

Seattle Department of Transportation

EAST MARGINAL WAY CORRIDOR IMPROVEMENT PROJECT



Prepared for
US Department of Transportation
Infrastructure for Rebuilding America
(INFRA) Grant FY2020

Submitted by



Seattle
Department of
Transportation

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Project Sponsor	Seattle Department of Transportation
Project Name	East Marginal Way Corridor Improvement Project
Was an INFRA application for this project submitted previously?	No
INFRA Request	\$13.0 million
Total Federal Funding (including INFRA)	\$18.3 million
Total Non-Federal Funding	\$18.0 million
Future Eligible Project Costs	\$36.3 million
Previously Incurred Project Costs	\$2.0 million
Total Project Costs	\$38.3 million
Are matching funds restricted to a specific project component? If so, which one?	Yes. Certain local sources are tied to specific components as detailed in Section 4.
Approximately how much of the estimated future eligible project costs will be spent on components of the project currently located on National Highway Freight Network (NHFN)?	\$0
Approximately how much of the estimated future eligible project costs will be spent on components of the project currently located on National Highway System (NHS)?	\$36.3 million
Approximately how much of the estimated future eligible project costs will be spent on components constituting railway-highway grade crossing or grade separation projects?	\$2.3 million
Approximately how much of the estimated future eligible project costs will be spent on components constituting intermodal or freight rail projects, or freight projects within the boundaries of a public or private freight rail, water (including ports), or intermodal facility?	\$2.3 million
State(s) in which the project is located	Washington
Small or large project	Small
Urbanized Area in which project is located, if applicable	Seattle, Washington
Population of Urbanized Area	3,059,393 (2010 Census)
Is the Project located (entirely or partially) in an Opportunity Zone?	Yes (2011–2015 Low-Income Community Census Tract: 53033009300)
Is the Project currently programmed in the: <ul style="list-style-type: none"> • TIP • STIP • MPO Long Range Transportation Plan • State Long Range Transportation Plan • State Freight Plan 	<ul style="list-style-type: none"> • Yes • Yes • Yes (programmatically included; MPO does not individually list roadway improvement projects) • No, State does not include project programming • No, State Freight Plan does not list individual projects

1. PROJECT DESCRIPTION

The East Marginal Way Corridor is a major freight corridor serving as the sole – or primary – access route to three major seaport terminals, two freight railyards (Union Pacific and Burlington Northern Santa Fe Railroads), and the United States Coast Guard Puget Sound Sector Base. As Seattle and the Northwest region continue to grow rapidly, improvements to freight mobility and safety along this corridor are essential to promote regional, national, and international economic competitiveness.

E Marginal Way S acts as a critical last-mile connector on the National Highway System for both standard and over-sized freight trucks carrying goods and flammable cargo in and out of the major seaport terminals and rail yards through the national supply chain. For Seattle residents in the surrounding South of Downtown (SODO) and West Seattle neighborhoods, the corridor is important for commuters traveling north to downtown by car or bike. However, the East Marginal Way Corridor is in dire need of state of good repair roadway improvements, innovative technology upgrades, and lifesaving safety enhancements that remove conflicts between modes and provide for separate and predictable travel for people walking, biking and driving in cars and freight trucks.

To fortify the corridor’s position as a reliable freight connection, the Seattle Department of Transportation (SDOT) is respectfully requesting \$13 million in FY20 INFRA funds to complete the first set of critical improvements to the Corridor, known as the East Marginal Way Corridor Improvement Project (INFRA Project).

1.1 WHAT INFRA FUNDS WILL SUPPORT

Through this INFRA Project (Figure 1), these initial improvements will:

- Upgrade the E Marginal Way S roadway to Heavy Haul Network standards from S Massachusetts St to S Hanford St to enhance efficient freight flow and reduce operations and maintenance (O&M) costs for shippers
- Remove conflict between modes, and construct a 2-way protected bike lane between S Atlantic St and S Spokane St to eliminate fatalities, increase visibility, and protect the 900+ daily bicycle riders that use this corridor for commuting
- Construct adaptive traffic signals to work dynamically together using Split Cycle Offset Optimization Technique (SCOOT) technology to enhance safety and improve traffic flow at several of the city’s busiest freight intersections
- Relocate the railroad tracks at S Hanford St to provide more space between truck traffic and the bicycle facility
- Rebuild the sidewalk on the west side of E Marginal Way S adjacent to the roadway reconstruction north of S Hanford St
- Include adequate lighting and appropriate landscaping along the corridor to improve safety

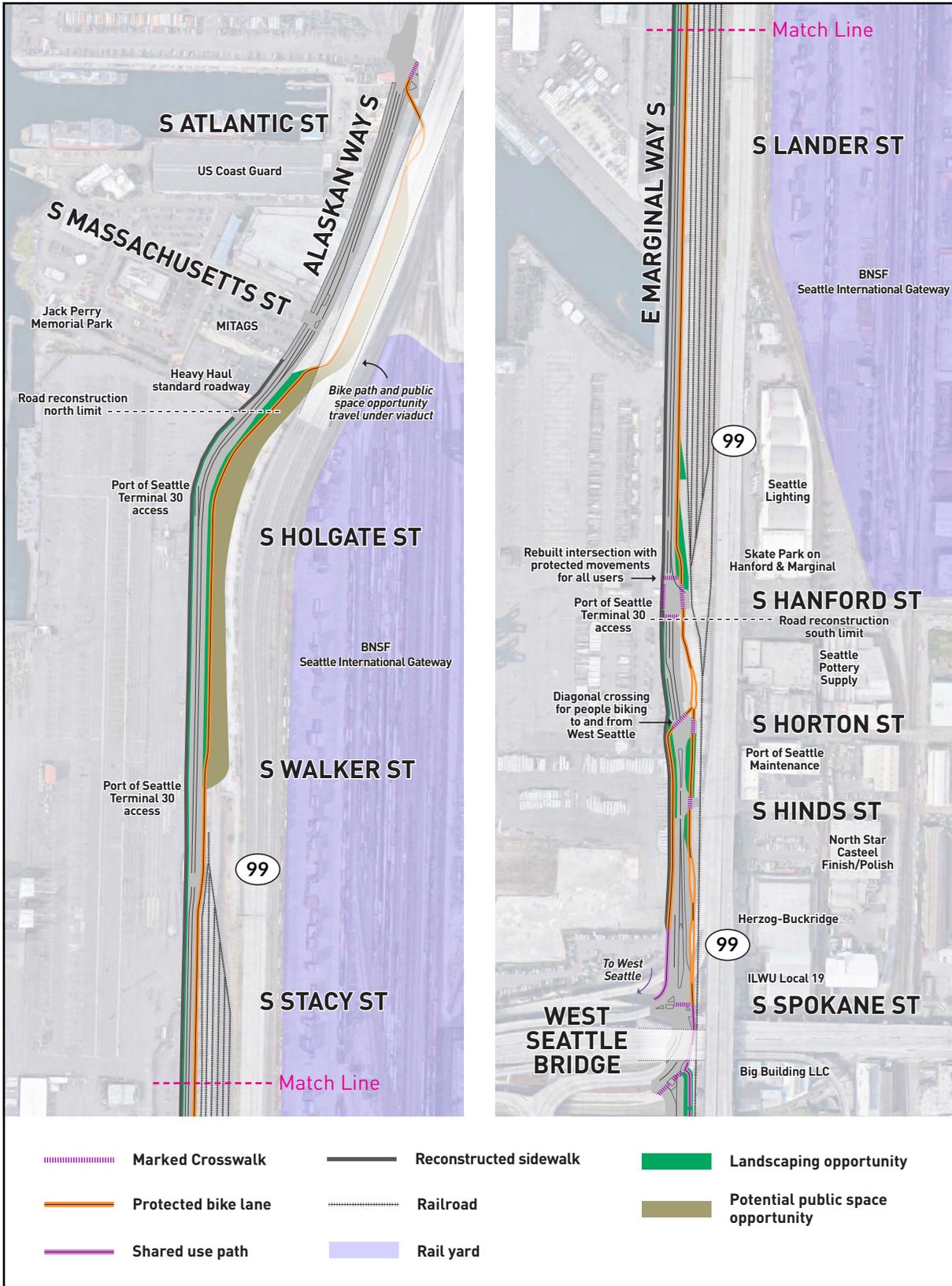


Figure 1: Project Map

This project aims to complete three crucial transportation goals:



Improve freight mobility and access



Promote efficiencies in freight movements



Reduce the potential for fatalities by constructing separated facilities for people walking, people biking, and heavy-haul freight trucks

Currently, the East Marginal Way Corridor between S Massachusetts St and S Spokane St carries more than 9,666 vehicles in average weekday daily traffic with more than 3,500 trucks a day according to 2019. E Marginal Way S is designated as part of Seattle’s Heavy Haul Network, where overweight vehicles are permitted to operate. This network was developed in partnership with the Northwest Seaport Alliance to create a more competitive international gateway and improve the livelihood of truck drivers by raising the truck weight limit so heavier cargo containers can be transported between the Port of Seattle, industrial businesses, and rail yards.

In addition to heavy vehicles, the Project corridor also provides connections for an average of 925 people who commute by bicycle to and from downtown Seattle. The large amount of multimodal traffic, particularly freight and bicycle vehicles, not only creates daily congestion and delays, but presents extremely unpredictable weaving and turning conflicts due to significant speed differentials between bicycles and heavy, fast-moving freight and auto traffic, contributing to inefficient and unpredictable traffic flow and behaviors along E Marginal Way S. The primary user groups on this corridor have no viable alternative routes. For truck drivers, E Marginal Way S provides the only direct access – or in many cases the

only access – to their destination. For people on bikes, E Marginal Way S is often the only connection between their home in West Seattle and their jobs in downtown Seattle or the Duwamish Manufacturing/Industrial Center (MIC). This Project will result in benefits for pedestrians as cyclists are moved into a fully protected separated bike lane and intersection crossings are improved; however, the core of this Project focuses on the critical safety and efficiency benefits for freight movement along this corridor.

As shown in Figure 2, the existing roadway is not designed to separate freight trucks and bicycles. This INFRA Project will increase safety by redesigning the roadway and constructing a separated 2-way protected bike lane, while also widening lanes for trucks (Figure 3). These enhancements will significantly increase visibility and predictability for all roadway users in the corridor and increase the system’s reliability.

The INFRA Project will address existing congested intersections within the Project limits, including constructing new adaptive signals to improve the traffic flow and help drivers respond more quickly to traffic conditions, reconfiguring the traffic signal at S Hanford St to provide protected turning movements, and relocating the existing railroad tracks at S Hanford St in order to continue the protected bike lane through the intersection (Figure 4) and provide separation of users for improved safety and visibility.

Additionally, the INFRA Project will dramatically rehabilitate the deteriorating roadway (Figure 4 and Figure 5) by upgrading the pavement between S Massachusetts St through the intersection at S Hanford St. New pavement will be constructed to Heavy Haul Network standards with a 50-year useful life.

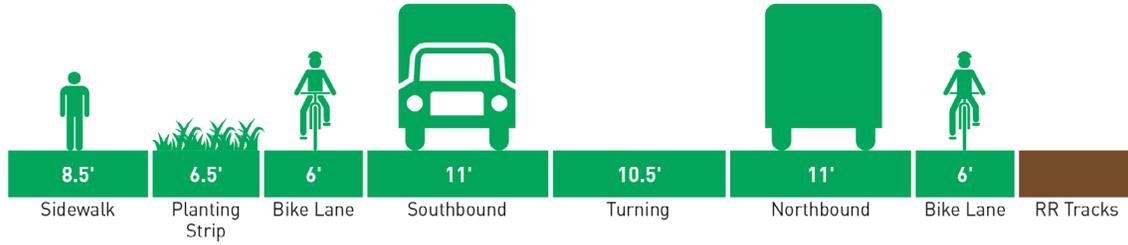


Figure 2: Existing Roadway Cross Section (looking north)

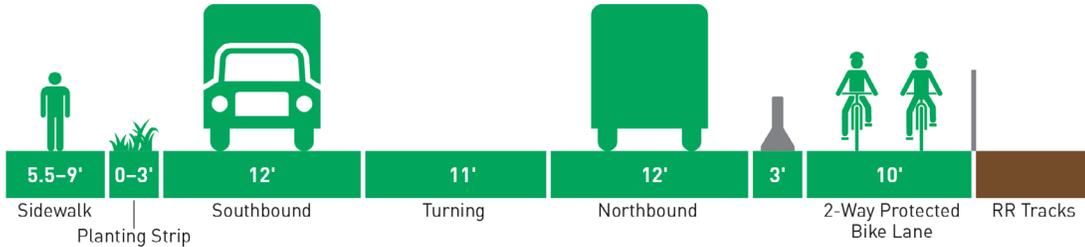


Figure 3: Proposed Roadway Cross Section (looking north)



Figure 4: Deteriorated Roadway Conditions along the Project Corridor

In Washington, the Heavy Haul Network standards were created to ensure designated roadways that carry weights in excess of standard roadway weight requirements – typically to and from ports and intermodal freight terminals – are designed to be able to withstand these additional stressors to safely accommodate oversized vehicles. These standards ensure the roadway will be able to handle the excessive weights and still maintain a 50-year useful life, reducing O&M costs to the roadway operator and freight shippers. The standards will minimize potholes that cause vehicles to reduce their speed or weave in and out of lanes to avoid rough conditions, increasing safety and travel times.¹

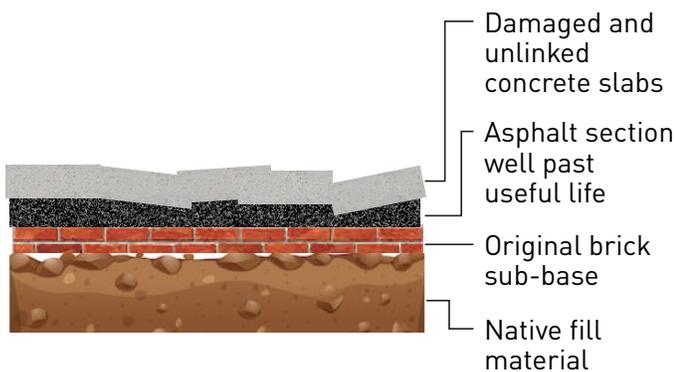


Figure 5: Deteriorated Conditions on Existing Pavement

1.2 PROJECT BACKGROUND AND RELATED IMPROVEMENTS

The need for improvements to the East Marginal Way Corridor has been documented in studies over several decades. The Region’s 1988 *Freight Action Strategy for the Everett-Seattle-Tacoma*

1. Washington State Legislature. RCW 46.44.0915. Heavy haul industrial corridors. <http://leg.wa.gov/>

Corridor (FAST Corridor) Plan identified major traffic and congestion chokepoints that were impeding access to the region's three major seaports and resulted in the completion of a grade separation of tracks to Terminals 5 and 18, Union Pacific, Burlington North, and Whatcom yards (see Figure 9: Project Vicinity Map) to support freight mobility to industrial centers. While there are other freight corridors within this region, E Marginal Way S has been continually prioritized due to its position as a critical last-mile connector and vital route for over-sized trucks or those carrying flammable cargo.

E Marginal Way S is highly ranked within *SDOT's and the Port of Seattle's Industrial Areas Freight Access Project 2015 Recommended Priority Project List*. The East Marginal Way Project is also a high-priority project in the *Move Seattle: 10-Year Strategic Vision for Transportation (2015)*, a plan that lays out how Seattle will work to create a safe, interconnected, vibrant, affordable, and innovative city. The Move Seattle strategic plan evaluated the East Marginal Way Project as a City priority calling for implementation by 2024, not only because of its safety and multimodal access benefits, but primarily because of its critical role to improve the movement of goods and maintain a critical corridor within the regional freight network. In 2015, Seattle voters approved the Levy to Move Seattle, which included a portion of funding for E Marginal Way S improvements.

The larger East Marginal Way Project has been segmented into multiple phases of improvements (see Figure 9: Project Vicinity Map) to achieve timely project delivery while managing funding challenges. This INFRA Project will rebuild the E Marginal Way S roadway from just south of S Massachusetts St to just south of S Hanford St to conform to Heavy Haul standards. The Heavy Haul standards will result in a smoother ride for drivers, causing

faster travel times all vehicles and reduced O&M vehicle costs, and reduced O&M costs for the City maintaining the corridor.

1.3 HOW THE PROJECT WILL ADDRESS TRANSPORTATION CHALLENGES

This INFRA Project will address three primary transportation challenges that affect freight movement and safe travel along the Corridor: 1) Cyclist and Driver Safety; 2) Freight Mobility and Increasing Demand; and 3) Traffic Operations.

SAFETY

Roadway users have experienced 125 crashes over a 10-year period along the the East Marginal Way Corridor. Of these crashes, 42 were classified as injury crashes, resulting in 52 people injured and three people killed. Crash types included 11 turning related collisions, 17 rear-end collisions, 31 sideswipe collisions, 14 collisions with bicyclists, 2 collisions with pedestrians, and 50 collisions classified as "other" or "no cause given." To reduce these alarming numbers, the INFRA Project will improve safety for all users by:

- Repaving the roadway to eliminate unpredictable travel from weaving and sudden stops due to pothole and puddle avoidance and debris in the bike lane
- Improving legends and channelization markings to increase predictability
- Installing adaptive signals to create smooth-flowing traffic "platoons," which typically reduce crashes for all users by an average of approximately 15%
- Constructing separated bike lanes from vehicular traffic while maintaining the west sidewalk for pedestrians

Separating people on bicycles from the adjacent truck and car traffic is expected to reduce risk by increasing visibility, movement predictability, and creating smoother traffic flows, which is a serious need in this area. Sixteen crashes involving cyclists and pedestrians occurred between S Spokane St and S Atlantic St during the past 10-year period resulting in injuries, and in two cases fatalities, including an employee at Expeditors, a global freight firm based in Seattle. This INFRA Project would fully separate bicyclists from motor vehicles (separated lane and rigid barrier) and revise operations at the intersections where crashes occurred on a corridor that has recently claimed the life of a bicyclist.



Figure 6: Officer at Scene of Fatal Cyclist Crash along Project Corridor



Figure 7: Existing Conditions of a Cyclists Traveling Amidst Freight Traffic

FREIGHT MOBILITY AND INCREASING DEMAND

As the roadway’s existing pavement reaches the point of failure and continues to impede freight flow along this critical Heavy Haul Network truck route, a primary purpose of the INFRA Project is to avoid the need for the intermittent closures of this critical freight corridor. The corridor is too

important to close in its entirety, meaning that without the roadway improvements planned in this Project, SDOT must continually implement costly short-term pavement fixes to maintain the roadway in an operable condition. This Project will result in \$432,000 in operating and maintenance savings to SDOT over a 30-year period, and \$149 million over the same period in vehicle operating and maintenance savings to freight shippers who will benefit from the enhanced roadway conditions at Heavy Haul standards. Pavement degradation and outdated intersection designs, ruts, potholes, small curb radii, and outdated signals slow all travelers, but especially freight haulers. The Project would specifically avoid detours that would cost trucking companies an estimated 160 to 210 hours per day (approximately 5,000 trips per day with an average detour time of 2 minutes per trip) from freight diversions onto side streets or other parts of the network. Keeping E Marginal Way S fully operational will mitigate the effects of freight on the surrounding communities by eliminating the need for diversions and cut-throughs, as truckers seek reliable access to seaport terminals, intermodal facilities, and other area freight centers.

TRAFFIC OPERATIONS

In addition to freight traffic, the East Marginal Way Corridor also carries large volumes of non-motorized travelers (34,000 people on bikes each month) and more than 9,650 vehicles per day. Reconstruction of the corridor via this INFRA Project addresses the needs of all modes with new, separated bicycle facilities, sidewalk and pedestrian crossing upgrades, and traffic signal improvements that will make traffic movements more predictable. These improvements will reduce auto travel times for commuters traveling to major employers along the corridor, military personnel accessing the major Coast Guard facility, and other general-purpose traffic traveling to sites along the nearby State Route (SR) 99 or SR 509 corridors by 10 seconds on average.



Figure 8: Freight Context Map

1.4 REGIONAL AND NATIONAL SIGNIFICANCE

E Marginal Way S lies just south of downtown Seattle within the regionally designated Duwamish Manufacturing/Industrial Center, (MIC) established in 2002 to ensure that adequate accessible industrial land is available to promote a diversified employment base and sustain Seattle's contribution to regional high-wage job growth. The Duwamish Manufacturing/Industrial Center (MIC) is one of the largest and most intensely developed manufacturing and industrial areas in the Pacific Northwest, receiving and distributing goods via roadway, water, rail and air.

As part of the Northwest Seaport Alliance (along with the Port of Tacoma), the Port of Seattle supports regional and national growth and is a driving force in the local, regional, and national economy. The Northwest Seaport Alliance (NWSA) is the 4th largest port in the country by export value and by twenty-foot equivalent units (TEUs). It also ranks among the Top 50 busiest container ports in the world. Directly and indirectly, the Port's marine cargo division supports a combined \$138.1 billion in

economic activity, equivalent to one-third of Washington state's gross state product. The Port also supports more than 48,000 jobs, including 18,900 direct jobs, and they produce \$379 million in state and local taxes annually. Three Port facilities have direct ingress/egress from the portion of the East Marginal Way Corridor improved through this INFRA project.

By providing safer, separated facilities directly to the Port of Seattle, this INFRA project will help maintain the SODO area's economic vitality, as well as the Port of Seattle's ability to move containers between sea and overland routes. It will allow businesses in Washington to effectively compete in regional and global markets. The proposed improvements will allow E Marginal Way S to serve reduced freight travel times, improved safety along a route known for freight-bike collisions, and increased reliability stemming from congestion relief and more predictable traffic flow – all of which will continue to benefit the Pacific Northwest farmers and manufacturers who are the biggest beneficiaries of port activity. As shown in the Freight Context Map, the Project's position is critical to regional, national, and global freight movement.

2. PROJECT LOCATION

The Project is located within the Seattle, Washington, Urbanized Area (UZA). The Seattle UZA had a 2010 Decennial Census population of 3,059,393 and 1,010 UZA square miles. It is also situated within the regionally designated Duwamish MIC, the region's largest and densest MIC, and includes a Designated Opportunity Zone, which offers business and investors tax incentives to invest in new development and industry in the area.

2.1 PROJECT COORDINATES

Northern Boundaries: Latitude 47°35'26.397"N | Longitude 122°20'14.27"W

Southern Boundaries: Latitude 47°34'15.89"N | Longitude 122°20'21.97"W



Figure 9: Project Vicinity Map

3. PROJECT PARTIES

This INFRA Project exemplifies a coordinated effort by the **City of Seattle, Port of Seattle, State of Washington**, and numerous **public advocacy groups** to complete this priority project in the region to enhance the safety and efficiency of freight and commuter movement, as well as pedestrian and bicycle activities.

PROJECT SPONSOR

The City of Seattle’s Department of Transportation (SDOT) will lead this work as the Project Sponsor. We are responsible for the maintenance of the City’s transportation systems, including roads, bridges and other roadway structures, signals and right-of-way permitting. The agency is funded primarily by general taxes supplemented by fees, partnership funding and a voter-approved property tax levy; our budget in 2019 was \$609 million.

We have a long history of delivering successful capital projects, including the South Lander Street Grade Separation and Railroad Safety Project, which received federal FASTLANE funding in 2016, and was the first funded project in the nation to start construction. We have continually proven ourselves to be good stewards of federal funding and are well versed in the reporting requirements associated with federal grants.

We are also responsible for the City’s Vision Zero campaign, with a goal of zero traffic deaths and serious injuries by 2030. This Project is an important part of SDOT’s multimodal improvements to eliminate fatalities through the Vision Zero initiative.

PROJECT PARTNERS



Port of Seattle: The Port of Seattle, founded by King County voters in 1911 as a special purpose government to promote economic development and trade in the region, has been a crucial partner of SDOT to design the most effective East Marginal Way Project possible to support its customers in the enhancement of safe and efficient freight movement throughout this corridor. The Port has committed \$5.0 million in funds to complete this Project Phase.



Washington State Department of Transportation (WSDOT) will also be an important partner in the completion of this project. WSDOT serves as the lead environmental agency for the State and works closely with SDOT to complete all required approvals and will issue the Construction Permit that allows for work completed under a WSDOT structure. SDOT and WSDOT will also enter into a Maintenance Agreement to allow SDOT to cover all maintenance and preservation responsibilities under SR 99 including fence repair, graffiti removal, homeless removal and cleanup, landscape, trail sweeping, snow and ice removal, and pavement maintenance.



The Washington State Freight Mobility Strategic Investment Board (FMSIB) has created a comprehensive and coordinated state program to facilitate freight movement between and

among local, national and international markets that enhance trade opportunities. The Board is also charged with finding solutions that lessen the impact of the movement of freight on local communities. This Project has been selected as [a priority project of FMSIB](#) and will receive \$3.3 million in funding to be used as local match to this grant.



The Washington State Transportation Improvement Board (TIB) was created by the Washington Legislature to foster state investment in transportation through the distribution of grants to local applicants with revenues collected from a set-aside of the State's gas taxes.

TIB selected the East Marginal Way Project to receive \$3.0 million in TIB funds through its competitive [FY20 Urban Arterial Program](#). These funds will be contributed towards the local match. TIB is in support of the Project elements being requested in this application, though these funds are specifically dedicated to construction of the bicycle facility and signal elements.

RAILROADS PARTNERS

We will work closely with BNSF and Union Pacific Railroad to coordinate any required permits needed to complete work close to their railroad, particularly in the case of UP, where the relocation of a portion of their track is being recommended at S Hanford St.

KEY STAKEHOLDERS

Through its public outreach efforts, we have worked closely with a long list of public stakeholders to support this project. These include:

Departments and Agencies

- Seattle Bicycle Advisory Board
- Seattle Pedestrian Advisory Board
- Seattle Freight Advisory Board

Business and Neighborhoods Groups

- SODO Business Improvement Area
- Duwamish Transportation Management Association
- Duwamish Valley Safe Streets
- Georgetown Merchants Association

Project Neighbors

- Port of Seattle/Northwest Seaport Alliance
- Businesses along E Marginal Way S

Interest Groups

- West Seattle Bike Connections
- Cascade Bicycle Club
- Feet First
- Marginal Way Skate Park at Hanford and Marginal
- Bemis Building

4. GRANT FUNDS, SOURCES AND USES OF PROJECT FUNDS

4.1 PREVIOUSLY INCURRED AND FUTURE ELIGIBLE COSTS

We have previously incurred \$2.04 million for planning and design on this INFRA Project prior to this application's submittal. Future eligible costs total \$36.33 million, which covers final design, right-of-way, and construction, for a total project cost of \$38.37 million.

4.2 SOURCE AND AMOUNT OF FUNDS FOR FUTURE ELIGIBLE PROJECT COSTS

Approximately half of the future eligible project costs are anticipated to come from non-Federal sources consisting of \$17.9 million or approximately 49%. The total Federal share is approximately 51%, which will be derived from INFRA grant funds and Federal Highway Administration (FHWA) funds. (See breakdown in Table 1).

Levy to Move Seattle Funds – This Project will use funds from the [Levy to Move Seattle](#), a 9-year, \$930 million that was approved by voters in 2015. The levy provides 30% of the City's transportation budget and is dedicated to taking care of both necessary state of good repair projects as well as investing in strategic transportation improvements to enhance the movement of goods and people, like this INFRA Project.

Urban Arterial Program – The Washington State TIB oversees several grant programs, including the [Urban Arterial Program](#), which has dedicated funding to complete this INFRA Project. These funds are applied for on a competitive basis and are awarded to projects that demonstrate a commitment to safety, growth and development,

mobility, and enhancing physical conditions. We have secured \$3.0 million in these funds to be used for design and construction.

Table 1: Source and Amount of Funds for Future Eligible Project Costs*

Source	Amount (\$000s)	% of Total Project Cost
TIB	\$2,992	8%
Move Seattle Levy	\$5,788	16%
Port of Seattle	\$5,000	14%
Seattle Public Utilities	\$884	2%
FMSIB	\$3,300	9%
Subtotal Non-Federal Funds	\$17,965	49%
FHWA Design Grant	\$3,366	9%
PSRC FHWA Construction Grant	\$2,000	6%
INFRA Request	\$13,000	36%
Subtotal Federal Funds	\$18,366	51%
Total	\$36,330	100%

4.3 DOCUMENTATION OF FUNDING COMMITMENTS

Puget Sound Regional Council (PSRC) – PSRC is the Metropolitan Planning Organization for the Greater Seattle area. They allocate Federal Highway Administration funds that have been apportioned to the four-county Seattle region, funding a variety of roadway, transit, and non-motorized needs. Federal aid is awarded through competitive grants, and Seattle has won two awards for E Marginal Way S. A \$2.0 million Construction grant is dedicated to the bicycle facilities and associated intersection improvements, while a \$4.0 million Preliminary Engineering grant is dedicated to design work for the heavy haul reconstruction and other Project elements.

4.4 PROJECT BUDGET

Table 2 shows sources and uses of Project funds by year. INFRA grant funds are being used solely for construction.

Table 3 shows how the three primary funding sources categories (non-federal, INFRA, and other federal, will be used for each major project cost category.

4.5 CONTINGENCY AMOUNTS FOR UNANTICIPATED COST INCREASES

This Project includes a 15% construction contingency in addition to a 20% allowance at this phase of the design process to ensure the Project Budget has reserve funds. If actual cost escalations exceed contingency funds, the Seattle Department of Transportation is committed to covering these additional costs with local funds.

Table 2: Project Cash Flow (\$000s)*

	Previously Incurred	Future Eligible						Future Eligible Cost Subtotal	Total Project Costs
	Q1 2020 & Prior	2020	2021	2022	2023	2024			
Planning	\$1,025	\$0	\$0	\$0	\$0	\$0	\$0	\$1,025	
Design	\$1,018	\$3,817	\$1,063	\$0	\$0	\$0	\$4,880	\$5,898	
ROW	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Construction	\$0	\$0	\$0	\$13,361	\$13,090	\$5,000	\$31,451	\$31,451	
Subtotal of Uses	\$2,043	\$3,817	\$1,063	\$13,361	\$13,090	\$5,000	\$36,330	\$38,374	
FHWA Design Grant	\$634	\$2,891	\$475	\$0	\$0	\$0	\$3,366	\$4,000	
TIB	\$8	\$217	\$100	\$2,675	\$0	\$0	\$2,992	\$3,000	
Move Seattle Levy	\$1,314	\$112	\$200	\$3,607	\$1,620	\$249	\$5,788	\$7,102	
Port of Seattle	\$50	\$0	\$0	\$1,000	\$2,000	\$2,000	\$5,000	\$5,050	
Seattle Public Utilities	\$37	\$596	\$288	\$0	\$0	\$0	\$884	\$921	
FMSIB	\$0	\$0	\$0	\$300	\$2,000	\$1,000	\$3,300	\$3,300	
PSRC FHWA Grant	\$0	\$0	\$0	\$1,000	\$1,000	\$0	\$2,000	\$2,000	
INFRA Grant	\$0	\$0	\$0	\$4,779	\$6,470	\$1,751	\$13,000	\$13,000	
Total	\$2,043	\$3,817	\$1,063	\$13,361	\$13,090	\$5,000	\$36,330	\$38,374	

Table 3: Future Funding Sources by Project Phase, in Dollars (\$000s) and Percentages*

	Planning & Design	Right-of-way	Construction	Total
INFRA	\$0	\$0	\$13,000	\$13,000
Other Federal	\$3,366	\$0	\$2,000	\$5,366
Non-Federal	\$1,514	\$0	\$16,450.7	\$17,965
Total	\$4,880	\$0	\$31,450.7	\$36,330
INFRA	0%	0%	41%	36%
Other Federal	69%	0%	7%	15%
Non-Federal	31%	0%	52%	49%
Total	100%	0%	100%	100%

* Number may not add up due to rounding

5. MERIT CRITERIA

5.1 CRITERIA #1 – SUPPORT FOR NATIONAL OR REGIONAL ECONOMIC VITALITY

Washington State is the most trade-dependent state in the nation, and Seattle is at the center of that trade economy. Currently, 40% of all jobs in Washington are tied to freight-related activity (see Figure 10).² This INFRA Project will continue to support regional and national economic vitality by enabling the necessary state of good repair on a critical freight corridor that provides sole access or primary access for major Port terminals, two major railyards, and a national/international military facility.

E Marginal Way S is identified as a priority route by the US Departments of Transportation and Defense, Washington State, the joint City of Seattle/Port of Seattle Heavy Haul Network, and for the City’s over-dimensional/over-weight load routing. It provides direct access to Port Terminals 25, 30, and 46, and it also serves the vast majority of truck traffic from Terminals 5 and 18 (shown previously in Figure 9: Project Vicinity Map).

The Project results in numerous economic benefits. For example, significant travel time savings will be produced due to a major reduction in freight and vehicle delay during peak periods, benefiting the local, regional, state, and national economy. The Port of Seattle estimates that just one hour of truck delay costs the tax base \$114 per truck.³ Based on forecast

2. https://www.seattle.gov/Documents/Departments/SDOT/About/DocumentLibrary/FMP_Report_2016E.pdf

3. South Lander Street Grade Separation Project Social Effects and Environmental Justice Discipline Report, SDOT 2017.



Figure 10: Puget Sound Freight-Related Jobs (Source: City of Seattle Freight Master Plan, 2016)

analysis on trips and signal timing, the INFRA Project will eliminate 152,504 hours of truck delay and 183,504 hours of personal vehicle delay over the 30-year evaluation period for the benefit cost analysis.

The majority of freight for the country’s northwestern quadrant passes through NWSA ports (Figure 11).⁴ Without the repairs being completed, the corridor will degrade to an unusable state, resulting in its intermittent closure for repairs.

This INFRA Project is estimated to create 314 direct and indirect jobs and 178 induced jobs during construction, which will result in a substantial increase in heavy and civil construction employment in a substantial increase in heavy and civil construction employment in the area. The reconstruction of

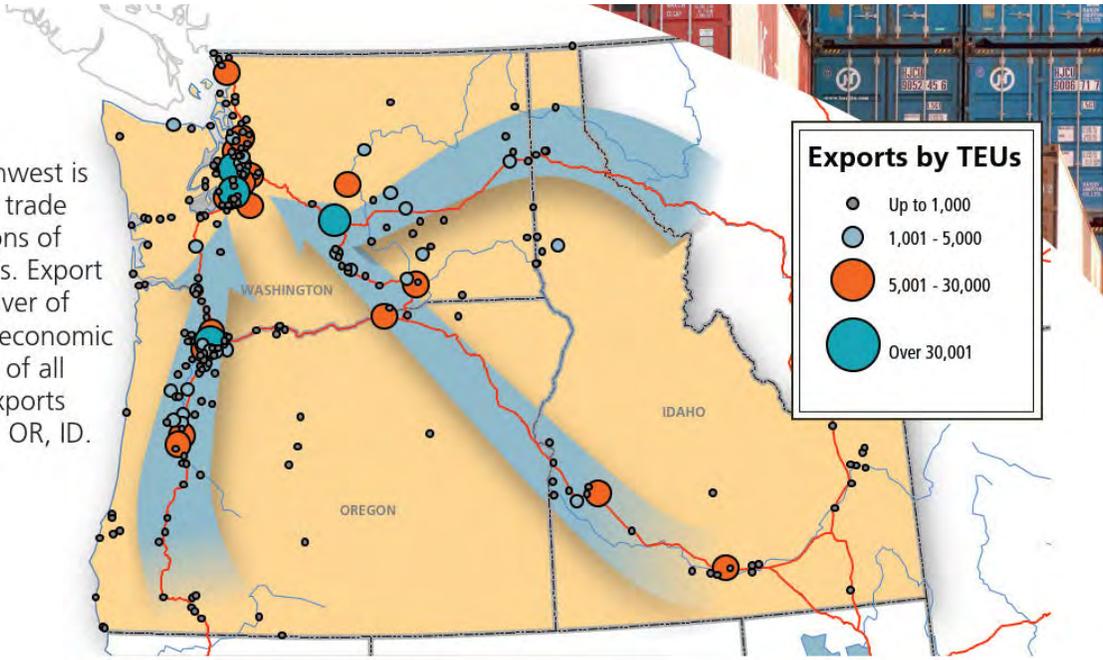
E Marginal Way S to meet Heavy Haul Network design standards will also allow efficient trade routes for overweight international freight. These added benefits will continue to support and fuel the northwest economy and add even more value to the closest US port for major Pacific Rim partners.

“

The Northwest Seaport Alliance, which combined the previously competitive ports of Seattle and Tacoma has been a great leap forward for the Puget Sound Region. E-Commerce’s impact on the industrial world has helped industrial vacancy in the Puget Sound market to drop to under three percent.

– Colliers Seattle Senior VP

The Pacific Northwest is one of the most trade dependent regions of the United States. Export trade is a key driver of job growth and economic prosperity. 75% of all NWSA harbor exports originate in WA, OR, ID.



Locations of PNW export companies by container volume

Figure 11: Northwest Seaport Alliance (NWSA) Ports Freight Flow through the Norhtwest

4. Delivering the goods for Pacific Northwest Exporters, The NWSA. 2019.

The NWSA is one of the closest US ports to major trading partners in the Pacific Rim, with their largest trading partners including China/Hong Kong, Japan, and the Republic of Korea.⁵ In 2017, the NWSA handled more than 3.7 million TEUs while supporting 58,400 jobs, contributing nearly \$12.4 billion in business output, producing more than \$4 billion in labor income, and generating \$135.9 million in state taxes from container shipping, the largest driver of economic impact.⁶ Additionally, the NWSA is America's leading gateway for refrigerated exports – fruits, vegetables and other perishable commodities, resulting in \$9.9 billion in market value of crops flowing both nationally and internationally.⁷ Agriculture and food processing provide over 164,000 jobs in Washington; and **94% of these farms are small farms in rural areas, which depend on Seattle to move these goods through the freight system.**

In 2018, annual container volume at the Port of Seattle's Terminal 18 hit one million TEUs, a record-breaking figure for Washington State.⁸ The Puget Sound industrial market is one of the biggest beneficiaries of port activity. Industrial vacancies hover around 3%, compared to 7% nationally in 2019. This is important to show that the area's real estate is in high demand and that the industry has faith in the future of the area, resulting in continued demand along the Project corridor. With the projected continued upward movement for cargo shipping within the NWSA, and the projected growth in associated freight traffic, the importance of the INFRA project highlights the significant benefits in store for the State, the Port, and the City.

The East Marginal Way Corridor offers trucks a more direct route than I-5 for shipments traveling to key destinations along SR 99 to the north (such as the Ballard-Interbay Manufacturing Center) or points along SR 509 to the south (such as the Kent Valley, which provides warehousing for much of the greater region). It is a resilient economic corridor that continues to evolve to meet market demands. For example, Terminal 30 now only serves international freight to meet the high demand in the region, and Terminal 106 is currently slated for redevelopment to expand the industrial market. The corridor will also be affected by the potential transformation of Terminal 46 to a cruise ship terminal just north of the Project area. This will affect the potential users along the corridor. Once this Project is completed, the route, which also provides system redundancy for shippers when congestion affects I-5, 4th Ave, and other freight arterials, will provide a frictionless north to south route designed to withstand heavy haul freight trucks at high volumes.

The Project area also includes a Designated Opportunity Zone (Census Tract: 53033009300). In 2019, private developers broke ground on the City's first Opportunity Zone project in Pioneer Square, just north of the Project area. The City is committed to realizing the economic potential of these zones and will promote new development and industry in the Project area.

5. 7 U.S. Seaports Driving Economic Growth and Industrial Demand. Bisnow. 2017.

6. Based on the Port of Seattle, Port of Tacoma, and The Northwest Seaport Alliance Economic Impact Analysis completed in October 2019.

7. Washington State Department of Agriculture. www.AGR.WA.GOV

8. <https://loydlist.maritimeintelligence.informa.com/LL1127735/44-Seaport-Alliance-US>

SAFETY AND CRASH IMPACTS TO ECONOMIC VITALITY

Traffic crashes place an undue burden on all road users. High truck volumes lead to greater risk for serious crashes that can cause fatalities and injuries, as well as result in hours of backlog congestion, as indicated by previous studies and local incidents.⁹ Thus, it is important to ensure trucks can operate efficiently and safely while not inhibiting or obstructing the ability of other travelers and trip purposes.

The City of Seattle has a Vision Zero program goal of eliminating all traffic fatalities and serious injuries by 2030. This project will aid in reaching this goal by removing a critical gap in the network for people biking.

E Marginal Way S is intimidating even for the most strong and fearless bicyclists, who must contend with fast moving cars, railroad tracks, heavy freight trucks, and poor pavement conditions.

In a recent public outreach effort for the project, 58% of respondents cited a lack of bicycle facilities as a current barrier they face when biking in the project area. Another 23% of respondents mentioned the lack of quality street infrastructure such as poor roadway conditions and a lack of track separation as current barriers. People biking along this corridor often weave in and out of traffic, creating unpredictable situations multiple times a day for all road users. This INFRA Project is a rare case of multimodality through the physical separation of heavy freight traffic and people riding bicycles via a protected bike lane facility. This INFRA Project will create dedicated spaces for people walking and people riding bicycles, removing conflicts between these vulnerable users and heavy freight traffic. Improved safety, both real and perceived, will enhance an important

connection between the industrial area and downtown, and provide many industrial workers with the option to bike safely to and from work.



Figure 12: Cyclist and Trucks Sharing the Project Corridor

“

Biking along trucks hauling freight is terrifying.

- 2020 Survey Respondent

“

I'd feel safe enough to bike more regularly to my job and downtown if this [INFRA] Project was in place, I've had so many close calls over the years.

- 2020 Survey Respondent

9. Trucks a significant cause of severe accidents, study finds. Taylor & Francis, 2013.

BENEFIT-COST ANALYSIS

The East Marginal Way Corridor Improvement Project is anticipated to have many quantifiable benefits. Specifically, the project will improve safety and mobility while reducing operating and rehabilitation costs. The expected future benefits of the Corridor Improvement Project are quantified through the comparison of a future scenario without the proposed improvements, the “no-build” case, with a scenario that includes the improvements, the “build” case.

- The no-build case incorporates baseline regional traffic forecast data with adjustments for significant funded investments and improvements that are anticipated to occur during the 30-year horizon for which benefits are being considered. Improvements include converting a section of Terminal 46 to accommodate cruise ship operations, further expansion of operations at Terminal 5, completion of the Seattle Downtown Waterfront and trail, and completion of announced near-term improvements to the bike network as part of the *Seattle Bicycle Master Plan* and funded improvements in the Move Seattle levy.
- The build case maintains the no-build forecast assumptions with adjustments to account for the impact of the East Marginal Way Corridor Improvement project. The primary monetized benefits include: reduction in roadway and vehicle operating costs, reduction in collisions, increase in active transportation trips through the corridor, and travel time savings due to improved signalization at intersections and the implementation of a SCOOT adaptive traffic control system.

The model results provide a net present value of project benefits determined by totaling the stream of annual benefits over the project design life using a discount rate of 7%. Further

sensitivity tests were conducted with a discount rate of 3% and using various adjustments to the benefits identified in the build case to confirm the reasonableness of the assumptions. Table 4 summarizes the benefit cost ratio using both a 7% and 3% discount rate.

Table 4: Benefit Cost Ratio Based on 4 Years of Design and Construction Costs and 30 Years of Benefits

	Benefit Cost Ratio
7 Percent Discount	2.87
3 Percent Discount (sensitivity test)	5.07

Overall, the East Marginal Way Corridor Improvement Project is anticipated to provide a positive benefit cost ratio of 2.87 using the suggested 7 percent discount rate. The primary benefits, as indicated in Table 5 include: reductions in vehicle operations and maintenance costs due to reduced damage from the deteriorating roadway surface; improved health and transportation alternatives attributed to an increase in bike ridership of 30%; reduction in current crash rates by 20%; and reduced roadway operating and maintenance costs of 20% as the current extensive roadway repairs will not be required. In addition to the benefits, there are some dis-benefits due to; increased travel time during construction, increased travel time from the new signalization at intersections and increased bike movements, and new operating and maintenance costs attributed to the protected bike lanes. The initial capital costs of the improvements are offset by the residual value of the asset which is assumed to have a full lifecycle of 50 years.

Table 5: Summary of Economic Benefits from the East Marginal Way Corridor Improvement Project

Benefits – Discounted 2019 Dollars	7% Discount Rate	3% Sensitivity Test
Travel Time Changes	\$902,125	\$2,602,887
Freight Vehicles	\$697,313	\$1,849,174
Passenger Vehicles	\$416,206	\$1,171,302
Active Transportation	-\$211,394	-\$417,589
Vehicle Operating and Maintenance Costs	\$43,859,203	\$86,694,590
Freight Vehicles	\$41,304,174	\$81,856,379
Passenger Vehicles	\$2,555,029	\$4,838,211
Safety	\$9,781,757	\$18,893,610
Roadway Maintenance	\$135,847	\$250,438
Active Transportation	\$25,837,447	\$51,039,562
Residual Value	\$1,303,892	\$4,762,383
Total Benefits	\$81,820,271	\$164,243,471
Project Cost (Including Residual Asset Value)	-\$28,517,066	-\$32,382,740
Net Benefit	\$53,303,205	\$131,860,731

There are several other expected benefits to the East Marginal Way Corridor Improvement Project that, although difficult to monetize, are important to acknowledge. They include:

- Reduced vehicle emissions, operating costs and roadway maintenance due to mode shift from vehicles to bikes as a result of the new protected bike lanes
- Reduced major repair and replacement costs as a result of further degradation of the current roadway and location in a floodplain where the improved drainage as a result of the project could partially or fully mitigate those risks
- Pedestrian benefits, including lighting, safety and accessibility, from the project intersection improvements

Additionally some of the assumed benefits, specifically the 30 percent increase in bike trips and 20 percent reduction in crashes, are considered to be conservative based

on experience on other similar facilities in the region.

5.2 CRITERIA #2 – LEVERAGING OF FEDERAL FUNDING

This Project is requesting the final piece of funding (\$13.0 million – or 36% – of the Project's total costs) in INFRA funds to complete this \$38.4 million funding package. To complete the Project's future eligible funding needs, we will leverage \$17.9 million (49% of future eligible Project costs) in local funds and will dedicate \$65.3 million (15% of future eligible Project costs) in other federal funds passed through the Puget Sound Regional Council to complete the funding needs for this Project. We have exhausted all local, regional, and State grant programs to compile the existing funding package, and these funding partners are all supportive of seeing this INFRA Project to completion. However, due to limited funding availability and an overwhelming number of capital needs in the region and State, we are respectfully looking to USDOT to help close its

final funding gap. The Project brings together an unusually large and diverse set of funders and stakeholders who see numerous benefits for their varied constituents.

It is a rare investment in the Seattle area to bring funds from both of the relevant state grantors, the regional Metropolitan Planning Organization (with two separate grants), and partnership contributions from a seaport alliance. These funds have each been awarded on the basis of very different criteria, demonstrating the Project's merit for freight flow, state of good repair, safety, economic significance, air quality, and other key metrics for the various grantors. Each of these investors have made significant contributions, and the City of Seattle has turned to the INFRA program as a last resort to complete the required funding package and deliver the project. PSRC and TIB grants have strict deadlines to proceed to construction, and without additional funds, the City faces the risk that these grants will expire and be forfeited.

As described in Section 4, these non-federal funds for future eligible costs will be derived from a variety of local and regional sources designed to invest in critical and priority transportation needs for the region. These include:

- Move Seattle Levy funds (\$5.8 million / 16% of Project costs);
- TIB's Urban Arterial Funds (\$2.9 million / 8% of Project costs);
- FMSIB (\$3.3 million / 9% of Project costs); and
- Port of Seattle's contribution of \$5.0 million (14% of Project costs)

5.3 CRITERIA #3 – INNOVATION

INNOVATIVE TECHNOLOGY, INCLUDING EXPANDED ACCESS TO BROADBAND

This INFRA Project includes **adaptive signal control technologies** to adjust the timing of red, yellow, and green lights based on actual traffic conditions in order to ease traffic congestion. FHWA promoted [Adaptive Signal Technologies](#) as an innovative tool in its Everyday Counts Initiative. By collecting and processing data in real-time from sensors at each intersection, adaptive signal technology can control and adjust the timing of traffic lights to both increase traffic flow and decrease crashes. FHWA notes that studies have shown **crashes at intersections can decrease up to 15% through adaptive signal timing** based on reduced intersection congestions. Similar improvements, often up to 20% or higher, are seen for travel time and throughput on congested corridors.

INNOVATION IN PERMITTING, CONTRACTING, AND PROJECT DELIVERY

We are committed to using relevant proven technologies and innovations to shorten and enhance project delivery through FHWA's Everyday Counts Initiative. This INFRA Project includes:

- **Virtual Public Involvement:** We have taken an innovative approach to public involvement throughout the life of this Project by promoting [Virtual Public Involvement](#), using two online surveys, one in 2017 and one in 2020, and project update e-mails. According to FHWA, these tools are cost-effective options to accelerate project delivery (by securing public buy-in and quickly alerting the public to progress and possible construction impacts), and to enhance communication and collaboration (by offering a wider group of people the ability to submit feedback on the Project's priorities and design to stakeholders

who may not be able to attend open houses and public meetings in-person.)

- **Warm Mix Asphalt:** This Project will use [Warm Mix Asphalt](#) to reduce paving costs, extend the paving season (which can be important in Seattle’s climate), improve asphalt compaction, allow the mix to be hauled longer distances, and improve working conditions for crew by reducing the risk of exposure to fuel emissions, fumes, and odors.

INNOVATION IN FINANCING

This INFRA Project will be funded through a mixture of federal, state, and local funding. This includes the use of levy revenues from the City’s voter-approved \$930 million **Levy to Move Seattle** which is raised through a property tax that costs the median Seattle homeowner about \$275 per year.

Additionally, The Port of Seattle has committed to contribute over \$5 million as it recognizes the necessity and importance of this Project’s completion in supporting its private customers.

5.4 CRITERIA #4 – PERFORMANCE AND ACCOUNTABILITY

PLAN TO ADDRESS FULL LIFE-CYCLE COSTS AND ENSURING FUNDING AVAILABILITY

Life Cycle Costs – The City of Seattle will manage ongoing O&M costs after initial construction. The City has a robust [asset management program](#) in place for maintenance and preservation activities, including long-term condition forecasting and optimization modeling to meet federal performance monitoring requirements and industry best practices. We maintain an interactive [Asset Web Map](#), which is updated weekly to reflect the existing conditions of the City’s assets and to aid in timely repairs and maintenance (Figure 13). For this Project,

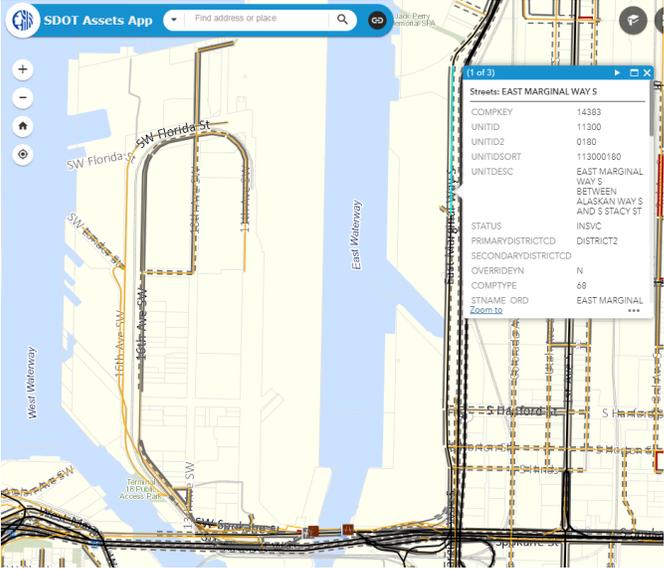


Figure 13: SDOT Asset Web Map

we have used historical data to forecast future O&M costs of the roadway.

The Seattle Public Utilities (SPU) intends to replace both water and drainage facilities under the surface of E Marginal Way S as part of the roadway reconstruction. They plan to replace over 5,400 linear feet (LF) of water main and 2,000 LF of drainage main, as well as replace castings within the Project area. SPU is working closely with us on the Project; and these project elements are being designed in conjunction with the roadway improvements. This work is not a part of the scope of this INFRA Project, but is an example of our commitment to working closely with its partners to be good stewards of public funds and to minimize the impacts to the public for any infrastructure upgrades along the corridor.

Accountability – We are committed to achieving the benefits as outlined in our application and benefit cost analysis. We will continuously monitor operational data on the corridor to ensure that critical safety and performance measures are met through ongoing monitoring

of reported crash data, bicycle count data, and travel time and trip volume analysis.

Our proposed accountability metric is based on the anticipated cost reductions associated to the replacement of the current deteriorating asphalt roadway with a concrete structure that has a 50 year design life and a protected bicycle facility. Described in our benefit-cost analysis, we anticipate routine annual operating and maintenance costs to reach \$70,350 per year in 2019 dollars by 2024, based on current trends in roadway deterioration and other similar facilities in Seattle with similar levels of roadway surface conditions. The identified costs exclude periodic and unanticipated repair and rehabilitation to address major roadway improvement requirements or natural acts including major flooding or seismic activity.

The anticipated reduction of 20% in maintenance costs from the \$70,350 in 2019 dollars for the first year of operations includes lower roadway maintenance costs, offset by higher anticipated costs for maintaining the protected bike lanes, new signal costs for the intersection with S Horton St., and operation of the SCOOT traffic management system. Reported maintenance cost records for the facility from S Massachusetts St to S Spokane St. will be used as the basis for verification that the 20% reduction in costs have been achieved. In the event we are unable to fully achieve a 20% reduction in costs in the first 12 months and there is a 10% reduction in the amount of INFRA funds provided to SDOT, the reduction in INFRA contributions will be offset by funds reallocated from non-critical expenditures as part of the Move Seattle program.

Table 6: Proposed Accountability Metric

Performance Objective	Metric
Reduction in Routine Roadway Operations and Maintenance Costs	Annual expenditures for the facility over the first 12 calendar months of operations after full acceptance and close out of construction activities

6. PROJECT READINESS

6.1 TECHNICAL FEASIBILITY

The INFRA Project was developed to 60% design in January 2020. The cost estimate for the Project described in this application is based on the 60% design and includes a 15% construction contingency and 20% allowance. Contingencies will be updated as design work progresses. The Project follows City of Seattle requirements, and a Basis of Design document captures standards that were followed.

6.2 PROJECT SCHEDULE

This INFRA Project entered into a design contract in August 2019, and at the time of this application, is at 60% design completion, with 100% design completion anticipated in April 2021. We are prepared to work closely with USDOT to obligate this INFRA award by September 2021, well in advance of USDOT’s statutory obligation deadline of September 2023. As shown in Table 7, the Project is scheduled to begin construction just six months after obligation in March 2022.

6.3 REQUIRED APPROVALS

ENVIRONMENTAL PERMITS AND REVIEWS

INFORMATION ON THE FEDERAL AND STATE ENVIRONMENTAL STATUS OF THE PROJECT

We anticipate that this INFRA Project will receive a Documented Categorical Exclusion (DCE) class of action in accordance with the National Environmental Policy Act (NEPA). Regarding Washington State’s Environmental Policy Act (SEPA), portions of the INFRA Project have been determined to be exempt from Section 106,

Table 7: Proposed Project Schedule

Milestone	Date
Design Contract Award	August 2019
INFRA Grant Award (Estimate)	July 2020
Environmental Document Certification	September 2020
Final Design Completion	April 2021
Right-of-Way Certification	March 2021
All Permits Received	May 2021
Obligation of INFRA Grant	September 2021
Construction Contract Award	December 2021
Start of Construction	March 2022
Substantial Completion	December 2023

meaning it met WSDOT’s criteria for screened highway, bridge, and transit infrastructure activities presumed to have minimum potential to cause effects. However, due to the additional elements of the larger East Marginal Way Corridor Program now being included in this INFRA Project, an additional review by WSDOT would need to be completed. We have completed a draft hazardous materials discipline report, and its Environmental office will continue to work on securing both WSDOT approval’s for SEPA and FHWA’s approval for NEPA by March 2021.

DISCUSSION WITH USDOT MODAL ADMINISTRATIVE LEADS

In December 2019, we had the opportunity to introduce this INFRA Project to FHWA staff, and were able to present the transportation benefits this project would provide for the regional freight network.

PUBLIC ENGAGEMENT

We have completed an extensive public engagement process to design the

East Marginal Way Project with its official **Public Involvement Plan (PIP)**, last officially updated in 2019. Design workshops began in 2015 and continued through 2016. We opened an online “open house” and survey for public input in the Spring and Summer of 2017 to receive feedback on design priorities for the corridor. In 2019, we worked with businesses in the Central Segment to develop a preliminary concept for the area. In February 2020, we re-released a survey to the public regarding the current design at 60% completion. At the time of this application, the survey is still receiving responses and comments at a very high engagement rate. Our team also meets regularly with key stakeholder groups such as the Seattle Freight Advisory Board and the Seattle Bicycle Advisory Board.



Figure 14: SDOT Outreach along the corridor

FULFILLMENT OF FEDERAL, STATE, AND LOCAL PLANNING REQUIREMENTS

Inclusion in the TIP – This INFRA Project is included in the Statewide Transportation Improvement Plan (TIP) as Project SEA-225. On February 4, 2020, we submitted a revision to the TIP to include the expanded Phase 1 Project area, presented as this INFRA Project, to include Alaska St as the southern terminus. This will now include construction (CN Phase) funds for the bicycle/pedestrian components of this INFRA Project. This Project’s construction phase

will span beyond the 2019–2022 TIP and will continue to be updated.

Freight Planning Documents – The INFRA Project was also selected as one of the top capital priorities of the 2015 Move Seattle Strategic Plan, a ten-year strategic vision that served as a basis for Levy to Move Seattle funding priorities. The INFRA Project was also included as a priority project in the 2016 [City of Seattle Freight Master Plan](#), which calls on the City to “reconstruct a core freight route to heavy haul vehicle standards, add safety and advanced management systems and incorporated separate bicycle and pedestrian facilities while maintaining freight efficiency.” The East Marginal Way Corridor is also designated as a priority T-1 State Route for freight in the [Washington State Freight and Goods Transportation System 2017 Update](#).

Right-of-Way – We are working closely with the Port of Seattle to complete all Right-of-Way (ROW) acquisitions required by March 2021. Conversations between the City and the Port have been on-going to secure this ROW, as evidenced by the Port’s financial commitment and letter of support attached to this application.

Additional Permits Required – Moving the railroad track at S Hanford St will require a permit from Union Pacific (UP). We have been in conversations with UP about securing this permit and approving the current design at 60%. We are also working to secure an exemption from the Shoreline Substantial Development Permit requirements and a National Pollutant Discharge Elimination System (NPDES) storm water construction permit. Standard construction permits will be required from UP and BNSF railroads because our project is within 25 feet of railroad tracks. We are also already working with WSDOT to secure a necessary construction agreement for work under the SR 99 viaduct.

6.4 ASSESSMENT OF PROJECT RISKS AND MITIGATION STRATEGIES

Certain risks exist to INFRA project implementation and completion. Table 8 presents those risks, as well as the strategies and plans to mitigate them if they occur.

Table 8: Potential Risks and Mitigation Strategies

Risk	Mitigation Strategy
<p>Railroad permitting/relocation To construct this project, we will need to secure construction permits from both Union Pacific railroad (UPRR) and Burlington Northern Santa Fe railroad (BNSF) to work within 25 feet of active rail. In addition, we are working with UPRR to relocate a section of track from the intersection of E Marginal Way S and S Hanford St.</p>	<p>Our strategy has been to engage early with the railroads. We have been in conversations with BSNF since 2017, and recently engaged formally with UPRR once ownership of the railroad track to be relocated was established. We have signed preliminary engineering agreement with UPRR and are preparing for a kick-off meeting with UPRR staff. During construction, the project will coordinate the use of UPRR and BSNF flaggers scheduling far enough in advance to avoid delays during construction.</p>
<p>Maintenance of traffic/construction detours The East Marginal Way Corridor runs adjacent to Port of Seattle/NWSA facilities with access that must be maintained during construction. Similarly, access to the BNSF rail yard just east of E Marginal Way S on S Hanford St is a busy freight intersection, and detours must be minimized.</p>	<p>We have included Maintenance of Traffic Plans in our design documents and are committed to maintaining two lanes of traffic whenever possible. We will work with the Port of Seattle/NWSA to make connections directly with seaport tenants so that their busiest times can be taken into account during construction sequencing.</p>
<p>Poor soils/dewatering issues Past construction experience in this area has shown how difficult the soils/water table along the East Marginal Way Corridor can be to handle. Trench support and dewatering have proven extensive on past projects.</p>	<p>We will obtain boring information for locations along the corridor in advance of the 90% design milestone to identify the extents of construction activities needed. This information will be used to prepare the contractor for expected conditions.</p>

7. SMALL PROJECT REQUIREMENTS

As a small project under \$100 million, this Project will be judged on its cost effectiveness and its increase in mobility in the State and region. This Project has proven to be cost effective with a BCR of 2.87 at a 7% discount rate.

As demonstrated in Section 5. Merit Criteria, this INFRA Project will have significant mobility benefits for freight and commuters in the City of Seattle and well beyond.



Seattle
Department of
Transportation

Seattle Department of Transportation
EAST MARGINAL WAY CORRIDOR IMPROVEMENT PROJECT
Infrastructure for Rebuilding America (INFRA) Grant FY2020