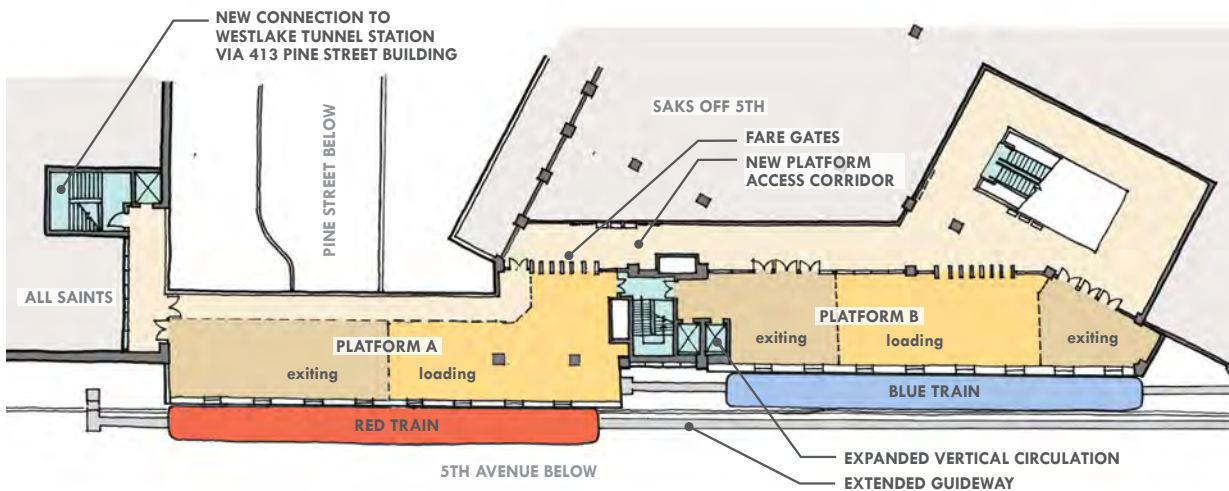
**CONCEPT B – STAGGERED PLATFORM**

Concept B extends the Red Train guideway and platform across Pine Street to a second entrance in the 413 Pine Street building, requiring modifications to the AllSaints store. This concept would allow improved reliability through the elimination of mechanical gantries while limiting modifications to the existing guideway. Challenges include impacts to Saks off 5th back of house, easement negotiations with the 413 Pine Street building owner, a significant station presence over Westlake Plaza and uncertain support from city leadership. Significant costs would include potential lease buy-outs of the affected retailers and/or acquisition costs, construction costs associated with significant modifications to Westlake Tunnel Station for expanded vertical circulation and platform support, as well as significant modifications to Westlake Center to accommodate revised platform configuration.

**CONCEPT C – STACKED PLATFORM**

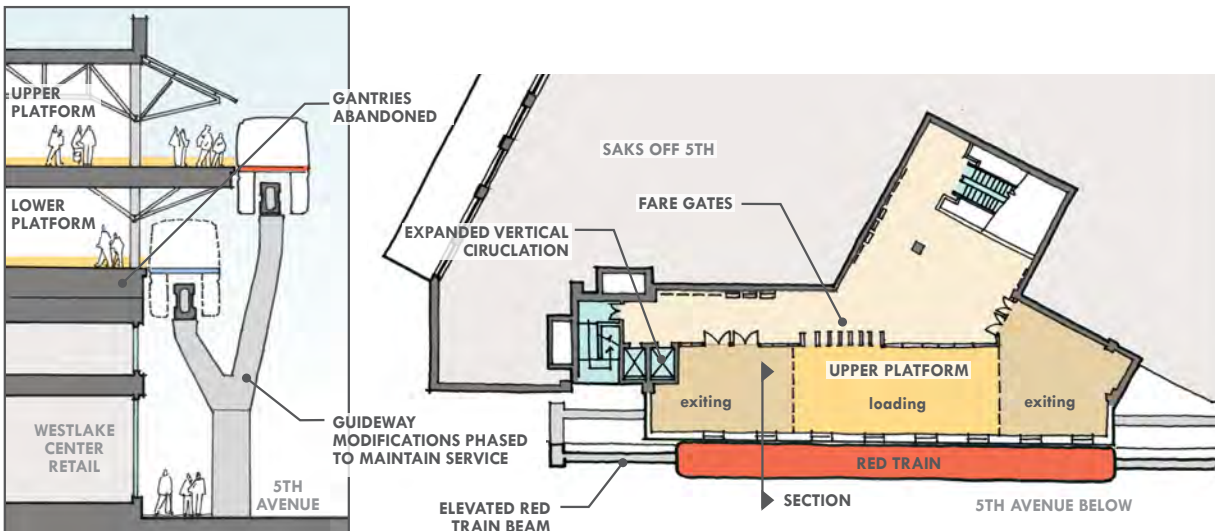
Concept C elevates the red train guideway and platform above the existing platform to double platform capacity and provide side platform access to both trains simultaneously without the use of mechanical gantries. Vertical circulation from Westlake Tunnel Station would be expanded and extended up to the second platform. Challenges would include minimizing the business impact of significant structural modifications to Westlake Center required to accommodate the new platform, as well as revisions to the guideway to allow for the gradual ramping of red train beams to meet the upper platform. Significant costs would include required structural modifications to Westlake Tunnel Station and Westlake Center as well as potential costs associated with guideway realignment such as traction power revisions and life safety upgrades.

**CONCEPT B – STAGGERED PLATFORM**



- # B
- 👤 C
- 👓 C
- 🚧 C
- 🛠️ B
- 🤝 C
- 💰 D

**CONCEPT C – STACKED PLATFORM**



- # C
- 👤 B
- 👓 B
- 🚧 A
- 🛠️ B
- 🤝 B
- 💰 C

**CONCEPT D – MCGRAW SQUARE STATION**

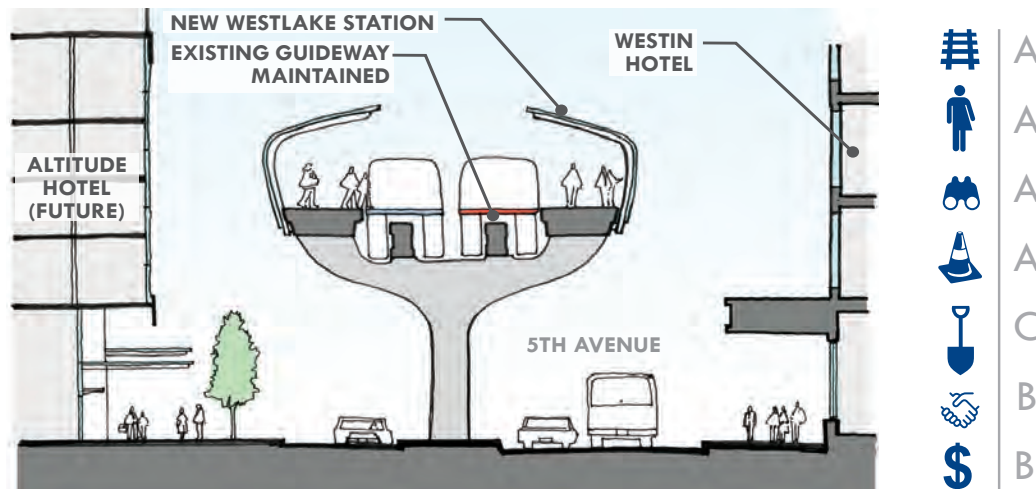
Concept D reduces construction complexity by relocating the station to McGraw square north of Stewart Street while allowing greatly expanded platform capacity, better multimodal connectivity and improved operational flexibility. Connections to Westlake Center and Westlake Tunnel Station are provided by a new elevated pedestrian walkway following the former alignment. This allows robust improvements to vertical circulation connecting to Westlake Tunnel Station as well as new connections to regional bus service via a new entrance at McGraw square, either as part of initial construction or as a future phase. While a portion of the existing guideway would be demolished to make room for the pedestrian walkway, the remaining guideway structure would be left largely untouched. Challenges would include negotiations with adjacent property owners on 5th Avenue. Significant costs include construction of a new elevated walkway and station as well as modifications to Westlake Tunnel Station, Westlake Center mall and the existing monorail station to accommodate expanded vertical circulation.

**G | COST ESTIMATION**

The following are examples of three projects that demonstrate VIA's cost estimating abilities at a concept design level.

**BART Civic Center Station Modernization:** Based on our 15% preliminary design drawings, VIA worked closely with cost consultant Martin Lee Corporation to prepare Planning Level Construction Cost Estimates for a set of station upgrades to improve capacity, wayfinding and passenger flow that includes station entrance upgrades, additional elevators, escalators and stairways, renovations to concourse ticketing areas, fare gates and attendant booths and lighting and finishes replacement. Preliminary costs were based on a drawing package to the 15% level of completion. Cost data was based on historical data from recent BART station upgrades and separate cost packages totaling \$101.2 M were aligned with the results from a prioritization process conducted internally by BART staff and phasing strategy designed by VIA to allow operation of the station during construction.

**CONCEPT D – MCGRAW SQUARE STATION**



**Metrotown Skytrain Station:** Cost estimates were conducted at 30%, 50% and 90% design completion based on drawing submittals prepared by the VIA design team for significant upgrades to the original Expo Line Skytrain station and bus exchange. The replacement of the two entrances and the addition of a third entrance including three new elevators and eight escalators and emergency egress stairs required a phased construction strategy with three construction drawing packages to maintain customer access to platforms and train operations during the two-year construction period. VIA worked closely with our constructability and cost estimating consultants to prepare cost estimates that captured both the evolving project scope resulting from late stakeholder agreements (City of Burnaby and adjacent mall owners) and cost premiums associated with significant night work and work adjacent to an operating trainway. The pre-construction estimate accurately predicted the actual construction cost of \$60 Million.

**Market Street Canopies:** VIA worked closely with BART and the client's cost estimator to produce cost estimates for 35% design to inform project procurement. The project team performed extensive outreach to fabricators, material providers and contractors to ascertain current costs, constructability parameters and sequencing needs in a complex urban environment. Findings were shared with the client's estimator to refine estimates and identify cost saving opportunities, and were used by the design team to improve design constructability, clearly outline construction sequence and remove uncertainties from bid documents to obtain the best bid price. The project is now under construction, with completion expected in early 2019.

## H | TEAM ORGANIZATION

To orchestrate a highly coordinated, flexible and adaptive team, our Project Delivery framework, built on Deltek's VISION platform for project management allows us to strategically align resources with project goals, priorities and schedules. Our PM will provide overall program governance and control, allocate tasks, track progress, and provide transparency to our team and Seattle Center Redevelopment Office's staff at every step of the project.

We will clearly communicate status of all deliverables in terms of schedule, scope, and cost, progress against milestones, identify issues which could impact time, scope or cost, and risks that could potentially impact the project. The VIA team has an integrated approach for addressing the project's needs. The key elements of this approach are a clear leadership structure, effective project management and team building, mutual respect among design disciplines, and integration of architectural and engineering design.

Leadership is critical to success of this project-- we bring this leadership through Greg Ball, who has managed similar complex and challenging transit station projects. Greg will use this experience to develop a Project Management Plan for successfully completing the work on schedule and on budget, including managing resources, communications, risk and decision making, budget, schedule, and document control, and QA/QC administration.

Greg will coordinate with the project team and the Seattle Center Redevelopment Office to ensure the lines of communication are maintained and project expectations are clearly understood. He will facilitate dialogue with the various stakeholders and agencies at the earliest stage possible to help identify potential issues that can pose challenges to project schedule, design concepts, and successful delivery of the final work product.

**See Chart in Section D for Practice Area Leads and responsibilities beyond the Key Team Members of Greg Ball as Project Manager, Alan Hart as PIC and Eric Birkhauser as Design Lead.**

## I | TEAMING & DECISION MAKING

Conflict occurs when communities battle over assets and investments, and between competing agendas. To achieve the Seattle Center Redevelopment Office's and stakeholder goals for the project the VIA team must prepare for, and spur timely decision-making, and provide an avenue for local partner contributions. Key management techniques for success include:

**Inform:** Our core project team members have a history of working with communities facing rapid change, including those within Uptown and South Lake Union. We have found that connecting community anxieties to value-based measures is key to the project process. As lead designers on the Millennium Line, Evergreen Line, and Canada Line, VIA used design principle primers to distill the key issues and decisions in alignment planning into a logical sequence of issues that must be considered when creating "fit" between a light rail system and an existing community.

**Organize:** A shared investment strategy requires true commitment from agency, community and jurisdictional partners. This project must create an inclusive, safe and informed space for the project partners to come to agreement. We intend to engage project partners by ensuring we have the right people in the room at the right time to solve problems. For example, on the Surrey LRT, VIA defined the boundaries of decision-making responsibility between the transit agency (TransLink) and the city (Surrey, BC) into a series of "zones"; i.e. ROW, transition area, property boundaries, catchment area.

**Engage:** On the Monorail, community stakeholders are integral to defining the project's essential values and community expectations. Our team's core leadership includes local planning and transport experts who intimately know the landscape. Our team has also selected visionary, strategic and civically engaged designers as thought leaders for this project.

**Resolve:** We know that it is important to tackle the hard problems early on. This can be achieved by taking on a leadership role in the conversation. For example, in 2011-2013, Alan Hart led a community-based design process with the City of Seattle, and key project stakeholders to finalize the design parameters for the SR520 bridge and multi-modal transit hub. A set of visionary charrettes were held, based around the established project goals.

CERTIFICATION REGARDING LOBBYING

11.4. CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement. If a contractor, applicant, or recipient has used Federal appropriated funds for the covered lobbying activity, this must be disclosed to the Point of Contact in the application, bid package, or award with the City of Seattle.
2. For any federal covered action, in addition to those associated with this Agreement, Vendors, Contractors, Applicants, and recipients that use non-federal funds for lobbying must submit a "Disclosure of Lobbying Activities" form (SF LLL) to report these activities and to identify the name of the individuals performing lobbying services. Contractors, applicants, and recipients must submit SF LLL as often as once per calendar quarter, depending on whether the lobbying activities change materially. If the activities change materially, the Contractors, applicants, and recipients must file an additional form for that quarter. The regulation defines Material changes to include (1) a cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; (2) a change in the person or individuals influencing or attempting to influence a covered Federal action; or (3) a change in the agency officers, employees, or Members of Congress or their employees or officers, contacted to influence or attempt to influence a covered Federal action. The SF LLL must be completed in accordance with its instructions [as amended by "Government wide Guidance for New Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/19/96)] and use of the 1997 reissuance of the form by the federal Office of Management and Budget. Note: Language in paragraph (2) herein has been modified in accordance with Section 10 of the Lobbying Disclosure Act of 1995 (P.L. 104-65, to be codified at 2 U.S.C. 1601, *et seq.* .)]
3. The undersigned shall require that the language of this certification be included in the purchasing, contracting and award documents for all vendor purchase agreements, subcontracts, or subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subcontractors, subvendors, and subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.]

The Vendor, Consultant, Contractor, Applicant, or Sub-recipient, \_\_\_\_\_, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Consultant understands and agrees that the provisions of 31 U.S.C. A 3801, *et seq.*, apply to this certification and disclosure, if any.

\_\_\_\_\_  
Signature of Vendor, Consultant, Contractor, Applicant, or Sub-recipient's Authorized Official

Alan Hart AIA, AIBC Name and Title of said Authorized Official

October 11, 2017 Date

CERTIFICATION REGARDING LOBBYING

11.4. CERTIFICATION REGARDING LOBBYING

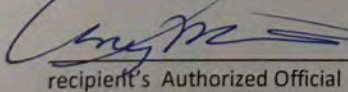
The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement. If a contractor, applicant, or recipient has used Federal appropriated funds for the covered lobbying activity, this must be disclosed to the Point of Contact in the application, bid package, or award with the City of Seattle.
2. For any federal covered action, in addition to those associated with this Agreement, Vendors, Contractors, Applicants, and recipients that use non-federal funds for lobbying must submit a "Disclosure of Lobbying Activities" form (SF LLL) to report these activities and to identify the name of the individuals performing lobbying services. Contractors, applicants, and recipients must submit SF LLL as often as once per calendar quarter, depending on whether the lobbying activities change materially. If the activities change materially, the Contractors, applicants, and recipients must file an additional form for that quarter. The regulation defines Material changes to include (1) a cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; (2) a change in the person or individuals influencing or attempting to influence a covered Federal action; or (3) a change in the agency officers, employees, or Members of Congress or their employees or officers, contacted to influence or attempt to influence a covered Federal action. The SF LLL must be completed in accordance with its instructions [as amended by "Government wide Guidance for New Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/19/96)] and use of the 1997 reissuance of the form by the federal Office of Management and Budget. Note: Language in paragraph (2) herein has been modified in accordance with Section 10 of the Lobbying Disclosure Act of 1995 (P.L. 104-65, to be codified at 2 U.S.C. 1601, et seq .)]
3. The undersigned shall require that the language of this certification be included in the purchasing, contracting and award documents for all vendor purchase agreements, subcontracts, or subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subcontractors, subvendors, and subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.]

The Vendor, Consultant, Contractor, Applicant, or Sub-recipient, CH2M, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Consultant understands and agrees that the provisions of 31 U.S.C. A 3801, et seq., apply to this certification and disclosure, if any.

 Signature of Vendor, Consultant, Contractor, Applicant, or Sub-recipient's Authorized Official

Amy Carlson, Vice President and Area Manager

10/4/17

Revised: February 2017

## CERTIFICATION REGARDING LOBBYING

### 11.4. CERTIFICATION REGARDING LOBBYING


The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement. If a contractor, applicant, or recipient has used Federal appropriated funds for the covered lobbying activity, this must be disclosed to the Point of Contact in the application, bid package, or award with the City of Seattle.
2. For any federal covered action, in addition to those associated with this Agreement, Vendors, Contractors, Applicants, and recipients that use non-federal funds for lobbying must submit a "Disclosure of Lobbying Activities" form (SF LLL) to report these activities and to identify the name of the individuals performing lobbying services. Contractors, applicants, and recipients must submit SF LLL as often as once per calendar quarter, depending on whether the lobbying activities change materially. If the activities change materially, the Contractors, applicants, and recipients must file an additional form for that quarter. The regulation defines Material changes to include (1) a cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; (2) a change in the person or individuals influencing or attempting to influence a covered Federal action; or (3) a change in the agency officers, employees, or Members of Congress or their employees or officers, contacted to influence or attempt to influence a covered Federal action. The SF LLL must be completed in accordance with its instructions [as amended by "Government wide Guidance for New Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/19/96)] and use of the 1997 reissuance of the form by the federal Office of Management and Budget. Note: Language in paragraph (2) herein has been modified in accordance with Section 10 of the Lobbying Disclosure Act of 1995 (P.L. 104-65, to be codified at 2 U.S.C. 1601, *et seq.*.)
3. The undersigned shall require that the language of this certification be included in the purchasing, contracting and award documents for all vendor purchase agreements, subcontracts, or subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subcontractors, subvendors, and subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.]

The Vendor, Consultant, Contractor, Applicant, or Sub-recipient, DCW Cost Management, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Consultant understands and agrees that the provisions of 31 U.S.C. A 3801, *et seq.*, apply to this certification and disclosure, if any.

  
\_\_\_\_\_  
Signature of Vendor, Consultant, Contractor, Applicant, or Sub-recipient's Authorized Official  
Trish Drew, Managing Director of DCW Cost Management | 10/17/2017

Revised: February 2017

CERTIFICATION REGARDING LOBBYING

11.4. CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement. If a contractor, applicant, or recipient has used Federal appropriated funds for the covered lobbying activity, this must be disclosed to the Point of Contact in the application, bid package, or award with the City of Seattle.
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3. The undersigned shall require that the language of this certification be included in the purchasing, contracting and award documents for all vendor purchase agreements, subcontracts, or subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subcontractors, subvendors, and subrecipients shall certify and disclose accordingly.

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[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.]

The Vendor, Consultant, Contractor, Applicant, or Sub-recipient, Fast + Epp, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Consultant understands and agrees that the provisions of 31 U.S.C. A 3801, *et seq.*, apply to this certification and disclosure, if any.

Digitally signed by Duane Palibroda  
DN: cn=Duane Palibroda, o=Fast + Epp, ou=Seattle Center, email=duane@fast+epp.com, c=US  
Date: 2017.10.13 14:21:47 -0700  
Duane Palibroda Signature of Vendor, Consultant, Contractor, Applicant, or Sub-recipient's Authorized Official

Duane Palibroda, Managing Principal Name and Title of said Authorized Official

October 13, 2017 Date

# CERTIFICATION REGARDING LOBBYING

## CERTIFICATION REGARDING LOBBYING

### 11.4. CERTIFICATION REGARDING LOBBYING

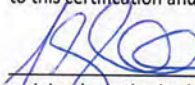
The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement. If a contractor, applicant, or recipient has used Federal appropriated funds for the covered lobbying activity, this must be disclosed to the Point of Contact in the application, bid package, or award with the City of Seattle.
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3. The undersigned shall require that the language of this certification be included in the purchasing, contracting and award documents for all vendor purchase agreements, subcontracts, or subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subcontractors, subvendors, and subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.]

The Vendor, Consultant, Contractor, Applicant, or Sub-recipient, Acutanza STS certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Consultant understands and agrees that the provisions of 31 U.S.C. A 3801, *et seq.*, apply to this certification and disclosure, if any.



\_\_\_\_\_  
recipient's Authorized Official

Signature of Vendor, Consultant, Contractor, Applicant, or Sub-

Jeanne Acutanza  
President

Name and Title of said Authorized Official

10-12-17

Date

CERTIFICATION REGARDING LOBBYING

11.4. CERTIFICATION REGARDING LOBBYING


The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement. If a contractor, applicant, or recipient has used Federal appropriated funds for the covered lobbying activity, this must be disclosed to the Point of Contact in the application, bid package, or award with the City of Seattle.
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3. The undersigned shall require that the language of this certification be included in the purchasing, contracting and award documents for all vendor purchase agreements, subcontracts, or subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subcontractors, subvendors, and subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.]

The Vendor, Consultant, Contractor, Applicant, or Sub-recipient, Lerch Bates Inc., certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Consultant understands and agrees that the provisions of 31 U.S.C. A 3801, *et seq.*, apply to this certification and disclosure, if any.

  
\_\_\_\_\_  
Signature of Vendor, Consultant, Contractor, Applicant, or Sub-recipient's Authorized Official

Kevin Egli, Regional Mgr Name and Title of said Authorized Official

10/3/17 Date

## CERTIFICATION REGARDING LOBBYING

### 11.4. CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement. If a contractor, applicant, or recipient has used Federal appropriated funds for the covered lobbying activity, this must be disclosed to the Point of Contact in the application, bid package, or award with the City of Seattle.
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[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.]

The Vendor, Consultant, Contractor, Applicant, or Sub-recipient, JENSEN HUGHES, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Consultant understands and agrees that the provisions of 31 U.S.C. A 3801, *et seq.*, apply to this certification and disclosure, if any.

Michael J. Johnson Signature of Vendor, Consultant, Contractor, Applicant, or Sub-recipient's Authorized Official

Michael Johnson, SET Vice President; West Region Name and Title of said Authorized Official

10/11/2017 Date

CERTIFICATION REGARDING LOBBYING

11.4. CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement. If a contractor, applicant, or recipient has used Federal appropriated funds for the covered lobbying activity, this must be disclosed to the Point of Contact in the application, bid package, or award with the City of Seattle.
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[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.]

The Vendor, Consultant, Contractor, Applicant, or Sub-recipient, Mimi Sheridan, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Consultant understands and agrees that the provisions of 31 U.S.C. A 3801, *et seq.*, apply to this certification and disclosure, if any.

Mimi Sheridan Signature of Vendor, Consultant, Contractor, Applicant, or Sub-recipient's Authorized Official

Mimi Sheridan Name and Title of said Authorized Official  
Owner  
10/9/2017 Date

## CERTIFICATION REGARDING LOBBYING

### 11.4. CERTIFICATION REGARDING LOBBYING

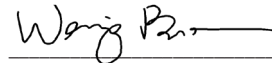
The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement. If a contractor, applicant, or recipient has used Federal appropriated funds for the covered lobbying activity, this must be disclosed to the Point of Contact in the application, bid package, or award with the City of Seattle.
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[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.]

The Vendor, Consultant, Contractor, Applicant, or Sub-recipient, Northwest Civil Engineers PLLC, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Consultant understands and agrees that the provisions of 31 U.S.C. A 3801, *et seq.*, apply to this certification and disclosure, if any.



Signature of Vendor, Consultant, Contractor, Applicant, or Sub-recipient's Authorized Official

Weiming Bian, Project Manager of NW Civil Engineers | 10/17/2017 Revised: February 2017

CERTIFICATION REGARDING LOBBYING

11.4. CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement. If a contractor, applicant, or recipient has used Federal appropriated funds for the covered lobbying activity, this must be disclosed to the Point of Contact in the application, bid package, or award with the City of Seattle.
2. For any federal covered action, in addition to those associated with this Agreement, Vendors, Contractors, Applicants, and recipients that use non-federal funds for lobbying must submit a "Disclosure of Lobbying Activities" form (SF LLL) to report these activities and to identify the name of the individuals performing lobbying services. Contractors, applicants, and recipients must submit SF LLL as often as once per calendar quarter, depending on whether the lobbying activities change materially. If the activities change materially, the Contractors, applicants, and recipients must file an additional form for that quarter. The regulation defines Material changes to include (1) a cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; (2) a change in the person or individuals influencing or attempting to influence a covered Federal action; or (3) a change in the agency officers, employees, or Members of Congress or their employees or officers, contacted to influence or attempt to influence a covered Federal action. The SF LLL must be completed in accordance with its instructions [as amended by "Government wide Guidance for New Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/19/96)] and use of the 1997 reissuance of the form by the federal Office of Management and Budget. Note: Language in paragraph (2) herein has been modified in accordance with Section 10 of the Lobbying Disclosure Act of 1995 (P.L. 104-65, to be codified at 2 U.S.C. 1601, et seq .))
3. The undersigned shall require that the language of this certification be included in the purchasing, contracting and award documents for all vendor purchase agreements, subcontracts, or subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subcontractors, subvendors, and subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.]

The Vendor, Consultant, Contractor, Applicant, or Sub-recipient, *Barbara Swift*, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Consultant understands and agrees that the provisions of 31 U.S.C. A 3801, et seq., apply to this certification and disclosure, if any.

\_\_\_\_\_  
Signature of Vendor, Consultant, Contractor, Applicant, or Sub-recipient's Authorized Official

Revised: February 2017

*Barbara Swift, Member* Name and Title of said Authorized Official

10/13/2017 Date

CERTIFICATION REGARDING LOBBYING

11.4. CERTIFICATION REGARDING LOBBYING

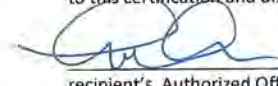
The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement. If a contractor, applicant, or recipient has used Federal appropriated funds for the covered lobbying activity, this must be disclosed to the Point of Contact in the application, bid package, or award with the City of Seattle.
2. For any federal covered action, in addition to those associated with this Agreement, Vendors, Contractors, Applicants, and recipients that use non-federal funds for lobbying must submit a "Disclosure of Lobbying Activities" form (SF LLL) to report these activities and to identify the name of the individuals performing lobbying services. Contractors, applicants, and recipients must submit SF LLL as often as once per calendar quarter, depending on whether the lobbying activities change materially. If the activities change materially, the Contractors, applicants, and recipients must file an additional form for that quarter. The regulation defines Material changes to include (1) a cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; (2) a change in the person or individuals influencing or attempting to influence a covered Federal action; or (3) a change in the agency officers, employees, or Members of Congress or their employees or officers, contacted to influence or attempt to influence a covered Federal action. The SF LLL must be completed in accordance with its instructions [as amended by "Government wide Guidance for New Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/19/96)] and use of the 1997 reissuance of the form by the federal Office of Management and Budget. Note: Language in paragraph (2) herein has been modified in accordance with Section 10 of the Lobbying Disclosure Act of 1995 (P.L. 104-65, to be codified at 2 U.S.C. 1601, *et seq.* .)]
3. The undersigned shall require that the language of this certification be included in the purchasing, contracting and award documents for all vendor purchase agreements, subcontracts, or subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subcontractors, subvendors, and subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.]

The Vendor, Consultant, Contractor, Applicant, or Sub-recipient, True North, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Consultant understands and agrees that the provisions of 31 U.S.C. A 3801, *et seq.*, apply to this certification and disclosure, if any.

 Signature of Vendor, Consultant, Contractor, Applicant, or Sub-recipient's Authorized Official

Eileen Forrester  
President Name and Title of said Authorized Official

10-3-2017 Date

# CERTIFICATION REGARDING DEBARMENT

## CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS

### 11.5. CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS

- I. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
- A. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;
  - B. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission or fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
  - C. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state, or local) with commission of any of the offenses enumerated in paragraph (I) (B) of this certification; and
  - D. Have not within a three (3) year period preceding this application/proposal had one or more public transactions (federal, state, or local) terminated for cause or default.
- II. Where the prospective primary participant is unable to certify to any of the statement

Consultant (Firm): VIA Architecture

October 11, 2017  
(Date)

  
(Signature) President or Authorized Official of Consultant

Revised: Sept 2014

**11.6. PROPOSER'S LIST—CONSULTANT CONTRACTS**

Consultant to Complete this Section	
Solicitation Number and Title:	SC-17-005 Seattle Center Monorail Stations Reconfiguration and Feasibility Study
Consultant Name:	VIA Architecture
Submittal Date:	October 17, 2017

**ATTENTION PROPOSERS:**

As required by 49 CFR Part 26, this completed form must be submitted with your proposals/submittals. Submittals provided without this form completed will be considered non-responsive and rejected.

**Instructions:**

Include your information as a Prime in the first section. Provide the information for ***ALL*** subcontractors who submitted a bid to your firm on this project, not just DBEs. Add additional sheets if necessary.

Firm Name and Address:	Swift Company LLC   3131 Western Ave, Suite M423, Seattle, WA 98121
DBE Status:	<input checked="" type="checkbox"/> Certified DBE, No: <u>D2F0000169</u> or <input type="checkbox"/> Non DBE
Age of Firm	35 Years
Annual Gross Receipts	<input type="checkbox"/> < \$500K <input type="checkbox"/> \$500K - \$1M <input checked="" type="checkbox"/> \$1M - \$2M <input type="checkbox"/> \$2M - \$5M <input type="checkbox"/> \$5M - \$7M <input type="checkbox"/> \$7M - \$10M <input type="checkbox"/> ≥\$10M

Firm Name and Address:	True North   815 S Weller, Suite 200, Seattle, WA 98104
DBE Status:	<input checked="" type="checkbox"/> Certified DBE, No: <u>D2F8218162</u> or <input type="checkbox"/> Non DBE
Age of Firm	14 Years
Annual Gross Receipts	<input type="checkbox"/> < \$500K <input type="checkbox"/> \$500K - \$1M <input checked="" type="checkbox"/> \$1M - \$2M <input type="checkbox"/> \$2M - \$5M <input type="checkbox"/> \$5M - \$7M <input type="checkbox"/> \$7M - \$10M <input type="checkbox"/> ≥\$10M

Firm Name and Address:	Acutanza STS   1514 Third Place, Kirkland, WA 98033
DBE Status:	<input checked="" type="checkbox"/> Certified DBE, No: <u>D4F0024932</u> or <input type="checkbox"/> Non DBE
Age of Firm	1 Years
Annual Gross Receipts	<input checked="" type="checkbox"/> < \$500K <input type="checkbox"/> \$500K - \$1M <input type="checkbox"/> \$1M - \$2M <input type="checkbox"/> \$2M - \$5M <input type="checkbox"/> \$5M - \$7M <input type="checkbox"/> \$7M - \$10M <input type="checkbox"/> ≥\$10M

Firm Name and Address:	Sheridan Consulting Group   3630 37th Ave W, Seattle, WA 98199
DBE Status:	<input checked="" type="checkbox"/> Certified DBE, No: <u>D2F0012755</u> or <input type="checkbox"/> Non DBE
Age of Firm	23 Years
Annual Gross Receipts	<input checked="" type="checkbox"/> < \$500K <input type="checkbox"/> \$500K - \$1M <input type="checkbox"/> \$1M - \$2M <input type="checkbox"/> \$2M - \$5M <input type="checkbox"/> \$5M - \$7M <input type="checkbox"/> \$7M - \$10M <input type="checkbox"/> ≥\$10M

Firm Name and Address:	NW Civil Engineers   17544 Midvale Ave N, Ste. 307, Shoreline, WA 98133
DBE Status:	<input type="checkbox"/> Certified DBE, No: _____ or <input checked="" type="checkbox"/> Non DBE
Age of Firm	8 Years
Annual Gross Receipts	<input checked="" type="checkbox"/> < \$500K <input type="checkbox"/> \$500K - \$1M <input type="checkbox"/> \$1M - \$2M <input type="checkbox"/> \$2M - \$5M <input type="checkbox"/> \$5M - \$7M <input type="checkbox"/> \$7M - \$10M <input type="checkbox"/> ≥\$10M

**11.6. PROPOSER'S LIST—CONSULTANT CONTRACTS**

Consultant to Complete this Section	
Solicitation Number and Title:	SC-17-005 Seattle Center Monorail Stations Reconfiguration and Feasibility Study
Consultant Name:	VIA Architecture
Submittal Date:	October 17, 2017

**ATTENTION PROPOSERS:**

As required by 49 CFR Part 26, this completed form must be submitted with your proposals/submittals. Submittals provided without this form completed will be considered non-responsive and rejected.

**Instructions:**

Include your information as a Prime in the first section. Provide the information for **ALL** subcontractors who submitted a bid to your firm on this project, not just DBEs. Add additional sheets if necessary.

Firm Name and Address:	DCW Cost Management   500 Yale Ave N, Ste 100, Seattle, WA 98109
DBE Status:	<input type="checkbox"/> Certified DBE, No: _____ or <input checked="" type="checkbox"/> Non DBE WBE #WF0023327
Age of Firm	4 Years
Annual Gross Receipts	<input checked="" type="checkbox"/> < \$500K <input type="checkbox"/> \$500K - \$1M <input type="checkbox"/> \$1M - \$2M <input type="checkbox"/> \$2M - \$5M <input type="checkbox"/> \$5M - \$7M <input type="checkbox"/> \$7M - \$10M <input type="checkbox"/> ≥\$10M

Firm Name and Address:	CH2M   1100 112th Ave NE Suite 500, Bellevue, WA 98004
DBE Status:	<input type="checkbox"/> Certified DBE, No: _____ or <input checked="" type="checkbox"/> Non DBE
Age of Firm	61 Years
Annual Gross Receipts	<input type="checkbox"/> < \$500K <input type="checkbox"/> \$500K - \$1M <input type="checkbox"/> \$1M - \$2M <input type="checkbox"/> \$2M - \$5M <input type="checkbox"/> \$5M - \$7M <input type="checkbox"/> \$7M - \$10M <input checked="" type="checkbox"/> ≥\$10M

Firm Name and Address:	Jensen Hughes   23109 55th Ave West, Mountlake Terrace, WA 98043
DBE Status:	<input type="checkbox"/> Certified DBE, No: _____ or <input checked="" type="checkbox"/> Non DBE
Age of Firm	37 Years
Annual Gross Receipts	<input type="checkbox"/> < \$500K <input type="checkbox"/> \$500K - \$1M <input type="checkbox"/> \$1M - \$2M <input type="checkbox"/> \$2M - \$5M <input type="checkbox"/> \$5M - \$7M <input type="checkbox"/> \$7M - \$10M <input checked="" type="checkbox"/> ≥\$10M

Firm Name and Address:	Lerch Bates   19515 North Creek Parkway, Suite 304 Bothell WA 98011
DBE Status:	<input type="checkbox"/> Certified DBE, No: _____ or <input checked="" type="checkbox"/> Non DBE
Age of Firm	70 Years
Annual Gross Receipts	<input type="checkbox"/> < \$500K <input type="checkbox"/> \$500K - \$1M <input type="checkbox"/> \$1M - \$2M <input type="checkbox"/> \$2M - \$5M <input type="checkbox"/> \$5M - \$7M <input type="checkbox"/> \$7M - \$10M <input checked="" type="checkbox"/> ≥\$10M

Firm Name and Address:	Fast & Epp   603 Stewart St Suite 802, Seattle, WA 98101
DBE Status:	<input type="checkbox"/> Certified DBE, No: _____ or <input checked="" type="checkbox"/> Non DBE
Age of Firm	32 Years
Annual Gross Receipts	<input type="checkbox"/> < \$500K <input type="checkbox"/> \$500K - \$1M <input type="checkbox"/> \$1M - \$2M <input type="checkbox"/> \$2M - \$5M <input checked="" type="checkbox"/> \$5M - \$7M <input type="checkbox"/> \$7M - \$10M <input type="checkbox"/> ≥\$10M

**11.7. DBE PLAN—CONSULTANT CONTRACTS**

(Inclusive of all DBEs listed at submittal. Refer to instructions on the reverse side of this form)

1. Solicitation Number and Title:	SC-17-005 Seattle Center Monorail Stations Reconfiguration and Feasibility Study
2. Prime Consultant Name:	VIA Architecture
3. Submittal/Revision Date:	October 17, 2017
4. Contract DBE Goal %:	8.3%

**DBE Plan**

List DBE firms that are part of your team. Describe the work for the firm to perform, the associated NAICS code, and percent of the total contract amount for each DBE firm. Add rows as needed. If you are a DBE firm, you may include the share of work you intend to self-perform. These percentages will be used to verify commitments on the final contract.

If you do not meet the Contract DBE Goal as outlined in the RFQ, include documentation of Good Faith Efforts as outlined in Title 49, Code of Federal Regulations (CFR) Part 26.53. Submittals with incomplete documentation or forms will be considered non-responsive and will be rejected.

Any DBE Subconsultant listed below should sign and submit a DBE Written Confirmation form as detailed in the RFQ. Make sure these forms match percentages outlined below.

These commitments will last the term of the agreement, unless otherwise approved in writing by the Seattle Department of Transportation, following 49 CFR Part 26.53

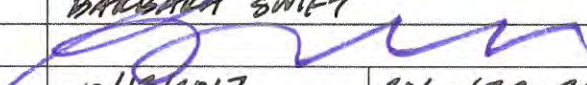
5. DBE Firm Contact Information	6. Describe Services to be Provided	7. NAICS Codes	8. DBE Cert #	9. Percentage Commitment (sub-work to overall work)
Swift Company LLC Contact: Barbara Swift 206.632.2038	Landscape Architecture and Urban Design	541 320	D2F0000169	3.70%
True North Contact: Eileen Forrester 206.332.0800	Surveying Services	541 370	D2F8218162	1.85%
Acutanza STS Contact: Jeanne Acutanza 425.429.3741	Traffic Transportation Planning	541 330	D4F0024932	2.22%
Sheridan Consulting Group Contact: Mimi Sheridan 206.270.8727	Historic Preservation	541 320	D2F0012755	1.48%
<b>10. Total Percentage Commitment:</b>				9.26%

11. Prepared by (print):	David Mueller	
12. Prepared by (signature):		
13. Preparer's Title:	Business Development Coordinator	
14. Date & Phone Number:	10/17/2017	206.812.0092

<b>To be complete by SDOT Staff</b>	
15. Federal Aid Project Number	
16. SDOT certifies that all DBE certifications are valid and the information on this form is complete and accurate:	
17. SDOT Rep Name (Print):	
18. SDOT Rep Signature:	
19. SDOT Rep Title:	
20. Date & Phone Number:	

**11.8. DBE WRITTEN CONFIRMATION**

To be considered as responsive to the referenced RFQ, complete the following form and provide as part of your submittal for each Subconsultant listed on the DBE Plan. The Percentage Commitment below must match that listed on the DBE Plan for the Subconsultant in question. Incomplete or incorrect documentation or forms will be considered non-responsive and submittals will be rejected.

Solicitation Number and Title:	SC-17-005 SEATTLE CENTER MONORAIL STUDY	
Prime Consultant Name:	VIA ARCHITECTURE	
DBE Firm Name:	SWIFT COMPANY LLC	
Prepared by (print):	BARBARA SWIFT	
Prepared by (signature):		
Date and Phone Number:	10/13/2017	206-632-2038

As an authorized representative of the Disadvantaged Business Enterprise (DBE) firm, I confirm that we have been contacted by the referenced proposer with regard to the referenced project and if the proposer is awarded the contract we will enter into an agreement with the proposer to participate in the project consistent with the information provided in the proposer's DBE Plan.

**Description of Work (include NAICS Codes):**

Landscape Architecture and Urban Design      NAICS Code: 541 320

Percentage Commitment: 3.70% %


Consultant's Name: Barbara Swift, Swift Company LLC

Revised: July 2014



**11.8. DBE WRITTEN CONFIRMATION**

To be considered as responsive to the referenced RFQ, complete the following form and provide as part of your submittal for each Subconsultant listed on the DBE Plan. The Percentage Commitment below must match that listed on the DBE Plan for the Subconsultant in question. Incomplete or incorrect documentation or forms will be considered non-responsive and submittals will be rejected.

Solicitation Number and Title:	SC-17-005 Seattle Center Monorail Study
Prime Consultant Name:	VIA Architecture
DBE Firm Name:	Acutanza STS
Prepared by (print):	Jeanne Acutanza
Prepared by (signature):	
Date and Phone Number:	10/16/2017   425-449-3743

As an authorized representative of the Disadvantaged Business Enterprise (DBE) firm, I confirm that we have been contacted by the referenced proposer with regard to the referenced project and if the proposer is awarded the contract we will enter into an agreement with the proposer to participate in the project consistent with the information provided in the proposer's DBE Plan.

**Description of Work (include NAICS Codes):**

Traffic Transportation Planning

NAICS Code: 541330

**Percentage Commitment:** 2.22% %

**Consultant's Name:** Jeanne Acutanza, Acutanza STS

**DBE WRITTEN CONFIRMATION**

**11.8. DBE WRITTEN CONFIRMATION**

To be considered as responsive to the referenced RFQ, complete the following form and provide as part of your submittal for each Subconsultant listed on the DBE Plan. The Percentage Commitment below must match that listed on the DBE Plan for the Subconsultant in question. Incomplete or incorrect documentation or forms will be considered non-responsive and submittals will be rejected.

<b>Solicitation Number and Title:</b>	SC-17-005 Seattle Center Monorail Stations Reconfiguration and Feasibility Study	
<b>Prime Consultant Name:</b>	VIA Architecture	
<b>DBE Firm Name:</b>	Sheridan Consulting Group	
<b>Prepared by (print):</b>	Mimi Sheridan	
<b>Prepared by (signature):</b>	Electronic Signature:	MIMI SHERIDAN
<b>Date and Phone Number:</b>	10/17/2017	206.270.8727

As an authorized representative of the Disadvantaged Business Enterprise (DBE) firm, I confirm that we have been contacted by the referenced proposer with regard to the referenced project and if the proposer is awarded the contract we will enter into an agreement with the proposer to participate in the project consistent with the information provided in the proposer’s DBE Plan.

**Description of Work (include NAICS Codes):**

Historic Preservation

NAICS Code: 541320

**Percentage Commitment:** 1.48% %

**Consultant’s Name:** Mimi Sheridan, Sheridan Consulting Group