Discipline Report

Land Use

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Draft EIS

Magnolia Bridge Replacement

City of Seattle

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Purpose

The purpose of this project is to replace the existing Magnolia Bridge structure, approaches, and related arterial connections with facilities that maintain convenient and reliable vehicular and non-motorized access between the Magnolia community and the rest of the City of Seattle. The bridge provides an important link to the Magnolia community in Seattle (see Figure 1and Figure 2). Because the existing bridge provides the only public vehicular access to the land between North Bay, also referred to as Terminal 91, Smith Cove Park, Elliott Bay Marina, and U.S. Navy property, the project purpose also includes maintenance of access to these areas.

Need

Structural Deficiencies

The City of Seattle has identified the Magnolia Bridge as an important bridge that should remain standing following a "design" seismic event (an earthquake with a peak ground acceleration of 0.3g that is anticipated to happen every 475 years and may measure 7.5 on the Richter scale). Even with the repairs completed following the February 2001 earthquake, the existing bridge is susceptible to severe damage and collapse from an earthquake that is less severe than the "design" seismic event.

The original bridge was constructed in 1929 and has been modified, strengthened, and repaired several times. The west end of the bridge was damaged by a landslide in 1997, requiring repair and replacement of bridge columns and bracing, the construction of six additional supports, and a retaining wall north of the bridge to stabilize the bluff from further landslides. Repairs after the 2001 earthquake included replacement of column bracing at 27 of the 81 bridge supports. A partial seismic retrofit of the single-span bridge structure over 15th Avenue West was completed in 2001. The other spans were not upgraded.

Inspections of the bridge conclude that the concrete structure is showing signs of deterioration. The concrete is cracking and spalling at many locations, apparently related to corrosion of the reinforcing steel. The bridge requires constant maintenance in order to maintain its load capacity, but there does not appear to be any immediate load capacity problem. The existing foundations have insufficient capacity to handle the lateral load and uplift forces that would be generated by a "design" seismic event. The existing foundations do not extend below the soils that could liquefy during a "design" seismic event. If the soils were to liquefy, the foundations would lose their vertical-load-carrying ability and the structure would collapse.

System Linkage

There are three roadway connections from the Magnolia community, with more than 20,000 residents, to the rest of Seattle. As the southernmost of the three connections, the Magnolia Bridge is the most direct route for much of south and west Magnolia to downtown Seattle and the regional freeway system.

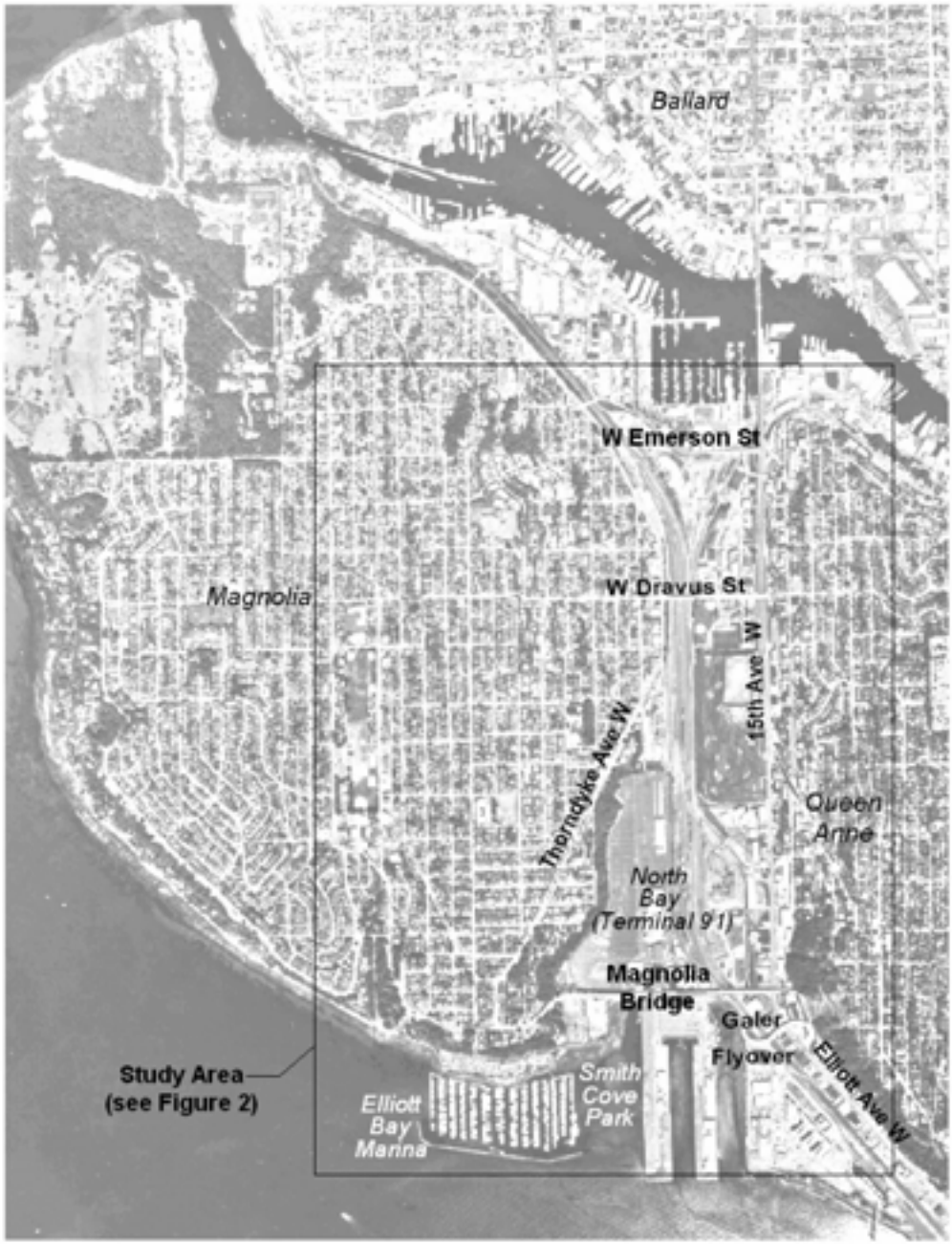


Figure 1
Vicinity Map

In meetings with the public and the Seattle Fire Department, the importance of this route for emergency services has been emphasized. The loss of use of this bridge in 1997 and again in 2001 demonstrated to the City that the remaining two bridges do not provide acceptable operation. During the bridge closure following the February 2001 earthquake, the City addressed community concerns about reduced emergency response time to medical facilities outside of Magnolia by stationing paramedics at Fire Station 41 (2416 34th Avenue West) 24 hours a day.

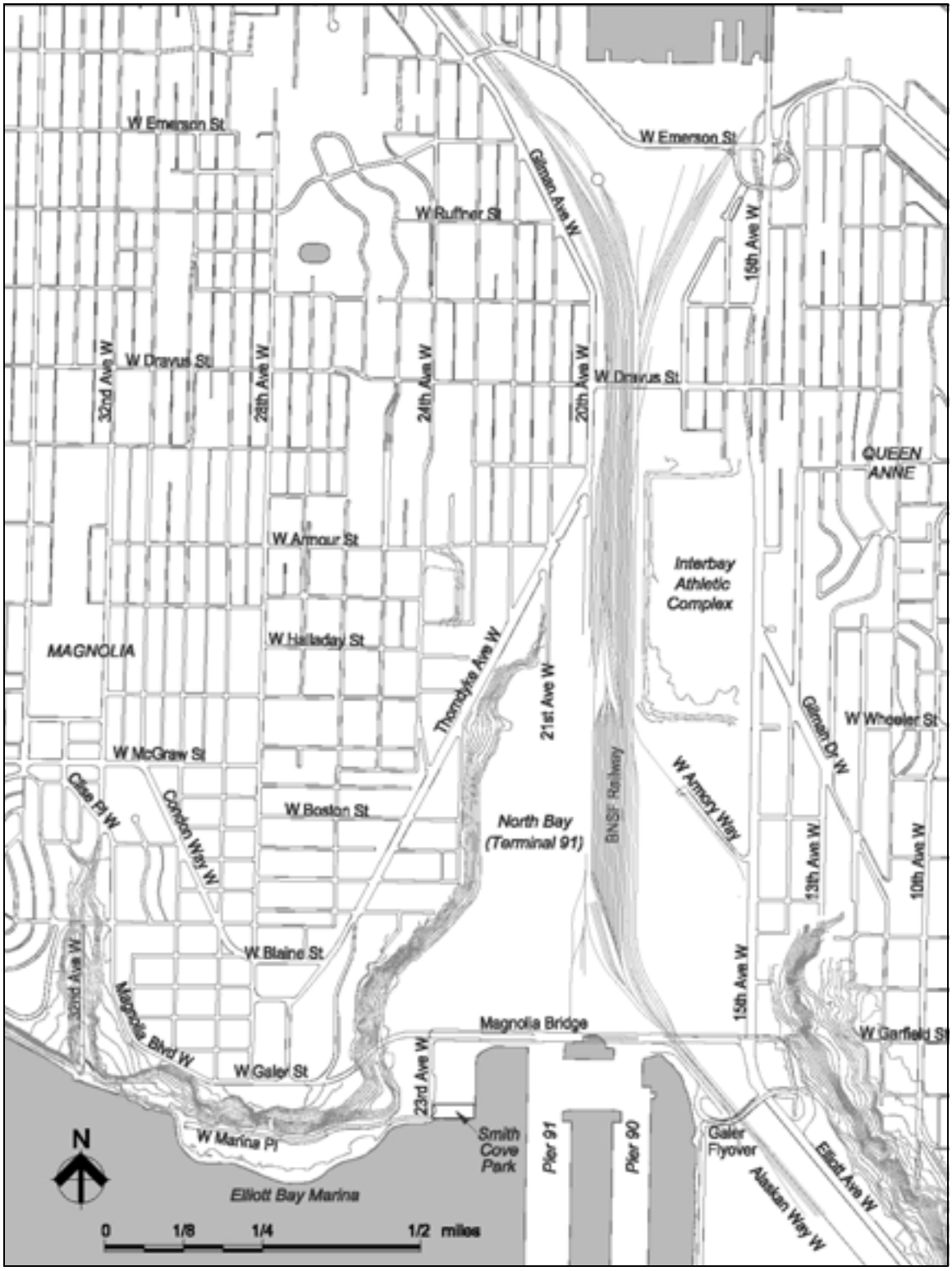


Figure 2
Study Area

Traffic Capacity

The three Magnolia community connections to the 15th Avenue West corridor are adequate for the present volume of traffic. Each of the three connections carries 30 to 35 percent of the 60,100 daily vehicle trips (2001 counts) in and out of the Magnolia community. Loss of the use of the Magnolia Bridge for several months after the February 2001 earthquake, and in 1997 following the landslide at the west end of the bridge, resulted in lengthy 15- to 30-minute delays and increased trip lengths for many of the users of the Magnolia Bridge. These users were required to use one of the two remaining bridges at West Dravus Street and West Emerson Street. Travel patterns in the Magnolia community changed substantially resulting in negative impacts on local neighborhood streets. The increase of traffic through the West Dravus Street and West Emerson Street connections also resulted in congestion and delay for the regular users of these routes. Losing the use of any one of these three bridges would result in redirected traffic volumes that would overwhelm the capacity of the remaining two bridges.

Modal Interrelationships

The Magnolia Bridge carries three of the four local transit routes serving Magnolia and downtown Seattle destinations. The topography of the east side of Magnolia, East Hill, would make access to the 15th Avenue West corridor via the West Dravus Street Bridge a circuitous route for transit. Use of the West Emerson Street connection to 15th Avenue West would add significant distance and travel time for most trips between Magnolia and downtown Seattle.

The Magnolia Bridge has pedestrian facilities connecting the Magnolia neighborhood to Smith Cove Park and Elliott Bay Marina as well as to 15th Avenue West/Elliott Avenue West. These facilities need to be maintained. The Elliott Bay multi-use trail connects Magnolia with downtown Seattle through Myrtle Edwards Park. The trail passes under the Magnolia Bridge along the west side of the BNSF rail yard, but there are no direct connections to the bridge.

Bicycle facilities on Magnolia Bridge need to be maintained or improved. Even with the steep (about 6.3 percent) grade, bicyclists use the Magnolia Bridge in both directions. There are no bike lanes on the bridge, so cyclists use the traffic lanes and sidewalks. Once cyclists cross the bridge, they must either travel with motor vehicles on Elliott Avenue West or find a way back to the Elliott Bay Trail using local east-west streets such as the Galer Flyover.

Transportation Demand

The existing Magnolia Bridge provides automobile access for Port of Seattle North Bay (Terminal 91) to and from Elliott Avenue West/15th Avenue West. Truck access between Terminal 91 and Elliott Avenue West/15th Avenue West is accommodated via the Galer Flyover. Future planned expansion of the Amgen facility on Alaskan Way West and redevelopment of underutilized portions of North Bay and other areas of Interbay will increase demand for traffic access to the Elliott Avenue West/15th Avenue West corridor. The Port of Seattle has a master planning process under way (July 2003) for its North Bay (Terminal 91) property and the Washington National Guard property east of the BNSF Railway between West Garfield Street and West Armory Way. This area contains 82 acres available for redevelopment. There are also 20 or more acres of private property available for

redevelopment east of the BNSF Railway between West Wheeler Street and West Armory Way. Redevelopment of the North Bay property will include public surface streets with connections to the replacement for the Magnolia Bridge. Forecasts of future (year 2030) traffic demand indicate that the access provided by the Galer Flyover and West Dravus Street would be inadequate. The capacity provided by the existing Magnolia Bridge or its replacement would also be needed.

Legislation

Seattle Ordinance 120957, passed in October 2002, requires that the Magnolia Bridge Replacement Study: (1) identify possible additional surface roads from Magnolia to the waterfront (avoiding 15th Avenue West and the railroad tracks); (2) obtain community input on the proposed roads; and (3) identify the cost for such roads and include it in the total cost developed in the Magnolia Bridge Replacement Study.

An alignment study process was implemented to help identify the specific bridge replacement alternatives to be studied in the EIS. Twenty-five concepts were developed and screened against the project goals and objectives. This resulted in nine alignment alternatives, identified as A through I, that merited further analysis. These nine went through an extensive public review and comment process as well as project screening criteria and prioritization. Initially, the top four priority alternatives, A, B, D, and H, were identified to be studied in the EIS. Early on, Alternative B was eliminated because it became clear that it violated City shoreline policies and Federal Section 4(f) criteria. Upon detailed traffic analysis, Alternative H was eliminated because two key intersections were predicted to function at a level of service F and could not be mitigated. The next priority, Alternative C, was then carried forward for analysis in the EIS.

Independent of this project, a new north-south surface street will be constructed on Port of Seattle property connecting 21st Avenue West at the north end of North Bay with 23rd Avenue West near Smith Cove Park. In addition, a southbound ramp will be added to the Galer Flyover to accommodate eastbound to southbound Elliott Avenue West traffic movements. The Galer Flyover ramp has been identified as a needed improvement for expected future development of property west of the railroad tracks. Locations for new surface streets through the Port of Seattle property will be determined through the Port's master planning process for the North Bay property. The north-south surface street and ramp are assumed to exist under any Build Alternative, but they are not part of this environmental process.

Typical cross sections and plans of the Build and No Build Alternatives are located at the end of this section.

No Build Alternative

The No Build Alternative, shown in Figure 3 and Figure 5, would maintain the existing bridge structure in place with the existing connections at the east and west ends. Long-term strategies for maintaining the existing structure would be required for the No Build Alternative. To keep the existing bridge in service for over 10 years, the following would need to be accomplished:

- An in-depth inspection of the bridge would be required to determine needed repairs and a long-term maintenance program.
- Concrete repairs would be required. These repairs could include injection of epoxy grout into cracks, repair of spalled concrete, and replacement of deficient concrete and grout.
- Preservation measures to slow corrosion of the reinforcement would be required. These measures could include a cathodic protection system.
- Any structural elements that lack the capacity to carry a tractor-trailer truck with a 20-ton gross trailer weight would need to be identified, modeled, and strengthened.

Alternative A

Alternative A would replace the existing bridge with a new structure immediately south of the existing bridge as shown in Figure 4 and Figure 6. The alternative would construct a signalized, elevated intersection (Alternative A – Intersection) in the bridge's mid-span to provide access to the waterfront and the Port of Seattle North Bay property from both the east and west. Connections at the east and west ends of the bridge would be similar to the existing bridge.

An optional half-diamond interchange (Figure 7, Alternative A – Ramps) could be constructed in lieu of the elevated intersection to provide access to the waterfront and the Port of Seattle North Bay property to and from the east only.

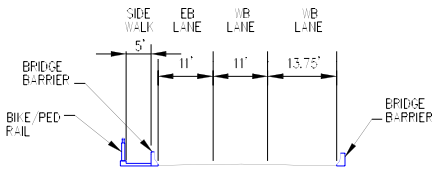
Alternative C

Alternative C would provide 2,200 feet of surface roadway within the Port of Seattle North Bay property between two structures as shown in Figure 4 and Figure 8. The alternative alignment would descend from Magnolia Bluff on a structure running along the toe of the slope. The alignment would reach the surface while next to the bluff before turning east to an intersection with the north-south surface street. The alignment would continue east from the intersection, turning south along the west side of the BNSF rail yard. The alignment would rise on fill and structure, turning east to cross the railroad tracks and connect to 15th Avenue West.

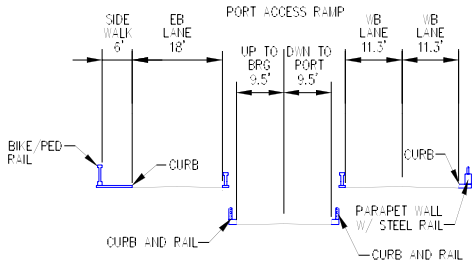
Alternative D

Alternative D would construct a new bridge in the form of a long arc north of the existing bridge as shown in Figure 4 and Figure 9. Connections at the east and west ends of the bridge would be similar to the existing bridge. This alternative would construct a signalized, elevated intersection (Alternative D – Intersection) in the bridge's mid-span to provide access to the waterfront and Port of Seattle North Bay property from both the east and west.

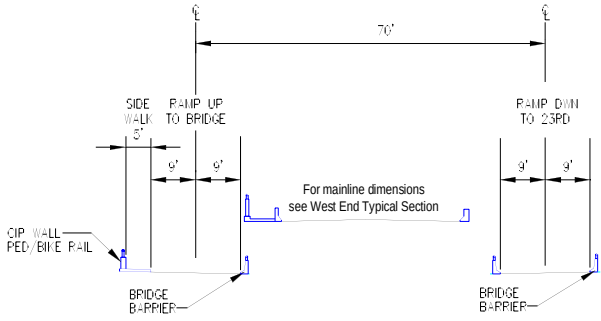
An optional half-diamond interchange (Figure 10, Alternative D – Ramps) could be constructed in lieu of the elevated intersection to provide access to the waterfront and the Port of Seattle North Bay property to and from the east only.



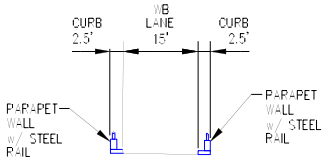
Bridge West End



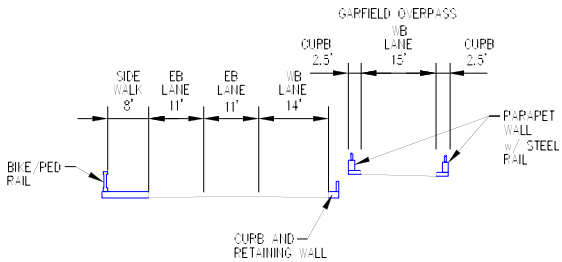
Ramp to Port Access



Ramps to 23rd Avenue West



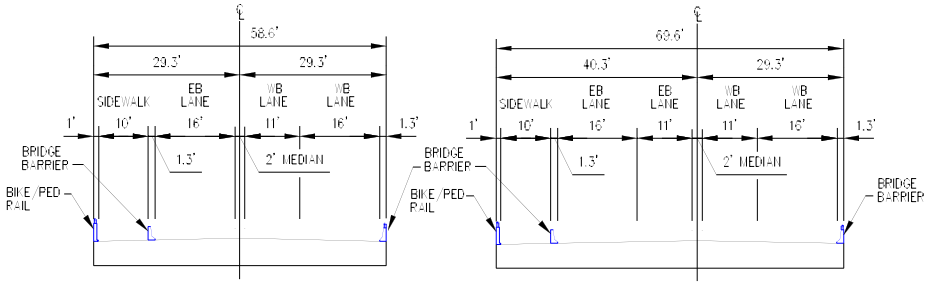
Garfield Overpass



15th Avenue West Connection
Eastbound Off-Ramp
Westbound On-Ramp

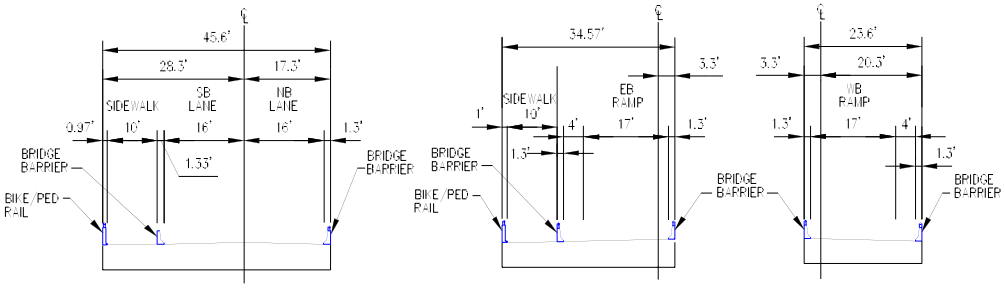
NOTE:
Dimensions are approximate and obtained from construction plans and aerial photographs. The information shown has not been field verified.

Figure 3
Typical Sections – No Build Alternative



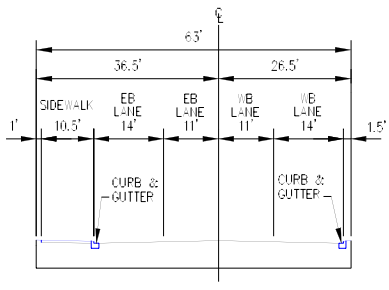
West End East End

Typical Bridge Structure

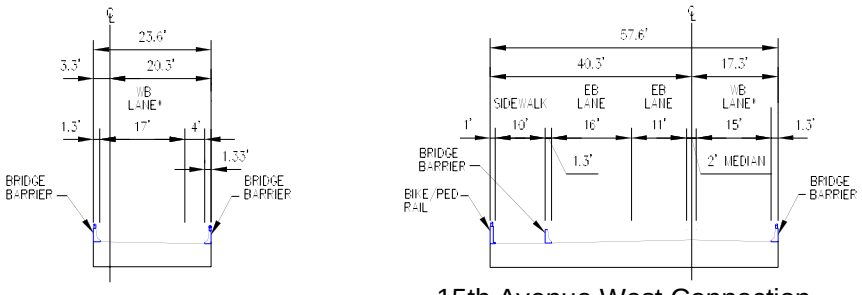


T-Ramp
Typical A & D Intersection Option

On-Ramp Off-Ramp
Typical A & D Ramp Option



Typical Alternative C Surface Road



Garfield Overpass
* 15' Alternative C
19' Alternative D

15th Avenue West Connection
Eastbound Off-Ramp
Westbound On-Ramp
* 16' Alternative D

Figure 4
Typical Sections – Build Alternatives

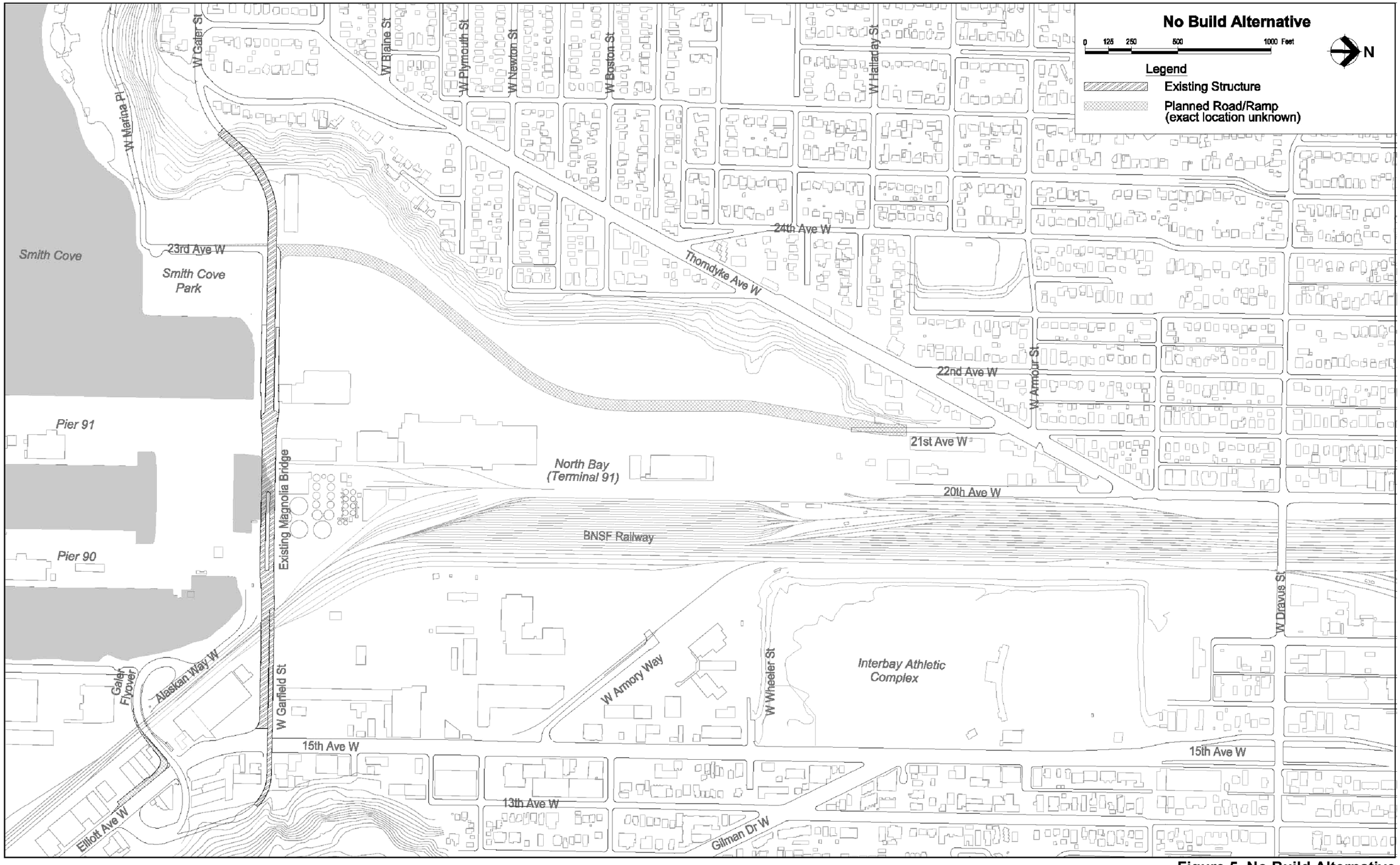


Figure 5 No Build Alternative

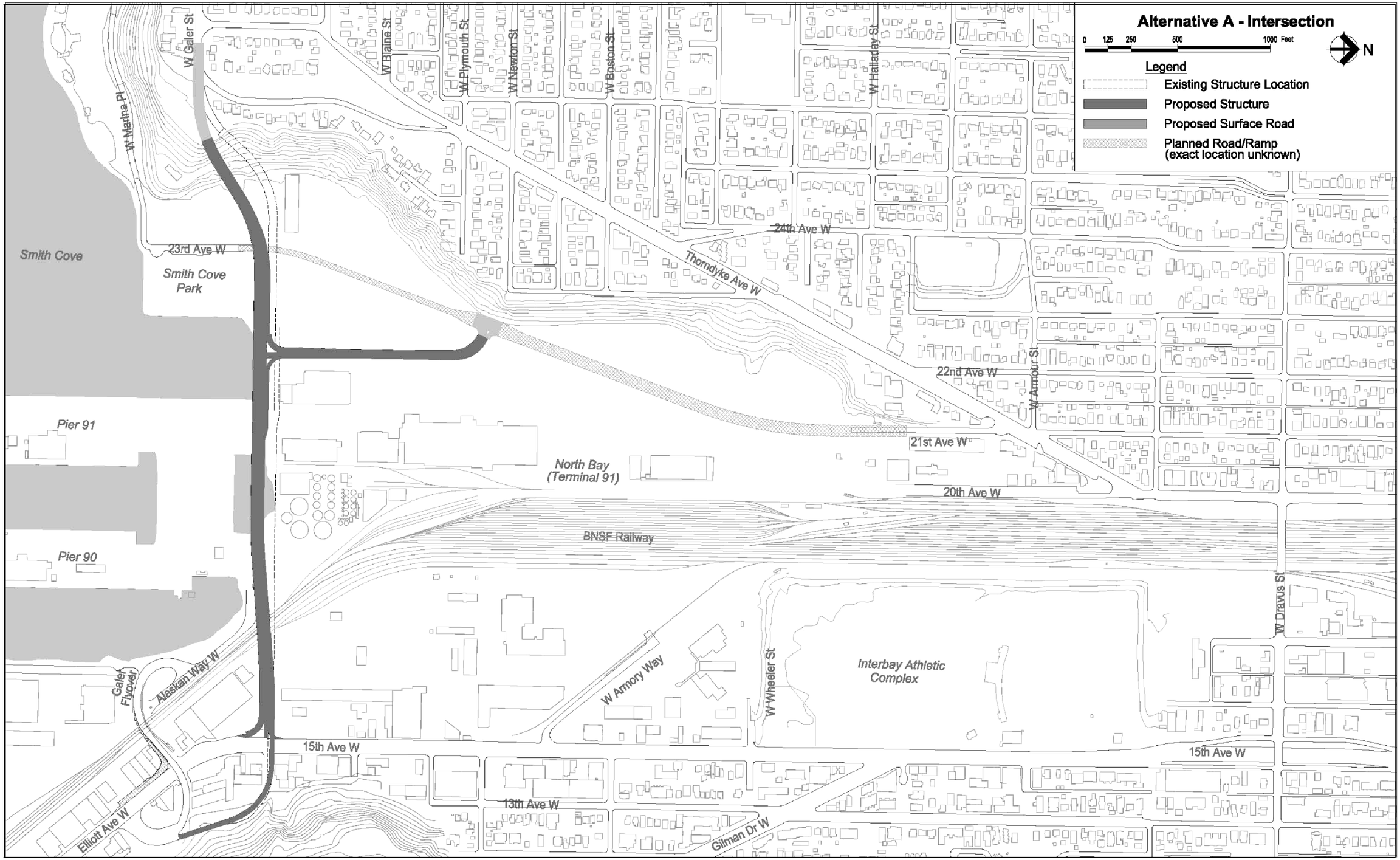


Figure 6 Alternative A - Intersection

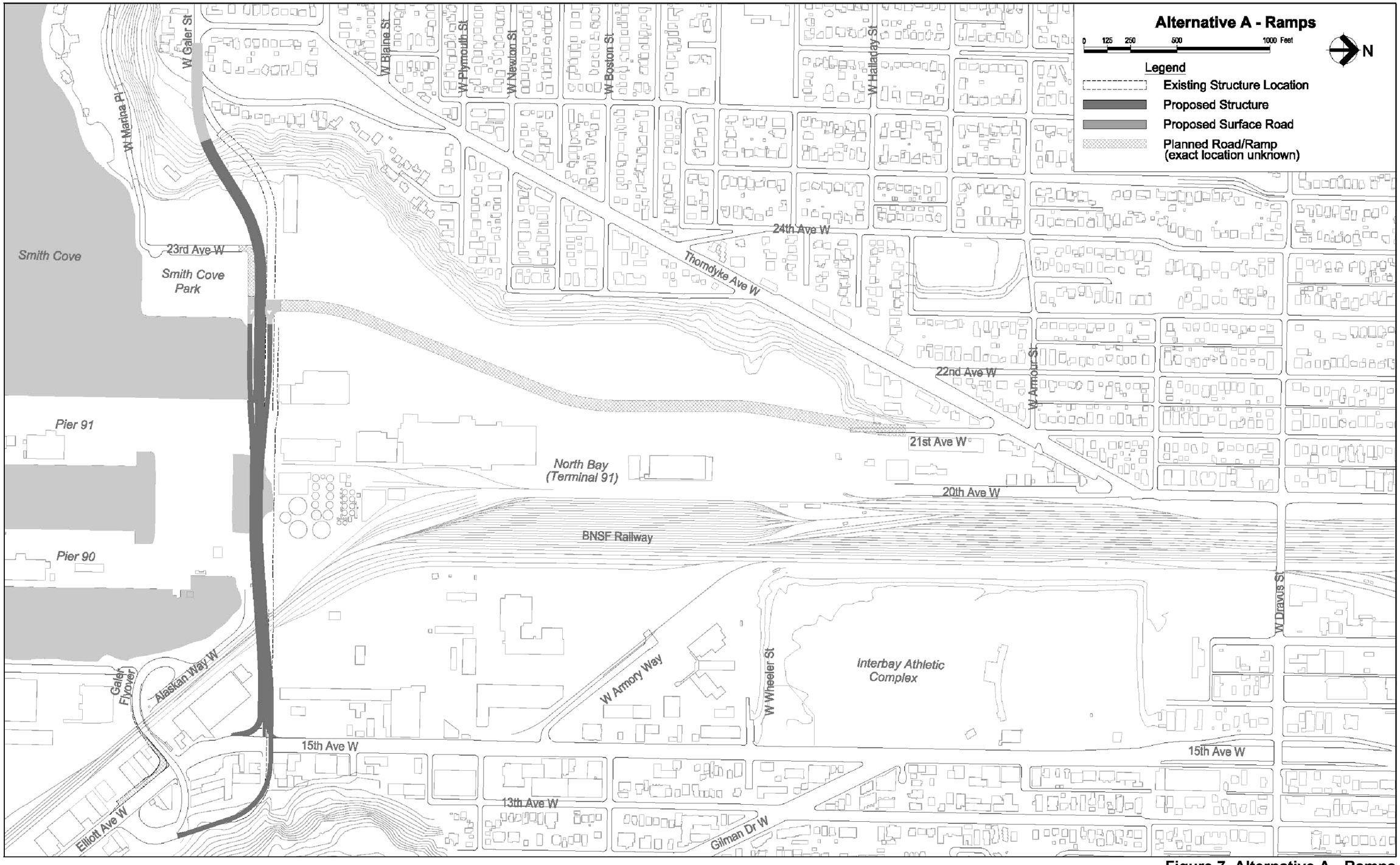


Figure 7 Alternative A - Ramps

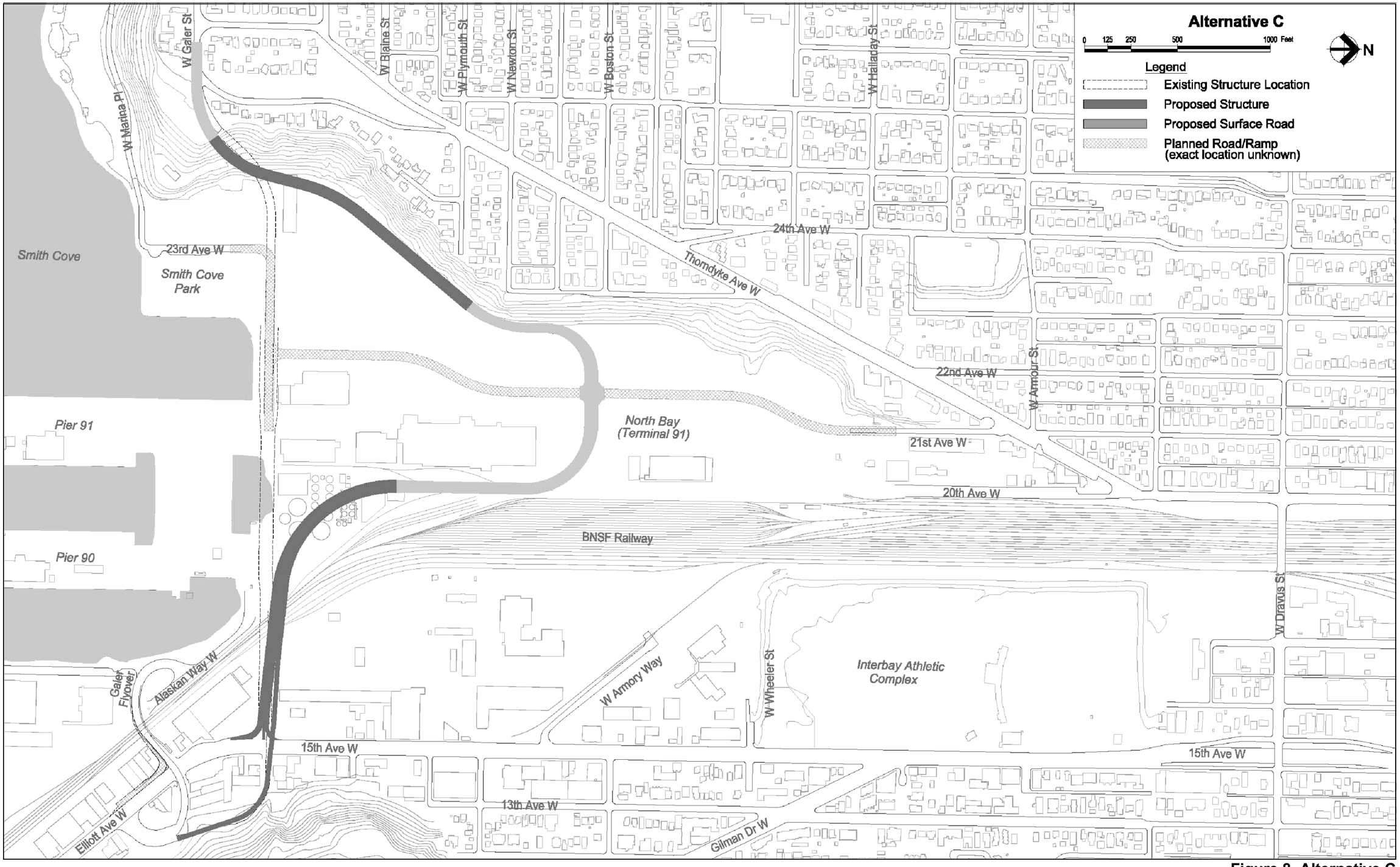


Figure 8 Alternative C

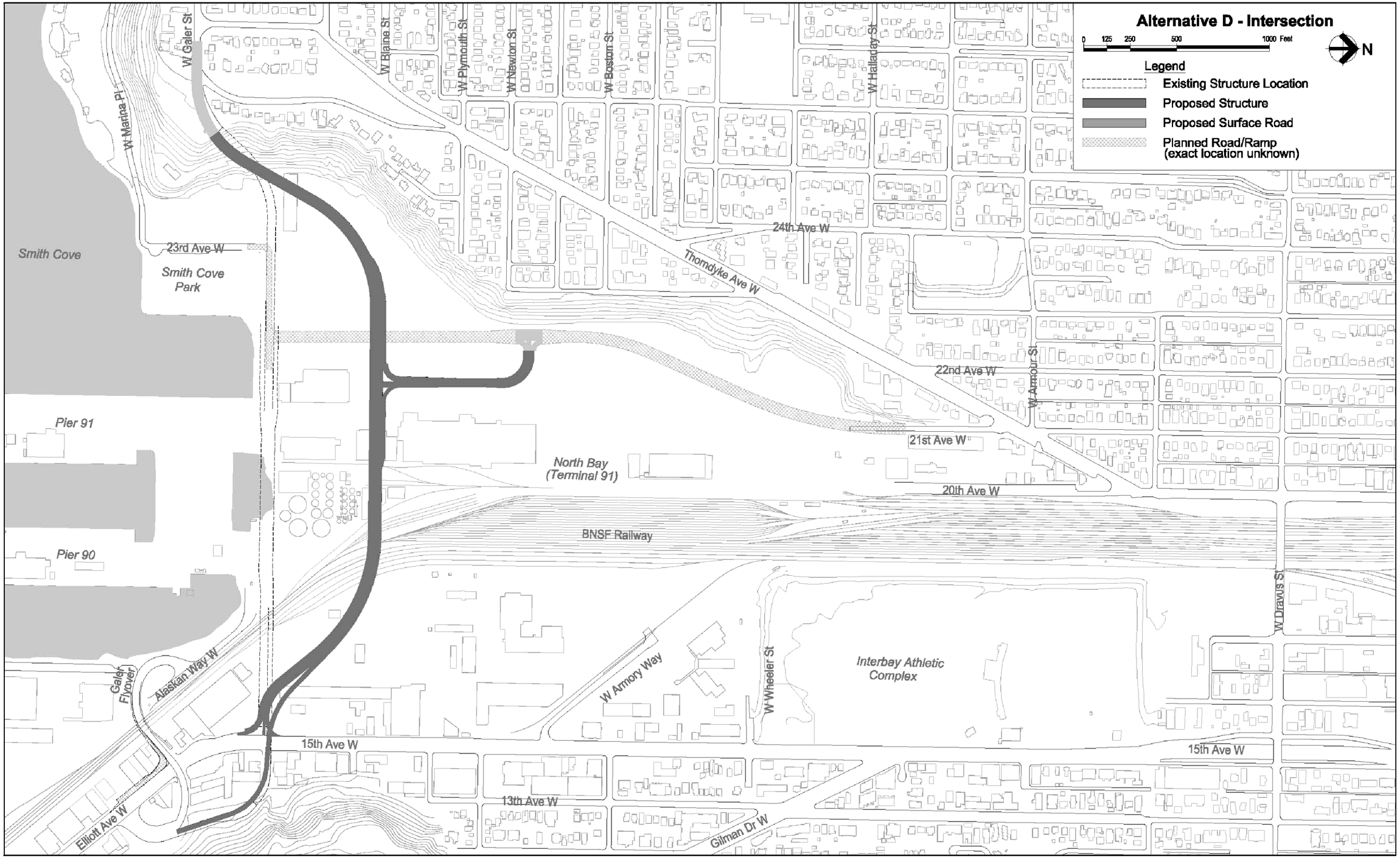


Figure 9 Alternative D - Intersection

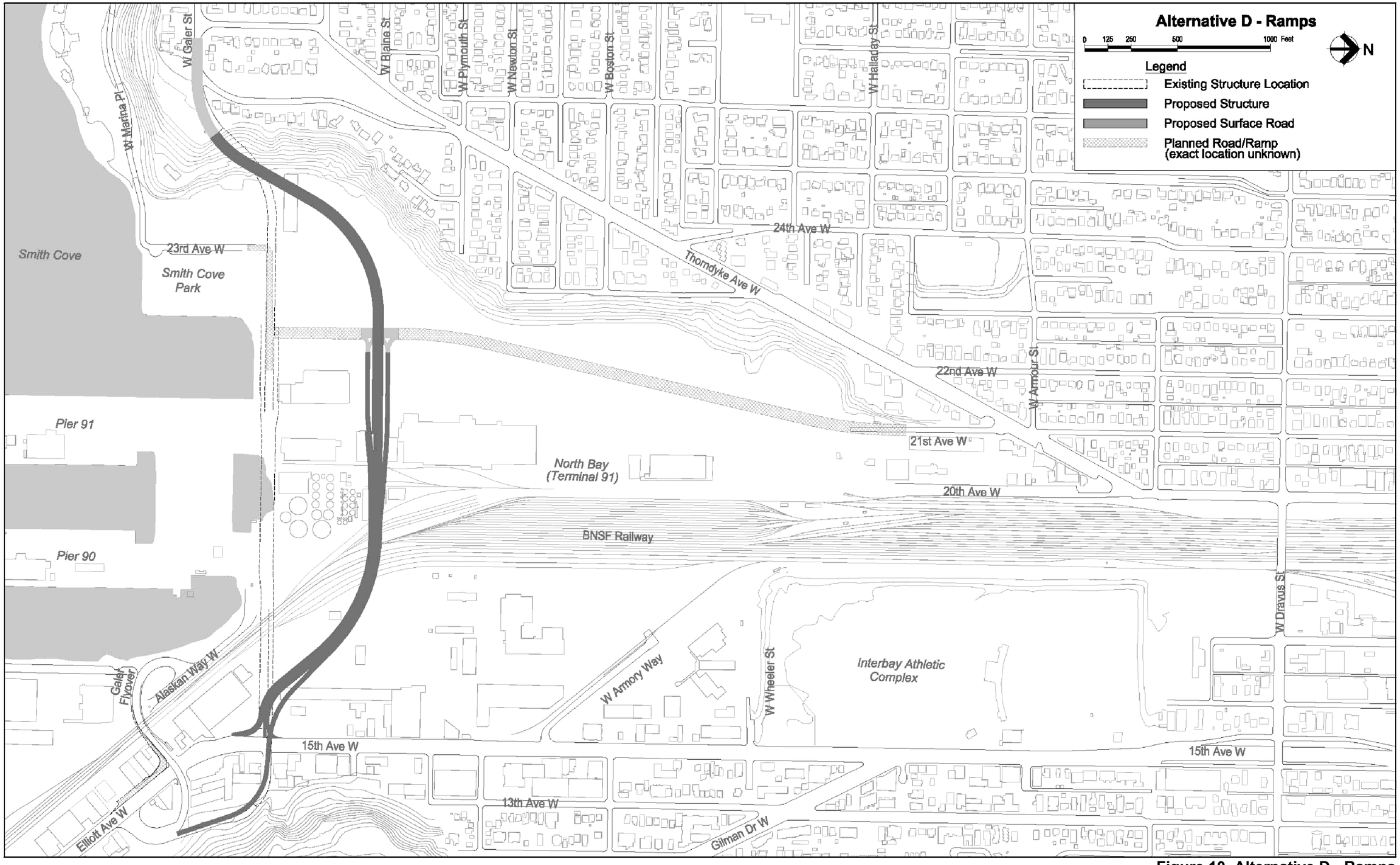


Figure 10 Alternative D - Ramps

Methods

This discipline report has been prepared consistent with the guidelines contained in Sections 450 and 451 of the Washington State Department of Transportation (WSDOT) *Environmental Procedures Manual* (WSDOT 2003). For purposes of this land use analysis, the study area boundaries include West Dravus Street on the north, 10th Avenue West on the east, the Elliott Bay waterfront on the south (from Terminal 86 to the extension of 32nd Avenue West), and 32nd Avenue West on the west.

General land use characteristics and development patterns have been described for the Magnolia, Interbay, and Queen Anne neighborhoods through a field investigation and review of City and neighborhood plans. More detailed information has been collected and analyzed for the study area. Existing and projected land use and zoning information for the study area was collected through a field investigation of the project site, review of aerial photos, and review of City's Geographic Information System (GIS) data describing existing zoning and land use designations. This information was also used to describe land use changes and right-of-way (ROW) requirements related to the alternatives. To gather information regarding potential new land uses in the study area, relevant portions of the City's Comprehensive Plan and Future Land Use Map were analyzed. Reasonably known future development in the study area was also considered to analyze future development patterns. Known future development includes the Monorail Project, expansion of the Amgen facility, the Interbay Urban Center (potential private commercial development along 15th Avenue West), and redevelopment of the Port's North Bay/Terminal 91 property.

To analyze the relationship and consistency of the project alternatives with adopted plans, policies, and regulations, planning documents and regulations of the City of Seattle and the Port of Seattle were reviewed. Relevant policies and regulations in each document were identified and compared to each of the alternatives to determine if any of the alternatives would be inconsistent with the content of the documents.

Existing Land Use

Figure 11 shows the general locations of existing land uses in the study area. The alternatives would primarily be located over land used for industrial and commercial purposes, with western connections to residential areas in the Magnolia neighborhood.

Single-family residential neighborhoods are located to the east and west of the project site, on the upper portions of the Magnolia Bluff and Queen Anne Hill. Multifamily residential buildings are generally located on the lower portions of both hills closer to the project site.

Interbay, which is the lowland area between Magnolia and Queen Anne, is used for a mix of industrial and commercial businesses. A variety of retail commercial, service, small office, and light industrial uses are located along the Elliott Avenue West/15th Avenue West corridor. The National Guard Armory is located to the west of this corridor, and BNSF railroad tracks run up the middle of the industrial area in Interbay. The Amgen offices are located along Elliott Bay to the southeast of the existing bridge.

The Port's North Bay/Terminal 91 property is located to the west of the railroad tracks and east of the Magnolia Bluff. The Port is a major landholder in the study area. Major current uses on Port property include cold storage, fish processing, fuel distribution, and vehicle storage for the Seattle School District.

Land uses to the north include a mix of light industrial and multifamily residential uses on the west side of the railroad tracks, the Interbay Golf Course and P-Patch on the east side of the tracks, and commercial/retail uses along Thorndyke Avenue West, 20th Avenue West, and 15th Avenue West.

Figure 11
Land Use

Existing Zoning

Figure 12 shows the current zoning designations in the project vicinity. Generally, existing land uses described above are consistent with the zoning designations.

The uphill portions of the Magnolia and Queen Anne neighborhoods are zoned Residential Single Family 5000, with lower areas on both hills zoned Lowrise 1, 2, or 3. Lowrise zoning designations allow multifamily residential development 25 to 30 feet in height, with densities of one dwelling unit per 800 to 1,600 square feet of lot area.

The Port's North Bay/Terminal 91, including properties south of the bridge along Elliott Avenue West, and BNSF Railway property are zoned General Industrial 1/45 (IG1), which allows industrial development in areas characterized as having access to waterways and rail. This zoning designation indicates a height limit of 45 feet. The National Guard Armory and properties located along 15th Avenue West, south of West Armory Way, are zoned General Industrial 2/45 (IG2), which is intended to allow a broad mix of activities.

Some property fronting the eastern side of 15th Avenue West (south of West Armory Way) and fronting both sides of Elliott Way West (south of the existing bridge) is zoned Industrial Commercial. This zone is intended to promote development of businesses that incorporate a mix of industrial and commercial activities. Some areas to the east of 15th Avenue West are zoned Industrial Buffer (IB), which provides additional development regulations to limit impacts on neighboring non-industrial areas.

Parcels fronting 15th Avenue West north of West Armory Way are zoned Commercial 1 and Commercial 2, which indicate an auto-oriented, primarily retail/service commercial area that serves surrounding neighborhoods and the larger community or citywide clientele. A Neighborhood Commercial zone (NC-3), which allows less intensive commercial uses, is located along 15th Avenue West north of Gilman Drive West.

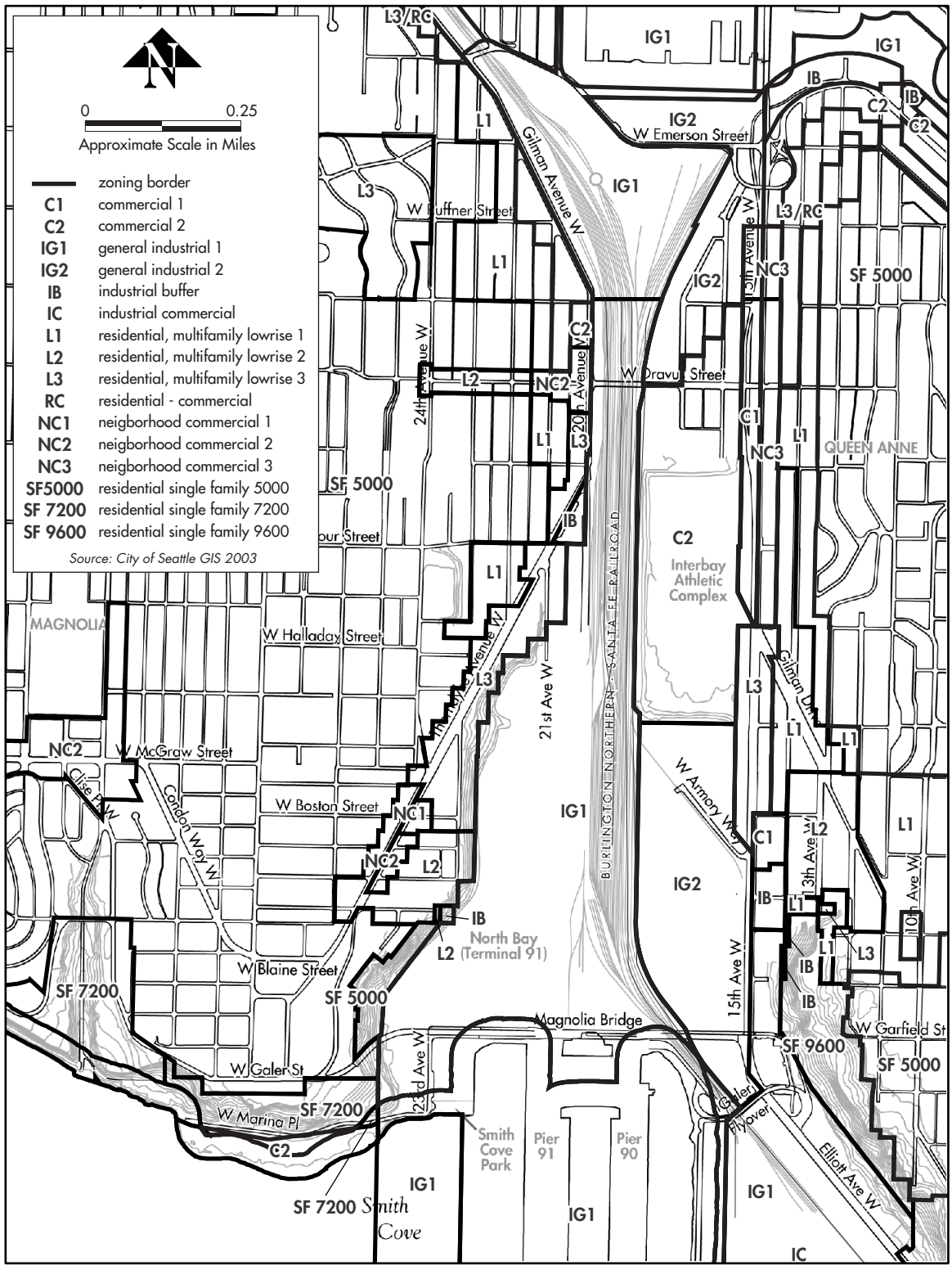


Figure 12
Zoning

Studies and Data Sources

To analyze the relationship and consistency of the proposed project alternatives with adopted plans, policies, and regulations, the following documents were reviewed:

- Seattle's Comprehensive Plan, Toward a Sustainable Seattle, A Plan for Managing Growth 1994-2014 (as amended) (City of Seattle Comprehensive Plan) (City of Seattle 2003)
- Land Use and Zoning, Title 23 (City of Seattle n.d.)
- Seattle Critical Areas Ordinance
- City of Seattle Shoreline Master Program
- Harbor Development Strategy 21 (Port of Seattle 2001)
- The Ballard-Interbay Northend Manufacturing and Industrial Center (BINMIC) Plan (BINMIC Planning Committee 1998)
- Queen Anne Plan (Queen Anne Neighborhood Planning Committee 1998)

The Port of Seattle Master Plan for North Bay/Terminal 91 is being prepared but is currently not available. If this plan becomes available, analysis of its content will be included in future drafts. The Magnolia neighborhood does not have a neighborhood plan. The City of Seattle Comprehensive Plan is the guiding policy document for the neighborhood.

Information regarding existing and future land uses was gathered through field investigations, analysis of City GIS information, review of the City's Comprehensive Plan and Future Land Use Map, and consideration of reasonably known future development in the study area.

Major Assumptions

This analysis assumes that the Port's North Bay/Terminal 91 property will be redeveloped consistent with the current industrial zoning for the site. Consideration of cumulative impacts and future development patterns, however, discloses the potential effect of the alternatives on development trends and on the desirability of nonindustrial development in the North Bay area. This analysis also assumes that other known future development, such as the Interbay Urban Center and expansion of the Amgen facility, would occur under existing zoning and permit requirements.

Because the project alternatives would not create additional traffic capacity, this analysis assumes that the alternatives would not induce population or housing growth in the study area and would not increase demand for public services. The study area is expected to grow at less than 1 percent per year as allowed by current City of Seattle land use plans and zoning (Puget Sound Regional Council 2003). The same amount of growth would occur under the No Build Alternative and the Build Alternatives.

No Build Alternative

Land Required for Right-of-Way

The No Build Alternative would maintain existing traffic patterns and would not require acquisition of land for new ROW. No changes in land use would occur.

Future Development Pattern Considerations

The existing structure could affect the type of development likely to occur on underused properties in the future, given its proximity to the water and its physical and aesthetic presence from the ground. The bridge's ramps would occupy space along the water's edge and segregate Piers 90 and 91 within North Bay/Terminal 91 from the uplands. The structure underneath the western end of the bridge would also inhibit development potential on adjacent property.

If the zoning and land uses in this area were to remain industrial in nature, the physical and aesthetic character of the underside of the bridge would not be an issue regarding future development. If there be a desire at some point in the future, however, for development of a different character, the structure would be a deterrent. Also, if the existing Magnolia Bridge needs to be replaced in the future, it would impact any development in the area built between the present and any future rebuild.

The No Build Alternative would retain existing businesses and access points. This alternative could keep access at the bridge level to the upper level of an existing business (Anthony's Seafood Distributing) in a building adjacent to the north side of the bridge. This business operates a loading dock with direct access to the existing bridge.

Alternative A

Land Required for Right-of-Way

Alternative A would primarily require use of land currently zoned and used for industrial purposes. This alternative would require relocation of one business, Anthony's Seafood Distributing, whose access is located on the existing bridge. That company would no longer have access at its current location after the existing bridge is removed. See the Social, Economic, and Relocation Discipline Report for additional information.

The land required for Alternative A is located immediately south of the existing bridge. The area is composed of a combination of parcels that are either City of Seattle ROW or are owned by the Port, Seattle Parks and Recreation, or the U.S. Navy. The land required for all but the western end of the bridge is zoned IG1 and is used for industrial purposes and for access from upland industrial activities to the waterfront and Piers 90 and 91.

The western end of the bridge approaching West Galer Street would be constructed over City-owned parkland (Smith Cove Acquisition Parcels) and U.S. Navy land on

the Magnolia Bluff hillside that is zoned Residential Single Family 5000. See the Public Land, Section 4(f) Discipline Report for a discussion of acquisition of the City-owned parkland.

Alternative A would require that the City of Seattle obtain a ROW or an easement over Port of Seattle, Seattle Parks and Recreation, and U.S. Navy property. The City would also need to work with BNSF Railway to construct over a portion of the railroad tracks to the south of the existing bridge. Portions of the ROW and easement occupied by the existing bridge could be transferred to the Port, Seattle Parks and Recreation, or the U.S. Navy for future use.

Right-of-way or easement required for the Alternative A – Intersection option would include an approximate 65- to 95-foot-wide corridor totaling 6.3 acres. Right-of-way or easement required for the Alternative A – Ramps option would include a 65- to 150-foot-wide corridor totaling 5.3 acres. See Appendix A for figures and tables showing right-of-way needs for each alternative.

Relationship to Public Facilities and Utilities

The ROW or easement required for Alternative A could be used for joint location of telecommunication and electrical lines. Those utility lines would likely be attached to the bridge. Also, the western end of Alternative A would pass over parcels recently purchased for park use by Seattle Parks and Recreation. The Seattle Department of Transportation and Seattle Parks and Recreation have agreed to prepare a Joint Development Agreement to manage replacement of the Magnolia Bridge over those park-owned parcels. The area under the bridge in that location (approximately 0.6 acre) would be used for public open space or non-organized recreation activities. See the Public Lands, Section 4(f) Discipline Report for more information. Finally, under Alternative A, the bridge would be designed to allow north-south vehicle access under the bridge between upland Port of Seattle property and the waterfront. BNSF Railway and bike path access under the bridge would also be maintained.

Future Development Pattern Considerations

By moving the bridge location slightly to the south, Alternative A would continue to form a physical and visual barrier between the shoreline (including the piers) and the uplands. Constructing the bridge in this location would not substantially affect the ability to retain the types of uses that are currently in the area but would limit other types of development into the foreseeable future. Given that the amount of land along Elliott Bay is a finite resource, locating the bridge as a visual and physical separator between shoreline and uplands may have an impact if future development pressures shift over the lifetime of the structure.

The other area of impact for Alternative A would be the ramp running north into the Port's North Bay/Terminal 91 property under the Alternative A – Intersection option. The visual quality of the area influenced by the height and bulk of the structure as well as noise associated with the ramp would affect the development potential on adjacent property, especially at the ramp's highest point near the bridge.

Other potential changes from the bridge related to noise, air, water, and visual quality are not expected to cause land use changes and affect future development patterns. Please refer to relevant discipline reports for this project for a description of impacts related to other elements of the environment, including social and

economic conditions, visual quality, transportation, water quality, air quality, and noise.

Consistency/Conflict with Adopted Plans and Policies

Overall, Alternative A would be consistent with City of Seattle, Port of Seattle, and BINMIC policies for use of industrial zoned land and would not preclude development of that land in compliance with those policies. Alternative A would not comply with some City policies that call for public access and view protection in shoreline areas; however, City policies also allow for consideration of industrial use and function in shoreline areas. Decision-makers would need to weigh the functional benefits of Alternative A against view and public access factors. Please see the Applicable Land Use Plans and Regulations section of this report below for a detailed consistency analysis and disclosure of potential conflicts with adopted plans, policies, and regulations.

Alternative A is located within the ceded territory and the "usual and accustomed areas" of the Suquamish Tribe, Tulalip Tribes, Muckleshoot Tribe, Yakama Indian Nation, the Duwamish Tribe (pending federal recognition), and the Kikiallus Indian Nation (not federally recognized). The Alternative A alignment is adjacent to Elliott Bay, which includes tribal fishing areas; however, no conflicts between the project alternatives and tribal interests have been identified to date. As part of the Section 106 process for historic and cultural resources, the federal lead agency, the Federal Highway Administration (FHWA), is required to make formal government-to-government consultation with potentially affected tribes. FHWA will send a formal letter to these identified tribes and any other tribe FHWA determines to be appropriate to initiate the Section 106 consultation. If a response from a tribe is not received within 30 days after the delivery date of the initiation of consultation letter, project development is allowed to move forward. The tribes have the option, however, of entering consultation at a later date. Any issues identified by the tribes will be addressed through the ongoing environmental process.

Please see the Applicable Land Use Plans and Regulations section of this report below for a detailed consistency analysis and disclosure of potential conflicts with adopted plans, policies, and regulations.

Alternative C

Land Required for Right-of-Way

As with Alternative A, Alternative C would primarily require use of industrial land and would require relocation of Anthony's Seafood Distributing. In addition, Alternative C would require displacement of the building currently used by Snider Petroleum, a fuel distribution company, and reconfiguration of loading docks on the eastern side of the Trident Seafood's building. Alternative C would also require removal of a food supply warehouse used by Northwest Harvest, which is located immediately north of the existing bridge. Because of a short-term lease, however, that structure is expected to be unoccupied prior to construction. See the Social, Economic, and Relocation Discipline Report for additional information.

The land required for Alternative C is located to the north of the existing bridge. The area for all but the western end of the bridge is owned by either the City or Port of Seattle, BNSF Railway, National Guard, or private parties. These properties are

zoned IG1 and IG2 and are used for industrial and warehouse purposes. The western end of the bridge approaching West Galer Street would be constructed over U.S Navy land and a small portion of Seattle Parks and Recreation land on the Magnolia Bluff hillside that is zoned Residential Single Family 5000.

Alternative C would require that the City obtain a ROW or an easement over Port of Seattle, Seattle Parks and Recreation, U.S. Navy, and private industrial property. The City would also need to work with BNSF Railway to construct over the railroad tracks to the north of the existing bridge. Portions of the ROW and easement occupied by the existing bridge could be transferred to the Port of Seattle, Seattle Parks and Recreation, or the U.S. Navy.

Right-of-way or easement required for Alternative C would include a 65- to 100-foot-wide corridor totaling 9.3 acres. See Appendix A for figures and tables showing right-of-way needs for each alternative.

Relationship to Public Facilities and Utilities

Similar to Alternative A, the ROW or easement required for Alternative C could be used for joint location of telecommunication and electrical lines. Also, the configuration of this alternative, with a length of surface road on Port property, would allow north-south vehicle access between upland Port of Seattle property and the waterfront. BNSF Railway and bike path access under the bridge would be maintained. Unlike Alternative A, Alternative C would not be located over that portion of the park-owned Smith Cove Acquisition Parcels where recreation activities would occur.

Future Development Pattern Considerations

Constructing the bridge as proposed under Alternative C would not substantially affect the ability to retain the types of uses that are currently in the area. Alternative C would move the bridge alignment to the north away from the water; as a result, this would allow a greater visual and physical connection between an increased amount of land and the water, and it would decrease the impacts on properties adjacent to Smith Cove. The western end of the bridge would swing in toward the wooded slope and improve the viability of development in the area north of Smith Cove. Given that the amount of land along Elliott Bay is a finite resource, increasing the amount of land connected to the shoreline may affect the type of development occurring on Port property adjacent to Smith Cove if future development pressures shift over the lifetime of the structure.

Other potential impacts from Alternative C, such as noise, air, water, and visual quality changes, are not expected to cause land use changes and affect future development patterns. Please refer to relevant discipline reports for this project for a description of impacts related to other elements of the environment, including social and economic conditions, visual quality, transportation, water quality, air quality, and noise.

Consistency/Conflict with Adopted Plans and Policies

Overall, Alternative C would be consistent with City of Seattle, Port of Seattle, and BINMIC policies for use of industrial zoned land and would not preclude development of that land in compliance with those policies. Unlike Alternative A,

Alternative C would not be located within the designated shoreline area and would not be subject to City shoreline policies.

As described for Alternative A, no conflicts between Alternative C and tribal interests have been identified to date. Alternative C would be less likely than Alternative A to have conflicts with tribal fishing interests because it would not be located adjacent to the shoreline. As part of the Section 106 process for historic and cultural resources, FHWA will make formal government-to-government consultation with potentially affected tribes. Any issues identified by the tribes will be addressed through the ongoing environmental process.

Please see the Applicable Land Use Plans and Regulations section of this report below for a detailed consistency analysis and disclosure of any potential conflicts with adopted plans, policies, and regulations.

Alternative D

Land Required for Right-of-Way

As with Alternatives A and C, Alternative D would primarily require use of industrial land and would require relocation of Anthony's Seafood Distributing. Alternative D would also displace an unused warehouse on the private industrial land north of the existing bridge near 15th Avenue West (Tsubota Family Property potentially optioned for development of Interbay Urban Center). In addition, this alternative would require removal of three buildings on the Port's North Bay/Terminal 91 property. One building is used by Snider Petroleum, a fuel distribution company, and the other is one of five buildings occupied by Seattle City Ice, a cold storage operation. The third building, a food supply warehouse used by Northwest Harvest, is located immediately north of the existing bridge, which because of a short-term lease is expected to be unoccupied prior to construction. See the Social, Economic, and Relocation Discipline Report for additional information.

The land required for Alternative D is located to the north of the existing bridge. The area for all but the western end of the bridge is composed of a combination of parcels that are either City ROW or Port of Seattle, BNSF Railway, National Guard, or privately owned property. These properties are zoned IG1 and IG2, and are used for industrial and warehouse purposes.

The western end of the bridge approaching West Galer Street would be constructed over U.S. Navy land and a small portion of unoccupied Seattle Parks and Recreation land on the Magnolia Bluff hillside that is zoned Residential Single Family 5000.

Alternative D would require that the City obtain a ROW or an easement over Port of Seattle, Seattle Parks and Recreation, U.S. Navy, National Guard, and private industrial property. The City would also need to work with BNSF Railway to construct over the railroad tracks to the north of the existing bridge. Portions of the ROW and easement occupied by the existing bridge could be transferred to the Port, Seattle Parks and Recreation, or the U.S. Navy for future use.

Right-of-way or easement required for the Alternative D – Intersection option would include an approximate 65- to 95-foot-wide corridor totaling 8.1 acres. Right-of-way or easement required for the Alternative D – Ramps option would include a 65- to 150-foot-wide corridor totaling 7.7 acres. See Appendix A for figures and tables showing right-of-way needs for each alternative.

Relationship to Public Facilities and Utilities

Similar to Alternatives A and C, the ROW or easement required for Alternative D could be used for joint location of telecommunication and electrical lines. Also, the bridge would be designed to allow north-south vehicle access under the bridge between upland Port of Seattle property and the waterfront. BNSF Railway and bike path access under the bridge would be maintained. Unlike Alternative A, Alternative D would not be located over that portion of the park-owned Smith Cove Acquisition Parcels where recreation activities would occur.

Future Development Pattern Considerations

Constructing the bridge as proposed under Alternative D would not substantially affect the ability to retain the types of uses that are currently in the area. Alternative D would move the bridge alignment north away from the water; as a result, this would allow a greater visual and physical connection between an increased amount of land and the water, and it would decrease the impacts on properties adjacent to Smith Cove. The western end of the bridge would swing in toward the wooded slope and improve the viability of development in the area north of Smith Cove. Given that the amount of land along Elliott Bay is a finite resource, increasing the amount of land connected to the shoreline may affect the type of development occurring on Port property adjacent to Smith Cove if future development pressures shift over the lifetime of the structure.

The Alternative D – Intersection option would include a ramp running to the north, which is similar to the Alternative A – Intersection option in that it would potentially render adjacent land less desirable for development.

Alternative D would impact the usability of the parcel of land just east of the railroad tracks and south of the bridge. This parcel would become a challenge to develop in terms of lot configuration and noise impacts because of its location between railroad tracks and the elevated roadway.

Other potential impacts from Alternative D related to air, noise, water, and visual quality changes are not expected to cause land use changes and affect future development patterns. Please refer to relevant discipline reports for this project for a description of impacts related to other elements of the environment, including social and economic conditions, visual quality, transportation, water quality, air quality, and noise.

Consistency/Conflict with Adopted Plans and Policies

Overall, Alternative D would be consistent with City of Seattle, Port of Seattle, and BINMIC policies for use of industrial zoned land and would not preclude development of that land in compliance with those policies. Unlike Alternative A, Alternative D would not be located within the designated shoreline area and would not be subject to City shoreline policies.

As described for Alternative A, no conflicts between Alternative D and tribal interests have been identified to date. Alternative D would be less likely than Alternative A to have conflicts with tribal fishing interests because it would not be located adjacent to the shoreline. As part of the Section 106 process for historic and cultural resources, FHWA will make formal government-to-government

consultation with potentially affected tribes. Any issues identified by the tribes will be addressed through the ongoing environmental process.

Please see the Applicable Land Use Plans and Regulations section of this report below for a detailed consistency analysis and disclosure of any potential conflicts with adopted plans, policies, and regulations.

No Build Alternative

No mitigation related to land use would be proposed for the No Build Alternative.

Alternative A

Under Alternative A, ROW acquisition would need to comply with City of Seattle land use and zoning regulations, where applicable. Owners of displaced businesses would be compensated at fair market value and provided relocation assistance in accordance with the Uniform Relocation and Assistance and Real Property Act of 1970, as amended (see the Social, Economic, and Relocation discipline report for more information). Please refer to relevant project discipline reports for a description of mitigation measures related to other elements of the environment, including social and economic conditions, visual quality, transportation, water quality, air quality, and noise.

Alternative C

Mitigation measures for Alternative C would be the same those described for Alternative A.

Alternative D

Mitigation measures for Alternative D would be the same as those described for Alternative A.

No Build Alternative

Impacts

No construction impacts would occur under the No Build Alternative.

Mitigation Measures

No construction impacts would occur under the No Build Alternative; therefore, no mitigation measures are proposed.

Alternative A

Impacts

Construction of either option under Alternative A would take 39 months. The bridge would be closed to all traffic for one 17-month period within that time frame.

Construction of Alternative A could cause temporary disruptions for industrial uses located on Port of Seattle property. Industrial vehicles trying to access the waterfront and Piers 90 and 91 within North Bay/Terminal 91 from upland areas may be diverted or delayed because of construction activities for the new bridge.

Approximately 18.4 acres of temporary ROW or easement would be required to construct the Alternative A – Intersection option, whereas approximately 15.8 acres of temporary ROW or easement would be required to construct the Alternative A – Ramps option. (These calculations include staging areas, the area that would be affected by demolishing the existing bridge, and the ROW that would be retained for operation.)

Mitigation Measures

Construction of Alternative A would need to comply with City of Seattle land use and zoning regulations. Please refer to relevant discipline reports for this project for a description of mitigation measures related to other elements of the environment, including social and economic conditions, visual quality, transportation, water quality, air quality, and noise.

Construction in critical areas would need to meet the requirements of SMC Section 25.09.

A construction management plan would be prepared to manage construction traffic in the vicinity of the project. The plan would identify mitigation measures to be implemented during the construction phases. The measures would include, in part, providing advanced notice to local businesses of construction activities and stipulating detour routes and parking locations.

To mitigate construction impacts to specific businesses and residences, a public interaction plan for construction activities would be prepared. This plan could include public notices and mailings to affected businesses and residences about the scope of construction work, likely impacts, and access issues.

Alternative C

Impacts

Construction of Alternative C would take 41 months. The bridge would be closed to all traffic for one 11-month period within that time frame.

Similar to Alternative A, Alternative C could cause temporary disruptions for industrial uses located on Port of Seattle property. Movement of industrial vehicles within the Port's North Bay/Terminal 91 property could be diverted or delayed because of construction activities for the new structures.

Approximately 21.7 acres of temporary ROW or easement would be required to construct Alternative C. These calculations include staging areas, the area that would be affected by demolishing the existing bridge, and the ROW that would be retained for operation.

Mitigation Measures

Mitigation measures for Alternative C would be the same as those described for Alternative A.

Alternative D

Impacts

Construction of either option under Alternative D would take 45 months. The bridge would be closed to all traffic for one 9-month period within that time frame.

Similar to Alternative A, Alternative D could cause temporary disruptions for industrial uses located on Port of Seattle property. Movement of industrial vehicles within the Port's North Bay/Terminal 91 property could be diverted or delayed because of construction activities for the new bridge. The City Ice cold storage business would experience temporary disruptions while one of its buildings is relocated to construct this alternative.

Approximately 19.9 acres of temporary ROW or easement would be required to construct the Alternative D – Intersection option, whereas approximately 17.9 acres of temporary ROW or easement would be required to construct the Alternative D – Ramps option. (These calculations include staging areas, the area that would be affected by demolishing the existing bridge, and the ROW that would be retained for operation.)

Mitigation Measures

Mitigation measures for Alternative D would be the same as those described for Alternative A.

Applicable Land Use Plans and Regulations

This section describes plans and policies relevant to the alternatives. The project would be located entirely within the Seattle city limits. No federal, state, or regional plans have been identified that contain specific policies that would be applicable to the Magnolia Bridge Replacement Project.

City of Seattle Comprehensive Plan and Neighborhood Plans

Comprehensive Plan

In 1994, to meet the requirements of the Washington State Growth Management Act (GMA), the City of Seattle adopted its Comprehensive Plan. The plan is a 20-year policy document designed to articulate a vision of how Seattle will grow through the year 2014. It makes basic policy choices and provides a framework for adapting to conditions over time. The following analysis is based on the City's currently adopted Comprehensive Plan. An update of this plan is scheduled for 2004. Following adoption of the updated plan, any changes to City policies that would affect the Magnolia Bridge Replacement Project may need to be considered in future rounds of environmental review.

The City of Seattle Comprehensive Plan presents a vision to concentrate future growth in designated neighborhoods called Urban Centers or Urban Villages and to support that growth with the necessary infrastructure, including transportation, housing, social services, and open space. The initial building blocks of the Comprehensive Plan are the elements required by GMA and include land use, transportation, housing, capital facilities, and utilities. King County's Countywide Planning Policies require the addition of an economic development element, and the Seattle Framework Policies (Resolution 28535) call for the inclusion of a neighborhood planning element and a human development element. The Comprehensive Plan provides goals and policies relating to these elements that establish how the City will accommodate projected population and employment growth.

The City's Comprehensive Plan goals and policies that would relate most directly to environmental factors associated with the proposed project alternatives are described below. Land use designations for the study area are described on the Seattle Comprehensive Plan Future Land Use Map. These future land use designations are consistent with the zoning and existing land use in the study area shown on Figures 10 and 11.

Land Use Element

Industrial

The Land Use Element of the Comprehensive Plan describes City policies related to establishment of Manufacturing/Industrial Centers. Areas designated for these centers comprise the majority of the land that would be used for the project alternatives' footprints. The proposed project alternatives are located within the BINMIC.

Land Use Goal LG19 calls for ensuring that adequate accessible industrial land remains available to promote a diverse employment base and contribute to economic growth. Goal LG21 encourages supporting the retention and expansion of existing industrial businesses and providing opportunities for the creation of new businesses.

Policies L24 and L25 call for establishment of Manufacturing/Industrial Centers, and Policy L27 places particular emphasis on maintaining land that is uniquely accessible to water, rail, and regional highways for continued industrial use.

Goals LG49 and LG71 call for preservation of industrial land for industrial uses and for protection of viable marine and rail-related industries from uses competing for scarce resources. Goal LG75 seeks to restrict or prohibit uses that may negatively affect the availability of land for industrial activity or that conflict with industrial uses.

Policies L220 through L227 describe the intent of and uses allowed in the General Industrial 1 (IG1) and General Industrial 2 (IG2) zones. IG1 zones provide opportunities for manufacturing and industrial uses and related activity in areas where these activities are already established and viable, and their accessibility by rail and/or waterway make them a specialized and limited land resource. IG2 zones provide areas and conditions that support existing industrial uses; provide space for new industrial development; and accommodate a broad mix of activity, including additional commercial development. In general, the industrial function of IG2 areas is less well established than in IG1 areas and lack the unique industrial infrastructure of rail and water access.

Policies L228 through L230 describe the intent of land uses allowed in the IB zone. This zone provides for the needs of industrial activity and allows for reduced conflicts between industrial development and abutting residential or commercial areas. Development standards address the need to provide an appropriate transition between industrial areas and less intensive use zones.

Policy L257 allows for certain additional view corridor standards to be applied outside of the Shoreline District in industrial areas to preserve views of the water through view corridors required in the Shoreline District.

Open Space Network

Goal LG85 calls for the City to facilitate bicycling and walking as viable transportation choices with links to major parks and open spaces.

Policy L294 seeks to provide public open space in conjunction with major public projects, such as utility and transportation projects.

Shoreline Areas

Policy L316 encourages permitting of only those uses or conditions that retain shoreline use options for future generations unless identified benefits clearly outweigh the physical, social, and/or economic loss to future generations. Water-dependent uses generally will have priority.

Goal LG92 calls for providing the optimum amount of public access, both physical and visual, to shorelines. Goal LG93 calls for preserving and enhancing views of the shoreline and water from upland areas where appropriate.

Goal LG95 calls for relocating transportation facilities that are functionally or aesthetically disruptive to the shoreline. Policy L326 states that streets, highways, freeways, and railroads should be located away from the shoreline in order to maximize the area of waterfront lots and minimize the area of upland lots.

Policy L335 allows landfill on submerged land that does not create dry land where necessary for a water-dependent or water-related use, for the installation of a bridge or utility line, or for wildlife or fisheries habitat mitigation or enhancement.

Policy L355 states that the 35-foot height limit of the Shoreline Management Act (SMA) shall be the standard for maximum height in the Shoreline District except in the following two conditions: (1) where a greater height will not obstruct views of a substantial number of residences and the public interest will be served, and (2) where a greater height is necessary for bridges or the operational needs of water-dependent or water-related uses or manufacturing uses.

Transportation Element

Policy T11 states that the City shall ensure provision of transportation systems and services to promote and accommodate growth and change within Urban Centers, Urban Villages, and Manufacturing/Industrial Centers.

Goal TG11 supports efficient freight and goods movement.

Policy T16 designates principal arterial streets to accommodate and facilitate through traffic and to connect with regional facilities. Policy T34 establishes a transit priority network. The 15th Avenue West/Elliott Avenue West corridor is designated as part of both of these networks.

Policies T53 through T57 designate major truck streets and promote an efficient multimodal commercial transportation strategy. The 15th Avenue West/Elliott Avenue West corridor is designated a major truck street.

Policy T44 establishes an Urban Trails System to support, encourage, and accommodate travel by bicycle and walking. The Elliott Bay Trail located along the exterior of the Port's North Bay/Terminal 91 property is designated as part of this system.

Economic Development Element

Goal EDG6 seeks to ensure that the infrastructure needed to support the economy is in place.

Policy ED27 seeks to coordinate, where appropriate, City investment in transportation and other public facilities with business, employment, and economic development opportunities.

Under Policy ED39, the City will use plans adopted for the Manufacturing/ Industrial Centers to help guide investments.

Policy ED41 calls for the City to strive through efforts with other public jurisdictions to address infrastructure improvements, which may encourage industrial expansion in industrial areas.

Policy ED46 calls for preserving and supporting continued use of suitable shoreline areas for water-dependent and -related businesses.

Environmental Element

Policy E6 states that the City will strive to design, construct, and operate City facilities to limit environmental impacts.

Neighborhood Plans

The City of Seattle Comprehensive Plan directs each of 37 designated neighborhoods to produce neighborhood plans to implement the overall Comprehensive Plan. The Magnolia Bridge is located within the neighborhood planning area for BINMIC and is adjacent to the Queen Anne neighborhood planning area. The Magnolia neighborhood does not have a neighborhood plan.

BINMIC Plan

The *Ballard-Interbay Northend Manufacturing and Industrial Center Plan* (BINMIC Plan) calls for retaining industrial uses within the Manufacturing/ Industrial Center. This plan acknowledges that some commercial and retail services are needed in and near BINMIC but that policies in the plan are designed to preserve the integrity of the area as a manufacturing and industrial center. Specific policies call for preserving land in BINMIC for industrial activities such as manufacturing, warehousing, marine uses, transportation, utilities, construction, and services to businesses. These policies also seek to retain existing businesses and promote their expansion.

The BIMIC Plan proposes surface street mobility improvements to help ensure that the roadway system continues to serve the needs of freight and goods movement and workers commuting to jobs in the BINMIC. Specific policies seek to facilitate truck mobility and maintain and enhance intermodal (barge, ship, rail, and truck) connections.

BINMIC Plan policies cite the interdependence of maritime and fishing industries to related businesses and their special requirements for transportation, utilities, pier space, and chill facilities. This plan calls for encouraging retention of this cluster of businesses and facilitating attraction of related businesses. Specifically, plan policies mention improving and retaining the barge, ship, rail, and truck freight intermodal connections of BINMIC associated with Terminal 91.

A number of policies from the BINMIC Plan were adopted as part of the Neighborhood Planning Element of the Seattle of Seattle Comprehensive Plan. Policies relevant to issues associated with the proposed project alternatives are described below.

Policy BI-P1 calls for preserving land in the BINMIC for industrial activities such as manufacturing, warehousing, marine uses, transportation, utilities, construction, and services to businesses.

Policy BI-P6 establishes that the City will strive to provide infrastructure in the BINMIC that is sufficient to ensure the efficient operation and smooth flow of goods to, through, and from the BINMIC. Infrastructure includes publicly built and maintained roads and arterial streets.

Goals BI-G1 and BI-G2 state that the City will strive to improve industrial traffic flow to and through BINMIC and will facilitate truck mobility.

Goal BI-G4 calls for maintaining and enhancing intermodal (barge, ship, rail, and truck) connections.

Goal BI-G10 and Policy BI-P15 establish that the City will preserve freight mobility, streets, and arterial access routes by preserving turning radii, visibility and sight lines, clearance, and existing lane configurations.

Policy BI-P18 recognizes the interdependence of maritime and fishing industries and related businesses and their special requirements for transportation and other facilities.

Policy BI-P21 calls for retaining shorelines for water-dependent uses. Policy BI-P-22 calls for providing a physical and regulatory environment that fosters the continued health of maritime and fishing industries in the BINMIC.

Policy BI-P25 establishes that public services, utilities, and infrastructure shall be sufficient to accommodate projected growth.

Queen Anne Neighborhood Plan

Policies in the *Queen Anne Neighborhood Plan* that are related to the proposed project alternatives are primarily associated with transportation connections between Queen Anne and other areas (including bicycle and pedestrian connections).

Policy T1.4 promotes mobility between Queen Anne and other urban and recreation centers. Policy T1.9 calls for providing multimodal access, including transit and bicycle access, to BINMIC and other employment areas adjacent to Queen Anne.

Strategies for developing a bicycle beltway include construction of a bridge crossing over the BNSF railroad tracks at West Wheeler Street in the BINMIC. The purpose of this project would be to provide an alternative crossing from the existing bicycle route to Queen Anne Hill.

Relevant policies adopted as part of the Neighborhood Planning Element of the Comprehensive Plan are described below.

Policy QA-P34 calls for providing multimodal linkages from Queen Anne to adjacent employment centers.

Policy QA-P39 calls for providing convenient and safe bicycle and pedestrian access between Queen Anne and the Elliott Bay waterfront.

City of Seattle Land Use and Zoning Code

The City of Seattle Land Use and Zoning Code implements the policies of the City's 1994 Comprehensive Plan. The zoning regulations are an official land use control intended to promote planned use of the City's land resources. The code establishes specific development standards and allowed land uses for each zoning category. Because the Code implements the policies of the Comprehensive Plan, its regulations correspond to policies discussed above for the Comprehensive Plan. Zoning requirements that would be most relevant to the proposed project alternatives are described below.

Industrial Zoning

SMC Section 23.34.092 describes location criteria for the IG1 zone. For all proposed project alternatives, most of the bridge/roadway would be constructed on land zoned

IG1. The IG1 zone is appropriate for areas directly related to the shoreline having suitable water access for marine industrial property, upland property of sufficient depth to accommodate industrial activity, an existing character of industrial uses and related commercial activity, and direct access to major rail lines serving industrial businesses.

SMC Sections 23.34.020 through 026 describe structure height restrictions in industrial zones. IG1, IG2, and IB zones have no maximum height limit except for designated nonindustrial uses, which include retail, office, entertainment, research, and institutional uses.

Industrial Street Landscaping

SMC Section 23.50.016 establishes specific landscaping standards for designated industrial streets including requirements for street trees and screening. Both 15th Avenue West and Elliott Avenue West in the vicinity of the Magnolia Bridge have been designated on the Industrial Streets Landscaping Map (SMC Exhibit 23.50.016A)

View Corridors

SMC Section 23.50.018 requires maintenance of view corridors on the nonshoreline portion of lots that are partially within the Shoreline District, if the portion of the lot in the Shoreline District is required to provide a view corridor under the Seattle Shoreline Master Program.

In addition, SMC Section 25.05.675(P) establishes specific environmental policies for public view protection. Attachment 1 to SMC 25.05.675 (titled *Seattle Views*) provides an inventory of 86 public view sites protected under the State Environmental Policy Act (SEPA). This document was reviewed, and none of the protected views would potentially be affected by the project alternatives. Smith Cove Park is included in the inventory, but the protected view corridor faces to the south, away from the proposed project alternative locations. Other protected views in the study area include those from Bayview Playground, Magnolia Elementary School Playground, and Soundview Terrace Park. The proposed project alternatives would not block views from those locations.

City of Seattle Shoreline Master Program

Local Shoreline Master Programs are required by the Washington State SMA (RCW 90.58) for shorelines of the State. Shoreline Master Programs must include goals and policies related to shoreline uses, conservation, economic development, public access, recreation, circulation, and housing. Development regulations for specific shoreline uses must be included as well.

To better coordinate GMA and Shoreline Management Act (SMA) requirements, the GMA was amended in 1995. The goals and policies found in a Shoreline Master Program are now considered an element of a jurisdiction’s comprehensive plan. The development regulations required as part of Shoreline Master Programs are now considered part of a jurisdiction’s development regulations.

The SMA addresses priorities for shoreline uses. Shoreline master programs are to give preference to uses in the following order of preference that:

- Recognize and protect the statewide interest over local interest,
- Preserve the natural character of the shoreline,
- Result in long-term over short-term benefit,
- Protect the resources and ecology of the shoreline,
- Increase public access to publicly owned areas of the shorelines,
- Increase recreational opportunities for the public in the shoreline, and
- Provide for any other element as defined in RCW 90.58.100 deemed appropriate or necessary.

SMC Chapter 23.60 establishes the Shoreline District as a zoning overlay district. The purpose of this SMC chapter is to implement the policies and provisions of the SMA and the Shoreline Goals and Policies of the City of Seattle Comprehensive Plan. Sections of SMC Chapter 23.60 that are relevant to the project alternatives are described below.

Designated Shoreline Environment

The shoreline adjacent to the project site has a shoreline environment designation of Urban Industrial (UI). The purpose of this environment is to provide for efficient use of industrial shorelines by major cargo facilities and other water-dependent and water-related industrial uses. Views are secondary to industrial development, and public access is provided mainly on public lands.

SMC Section 23.60.840 establishes that streets, railroads, and bridges are permitted outright in the UI environment.

SMC Section 23.60.162 requires that view corridors be provided for uses and developments in the Shoreline District as required in the development standards of the environment in which the use or development is located. According to Section 23.60.876, a view corridor of not less than 35 percent of the width of the lot must be provided and maintained on all waterfront lots within the UI environment that are developed with nonwater-dependent uses or a mix of uses where water-dependent or water-related uses occupy less than 50 percent of the dry land portion of the lot.

Streets

SMC 23.60.206 establishes criteria for placing streets in the Shoreline District. Except for bridges necessary to cross a water body, new streets shall be permitted in the Shoreline District only if necessary to serve lots in the Shoreline District or to connect to public access facilities. Where permitted, new streets on the shoreline will be designed to improve public visual and physical access to the shoreline, conform to natural features, provide means for the public to overcome the physical barrier created by the facility, and minimize the area of upland lots and maximize the area of waterfront lots.

Seattle Environmentally Critical Areas Ordinance

SMC 25.09.020 establishes City of Seattle regulations relating to development in or near environmentally critical areas, which include geologic hazard areas; flood-prone areas; riparian corridors; wetlands, fish and wildlife habitat conservation areas; and abandoned landfills. These regulations implement Seattle Environmentally Critical Area Policies, which are described above for the City's Comprehensive Plan. Regulations relevant to the proposed project alternatives include the following.

SMC Section 25.09.080 establishes development standards for landslide-prone areas, requires complete stabilization of all disturbed areas, and provides for a review process of detailed geotechnical studies and engineering plans.

SMC Section 25.09.100 requires soil engineering studies for all development in areas subject to liquefaction. Mitigation measures in such areas are recommended through the requirements of SMC Title 22, Subtitle VIII, Grading and Drainage Control Ordinance, SMC Title 22, Subtitle I, Building Code, and any other applicable codes or regulations.

SMC Section 25.09.160 establishes development standards for wetlands. The wetland provisions apply only to wetlands of 100 square feet or greater, unless part of a larger drainage system. Grading, filling, draining, and/or development within or over wetlands are only allowed under limited situations and conditions. (No disturbance of wetlands of exceptional value is allowed.) These regulations provide for restoration of degraded wetlands or creation of additional substitution wetlands as mitigation for wetland disturbance.

SMC Section 25.09.180 establishes development limitations for steep slopes. These regulations call for development to avoid areas with over (40 percent) slope whenever possible. When it is not practicable to avoid steep slope areas, conditions can be imposed concerning the type and method of construction that reflect the specific constraints of a site as well as regulations for the landslide-prone areas.

SMC Section 25.09.200 establishes development standards for fish and wildlife habitat conservation areas. Under these regulations, the characteristics of the conservation areas must be used to evaluate proposed development in order to minimize intrusion and preserve the integrity of the habitat areas.

SMC Section 25.09.220 regulates development on or near abandoned landfills. Areas within 1,000 feet of methane-producing landfills may be susceptible to methane leakage. Methane barriers or appropriate ventilation may be required in these areas as specified in SMC Title 22, Subtitle VIII, Grading and Drainage Control Ordinance; SMC Title 22, Subtitle I, Building Code; and Seattle-King County Health Department regulations.

Seattle Parks and Recreation Plan 2000

The City adopted the *Seattle Parks and Recreation Plan* in 2000. The document is a functional plan that broadly addresses open space, park, and recreation services for the City over a 10- to 20-year time frame. It provides a framework for park and recreation planning, establishes policies and proposed actions to assist with allocation of funds and resources, guides management efforts, and complements the City's Comprehensive Plan.

This plan states that one of the primary roles of Seattle Parks and Recreation is to protect and conserve parkland for the benefit of the public. This role includes maintaining parklands for designated uses in an environmentally sensitive manner with attention to appearance and visitor safety. The following discussion focuses on park and recreation-related issues relevant to the project alternatives that are identified in the *Seattle Parks and Recreation Plan* 2000 policies.

The Seattle Pro Parks Levy included an area north of Smith Cove as a Neighborhoods Parks Acquisition project. Transfer of property to the City of Seattle occurred in August 2003 for 7.3 acres of land, including 2.4 acres of property on West Galer Street along the Magnolia hillside (upper site), with views of Elliott Bay and downtown. Also included is 4.9 acres of property along 23rd Avenue West (lower site). This parcel is a level site between the current Magnolia Bridge location and Elliott Bay Marina.

Olmsted Legacy

Plan policies call for conserving and enhancing Olmsted planned and designed parks as key elements of Seattle's park legacy, with focus on the Olmsted system's special aesthetic and design consideration. These policies call for the City to pursue opportunities to expand the system with attention to the original vision. The perimeter of Magnolia is one of the "pleasure drives" in the original Olmsted Plan. The connection to Magnolia is shown along West Armory Way and Thorndyke Avenue West in the original plan.

Plan policies also designate the Olmsted system and individual boulevards and parks comprising the system as Park Historic Resource Areas. Procedures for adequately considering historic planning and design intent in current management practices are part of the planning for future restoration and improvements.

Shorelines

The *Seattle Parks and Recreation Plan* policies call for Seattle Parks and Recreation to advocate for aggressively pursuing acquisition and preservation of open space and public shoreline property. Public shoreline access will be regarded with the same degree of importance as open space and will be planned to ensure a reasonable amount of public access along each shoreline. Policies also call for managing shoreline resources to protect, and where possible, enhance habitat for salmon and other native fish and shellfish resources.

Accessibility

The *Seattle Parks and Recreation Plan* policies call for the City to seek to improve barrier free access to and within park recreation facilities in accordance with the American Disabilities Act.

Port of Seattle Harbor Development Strategy 21

The Port of Seattle Commission adopted the Harbor Development Strategy 21 on June 26, 2001. The document provides strategic direction and a set of policies to guide the future of the Seattle seaport. It sets forth a framework for the Port Commission and Seattle seaport staff to make choices among competing projects and investment options.

The Harbor Development Strategy 21 establishes a series of policies to guide future development at North Bay/Terminal 91. The policies call for the following:

- Phasing out cold storage and vehicle roll-on/roll-off businesses because of declining market factors and finances.
- Continued investment in the piers at Terminal 91.
- Keeping property south of the Magnolia/Garfield Street Bridge, which is mostly within the Shoreline Zone, in maritime and water-dependent uses.
- Maximizing the use of the piers and the Shoreline Zone properties for commercial moorage, marine support activities, and other water-dependent uses.
- Looking at redevelopment of the inland properties north of the Magnolia Bridge as an opportunity to maximize financial value to the Seattle seaport, given land values and that those properties would not be needed to support water-dependent activities at North Bay.
- Carefully considering the impacts on existing tenants when evaluating future use of inland property, and when current leases expire, evaluating the opportunities and implications of relocating those businesses.
- Working within the context of the City of Seattle Comprehensive Plan and the BINMIC Plan when considering the future of North Bay properties.
- Considering the scarcity and desirability of industrial property in the City.
- Considering the economic benefits of clustering business and use types when making decisions about the uses of North Bay properties.
- Initiating master planning for the site which would encompass the entire site plus key adjacent properties.
- Addressing specific issues in the master plan such as traffic, access, and supporting infrastructure requirements.
- Developing the inland property north of the Magnolia Bridge in phases.

Consistency Analysis

No Build Alternative

The No Build Alternative would be consistent with City of Seattle, Port of Seattle, and BINMIC policies for use of industrial zoned land. This alternative would not preclude use and redevelopment of the industrial areas adjacent to the bridge in a manner that would be consistent with the purpose of the IG1 zone and other City, Port, and BINMIC policies for the industrial area. The No Build Alternative would not affect nearby commercial and residential areas.

Under the No Build Alternative, the Magnolia Bridge would be more likely to be damaged and closed if an earthquake were to occur than under the Build Alternatives. The No Build Alternative would, therefore, be less consistent than the Build Alternatives with Seattle Comprehensive Plan transportation and economic development policies calling for the City to maintain transportation systems to serve industrial areas and support economic vitality (Policies and Goals T11, EDG6, and ED41).

Because the existing bridge is located adjacent to the shoreline, the No Build Alternative would not provide for views of the shoreline from upland properties and would limit public shoreline access (Goals LG92, LG93, LG94, and LG95). Shoreline policies and regulations, however, also allow for consideration of the industrial function and use of industrial shoreline areas, as well as other benefits (Policies L316, L355). Decision-makers could determine that benefits such as maintaining existing traffic patterns and limiting displacements would outweigh view and public access factors under this alternative.

Alternative A

Alternative A would be consistent with City of Seattle, Port of Seattle, and BINMIC policies for use of industrial zoned land. This alternative would not preclude use and redevelopment of the industrial areas adjacent to the bridge and thus would be consistent with the purpose of the IG1 zone and other City, Port, and BINMIC policies for the industrial area. This alternative would not affect nearby commercial and residential areas.

Alternative A would be located adjacent to the shoreline and would not provide for views of the shoreline from upland properties and would limit public shoreline access (Goals LG92, LG93, LG94, and LG95). Shoreline policies and regulations, however, also allow for consideration of the industrial function and use of industrial shoreline areas, as well as other benefits (Policies L316, L355). Decision-makers could determine that benefits such as maintaining existing traffic patterns and limiting displacements would outweigh view and public access factors under this alternative.

Alternative A would be consistent with SMC 23.60.206, which establishes criteria for placing streets in the Shoreline District. Although Alternative A would not cross a water body, it would serve lots in the Shoreline District and continue to provide the shoreline public access connection to Smith Cove Park and the Elliott Bay Marina. Alternative A, however, would not minimize the area of upland lots and maximize the area of waterfront lots compared to Alternatives C and D.

Alternative A would require construction over a small portion of the tidelands of Elliott Bay, which serves as fish habitat. The structure would be constructed and mitigation would be provided according to the requirements of SMC 25.09.200.

Alternative A would require construction in a liquefaction zone, steep slopes, and a landslide-prone area. Under Alternative A, the structure would be constructed and mitigation would be provided according to the requirements of SMC 25.09.080, 25.09.100, and 25.09.180.

Alternative C

Alternative C would be consistent with City of Seattle, Port of Seattle, and BINMIC policies for use of industrial zoned land. This alternative would not preclude use and redevelopment of the industrial areas adjacent to the bridge and thus would be consistent with the purpose of the IG1 zone and other City, Port, and BINMIC policies for the industrial area. Compared to the No Build Alternative and Alternative A, Alternative C would provide more opportunity for development on the Port's North Bay/Terminal 91 property to conform to the purposes of the IG1 zone (SMC Section 23.34.092). Alternative C would provide more land that could

be directly linked to water-dependent uses. This alternative would not affect nearby commercial and residential areas.

Alternative C would not be located within the Shoreline District, the boundary of which is 200 feet from the ordinary high water mark, and would not be subject to the requirements of the City's Shoreline Master Program (SMC Chapter 23.60).

Alternative C would require construction in a liquefaction zone, steep slope area, and a landslide-prone area. Under Alternative C, the structure would be constructed and mitigation would be provided according to the requirements of SMC 25.09.080, 25.09.100, and 25.09.180.

Alternative C would require construction near but outside of the 1,000-foot methane buffer of a former landfill, now the Interbay Golf Course. If necessary, the northern portion of Alternative C would be constructed and mitigation would be provided according to the requirements of SMC Section 25.09.220.

Alternative D

Alternative D would be consistent with City of Seattle, Port of Seattle, and BINMIC policies for use of industrial zoned land. This alternative would not preclude use and redevelopment of the industrial areas adjacent to the bridge and thus would be consistent with the purpose of the IG1 zone and other City, Port, and BINMIC policies for the industrial area. Compared to the No Build Alternative and Alternative A, Alternative D would provide more opportunity for development on the Port's North Bay/Terminal 91 property to conform to the purposes of the IG1 zone (SMC Section 23.34.092). Alternative D would provide more land south of the bridge that could be directly linked to water-dependent uses. This alternative would not affect nearby commercial and residential areas.

Alternative D would not be located within the Shoreline District, the boundary of which is 200 feet from the ordinary high water mark, and would not be subject to the requirements of the City's Shoreline Master Program (SMC Chapter 23.60).

Alternative D would require construction in a liquefaction zone, steep slopes, and a landslide-prone area. Under Alternative D, the structure would be constructed and mitigation would be provided according to the requirements of SMC 25.09.080, 25.09.100, and 25.09.180.

Project Objectives

The purpose of this project is to replace the existing Magnolia Bridge structure, approaches, and related arterial connections with facilities that maintain convenient and reliable vehicular and nonmotorized access between the Magnolia community and the rest of the City of Seattle. Because the existing bridge provides the only public vehicular access to the land between North Bay, Smith Cove Park, Elliott Bay Marina, and U.S. Navy property, the project purpose also includes maintenance of access to these areas.

Affected Environment

The proposed project alternatives would primarily be located over land used for industrial and commercial purposes, with western connections to residential areas in the Magnolia neighborhood. Generally, existing land uses in the study area are consistent with the zoning designations. The proposed project alternatives would be subject to City of Seattle policies and regulations. Port of Seattle policies would also be relevant to the alternatives.

Impacts

Operational Impacts

No Build Alternative

The No Build Alternative would maintain existing traffic patterns and would not require acquisition of land for new ROW. The existing structure could affect the type of development likely to occur on underused properties in the future, given its proximity to the water and its physical and aesthetic presence from the ground.

Alternative A

Alternative A would primarily require use of land currently zoned and used for industrial purposes. This alternative would require that the City of Seattle obtain a ROW or an easement over Port of Seattle, Seattle Parks and Recreation, and U.S. Navy property. The City would also need to work with BNSF Railway to construct over a portion of the railroad tracks to the south of the existing bridge. One seafood distribution company would need to be relocated.

The project as constructed under Alternative A would continue to form a physical and visual barrier between the shoreline and the uplands. This location would not create a major impact in terms of retaining the types of uses that are currently in the area but would limit other types of development into the foreseeable future.

Alternative C

Land use changes under Alternative C would be similar to those described for Alternative A. Alternative C would primarily require use of land currently zoned and used for industrial purposes. Alternative C would require that the City of Seattle

obtain a ROW or an easement over Port of Seattle, Seattle Parks and Recreation, U.S. Navy, National Guard, and private industrial property. The City would also need to work with BNSF Railway to construct over a portion of the railroad tracks to the north of the existing bridge. Alternative C would require relocation of a seafood processing company and a petroleum distribution company as well as reconfiguration of loading docks for another seafood processing and distribution company.

Under Alternative C, the bridge alignment would move to the north away from the water; the result would be a connection between an increased amount of land and the water. Given that the amount of land along Elliott Bay is a finite resource, increasing the amount of land connected to the shoreline may affect the type of development occurring on Port property adjacent to Smith Cove if future development pressures shift over the lifetime of the structure. Alternative C would be more likely to influence development pressures than Alternative A, which would maintain a similar barrier between the uplands and the shoreline as existing conditions. Alternative C would also have a greater influence on development pressures than Alternative D, because it exposes more upland area to the water than Alternative D.

Alternative D

Land use changes under Alternative D would be similar to those described for Alternatives A and C. Alternative D would primarily require use of land currently zoned and used for industrial purposes. Alternative D would require that the City of Seattle obtain a ROW or an easement over Port of Seattle, Seattle Parks and Recreation, U.S. Navy, National Guard, and private industrial property. The City would also need to work with BNSF Railway to construct over a portion of the railroad tracks to the north of the existing bridge. Displacements include relocation of a seafood processing company and a petroleum distribution company, destruction of one of five buildings occupied by a cold storage company, and removal of two structures that would be unoccupied at the time of construction.

Under Alternative D, the bridge alignment would move north away from the water, and as a result, would allow connection of an increased amount of land to the water. Given that the amount of land along Elliott Bay is a finite resource, increasing the amount of land connected to the shoreline may affect the type of development occurring on Port property adjacent to Smith Cove if future development pressures shift over the lifetime of the structure. Alternative D would be more likely to influence development pressure than Alternative A, which would maintain a barrier between the uplands and the shoreline similar to existing conditions. Alternative D would influence development pressure to a lesser extent than Alternative C because it exposes less upland area to the water than Alternative C.

Construction Impacts

Construction of the Build Alternatives could cause temporary disruptions for industrial uses located on the Port's North Bay/Terminal 91 property. Movement of industrial vehicles within the North Bay property could be diverted or delayed because of construction activities for the new bridge.

Secondary and Cumulative Impacts

The Magnolia Bridge replacement is one of several projects in the study area in the planning and evaluation phases of development. Planning is underway for building

new mass-transportation infrastructure and for redeveloping the large areas of underutilized land in the area. These projects will influence future transportation patterns, land use patterns, and economic potential. Related projects include the following:

- The Seattle Monorail Project is in the design phase for the Green Line, a monorail route approved by voters that will run from Ballard to West Seattle. The Green Line will include stations at West Dravus Street/16th Avenue West and West Mercer Street/Elliott Avenue West, as well as a future station near Magnolia Bridge at West Blain Street/15th Avenue West.
- The Pro Parks Levy, approved by voters in November 2000, made over $198 million available for land acquisition and development by Seattle Parks and Recreation. Land will be acquired for over 30 new parks, and 95 park development projects are planned or underway. In the Smith Cove area, 7.3 acres of land were purchased through this levy program.
- The Port of Seattle is in the planning phase for 57 acres of land on the uplands of Piers 90 and 91, known as North Bay/Terminal 91. The Port's study also includes the possible relocation of the National Guard Armory and reuse of that property.
- Private development, including a potential private commercial development known at the Interbay Urban Center on property currently owned by the Tsubota Family (12.5 acres; 1,500 lineal feet along 15th Avenue West) and future phases of Amgen.
- Sound Transit's commuter rail line, known as Sounder, runs between downtown Seattle and Everett along the BNSF railroad tracks through the study area. A station is not currently proposed for the Interbay area, but a stop would be possible if future conditions warrant such a stop.
- Seattle's waterfront streetcar currently runs to just north of Broad Street. There have been ongoing discussions of extending the line north to Amgen or beyond. If the streetcar line were to be extended, it could serve Interbay. Under these circumstances, the streetcar maintenance facility would need to be relocated and could be moved to the study area.

Potential for an Intermodal Hub

If the proposed transportation systems through the Interbay area were designed in concert, the concept for a future intermodal hub could develop. An intermodal hub could eliminate the need for buses from Magnolia to use 15th Avenue West. This change would reduce traffic on 15th Avenue West and benefit freight and other traffic along the corridor. The intermodal hub could provide connections between the monorail, commuter rail, water transport, buses, and pedestrian and bicycle systems. Pedestrian and bicycle routes along the water already serve Amgen and the Port's North Bay/Terminal 91 property and connect to Seattle's north waterfront, Belltown, and downtown. The Magnolia Bridge would provide access to an intermodal hub if developed under any of the Build Alternatives.

Under the No Build Alternative, changes to the design of the bridge would not occur. The No Build Alternative would not provide an opportunity to connect to an intermodal hub. All of the Build Alternatives would be designed to accommodate an intermodal hub if one were developed.

Planned Development

The location of the bridge structure and ramps would affect the development of currently vacant or underutilized Port of Seattle property. The existing bridge location limits views and a perception of a connection to the water from upland areas. Differences in land values would be expected for land with views and connection to Elliott Bay compared to properties separated from the waterfront by the bridge. Although industrial development is much less sensitive to the impacts of alignment location than other land use types, this effect would be true even for the industrial-related uses on Port property that are allowed under current zoning.

Under the No Build Alternative and Alternative A, upland properties would remain visually separated from the waterfront. However, Alternative A (as well as the No Build Alternative) would not physically separate these properties because the spacing of the piers would allow vehicles to pass underneath almost without restriction. The Alternative A – Ramps option would impose a limited barrier. Under Alternatives C and D, more upland property would be visually connected to the waterfront, which could influence the type of redevelopment that would occur in the area.

The Build Alternatives would not be located on Amgen property and would not affect future planned expansion of that facility. Alternative A would not affect the Interbay Urban Center project, which would be located on private property along 15th Avenue West immediately north of the existing bridge. Alternatives C and D, however, would be located within the southern end of the property potentially used for the Interbay Urban Center and could cause a reduction in the size of that development.

Monorail

While the location and the timing of the monorail station near West Blaine Street has not been determined, a station will be located at West Dravus Street/16th Avenue West. The project alternatives would keep traffic patterns the same as existing conditions and would not affect traffic volumes along West Dravus Street. All transportation modes use West Dravus Street to travel between Magnolia and Queen Anne and to access 15th Avenue West. From a monorail station area planning standpoint, it is desirable to make West Dravus Street as pedestrian-friendly as possible. A new monorail stop will increase pedestrian traffic on this high-volume street. King County/Metro may decide to reallocate service hours to certain routes to support intermodal transfers to and from the Monorail.

Mitigation Measures

Operational Mitigation

ROW acquisition for all Build Alternatives would need to comply with City of Seattle land use and zoning regulations, where applicable. Please refer to relevant discipline reports for this project for a description of mitigation measures related to other elements of the environment.

Owners of displaced businesses would be compensated at fair market value and provided relocation assistance when purchases occur in accordance with the Uniform Relocation and Assistance and Real Property Act of 1970, as amended.

Construction Mitigation

Construction under all Build Alternatives would need to comply with City of Seattle land use and zoning regulations. Please refer to relevant discipline reports for this project for a description of mitigation measures related to other elements of the environment.

For all Build Alternatives, construction in critical areas would need to meet the requirements of SMC Section 25.09.

For all Build Alternatives, a construction management plan would be prepared to manage construction traffic in the vicinity of the project. This plan would include, in part, providing advanced notice to local businesses of construction activities and stipulating detour routes and parking locations.

To mitigate construction impacts to specific businesses and residences under all alternatives, a public interaction plan for construction activities would be prepared. This plan could include public notices and mailings to affected businesses and nearby residences about the scope of construction work, likely impacts, and access issues.

Consistency with Plans and Policies

No Build Alternative

The No Build Alternative would not preclude use and redevelopment of the industrial areas adjacent to the bridge and thus would be consistent with the purpose of the IG1 zone and other policies for the industrial area.

Under the No Build Alternative, the Magnolia Bridge would be more likely to be damaged and closed if an earthquake were to occur. This alternative would, therefore, be less consistent than the Build Alternatives with policies calling for the City to maintain adequate transportation systems.

The No Build Alternative is located adjacent to the shoreline and would not provide views from upland properties or public shoreline access as called for by City shoreline policies. City policies, however, also allow for consideration of other factors such as the function and use of the industrial area.

Alternative A

Alternative A would be consistent with City of Seattle, Port of Seattle, and BINMIC policies and regulations. This alternative would not preclude use and redevelopment of the industrial areas adjacent to the bridge and thus would be consistent with the purpose of the IG1 zone and other policies for the industrial area.

Alternative A would be located adjacent to the shoreline and would not provide views from upland properties or public shoreline access as called for by City shoreline policies. City policies, however, also allow for consideration of other factors such as the function and use of the industrial area.

This alternative, as well as the other Build Alternatives, would require construction in critical areas and would need to meet the requirements of Seattle's Environmentally Critical Areas Ordinance.

Alternative C

Alternative C would be consistent with City, Port, and BINMIC policies and regulations as described for Alternative A. Alternative C would not be located in the Shoreline District and would not be subject to Shoreline Master Program requirements.

Alternative D

Alternative D would be consistent with City, Port, and BINMIC policies and regulations in a similar manner as described for Alternative A. Alternative D would not be located in the Shoreline District and would not be subject to Shoreline Master Program requirements.

Comparison of Alternatives

The No Build Alternative would be more likely to be damaged in an earthquake than the Build Alternatives. The cost of retrofitting the bridge would approach the cost of building a new bridge to modern seismic standards.

Alternative A would displace one business and would be located within the designated Shoreline District, which could cause more potential conflicts with City shoreline policies and regulations than Alternatives C and D. Alternative C would displace two businesses and require reconfiguration of loading docks for another business. Alternative D would displace all or part of three businesses on Port of Seattle property, requiring greater relocation costs than the No Build Alternative and Alternatives A and C.

The amount of land along Elliott Bay is a finite resource. The location of a new Magnolia Bridge and the amount of land connected to the shoreline may affect the type of development occurring on Port property adjacent to Smith Cove if future development pressures shift over the lifetime of the structure. Alternative A would be the least likely of the Build Alternatives to influence development patterns because it would provide a barrier between upland properties and the water, similar to existing conditions. Alternative A would also have the smallest potential to create views of the water from upland properties (for detailed analyses of potential view impacts from adjacent areas see the Visual Quality Discipline Report).

Under Alternative D, the bridge would be moved to the north away from the water and as a result would connect an increased amount of land to the water. Alternative D would be more likely to influence development patterns than Alternative A and would have a greater potential to create views of the water from upland properties. Of the three Build Alternatives, Alternative C would be to most likely to influence development patterns and create views of the water from upland areas because it would not provide a raised structure across the center of the Port's property and therefore would expose the most land to the water.

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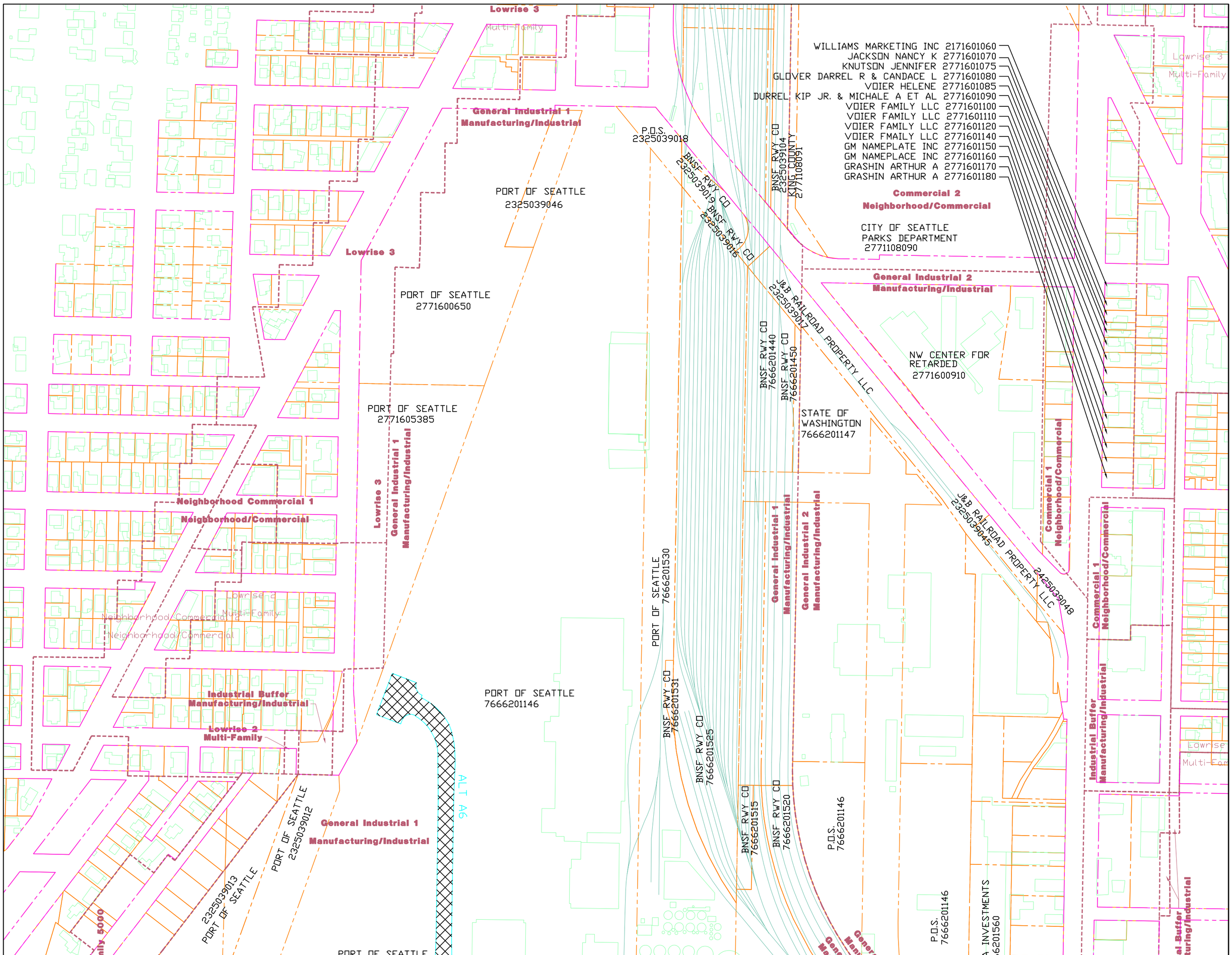
Appendix A - Build Alternatives Right-of-Way Needs



LEGEND

- ZONING BOUNDARY
- PARCEL LINE
- R.O.W. LINE

PARCEL DATA SHOWN BASED ON INFORMATION FROM CITY OF SEATTLE GIS DEPARTMENT AND SEATTLE PUBLIC UTILITIES CENTRAL GEOGRAPHIC DATA BASE DRAWINGS. ACCURACY OF LOCATION OF R.O.W., PARCEL LINES AND OWNERS LISTED SHOULD BE CONFIRMED PRIOR TO RELYING ON THIS DATA.

ALIGNMENT A6 - R.O.W. NEEDS

OWNER	#	ROW TAKE (SF)	APPROX. TOTAL PARCEL (SF)	ZONING
TSUBOTA	1	887	17,360	GEN. INDUSTRIAL 2
TSUBOTA	2	445	78,874	GEN. INDUSTRIAL 2
B.N.S.F.	3	8	620	GEN. INDUSTRIAL 2
P.O.S.	4	12	4,025,428	GEN INDUSTRIAL 2
P.O.S.	5	225,647	4,025,428	GEN. INDUSTRIAL 1
C.O.S. PARKS	6	8,537	214,638	GEN. INDUSTRIAL 1
C.O.S. PARKS	7	18,852	109,098	GEN. INDUSTRIAL 1
C.O.S. PARKS	8	16,908	169,449	RES. SINGLE FAMILY 5000
C.O.S. PARKS	9	10,668	28,776	RES. SINGLE FAMILY 5000
C.O.S. PARKS	10	1,993	2,825	RES. SINGLE FAMILY 5000
TOTAL		283,957		

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N

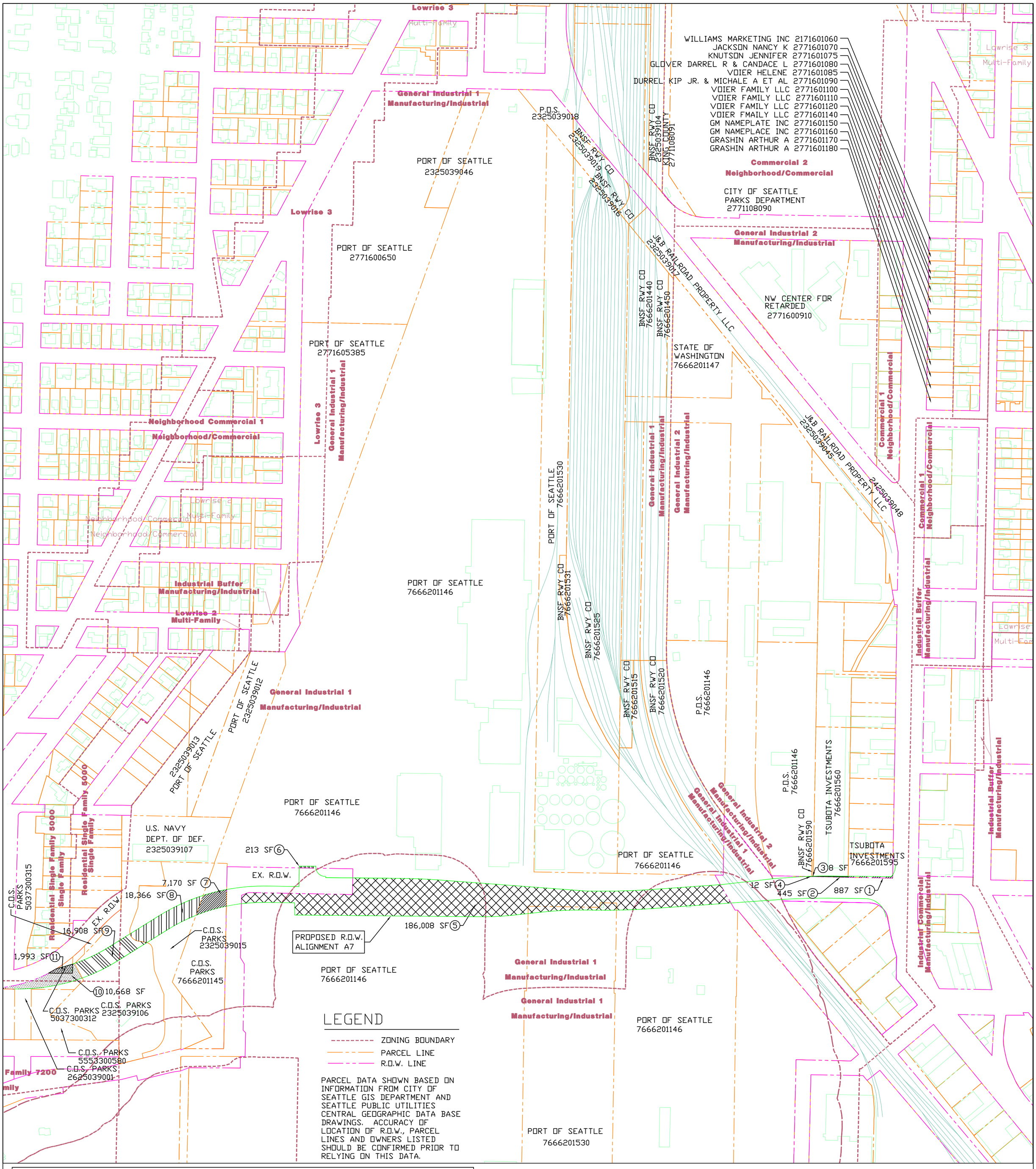
GRAPHIC SCALE
0 120 240 480 960
1 inch = 240 ft.

Magnolia BRIDGE PROJECT

ALIGNMENT A6
R.O.W. MAP

JULY 28, 2004

NOTE:
RIGHT-OF-WAY INFORMATION SHOWN IS FOR PLANNING PURPOSES ONLY AND IS BASED ON PRELIMINARY DESIGN AND AVAILABLE EXISTING RECORDS.



ALIGNMENT A7 - R.O.W. NEEDS

OWNER	#	ROW TAKE (SF)	APPROX. TOTAL PARCEL (SF)	ZONING
TSUBOTA	1	887	17,360	GEN. INDUSTRIAL 2
TSUBOTA	2	445	78,874	GEN. INDUSTRIAL 2
B.N.S.F.	3	8	620	GEN. INDUSTRIAL 2
P.O.S.	4	12	4,025,428	GEN INDUSTRIAL 2
P.O.S.	5	186,008	4,025,428	GEN. INDUSTRIAL 1
P.O.S.	6	213	4,025,428	GEN. INDUSTRIAL 1
C.O.S. PARKS	7	7,170	214,638	GEN. INDUSTRIAL 1
C.O.S. PARKS	8	18,366	109,098	GEN. INDUSTRIAL 1
C.O.S. PARKS	9	16,908	169,449	RES. SINGLE FAMILY 5000
C.O.S. PARKS	10	10,668	28,776	RES. SINGLE FAMILY 5000
C.O.S. PARKS	11	1,993	2,825	RES. SINGLE FAMILY 5000
TOTAL		242,678		

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N

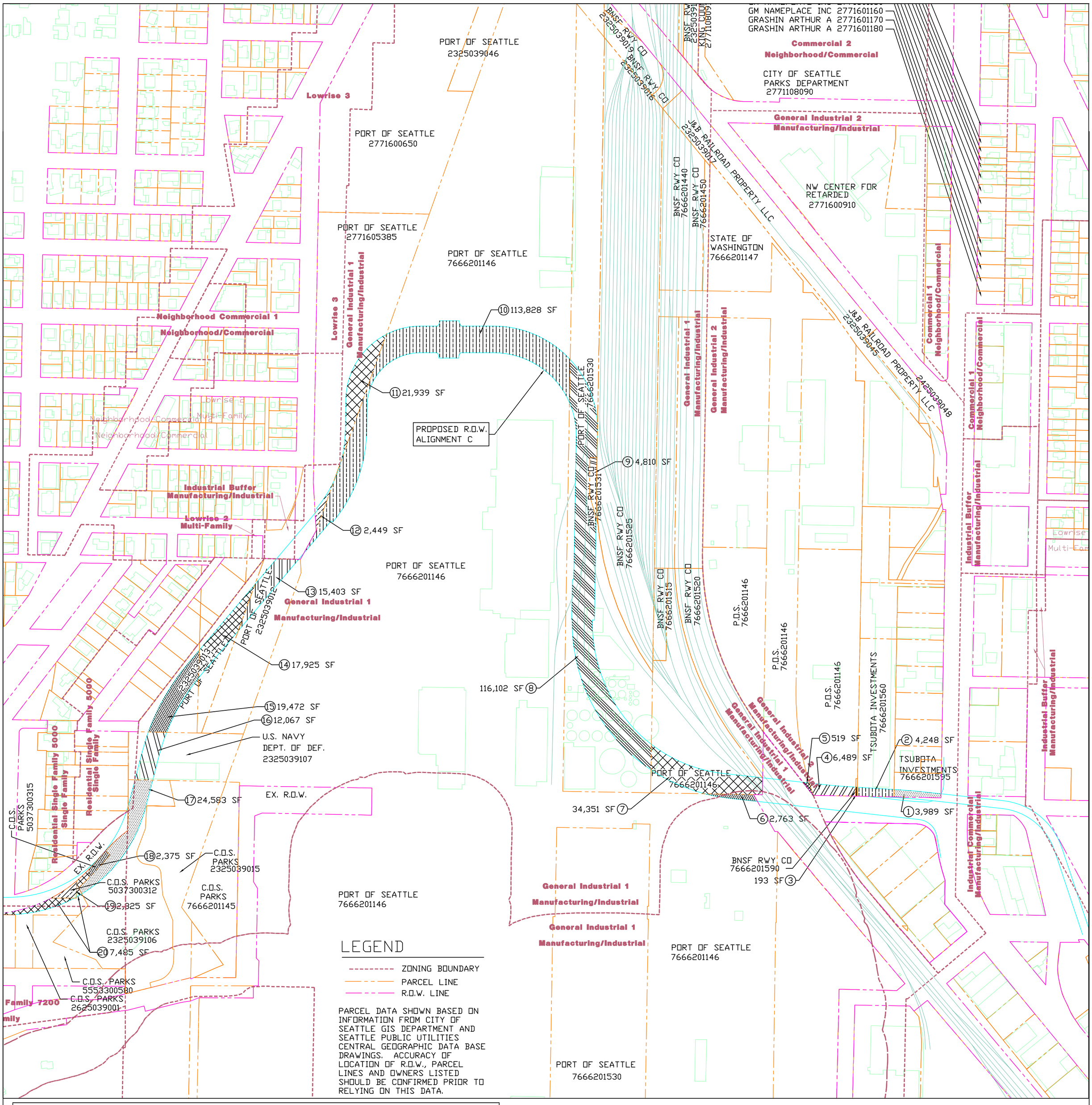
GRAPHIC SCALE
0 120 240 480 960
1 inch = 240 ft.

Magnolia BRIDGE PROJECT

ALIGNMENT A7
R.O.W. MAP

JULY 28, 2004

NOTE:
RIGHT-OF-WAY INFORMATION SHOWN IS FOR PLANNING PURPOSES ONLY AND IS BASED ON PRELIMINARY DESIGN AND AVAILABLE EXISTING RECORDS.



ALIGNMENT C - R.O.W. NEEDS

OWNER	#	ROW TAKE (SF)	APPROX. TOTAL PARCEL (SF)	ZONING
TSUBOTA	1	3,989	17,360	GEN. INDUSTRIAL 2
TSUBOTA	2	4,248	78,874	GEN. INDUSTRIAL 2
B.N.S.F.	3	193	620	GEN. INDUSTRIAL 2
P.O.S.	4	6,489	4,025,428	GEN. INDUSTRIAL 2
P.O.S.	5	519	4,025,428	GEN. INDUSTRIAL 2
P.O.S.	6	2,763	4,025,428	GEN. INDUSTRIAL 1
P.O.S.	7	34,351	4,025,428	GEN. INDUSTRIAL 1
P.O.S.	8	116,102	1,254,528	GEN. INDUSTRIAL 1
B.N.S.F.	9	4,810	5,051	GEN. INDUSTRIAL 1
P.O.S.	10	113,828	4,025,428	GEN. INDUSTRIAL 1
P.O.S.	11	21,939	256,697	GEN. INDUSTRIAL 1
P.O.S.	12	2,449	256,697	GEN. INDUSTRIAL 1
P.O.S.	13	15,403	107,593	GEN. INDUSTRIAL 1
P.O.S.	14	17,925	80,586	GEN. INDUSTRIAL 1
P.O.S.	15	19,472	80,586	GEN. INDUSTRIAL 1
U.S. NAVY	16	12,067	200,360	GEN. INDUSTRIAL 1
C.O.S. PARKS	17	24,583	169,449	RES. SINGLE FAMILY 5000
C.O.S. PARKS	18	2,375	2,375	RES. SINGLE FAMILY 5000
C.O.S. PARKS	19	2,825	2,825	RES. SINGLE FAMILY 5000
C.O.S. PARKS	20	7,485	28,776	RES. SINGLE FAMILY 5000
TOTAL		413,815		

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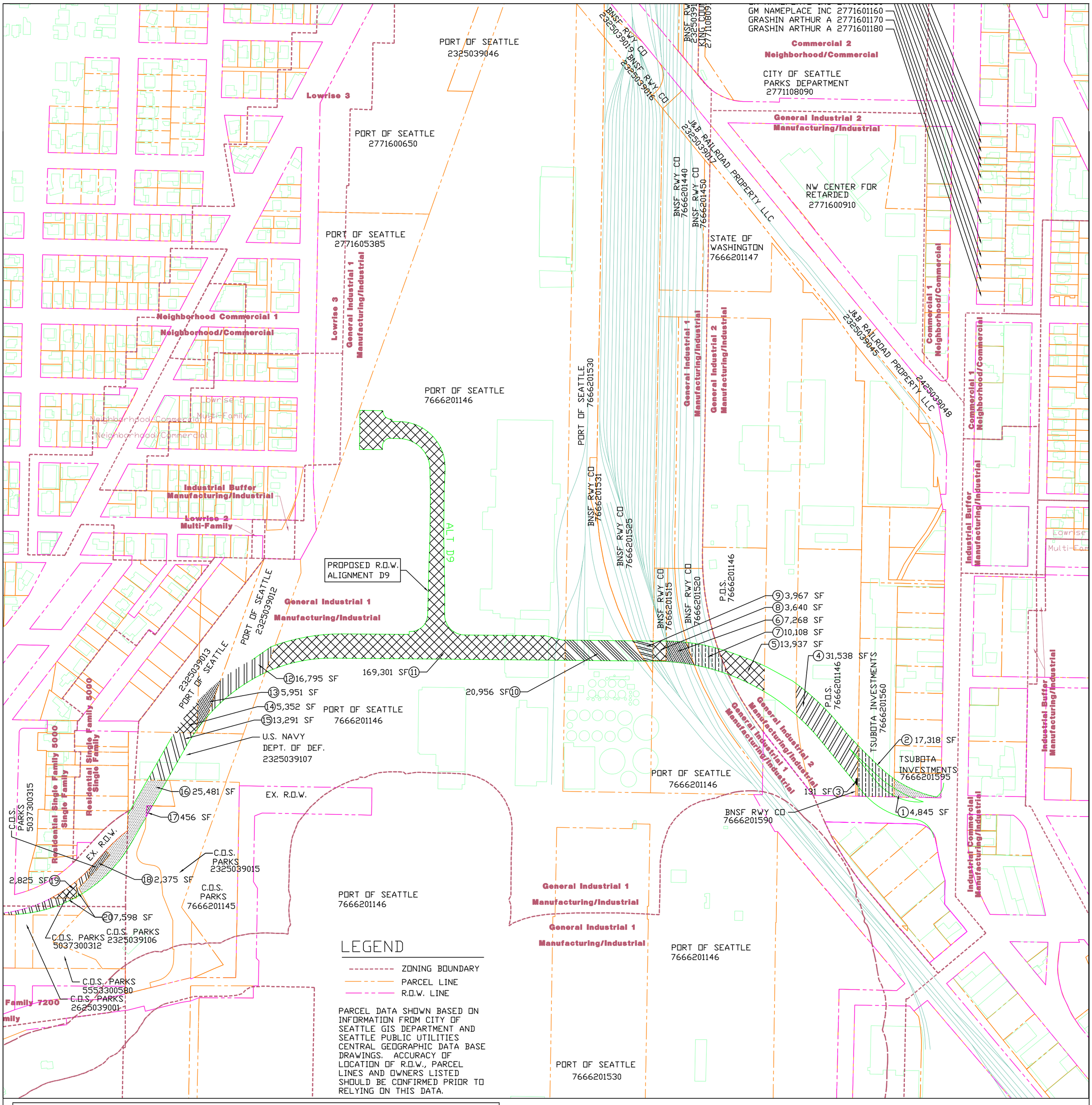
GRAPHIC SCALE
0 120 240 480 960
1 inch = 240 ft.

Magnolia BRIDGE PROJECT

ALIGNMENT C
R.O.W. MAP

JULY 28, 2004

NOTE:
RIGHT-OF-WAY INFORMATION SHOWN IS FOR PLANNING PURPOSES ONLY AND IS BASED ON PRELIMINARY DESIGN AND AVAILABLE EXISTING RECORDS.



LEGEND

- ZONING BOUNDARY
- PARCEL LINE
- R.O.W. LINE

PARCEL DATA SHOWN BASED ON INFORMATION FROM CITY OF SEATTLE GIS DEPARTMENT AND SEATTLE PUBLIC UTILITIES CENTRAL GEOGRAPHIC DATA BASE DRAWINGS. ACCURACY OF LOCATION OF R.O.W., PARCEL LINES AND OWNERS LISTED SHOULD BE CONFIRMED PRIOR TO RELYING ON THIS DATA.

ALIGNMENT D9 - R.O.W. NEEDS

OWNER	#	ROW TAKE (SF)	APPROX. TOTAL PARCEL (SF)	ZONING
TSUBOTA	1	4,845	17,360	GEN. INDUSTRIAL 2
TSUBOTA	2	17,318	78,874	GEN. INDUSTRIAL 2
B.N.S.F.	3	131	620	GEN. INDUSTRIAL 2
P.O.S.	4	31,538	4,025,428	GEN. INDUSTRIAL 2
P.O.S.	5	13,937	4,025,428	GEN. INDUSTRIAL 2
P.O.S.	6	7,268	4,025,428	GEN. INDUSTRIAL 1
B.N.S.F.	7	10,108	87,991	GEN. INDUSTRIAL 1
B.N.S.F.	8	3,640	17,376	GEN. INDUSTRIAL 1
B.N.S.F.	9	3,967	452,998	GEN. INDUSTRIAL 1
P.O.S.	10	20,956	1,254,528	GEN. INDUSTRIAL 1
P.O.S.	11	169,301	4,025,428	GEN. INDUSTRIAL 1
P.O.S.	12	16,795	107,593	GEN. INDUSTRIAL 1
P.O.S.	13	5,951	80,586	GEN. INDUSTRIAL 1
P.O.S.	14	5,352	80,586	GEN. INDUSTRIAL 1
U.S. NAVY	15	13,291	200,360	GEN. INDUSTRIAL 1
C.O.S. PARKS	16	25,841	169,449	RES. SINGLE FAMILY 5000
C.O.S. PARKS	17	456	109,098	GEN. INDUSTRIAL 1
C.O.S. PARKS	18	2,375	2,375	RES. SINGLE FAMILY 5000
C.O.S. PARKS	19	2,825	2,825	RES. SINGLE FAMILY 5000
C.O.S. PARKS	20	7,598	28,776	RES. SINGLE FAMILY 5000
TOTAL		363,493		

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GRAPHIC SCALE
0 120 240 480 960
1 inch = 240 ft.

Magnolia BRIDGE PROJECT

ALIGNMENT D9
R.O.W. MAP

JULY 28, 2004

NOTE:
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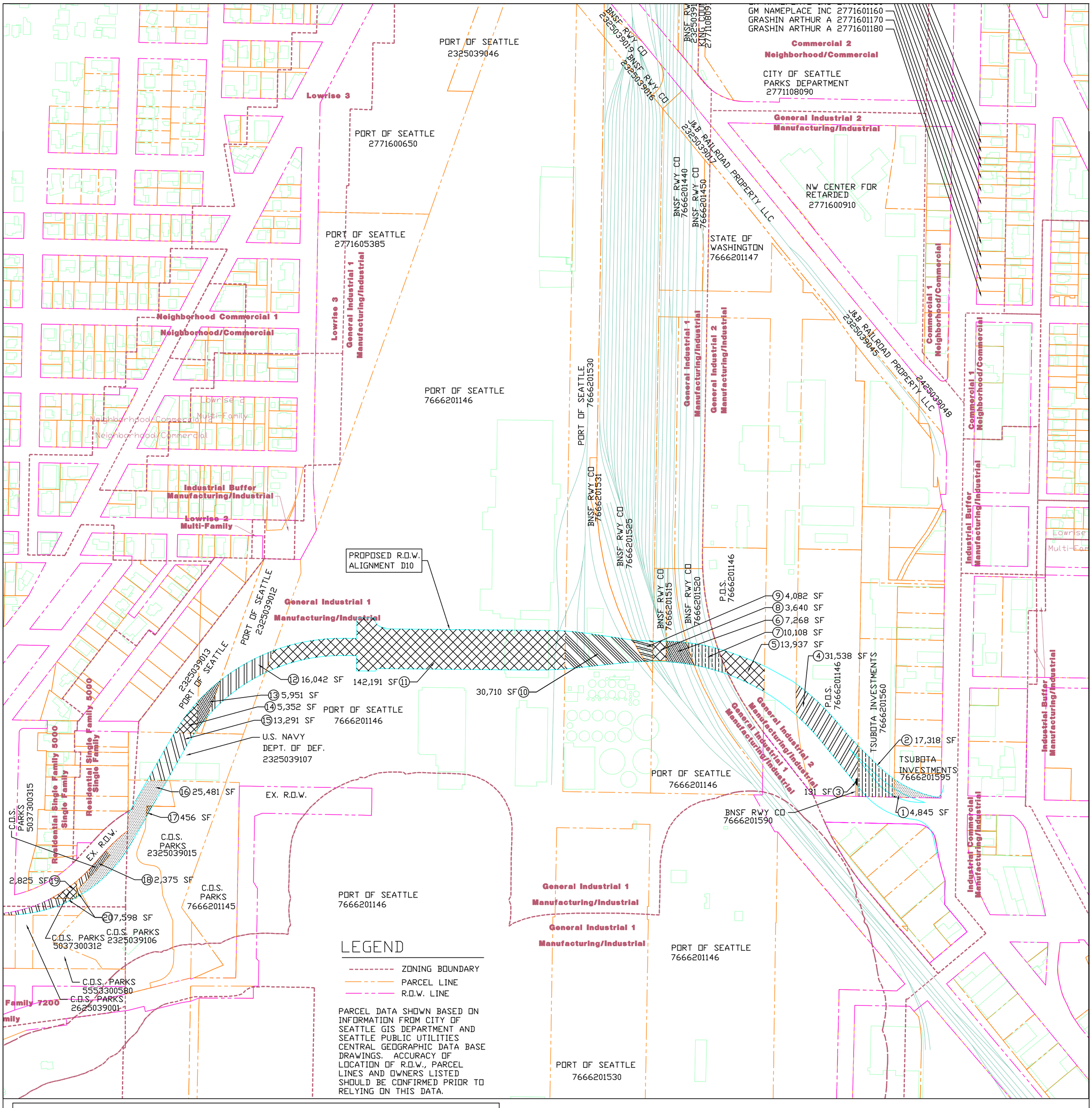

LEGEND

- ZONING BOUNDARY
- PARCEL LINE
- R.O.W. LINE

PARCEL DATA SHOWN BASED ON INFORMATION FROM CITY OF SEATTLE GIS DEPARTMENT AND SEATTLE PUBLIC UTILITIES CENTRAL GEOGRAPHIC DATA BASE DRAWINGS. ACCURACY OF LOCATION OF R.O.W., PARCEL LINES AND OWNERS LISTED SHOULD BE CONFIRMED PRIOR TO RELYING ON THIS DATA.

ALIGNMENT D10 - R.O.W. NEEDS

OWNER	#	ROW TAKE (SF)	APPROX. TOTAL PARCEL (SF)	ZONING
TSUBOTA	1	4,845	17,360	GEN. INDUSTRIAL 2
TSUBOTA	2	17,318	78,874	GEN. INDUSTRIAL 2
B.N.S.F.	3	131	620	GEN. INDUSTRIAL 2
P.O.S.	4	31,538	4,025,428	GEN. INDUSTRIAL 2
P.O.S.	5	13,937	4,025,428	GEN. INDUSTRIAL 2
P.O.S.	6	7,268	4,025,428	GEN. INDUSTRIAL 1
B.N.S.F.	7	10,108	87,991	GEN. INDUSTRIAL 1
B.N.S.F.	8	3,640	17,376	GEN. INDUSTRIAL 1
B.N.S.F.	9	4,082	452,998	GEN. INDUSTRIAL 1
P.O.S.	10	30,710	1,254,528	GEN. INDUSTRIAL 1
P.O.S.	11	142,191	4,025,428	GEN. INDUSTRIAL 1
P.O.S.	12	16,042	107,593	GEN. INDUSTRIAL 1
P.O.S.	13	5,951	80,586	GEN. INDUSTRIAL 1
P.O.S.	14	5,352	80,586	GEN. INDUSTRIAL 1
U.S. NAVY	15	13,291	200,360	GEN. INDUSTRIAL 1
C.O.S. PARKS	16	25,841	169,449	RES. SINGLE FAMILY 5000
C.O.S. PARKS	17	456	109,098	GEN. INDUSTRIAL 1
C.O.S. PARKS	18	2,375	2,375	RES. SINGLE FAMILY 5000
C.O.S. PARKS	19	2,825	2,825	RES. SINGLE FAMILY 5000
C.O.S. PARKS	20	7,598	28,776	RES. SINGLE FAMILY 5000
TOTAL		345,499		

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GRAPHIC SCALE
0 120 240 480 960
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Magnolia BRIDGE PROJECT

ALIGNMENT D10
R.O.W. MAP

JULY 28, 2004

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