

# **Fremont Bridge Approach Replacement Project**

## **SEPA Environmental Checklist**

**October 15, 2004**

Prepared for:  
City of Seattle

Prepared and Submitted by:  
Parsons Brinckerhoff



# Table of Contents

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|   |    |
|---|----|
| A. BACKGROUND .....                                 | 1  |
| B. ENVIRONMENTAL ELEMENTS .....                     | 7  |
| 1. <i>Earth</i> .....                               | 7  |
| 2. <i>Air</i> .....                                 | 10 |
| 3. <i>Water</i> .....                               | 12 |
| 4. <i>Plants</i> .....                              | 15 |
| 5. <i>Animals</i> .....                             | 16 |
| 6. <i>Energy and Natural Resources</i> .....        | 17 |
| 7. <i>Environmental Health</i> .....                | 18 |
| 8. <i>Land and Shoreline Use</i> .....              | 20 |
| 9. <i>Housing</i> .....                             | 23 |
| 10. <i>Aesthetics</i> .....                         | 23 |
| 11. <i>Light and Glare</i> .....                    | 25 |
| 12. <i>Recreation</i> .....                         | 25 |
| 13. <i>Historic and Cultural Preservation</i> ..... | 28 |
| 14. <i>Transportation</i> .....                     | 29 |
| 15. <i>Public Services</i> .....                    | 33 |
| 16. <i>Utilities</i> .....                          | 33 |
| C. SIGNATURE .....                                  | 34 |

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# ***Environmental Checklist***

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## **A. BACKGROUND**

- 1. Name of proposed project:** Fremont Bridge Approach Replacement Project
- 2. Name of applicant:** City of Seattle
- 3. Address and phone number of applicant and contact person:**

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- 4. Date checklist prepared:** June 2004, revised October 2004
- 5. Agency requesting checklist:** Washington State Department of Transportation, Highways and Local Programs and City of Seattle's Department of Planning and Development
- 6. Proposed timing or schedule (including phasing, if applicable):**

The entire project including all the components will take approximately 34 months beginning in 2005 (see Figure 1). This time period will include approximately 18 months to replace the approaches as well as an additional seven months to complete the construction of the new mechanical and electrical system. The construction of the Operations and Maintenance Facility (shop) will follow the mechanical and electrical system work and will take up to nine months to complete. During approach construction, the project would maintain full bridge operations (two lanes each way and both sidewalks) for approximately the first nine months while constructing a new micro-pile substructure beneath the existing approach structure deck, followed by half bridge closure (one lane in each direction and one sidewalk maintained) for an additional nine months while the approach structure deck is replaced one half at a time.

It is estimated that up to ten full bridge closures may be necessary to replace the north and south approaches. If the upgrade of the mechanical and electrical system is done after the approach replacement, up to five additional closures are possible. Bridge closures are expected to be short in duration (approximately two days each) and may occur on weekdays or weekends.

The Burke-Gilman and Ship Canal Trails would be closed in the vicinity of the project due to safety concerns. Users of these trails would be detoured around areas of construction. The City will close the Burke-Gilman Trail for up to approximately 24 months and the Ship Canal Trail for up to approximately 34 months. Once the approaches are replaced, the City will reopen the Burke-Gilman Trail. It is possible that the Burke-Gilman Trail will be opened after the approach replacement work with spot closures during the mechanical/electrical upgrade. The City will reopen the Ship Canal Trail once the new Operation and Maintenance Facility is completed.

**7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.**

Yes. The City of Seattle Department of Transportation is proposing a separate project called the Bridge Way/Fremont Circulation TIB Project that will implement permanent improvements (mainly signal system upgrades) at several locations within the Fremont and Queen Anne communities from 40<sup>th</sup> Avenue North (north) to Stone Way (east) to 3<sup>rd</sup> Avenue West (west) and to Nickerson Street (south). Construction for this project will start in the mid-2005. The traffic mitigation plan proposed for the approach replacement project overlaps with the project mentioned above. The main difference is that Bridge Way/Fremont Circulation project proposes permanent improvements (under a separate grant) and the approach replacement project proposes improvements that are mainly temporary.

**8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.**

The following documents have been prepared in support of this project, and are attached to this checklist:

- *Biological Assessment/Essential Fish Habitat*, Seattle, Washington, Herrera Environmental Consultants, April 2004 (see Appendix A)
- *Air Quality Technical Report*, Seattle, Washington, Parsons Brinckerhoff, April 2004 (see Appendix B)
- *Traffic Analysis Support Technical Memorandum*, Seattle, Washington, Parsons Brinckerhoff, September 2004 (see Appendix C)
- *Final Hazardous Materials Discipline Report*, Seattle, Washington, Parsons Brinckerhoff, June 2004 (see Appendix D) and addenda
- *Economic Elements Discipline Report*, Seattle, Washington, Parsons Brinckerhoff, April 2004 (see Appendix E) and addendum
- *Section 106 Technical Documentation*, Seattle, Washington, Parsons Brinckerhoff with Historical Research Associates, Inc., June 2004 (see Appendix F)
- *Social Elements Discipline Report*, Seattle, Washington, Parsons Brinckerhoff, July 2004 (see Appendix G)

Other environmental related reports that were prepared or are being prepared are:

- *Fremont Bridge Approach Replacement Project: Environmental Constraints Technical Memorandum*, Seattle, Washington, Adolphson Associates, Inc., January 2003
- *Initial Site Assessment*, Seattle, Washington, Parsons Brinckerhoff, July 2003
- *Final 4(f) Programmatic Evaluation*, Parsons Brinckerhoff, Summer 2004

**9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.**

No.

**10. List any government approvals or permits that will be needed for your proposal, if known.**

- U.S. Army Corps of Engineers (COE) Section 10 and 404 Permits
- Washington State Department of Fish and Wildlife Hydraulic Project Approval
- Ecology Section 401 Water Quality Certification
- City of Seattle Shoreline Substantial Development Permit (DPD, #2307035) for the Replacement of the Approaches
- City of Seattle Shoreline Substantial Development Permit (DPD, Permit #2404808) for the Replacement of the Operations and Maintenance Facility
- City of Seattle construction and grading approval permits
- Street Use Permit (SDOT)
- Memorandum of Agreement (MOA) among Federal Highway Administration (FHWA), Washington State Department of Transportation (WSDOT), SDOT, and Washington State Historic Preservation Officer (SHPO) under Section 106 of the National Historic Preservation Act

A Joint Aquatic Resources Permit Application (JARPA) was used to apply for U.S. Army Corps of Engineers Section 10 and 404 permits, Washington Department of Fish and Wildlife Hydraulic Project Approval, Ecology Section 401 Water Quality Certification, and City of Seattle Shoreline Substantial Development Permit. The JARPA application was submitted to the appropriate agencies on 3/26/04. Permits are pending except for the Corps of Engineers permit. The City received a conditional Nationwide permit on 6/24/04.

**11. Give a brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)**

The Fremont Bridge is located in north Seattle and spans the Lake Washington Ship Canal, providing an important transportation link between the Fremont and Queen Anne neighborhoods (see Figure 2). It is a drawbridge with two lanes in each direction for vehicles, with sidewalks for non-motorized users. In 1998, a condition report completed for the approach structures found them to be structurally deficient and functionally obsolete by Washington State Department of Transportation (WSDOT) standards. The study concluded that replacement of the existing bridge approaches was the prudent course of action.

The purpose of this project is to replace the existing sub-standard bridge approaches (located north and south of the bridge itself) with new approaches that meet current structural design standards (see Figure 3). The bascule bridge portion will be improved with the upgrade of the mechanical and electrical system. The bascule portion was seismically upgraded in the late 1990s. The approaches are the elevated roadways at each end of the bridge that connect to city streets. Improvements would replace the existing structures for the north and south approaches, and seismically retrofit and strengthen the north approach off-ramp. Sidewalks, railings and lighting on the approach structure would also be replaced. The new bridge approach structures would be located in the same location as the existing structures. The north and south approach structures have average centerline lengths of 534 feet and 124 feet, respectively. This project will not include any widening of the approaches.

The construction staging area for the replacement of the approaches will be at the bridge approaches and next to the bridge approaches (as shown on the right of way plans). The staging area for the replacement of the Operations and Maintenance Facility will be within the existing site boundaries to the edge of the bike trail easement under the south bridge approach. The staging area is within the existing City of Seattle right-of-way. Please see the transportation section (Item B.14, g) for more information on the number of trucks in the project area.

The project helps fund traffic signal system improvements to mitigate the traffic impacts during construction. For details please refer to the Transportation Section, Item B. 14 below and also the Traffic report in Appendix C.

The project also includes five additional components, which are described in more detail below:

### **Replacement of Operations and Maintenance Facility (Shop)**

The City of Seattle owns and operates the Fremont Bridge Operations and Maintenance Facility. This building is located underneath the southern approach of the bridge. The facility includes a 6,130 square foot building area (gross square footage), ten parking spaces, and a yard area. The existing building includes an electrical shop and administrative offices. The existing two-story concrete structure would be removed prior to the removal of the eastern half of the southern approach structure. It is likely the demolition of the eastern half of the southern approach structure would take place immediately after the demolition of the Operations and Maintenance Facility. The building would be deconstructed, and all material would be disposed of according to the City of Seattle Standard Specifications.

The City of Seattle considered four design options for the new Operations and Maintenance Facility. Through internal discussion and review, two options were eliminated, and a preferred option was selected with Scheme 4 chosen as the preferred alternative. The City of Seattle presented the final two design options to the Citizen Advisory Group (CAG) on March 23, 2004. The CAG was in agreement with the City that Scheme 4 was the preferred alternative. In addition, the City presented the preferred alternative at a public open house on May 12, 2004.

The building areas listed below are maximum estimates that are expected to decrease as the project moves through value engineering according to the project architect. The new building areas (gross square foot) are expected to increase slightly in size in comparison to the existing building. The City of Seattle owns the right of way in which the building will be replaced.

In the Scheme 4 design, the main building for the electrical shop, bridge operations center, and a multipurpose room would be located east of the southern bridge approach with an adjoining public roof deck plaza. The main building will have a maximum of 1,160 gross square feet on the first floor, 2,520 gross square feet on the second floor, and 2,520 gross square feet on the roof deck plaza. The majority of the maintenance truck parking area would be sheltered underneath the bridge approach. A structurally independent 1,193 gross square feet mechanical shop building will also be located under the north end of the southern bridge approach with a new access stair to the north bridge tower and the bridge control room. The loading area is planned to be adjacent to the mechanical shop, and the remainder of the site is expected to be an open paved work yard of approximately 6,150 square feet with an open stair to the second floor of the main building.

The upper roof plaza deck in the new Operations and Maintenance facility attaches to the eastern sidewalk of the new south approach. The roof plaza /deck will provide opportunity for the public to observe the bridge and Ship Canal from an unobstructed viewpoint.

### **Upgrade Mechanical and Electrical System**

The project would also upgrade the mechanical/electrical system used to raise and lower the drawbridge. Although some of this work will take place over the Lake Washington Ship Canal, no material will enter the water. The electrical work would include a number of elements. The major components of this work are listed below:

1. Removal and replacement of all existing electrical equipment, motors, controls, conduit and wire. Work will be sequenced and coordinated with structural and mechanical activities to minimize impact to the roadway and waterway traffic.
2. Installation of new service entrance equipment including: meter sockets, current transformer enclosures, and main disconnect circuit breakers at both North and South bascule piers.
3. Installation of two standby engine generator sets, automatic transfer switches and associated equipment. The generators shall be sized for operation of the bascule leaves and for the house lighting and outlets.

In addition, the mechanical system of the drawbridge would be upgraded with the following work elements:

1. Removal of bridge reduction machinery from the platforms on the bascule piers. Removal of line shafts and reduction machinery on each side of each bascule leaf.
2. Installation of new motors, brakes and enclosed reduction machinery on each side of each bascule leaf.
3. Replacement of bridge center lock system.
4. Installation and removal of a temporary bridge operating system consisting of a City-provided winch system, wire ropes and blocks.

### **Replacement of Existing Pedestrian/Bicycle Stairs**

In June 2004, the City evaluated a proposal to widen the existing pedestrian/bicycle stairs from the Burke-Gilman Trail to the northern bridge approach. The existing stairs are 3 feet wide. A proposal to widen the stairs to 6 feet was considered to allow two people carrying bicycles in opposite directions to use the stairs at the same time. However, due to the high cost, low use, low priority given to the upgrade from the bike community, and need for additional right-of-way, the City has elected not to implement this improvement. During construction of the approaches, the current stairs on both the north and south approaches will need to be removed as they are attached to the approach structures. The existing stairs will be replaced after construction is completed to maintain the connection from the Burke-Gilman and Ship Canal Trails to the Fremont Bridge.

## **Non-Motorized Related Improvements**

To accommodate bicycle users, the City of Seattle plans to provide the following bicycle related improvements<sup>1</sup>:

### *Permanent Improvements*

- Widen the southbound curb land between Florentia and Nickerson Streets to 14 feet to create more street space for bicyclists as they transition from the sidewalk to the street.
- Relocate or remove poles and other vertical obstructions to create a clearer pathway for pedestrians/bicyclists and to eliminate double blind zones at the north and south end of the bridge deck.
- Use signs and/or other lane-marking devices to help warn drivers and bicyclists of potential conflicts.
- Trim back the northeast traffic island at the West Nickerson Street and Westlake Avenue North intersection to minimize debris collection.
- Provide a bicycle signal for eastbound movements at North 34<sup>th</sup> Street and Fremont Avenue North. The new bicycle signal will be similar to a vehicle signal (with red, green and yellow lights), but it will be slightly smaller in size. A sign will indicate the signal is for bicyclists only.
- Trim back bushes at Florentia Street to improve visibility.

### *Temporary Improvements*

- Provide a temporary six-foot bike lane on the north side of North 34<sup>th</sup> Street between Stone Way and Fremont Avenue North while the Burke-Gilman Trail is closed for construction.
- Place detour signs at locations that will give bicyclists ample opportunity to choose alternative routes during construction.

To improve bicycle safety and mobility between Florentia and Nickerson Streets the City will acquire a small “sliver” of land on the south side of the Ship Canal. The land is part of a triangle-shaped parcel that is bounded by Florentia Street, West Nickerson Street and 4<sup>th</sup> Avenue North (see Figure 2). The taking of this land may cause the existing espresso stand to be relocated approximately 8 feet to the west. The espresso stand is currently located a few feet into the City of Seattle right of way.

## **Underwater Cables**

Submarine cables currently lay on the bottom of the Ship Canal, which provide power and communications to the north bascule portion of the bridge. These cables have been in place since 1917 when the bridge opened. This project will abandon these cables in place, and it is envisioned the new submarine cable(s) will be laid on the bottom of the Ship Canal and allowed to sink down by its own weight into the mud/silt. It is not expected the original cables will be removed as part of this project.

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<sup>1</sup> These proposed non-motorized improvements were discussed, in July, with representatives from the City's Bicycle and Pedestrian Advisory Boards and other bicycle organizations.

In addition, stormwater facilities for the bridge approaches will be modified to provide oil-water separation and water quality wet vaults as required under the City of Seattle drainage ordinance, Title 22.800 Stormwater, Grading, and Drainage Control Code.

It is not anticipated that the laying of the new cable will require closures of the waterway, but any closures would be brief (maximum of four hours). Boaters may be briefly delayed during the installation of the new cable. The project does not have a sufficiently detailed schedule at this point to determine when the cable laying would occur. Most likely the cable will be laid using a boat.

- 12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.**

The project is located in the Seattle North 7.5 minute quadrangle within United State Geological Survey (USGS) Sections 18 and 19, Township 25 North, Range 4 East. Latitude 47° 38' 50"N, Longitude 122° 20' 58"W.

The study area for most of the environmental analyses encompasses the boundaries of the urban village/center of Fremont (south of North 40<sup>th</sup> Street to the water and Ashworth Avenue North to the east and 3<sup>rd</sup> Avenue Northwest to the west). The study area for the various discipline reports varies depending on the level of impact. For instance, the boundaries for the traffic analysis encompassed North 39<sup>th</sup> Street/Stone Way on the north, Phinney Avenue on the west, 3<sup>rd</sup> Avenue West/Nickerson Street on the southwest, Aurora Avenue on the east and Queen Anne Drive on the south. The general study area is shown in Figure 2.

The address of the approach project is 3100 Fremont Avenue North, Seattle, WA 98109 (and associated DPD Shoreline Permit is 2307035). The address of the Operations and Maintenance Facility is 3020 Westlake Avenue North, Seattle, WA 98109 (and associated DPD Shoreline Permit is 2404808). The parcels are Denny and Hoyt Supplemental Plat blocks 80 and 85 with the bridge between them. Additional maps can be found in the attached appendixes.

## **B. ENVIRONMENTAL ELEMENTS**

### **1. Earth**

- a. General description of the site (circle one): Flat, rolling, hilly, steep slopes, mountainous, other**

The "south approach" portion of the project consists of relatively steep slopes restrained by retaining walls and bridge abutments and terraced slopes down to the south side of the Ship Canal. The "north approach" portion of the project is relatively flat sloping gently down to the north side of the Ship Canal.

**b. What is the steepest slope on the site (approximate percent slope)?**

The *Environmentally Critical Areas Folios* from 1996 documents a hillside containing a slope with a 40 percent or greater incline located directly southwest of the bridge. This slope will not be impacted by this project.

**c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.**

In general, the subsurface conditions in the vicinity of the north approach reveal 3 to 10 feet of fill consisting of loose to medium dense, silty SAND with some gravel and/or organics and wood debris. The fill is underlain by 6 to 19 feet of loose to medium dense, fine to medium SAND with some silty sand or silt layers. Below this sand is 10 to 22 feet of dense to very dense silty, gravelly SAND and sandy GRAVEL underlain by hard SILT and CLAY. The hard silt/clay layer was encountered about 28 to 43 feet below ground surface.

At the south approach to a depth of approximately 12 feet a mixture of very loose to loose, silty, gravelly SAND; clayey SILT; and ORGANIC SILT were encountered in borings. A loose to medium dense, silty SAND was encountered from 12 to 22 feet which was underlain by about 16 feet of dense to very dense, silty, sandy GRAVEL and silty, gravelly SAND. At a depth of about 38 feet, the borings encountered hard, silty CLAY and clayey SILT.

There are no prime farmlands or agricultural soils in the project vicinity.

**d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.**

There are no apparent surface indications of unstable soils in the immediate area. No indications of slope instability (past movement) have been noted in the previous boring logs. Based on the existing subsurface information, some soil zones may be susceptible to liquefaction during a design level earthquake.

**e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.**

There will be no significant filling or grading as a result of the approach replacement project or any other component of the project. With the replacement of the Operations and Maintenance Facility, some minor grading and excavation may be necessary. All existing grades will be restored after project completion. There are two possibilities for structuring the ground floor of the new Operations and Maintenance Facility. The first option, slab on grade would require a maximum of 43 cubic yards of fill. It is possible that the City could salvage the removed concrete slab from the existing Operations and Maintenance Facility, crush it and use the crushed concrete as the fill. The second option would be to set piles and cantilever the ground floor allowing the existing slope to remain virtually unaltered. The preferred option will be determined upon structural design considerations to occur in the next phase of design. The option that proves to be most feasible and economical for the project will be incorporated into the design.

**f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.**

Erosion could occur during footing excavation, micro pile and footing installation of the approaches, excavation of the water quality vaults, and the construction of the new Operations and Maintenance Facility. Construction equipment working on site could disturb soil. Runoff from work areas could create increased turbidity and sedimentation in the adjacent Ship Canal. Best Management Practices (BMPs) will be implemented for temporary erosion and sediment control during construction in accordance with City of Seattle's Volume 2: Construction Stormwater Control Technical Requirements Manual, Title 22.880 Stormwater, Grading, and Drainage Control Code. The Biological Assessment includes more detailed information on the BMPs (see Appendix A).

**g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?**

The existing approaches are 100% covered with impervious surfaces (concrete). The new approaches will also be 100% covered with impervious surfaces (concrete). The new surfaces will be in the same location as the existing ones. No additional impervious surface will be created with the replacement of the Operations and Maintenance Facility as the site is currently completely covered with asphalt paving and building.

The proposal to widen the existing pedestrian/bicycle stairs from the Burke Gilman Trail to the Fremont Bridge would have resulted in a new net impervious area of 311 feet due to the widened stairs and foundations pads. This new impervious area would be considered minor in terms of potential impacts on ground water recharge in the project area. Refer to Appendix A, Biological Assessment for details. Runoff from the project site is categorically exempt from detention by DCLU Director's Rule 26-2000. Currently, the City does not plan to widen these stairs. The original stairs will be replaced after construction of the new approaches.

**h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:**

Erosion protection methods will be in accordance with the requirements of the City of Seattle, Title 22.800 Stormwater, Grading & Drainage Control Code, Volume 2: Construction Stormwater Control Technical Requirements Manual and the Washington State Department of Ecology Stormwater Management Manual for the Puget Sound Basin, Volume II. In addition, a Temporary Erosion and Sedimentation Control Plan (TESCP) will be developed as required by the City of Seattle during project development to address potential impacts resulting from erosion and sedimentation. The following BMPs could be implemented to reduce or control erosion:

- Preserve natural vegetation when possible
- Stabilize construction site entrance
- Mulch the site to prevent death of new plants
- Use nets and blankets or plastic covering to prevent soil erosion

## **2. Air**

- a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.**

This project could result in a small increase in exhaust emissions from construction vehicles and equipment and a temporary increase in fugitive dust due to earthwork and bridge approach structure replacement and Operations and Maintenance Facility demolition. The Air Quality Analysis includes a qualitative discussion of the short-term impacts of emissions from demolition, excavation, and grading activities and from construction vehicles (see Appendix B).

Carbon monoxide (CO) concentrations were modeled at proposed signalized intersections or at intersections that experience a configuration change in the Fremont Bridge project corridor. Localized carbon monoxide concentrations were modeled for 2002, 2007, and 2030 using standardized Puget Sound Regional Council (PSRC) and Environmental Protection Agency (EPA) modeling procedures. A hot spot analysis was prepared for five intersections in the project area (see Appendix B). Predicted worst-case one-hour and eight-hour average CO concentrations were evaluated for the project. The operational impacts of other pollutants would be less than for CO. For both the No Action alternative and the Build alternatives, the one-hour and eight-hour average CO concentrations would be below the National Ambient Air Quality Standards. CO emissions from vehicles using the completed bridge structure were modeled to be no greater than current conditions (see Appendix B for more details).

- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.**

Air quality may decrease temporarily along detour routes with slower vehicle speeds and increased congestion during partial bridge closures.

No off-site sources of odors are anticipated.

- c. Proposed measures to reduce or control emissions or other impacts to air, if any:**

To minimize the adverse impacts from emissions resulting from the construction site, BMPs would be implemented to ensure minimal amounts of dust and exhaust fumes leave the site. Some BMP measures include watering exposed soil for dust control, regular street cleaning/sweeping, and minimizing vehicle and equipment idling to reduce exhaust emissions at the site.

Air quality along detour routes may be affected by an increase in congestion or an increase in vehicle idling time during full or partial bridge closures. During the construction period, various improvements are proposed to mitigate traffic impacts, which may help improve air quality on detour routes. These improvements will mainly consist of temporary traffic control measures such as turn restrictions and signalization of impacted intersections. The Traffic Analysis includes the traffic improvement plan recommended for the construction period (see Appendix C for detailed information). The congestion impacts of the partial closures of the Fremont Bridge would likely result in a

redistribution of traffic movements to alternative routes such as SR-99 (Aurora Bridge), 15th Ave Northwest (Ballard Bridge), and Eastlake Avenue on the east side of Lake Union (see Figure 6 and Figure 7). To address these potential impacts, various measures were analyzed to test their effectiveness.

During the Type, Size and Location (TS&L) phase of the project, the following improvements were identified to help mitigate traffic impacts during construction:

- Temporary signals at on/off ramps to SR-99 (Aurora)
- Temporary signal at Evanston Avenue North and North 36<sup>th</sup> Street
- Temporary signal at Fremont Avenue North and North 36<sup>th</sup> Street

Through other City of Seattle transportation projects (i.e., the Bridge Way/Fremont Circulation Project), the City has received funding to permanently implement these improvements through a Transportation Improvement Board (TIB) grant. The Fremont Bridge Approach Replacement project will provide matching funds for the TIB grant. Other improvements to be implemented under the TIB funding source are listed below. These improvements will help mitigate traffic impacts from the approach replacement project. The permanent implementation of these specific improvements is the result of other ongoing traffic analysis work and related recommendations as part of the Bridge Way Study and Fremont Circulation Plan.

- Permanently remove eastbound left turn (i.e., “hard left”) to northbound Fremont Avenue at North 35<sup>th</sup> Street. The “through” movement from Fremont Place North to North 35<sup>th</sup> Street will be maintained.
- Permanently extend eastbound left turn at Fremont Place North/Evanston Avenue North/North 36<sup>th</sup> Street.
- Permanently add signal at Fremont Place North/Evanston Avenue North/North 36<sup>th</sup> Street.
- Permanently add signal at Fremont Avenue North/North 36<sup>th</sup> Street.
- Permanently add signal at SR-99 Northbound Off-Ramp/Bridge Way/North 38<sup>th</sup> Street.
- Permanently add signal at Bridge Way/North 38<sup>th</sup> Street on-ramp to Southbound SR-99.
- Reconfigure Evanston Avenue North to two-way traffic south of North 36<sup>th</sup> Street (permanently after construction period).
- Permanently allow left turn movement for Northwest Fremont Way to southbound Fremont Avenue (Fremont Way/Fremont Avenue North/North 39<sup>th</sup> Street intersection).

In addition, the following roadway reconfigurations will be temporarily implemented as a result of the reduction in capacity on the bridge approaches during construction.

- Temporarily remove one westbound left turn lane at Fremont Avenue North/North 34<sup>th</sup> Street.
- Temporarily remove one eastbound right turn lane at Fremont Avenue North/North 35<sup>th</sup> Street.
- Temporarily remove one westbound lane on North 34<sup>th</sup> Street east of Aurora Bridge.
- Temporarily remove one westbound lane on North 34<sup>th</sup> Street between Stone Way and Fremont Avenue North (to facilitate bicycle movements impacted by the closure of the Burke-Gilman Trail). This is a measure to improve bicycle safety.

- Temporarily remove northbound left turn at Fremont Avenue North/North 34th Street. It is important to note that currently there is a left-turn restriction for northbound left turns at Fremont Avenue North/North 34<sup>th</sup> Street during the PM peak. The analysis assumed that this restriction is maintained during both the AM and PM peak hours.

The following improvements are planned as part of other on-going traffic improvement projects.

- Reconfigure Evanston Avenue North to two-way traffic south of North 36th Street (permanently after construction period).
- Add a signal to North 39th Street and Stone Way
- Upgrade the signal at Bridge Way and Stone Way
- Upgrade the signal at Stone Way and North 40th Street
- Upgrade the signal at Nickerson Street and 3rd Avenue West
- Upgrade the signal at Westlake Avenue and Nickerson Street
- Upgrade the signal at North 36th Street and Dayton Avenue
- Upgrade the signal at North 36th Street and Phinney Avenue

### 3. Water

#### a. Surface

- 1) **Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.**

The Lake Washington Ship Canal includes the Fremont Cut where the current Fremont Bridge project is located, as well as the Hiram M. Chittenden Locks, which is approximately two and a half miles west of the existing Fremont Bridge. The eight-mile-long Ship Canal provides the only navigable passage for commercial vessels, barges, and recreational boaters between Lake Washington and Puget Sound.

- 2) **Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.**

Yes, the project will replace the Fremont Bridge approaches on both sides of the Lake Washington Ship Canal (see Figure 2).

- 3) **Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.**

As part of the replacement of the approaches, the existing outfalls will be replaced. The new stormwater outfalls will be located as closely as possible to the current discharge points. During construction, existing riprap that currently stabilizes the existing outfalls will be removed. The existing riprap will be replaced with concrete grid pavers, returning the areas where the outfalls are present to the existing condition. To improve the area around the outfalls, red-osier dogwood or willow trees would also be planted to increase shading over the shallow water habitat for fish, to compensate for the clearing of any

vegetation that would occur during construction, and provide visual aesthetic screening. A minor amount of stabilization material (10 cubic yard or less), consisting of rock, soil, and concrete paver grid, will be used to assist in the bio-engineered slope stabilization at each storm outfall. Refer to Appendix A for details.

No fill or dredge material is expected to be placed or removed from surface water or wetlands.

**4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.**

No surface water withdrawals or diversions are required for this project.

**5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.**

The project will span the 100-year floodplain of the Lake Washington Ship Canal. The project will not impact the floodplain conveyance or storage.

**6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

Discharge of treated stormwater runoff from the project site will go directly to the Lake Washington Ship Canal, which is an exempt receiving body of water. Stormwater will be treated in accordance with the requirements of the City of Seattle, Title 22.800 Stormwater, Grading & Drainage Control Code, Volume 4: Stormwater Treatment Technical Requirements Manual. The maximum velocity based on a 100-year storm would be 6 feet per second.

**b. Ground**

**1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.**

Minor, temporary dewatering may be required to facilitate concrete placement (for water quality vault). There will be no permanent groundwater withdrawal or impact to groundwater quantity.

**2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals ... agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

No waste materials of any kind will be discharged into the ground as a result of this project.

**c. Water Runoff (including stormwater)**

**1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

Stormwater from the existing bridge approaches currently drains directly into the Lake Washington Ship Canal (which is an exempt receiving body of water) without water quality treatment or detention. There is no detention required for stormwater discharging directly to the Ship Canal, only water quality is required. Stormwater runoff to the Ship Canal from non-pollution generating impervious surfaces (e.g. roofs) do not require any treatment or detention. Stormwater from the new bridge approaches would also continue to drain into the Lake Washington Ship Canal without detention, but water quality treatment would be provided as part of the proposed project, improving overall water quality in the Canal (see Appendix A, Biological Assessment for more information). The new bridge approach grate inlets would be connected to pipes that run down the new columns, which would drain into new catch basins. These catch basins would connect to a 12-inch Pipe Storm Drain (PSD), which would convey bridge stormwater to an oil water separator and water quality vault for each approach structure. Design would be in accordance with the City of Seattle Title 22.800 Stormwater, Grading & Drainage Control Code, Volume 4: Stormwater Treatment Technical Requirements Manual. The oil/water separator will be sized in accordance with Section 6.1.1 of Volume 4. The Wet Vault will be sized in accordance with Section 4.2 of Volume 4.

Flows would be discharged via permitted outfalls. The location of the stormwater outfalls will be located as closely as possible to the current discharge points. Stormwater will be treated in accordance with the requirements of the City of Seattle, Title 22.800 Stormwater, Grading & Drainage Control Code, Volume 4: Stormwater Treatment Technical Requirements Manual.

The Operations and Maintenance Facility will include a roof with non-polluting materials (e.g., no galvanized metals). The runoff from the roof does not need to be treated and can be discharged directing into the Lake Washington Ship Canal (an exempt receiving body of water).

**2) Could waste materials enter ground or surface waters? If so, generally describe.**

No waste materials will be allowed to enter the ground or surface water as a result of this project. Spill control catch basins and oil/water separators will contain accidental spills on the Fremont bridge deck (see attached Biological Assessment in Appendix A for details).

**d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any**

Due to the proximity of the project to a steep slope and to landscaped areas, BMPs will be implemented to minimize the potential for construction-related sediment to enter the Ship Canal as described in the attached Biological Assessment (see Appendix A). Runoff conveyance and treatment BMPs may include the use of a gravel filter berm, a sediment trap and/or a triangular silt dike (geotextile-encased check dam) to control potential turbidity. The BMPs may also include establishing outlet protection, a storm drain inlet protection and/or silt fence. Although the slope located southwest of the southern bridge approach is greater than 40%, the City does not anticipate that the steep slope will be impacted by this project since BMPs will be followed.

## 4. Plants

a. **Check or circle types of vegetation found on the site:**

- deciduous tree: alder, maple, aspen, other
- evergreen tree: fir, cedar, pine, other
- shrubs
- grass
- pasture
- crop or grain
- wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
- water plants: water lily, eelgrass, milfoil, other
- other types of vegetation

The majority of the plants in the project area were planted, and are not normally occurring species. A single row of Lombardy poplar line the northwestern shoreline and a cluster of immature cottonwood, blackberry, iris, and clematis occur at the northwestern base of the existing bridge. Vegetation on the northeastern side of the bridge is dominated by landscaping strips planted mostly with non-native species with Himalayan blackberry and willow-dominated scrub-shrub vegetation along the shoreline. The steep bank between the upper roadway and the lower pathway is densely vegetated to the southwest of the bridge. Species include a large big leaf maple, birch, oceanspray, one shore pine, Himalayan blackberry, English ivy, and English holly. A small, open grassy area also occurs at the southwestern base of the bridge. One big leaf maple, non-native English ivy, and pea vine occur at the southeast approach base, and Himalayan blackberry grows along the nearby shoreline.

b. **What kind and amount of vegetation will be removed or altered?**

The project will occur within already developed and paved areas, and is not expected to require the substantial disturbance of soils or clearing of vegetation. The area on and around the Burke-Gilman Trail will be used by construction vehicles to access the project site, which may require the temporary removal of some vegetation along the trail. Any vegetation that is removed during construction will be replaced under the guidance of a landscape architect and returned to its pre-construction state.

c. **List threatened or endangered species known to be on or near the site.**

As the corridor and the project vicinity are largely urbanized, there is low probability for the presence of threatened, endangered, or sensitive plant species. A Washington State Department of Natural Resources (WDNR) Natural Heritage Program (NHP) data search (WDNR, 2002) revealed no known occurrence of federally listed plants in the project area or vicinity. There is no known occurrence of state-listed plants in the project area.

d. **Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:**

Landscaping, if required, will be accomplished with native plantings under the guidance of a landscape architect.

## 5. Animals

**a. Circle any birds and animals which have been observed on or near the site or are known to be on or near the site:**

**Birds:** hawk, heron, eagle, songbirds, **other:** Rock Doves, European Starlings, Cliff Swallows, English Sparrow, Gulls, Bald Eagle, Great Blue Heron, Osprey

**Mammals:** deer, bear, elk, beaver, **other:** None noted

**Fish:** bass, salmon, trout, herring, shellfish, **other:** Salmon, Yellow Perch, Prickly Sculpin, Rainbow Trout, Cutthroat Trout, River Lamprey, Smallmouth Bass, Northern Pikeminnow

**b. List any threatened or endangered species known to be on or near the site.**

Species known to be on or near the site are: Coastal Bull Trout, Puget Sound/ESU Chinook Salmon, Pacific Salmon, Puget Sound/Strait of Georgia ESU Coho Salmon, River Lamprey and Pacific Lamprey, Pink Salmon and Chum Salmon, Atlantic Salmon, Sockeye, Winter Steelhead, Cutthroat, Bald Eagle, Great Blue Heron, and Osprey (See Appendix A for Biological Assessment).

Adult Coho and Chinook salmon use the Ship Canal system as a migration corridor to upstream spawning grounds. Habitat use by juvenile Chinook salmon in the vicinity of the Fremont Bridge is anticipated to be minimal. Sockeye salmon, and rainbow and cutthroat trout may also be found in the vicinity of the Fremont Bridge. The Ship Canal is more likely a migratory route rather than a rearing and foraging area for the most of these species.

**c. Is the site part of a migration route? If so, explain.**

Portions of the Fremont Bridge serve as nesting sites for migratory Cliff Swallows.

Adult Chinook and Coho salmon use the Lake Washington Ship Canal system as a migration corridor to upstream spawning grounds. In addition, River lamprey and Pacific lamprey may use the Lake Washington Ship Canal as a migratory corridor. Finally, Sockeye salmon, and rainbow and cutthroat trout may use as the Ship Canal system as a migratory route.

**d. Proposed measures to preserve or enhance wildlife, if any:**

The impacts to wildlife in the project area are described in detail in the attached Biological Assessment (see Appendix A). The project area shoreline is developed and armored, and provides little fishery support. The project will not alter the Ship Canal shoreline or affect available food or cover. Minimal disturbances to the water column or aquatic habitat are anticipated, as the project is mainly land based. To minimize the potential for accidents during construction, construction equipment will be fitted with emergency spill kits and construction crews will be trained in their proper use.

This project may affect but is not likely to adversely affect bald eagles for the following reasons:

- There are no bald eagle nests within a 1-mile radius of the project area.
- Bald eagles that migrate through the project area have likely become acclimated to the noise that is typical of the urban environment.

This project may affect but is not likely to adversely affect bull trout. Bull trout may be adversely affected by the project for the following reasons:

- The activities associated with the construction of the bridge approaches could result in sediment delivery to the Ship Canal if the best management practices were to fail.
- There will be in-water work associated with stormwater outfall reconstruction and placement of the underwater cable.

However, bull trout are not expected to be adversely affected by the proposed project because best management practices will be implemented to avoid or minimize all potential direct and indirect adverse effects of construction activities, such as sedimentation and accidental spills of construction-related chemicals.

This project may affect but is not likely to adversely affect chinook salmon. This determination is based on the same rationale as that provided for the potential effects on bull trout.

This project is not likely to significantly impact coho salmon within the Ship Canal. If, at a later date, the coho salmon is listed as a threatened species, this project may affect but is not likely to adversely affect coho salmon. This determination is based on the same rationale as that provided for the potential effects on bull trout.

Overall, the proposed project will not adversely affect essential fish habitat for Pacific salmon. It is likely to improve essential fish habitat over the long term by treating all potentially contaminated stormwater runoff from the project site. For more details please refer to the attached Biological Assessment.

Cliff Swallow nests can be found on the underside of the south bridge approach. Construction activities will follow the regulations of the Migratory Bird Treaty Act and requirements of the Washington State Department of Fish & Wildlife. Once egg laying of the Cliff Swallow has commenced in spring, the City of Seattle will be unable to disturb the nests or keep the swallows from their nests until the nests are abandoned in September. Prior to egg laying, the old nests may be destroyed and the birds can be prevented from nesting at the site. The City will need to actively discourage swallow nesting. If destruction of Cliff Swallow nests is necessary, it will take place prior to the commencement of egg laying, which is generally the first few days of the nesting activity in March.

Nests could be hosed off in the fall after the swallows have nested. Then non-lethal methods should be used to deter them from nesting next spring. Old nests or nests under construction may be washed down with water or knocked down with a pole. Swallows are strongly attracted to old nests or to the remnants of deteriorated nests, so all traces of mud should be removed. During nest building, nest removal may be necessary for many days because cliff swallows persistently rebuild nests for most of the breeding season. They usually return the following year and aggressively attempt to nest in the same area. Netting can be used to provide a physical barrier between the birds and the nest site.

## **6. Energy and Natural Resources**

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.**

No additional energy will be required for the completed bridge approaches. The mechanical/electrical system for the bascule will be upgraded as part of this project (as described in Item A. 11).

**b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.**

No.

**c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:**

According to the City of Seattle's Sustainable Building policy, all City funded projects with an occupied area greater than 5000 square feet must apply for LEED (Leadership in Energy and Environmental Design) Silver certification. Natural ventilation, energy efficient lighting and daylighting, use of recycled and salvaged materials from local suppliers, and water efficient fixtures are just a few potential conservation measures for the proposed Operations and Maintenance Facility. As the design for the Operations and Maintenance Facility progresses specific components of LEED will be integrated into the project.

## **7. Environmental Health**

**a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal? If so, describe.**

An Initial Site Assessment by Parsons Brinckerhoff was undertaken of properties in and adjacent to the project corridor in August 2003. This study reviewed the known or suspected hazardous material sites and the types of containments likely to be encountered during construction. This study recommended that additional sampling and testing be performed given the past industrial uses in the area adjacent to both the south and north bridge approaches (see the Final Hazardous Materials Discipline Report, June 2004 in Appendix D). The sites selected for detailed analysis were:

- The area immediately under the north approach;
- The area immediately under the south approach, (including the City of Seattle Operations and Maintenance Facility);
- The strip of right-of-way of that the City will acquire to support non-motorized improvements (i.e., the sliver of land between 4<sup>th</sup> Avenue North, West Nickerson Street, and Florentia Street); and
- Approximate locations of proposed permanent and temporary easements are shown on Figures 3 through 8 in Section 1.0, Introduction of the Hazardous Materials Discipline Report, Appendix D.) Legal descriptions of easements have been prepared that include these locations.

The subsequent sampling and testing of the project area located a number of hot spots of contaminated soil that exceeded the Washington Model Toxics Control Act (MTCA). Gasoline was detected in two soil samples collected from the 4th Avenue Strip at greater than the MTCA Method A limits. Gasoline was also detected in the groundwater at the strip, along with benzene, toluene, ethyl-benzene, and xylenes, at higher than MTCA levels. The City has reported this issue to the Department of Ecology in accordance with Washington Administrative Code (WAC) 173-340-300. This analysis determined the soil was primarily contaminated petroleum products, PAH's and lead. This spot will be

abated by the City of Seattle. In addition, the City will use special handling and disposal of any contaminated soil, groundwater and debris removed during excavations.

Additional information on this issue can be found in Appendix D (Hazardous Materials Discipline Report).

**1) Describe special emergency services that might be required.**

None

**2) Proposed measures to reduce or control environmental health hazards, if any:**

Proposed measures include preparing a media contingency plan that provides specific guidance for managing contaminated media. The contaminated media contingency plan shall address risk-based cleanup and recommend provisions for field screening options, notification requirements, and stockpile management. Groundwater measures include alternatives for construction activities that minimize or avoid intercepting the groundwater table, where possible. Surface water measures will be addressed in the Spill Prevention Control and Countermeasure (SPCC) plan. Measures for demolition debris rely on recycling and proper disposal of identified hazardous materials. Possible impacts related to the Federal and State Superfund authorities within the project area shall be mitigated through early coordination with the Environmental Protection Agency (EPA) and the Washington State Department of Ecology (Ecology).

All hazardous materials work will be accomplished by 40-hour trained workers pursuant to 29 CFR 1910.120. See 5.12 Regulatory Mitigation Operations in the Hazardous Materials Discipline Report (Appendix D).

**b. Noise**

**1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?**

Under existing conditions, the main source of noise in the project vicinity is from automobile and truck traffic and marine activities. Traffic noise is intensified with larger vehicles including semi-trucks, King County Metro buses, and other large vehicles. While noise levels generated as a result of traffic in the project area can average between approximately 64 and 82 decibels [dB(A)] at a distance of 50 feet, vehicle-generated noise levels in excess of 90 dB(A) (motorcycle at 50 feet) are not uncommon. Other sources of noise include watercraft traveling along the Ship Canal, noise associated with the raising and lowering of the Fremont Bridge, occasional City of Seattle street and sidewalk maintenance work (i.e. leaf blowers).

**2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.**

Temporary short-term additional noise will be generated during demolition and construction of this project (both the approaches and Operations and Maintenance Facility components). Noise levels will remain within City of Seattle Noise Ordinance levels described in SMC 25.08. It is expected that most construction noise will be limited between 7:00 am and 10:00 pm on weekdays. It is anticipated that the girder placement operation and pouring the bridge deck would take place on weekends (during the time between Friday evening at 8:00 p.m. and 5:00 a.m. on Monday morning). It is estimated that up to ten weekend closures are possible for the replacement of the bridge approaches. It is possible the City will need to obtain a noise variance for this work. No additional long-term construction noise will be generated by this project. No additional traffic noise is anticipated as a result of this project.

**c. Proposed measures to reduce or control noise impacts, if any:**

In order to shorten the construction duration, and thus minimize the duration of construction noise impacts, a variance to the Seattle Noise Ordinance may be required for placement of the deck girders. It is anticipated that the girder placement operation would take place on weekends (during the time between Friday evening at 8:00 p.m. and 5:00 a.m. on Monday morning). Double shifting, especially during critical time periods of construction (such as approach deck construction) may be desired to shorten construction duration and lessen the overall construction impacts. No other measures are proposed at this time.

## **8. Land and Shoreline Use**

**a. What is the current use of the site and adjacent properties?**

The Fremont Bridge is generally surrounded by land uses composed of numerous types of commercial businesses. Local restaurants and shops associated with “downtown” Fremont extend north of the bridge along Fremont Avenue North, while specialized larger commercial businesses (including the Adobe Systems campus), informal parking, and a temporary storage area utilized by the Fremont Arts Council and others are located beneath the Fremont Bridge and along Fremont Avenue North and North 34th Street. Businesses adjacent to the south approach structure are a mixture of small commercial buildings. The Bleitz Funeral Home, a restaurant, and an espresso coffee stand operate to the southwest of the bridge along 4th Avenue North. To the southeast of the bridge, a local road extends under the Fremont Bridge south approach structure providing access to an adjacent boat service yard. A Seattle Department of Transportation Operations and Maintenance Facility is located underneath the south bridge approach structure.

In addition to the buildings and parking areas near the Fremont Bridge, both the north and south approach structures extend above two asphalt paved trails. The Burke-Gilman Trail, a regionally used trail, is located directly under the north bridge approach structure. The Ship Canal Trail extends along the southern shoreline of the Ship Canal and passes under the south bridge approach structure where it stops.

**b. Has the site been used for agriculture? If so, describe.**

The site has never been used for agriculture.

**c. Describe any structures on the site.**

Bridge approaches are comprised of concrete columns supporting a steel and concrete deck structure. An Operations and Maintenance Facility (shop) under the south approach will be demolished. The building is used by the City of Seattle operations and bridge maintenance staff. Up to 30 staff members work on site or utilize the building on a daily basis. It serves several bridges located in the Ship Canal/Lake Washington area and approximately 200 other bridges throughout Seattle.

**d. Will any structures be demolished? If so, what?**

An Operations and Maintenance Facility will be demolished as a result of this project. This building will be replaced with a new Operations and Maintenance Facility (shop). Currently, the City of Seattle considered four design options for the new facility. Scheme 4 is the preferred option by SDOT staff and received good public support.

In the Scheme 4 design, the main building for the electrical shop, bridge operations center, and a multipurpose room would be located east of the southern bridge approach with an adjoining public roof deck plaza. The main building will have a maximum of 1,160 gross square feet on the first floor, 2,520 gross square feet on the second floor, and 2,520 gross square feet on the roof deck plaza. The majority of the maintenance truck parking area would be sheltered underneath the bridge approach. A structurally independent 1,193 gross square feet mechanical shop building will also be located under the north end of the southern bridge approach with a new access stair to the north bridge tower and the bridge control room. The loading area is planned to be adjacent to the mechanical shop, and the remainder of the site is expected to be an open paved work yard of approximately 6,150 square feet with an open stair to the second floor of the main building (see following table on estimated size differences between the existing and proposed building).

**Table 1: Gross Square Footage of Existing & Proposed Facility**

|  | Existing<br>Gross Square<br>footage | Proposed<br>Gross Square<br>Footage |
|--|-------------------------------------|-------------------------------------|
| Electrical Shop<br>1 <sup>st</sup> Floor | 1,000                               | 1,157                               |
| Machine Shop                             | 2,300                               | 1,193                               |
| Office 2 <sup>nd</sup> Floor             | 2,300                               | 2,520                               |
| Public Plaza                             | 0                                   | 2,520                               |

**e. What is the current zoning classification of the site?**

*The Seattle Zoning Code* designates the area surrounding the Fremont Bridge as a mixture of Neighborhood Commercial (NC2-40 and NC3-40 and -65) and Commercial

(C1-65) to the north of the bridge; Industrial Commercial (IC-65) and Commercial (C2-40) zoned areas exist within the southern boundary of the project area.

**f. What is the current comprehensive plan designation of the site?**

The Fremont area adjacent to the bridge is designated as a Hub Urban Village in the City of Seattle's *Comprehensive Plan*. Urban villages are growth centers within the City with a mixture of uses and a high degree of urban infrastructure. The *Comprehensive Plan* states Hub Urban Villages should "have a strategic location in relation to both the local and regional transportation network".

**g. If applicable, what is the current shoreline master program designation of the site.**

Chapter 23.60, the Shoreline District section of the *Seattle Land Use Code* summarizes plans and policies relevant to the shorelines regulated under the City of Seattle. The Ship Canal is designated as a Conservancy Navigation (CN) Environment. The northern bridge approach structure falls within the shoreline environment designated as Urban General (UG) Environment, the southern bridge approach structure is located on a shoreline designated as Urban Stable (US) Environment. Construction activities related to the Fremont Bridge project would be required to follow regulations established in Section 23.60, Shoreline District, of the *Seattle Municipal Code*, during construction in the shoreline environments.

**h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.**

The area along the southwest side of the south approach has been designated as an Environmentally Critical Area by the City of Seattle. This area contains a slope that is greater than 40%. The City does not anticipate that this area will be impacted by this project.

**i. Approximately how many people would reside or work in the completed project?**

The proposed Operations and Maintenance Facility will provide space for City of Seattle maintenance personnel. It is expected the new building will include capacity for 30 staff members regularly on-site as well as room for meetings with up to 60 people (see Item A.11 in the beginning of this document for more information).

**j. Approximately how many people would the completed project displace?**

The current staff of the Operations and Maintenance Facility (shop) would be temporarily relocated to another City facility during the construction (for approximately 3 years). It is not anticipated the staff will be permanently displaced. The number of people that work in the proposed facility will be the same as the existing facility. Only during emergency operations and other meetings that include individuals from other offices will the facility be occupied by additional people.

To improve bicycle safety and mobility between Florentia and Nickerson Streets the City will acquire a small "sliver" of land on the south side of the Ship Canal. The land is part of a triangle-shaped parcel that is bounded by Florentia Street, West Nickerson Street and 4<sup>th</sup> Avenue North (see Figure 2). The taking of this land may cause the existing espresso stand to be relocated approximately 8 feet to the west. The espresso stand is

currently located a few feet into the City of Seattle right of way. Additional information on this potential relocation can be found in Appendix E, Economic Elements Discipline Report.

**k. Proposed measures to avoid or reduce displacement impacts, if any:**

If relocation of the espresso stand is necessary, the City of Seattle will assist the owner according to the Uniform Relocation and Real Property Assistance Acquisition Act of 1970.

**1) Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:**

Existing and proposed plans were reviewed to ensure the project was compatible with current and projected land uses. The project is consistent with both the City of Seattle's *Comprehensive Plan* and Fremont's neighborhood plan. The Fremont neighborhood plan also mentions the importance of the Fremont Bridge to the community.

## **9. Housing**

**a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.**

Not applicable.

**b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.**

Not applicable.

**c. Proposed measures to reduce or control housing impacts, if any:**

Not applicable.

## **10. Aesthetics**

**a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?**

The new approaches would be the same height as the existing ones. The principal building material for the approaches is concrete and will be replaced in kind.

The roof of the main building of the Operations and Maintenance Facility will align with the sidewalk of the new south approach. The building roof top will be approximately 26'-0" above grade. There will be a 4'-0" high guard railing on the top of the building around the plaza. The total height is expected to be 30'0" for the Operations and Maintenance Facility (including railing and building).

The portion of the facility located underneath the bridge approach will be approximately 2'-0" below the bottom of the new approach structure with bird netting around to fill in the airspace between the roof and the understructure of the new bridge approach. This will provide ease of maintenance and more light underneath the approach.

Detailed drawings of proposed Operations and Maintenance Facility were submitted with the shoreline application for this work.

**b. What views in the immediate vicinity would be altered or obstructed?**

No views will be altered or obstructed as a result of the replacement of the approaches.

At the lower level (where the Ship Canal Trail exists), a slatted chain-link fence currently exists blocking potential views of the Ship Canal/Fremont through the yard. The base of the new facility will be located in the same view area that is currently obstructed by the slatted fence. The portion of the facility underneath the approach has a smaller footprint than the existing facility and therefore will allow for a more open view from the trail through the new fencing.

The public upper deck in the new Operations and Maintenance facility attaches to the eastern sidewalk of the new south approach. The roof plaza will be approximately 2500 gross square feet over the existing yard. The location of the upper floor of the facility is below the grade of the bridge approach and 14'-0" minimum above the grade of the Ship Canal Trail; thus not creating any significant obstruction of views from adjacent areas. The deck will provide new opportunity for the public to observe the bridge from an unobstructed viewpoint.

**c. Proposed measures to reduce or control aesthetic impacts, if any:**

The new approach structures would be a distinct improvement over the existing bridge approaches because of the use of longer spans, uniform material and fewer and uniform structural supports (see Figure 4). In addition, the new Operations and Maintenance Facility will likely incorporate aesthetic improvements.

This project will also replace sidewalks, railings, and lighting on the approach structures. A brief description of this work is described below, and more detailed information and photographs can be found in the Section 106 documentation for this project (see Appendix F).

This project will replace the existing railings along the sidewalks of both the north and south approaches. The railings are not part of the original structure. The City considered several different concrete and metal (steel/aluminum) designs for the new railings. The preferred railing type is a concrete railing appropriate to the historic character of the bridge.

The project will also replace the lighting on the approaches. The light fixtures and structure are not part of the original structure. The City considered three different design options for the new lighting. The preferred lighting option is a decorative luminaire style chosen to minimize glare and to match the historic lighting types as much as possible.

A sign/signal bridge is on each of the approaches, and the City plans to rehabilitate and retain these sign bridges. These sign bridges are currently mounted near the curb on the sidewalk. The original materials will be reused and the new sign bridge will retain the same appearance as the original.

In addition, there is a set of steel trolley poles on the approaches (two on each approach). The City is considering removing the posts completely, and not replacing them. A decision on this issue will be made as part of a Memorandum of Agreement currently being negotiated with the Office of Archaeology and Historic Preservation (see Section 13 below). These posts currently have street lights on them, and one has an antenna mounted on it. These items can be relocated to other structures on the bridge if deemed necessary.

## 11. Light and Glare

- a. **What type of light or glare will the proposal produce? What time of day would it mainly occur?**

Site cutoff light fixtures will limit light and glare impacts off-site. Street lighting impacts will mostly be limited to periods of darkness.

- b. **Could light or glare from the finished project be a safety hazard or interfere with views?**

No.

- c. **What existing off-site sources of light or glare may affect your proposal?**

None known.

- d. **Proposed measures to reduce or control light and glare impacts, if any:**

Site cutoff fixtures will be utilized to limit the light and glare emissions during construction and for the completed project. The project will replace the existing lighting on the approaches, and this lighting is being designed to provide uniform light levels along the approach structures (See Section 106 document in Appendix F for details).

## 12. Recreation

- a. **What designated and informal recreational opportunities are in the immediate vicinity?**

There are two non-motorized transportation facilities in the project area that are used for recreation including the Burke-Gilman and Ship Canal Trails (see Figure 5). The Fremont Bridge is also a significant part of Seattle's bicycle network, providing a direct link between the Burke-Gilman multi-use trail and Dexter Avenue, which is a main artery into downtown Seattle. The Burke-Gilman Trail passes under the northern approach of the Fremont Bridge and runs along the Ship Canal. It is a regionally-significant trail that begins at 8<sup>th</sup> Avenue Northwest in Ballard and follows an old railroad right-of-way along the Ship Canal and north along Lake Washington. This multi-use trail extends 27 miles in length. The City of Seattle manages the trail in the city limits and King County is responsible for the remainder of the trail. The Burke-Gilman trail is one of the oldest and most heavily used trails in the region. Cyclists, skaters, runners and walkers utilize the trail for both recreational and non-motorized transportation purposes. The Ship Canal Trail runs along the southern shoreline of the Ship Canal and passes under the southern approach structure. This city-managed trail begins at the Fremont Bridge, heads west for about  $\frac{3}{4}$  of a mile to 6<sup>th</sup> Avenue West. Cyclists, runners, walkers and skaters also use this trail for recreation and to a lesser degree for commuting purposes. This trail connects Seattle Pacific University to the Fremont Bridge where users can access the regionally significant Burke-Gilman Trail.

Recreational boating and canoeing occurs within the Lake Washington Ship Canal. There are no other recreational opportunities in the immediate project vicinity.

- b. **Would the proposed project displace any existing recreational uses? If so, describe.**

No permanent changes would occur to pedestrian and bicycle facilities upon completion of construction activities.

During construction, when the bridge is fully closed (most likely during off-peak periods) to vehicle traffic, it will also be closed to bicycle and pedestrians. During full bridge closures (estimated to be up to fifteen times), pedestrians and bicyclists will use alternative routes to cross the Ship Canal. During construction of the approaches on the east half, a 10-foot curbed sidewalk on the west approach will handle both directions of pedestrian and bicycle traffic. Once the east side construction is completed, pedestrians and bicyclists will be shifted to the newly constructed (east) half. During this phase of the construction period, pedestrians and bicyclists will have a 6 to 8 foot wide area on the approaches that will be separated from the motorized traffic by a temporary concrete traffic barrier.

During the upgrade of the drawbridge's mechanical/electrical system, there may be restrictions on full usage of the drawbridge. That is, only one side of the drawbridge may be fully operable, thus boaters in the Lake Washington Ship Canal would need to cross under bridge on one side. This occurrence is expected to happen only briefly, but it may cause boaters to experience an increase in travel time.

Both leaves of the bascule bridge will be operable during the upgrade of the bridge's mechanical/electrical system. One leaf at a time will have its mechanical/electrical system replaced while the other leaf is fully operational with the same opening speed as what currently exists. The leaf having its mechanical/electrical drive system replaced will have to be opened utilizing a temporary winch system. It will take the temporary winch system 12 to 15 minutes to open its leaf as opposed to the fully operational leaf's opening time of 3 to 5 minutes. This is the same temporary winch system (and approach) utilized for the mechanical/electrical upgrades for other nearby bridges (Ballard and University bridges). Note that the Ballard Bridge (upgrade done within the last two years) had double leaf openings averaging three times a week. Full bridge openings (both leaves opened) were scheduled as much as possible to avoid conflicts with peak hours for the vehicles.

The Ship Canal Trail will be rerouted up onto the sidewalk/trail next to Westlake Avenue/West Nickerson Street during the construction of the approaches and the Operations and Maintenance Facility (approximately 30 to 34 months). On the west end it is anticipated that the Ship Canal Trail will be closed at the ramp in the vicinity of 3rd Ave North and Etruria Street (see Figure 5).

The City of Seattle will close the Burke-Gilman Trail during the construction period of the approaches from approximately Stone Way North to Phinney Avenue North. The Burke-Gilman Trail will be closed at Stone Way North and detoured up onto North 34th Street where it will join back up to the existing trail in the vicinity of Phinney Avenue North. Trail users will be able to use North 34<sup>th</sup> Street between Stone Way North and Phinney Avenue North. Those traveling eastbound will be able to use a temporary striped bicycle lane on the south side of North 34<sup>th</sup> Street. Those traveling westbound will use a temporary striped bike lane on the north side of North 34<sup>th</sup> Street between Stone Way North and Fremont Avenue North. Pedestrians would be able to use the sidewalks on these streets (see Figure 5). The description in Item A.11 has more details.

The City will close the Burke-Gilman Trail for up to approximately 24 months and the Ship Canal Trail for up to approximately 34 months. Once the approaches are replaced and the mechanical and electrical system work is completed, the City will reopen the Burke-Gilman Trail. It is possible that the Burke-Gilman Trail will be opened after the approach replacement work with spot closures during the mechanical/electrical upgrade. The City will reopen the Ship Canal Trail once the new Operations and Maintenance Facility is completed.

**c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:**

Efforts by the City during the temporary closure of the Burke-Gilman and Ship Canal Trails would include public notification of construction schedules and providing detour routes information through internet, television, radio, local bicycling club web site or newsletter as well as street and trail signage in the project area. All detour routes would be clearly marked and identified to trail users. Upon completion of the project, the trails will be reopened.

Members of the community would also be notified of potential changes in the drawbridge operations.

To accommodate bicycle users, the City of Seattle plans to provide the following bicycle related improvements:

*Permanent Improvements*

- Widen the southbound curb lane between Florentia and Nickerson Streets to 14 feet to create more street space for bicyclists as they transition from the sidewalk to the street.
- Relocate or remove poles and other vertical obstructions to create a clearer pathway for pedestrians/bicyclists and to eliminate double blind zones at the north and south end of the bridge deck.
- Use signs and/or other lane-marking devices to help warn drivers and bicyclists of potential conflicts.
- Trim back the northeast traffic island at the West Nickerson Street and Westlake Avenue North intersection to minimize debris collection.
- Provide a bicycle signal for eastbound movements at North 34<sup>th</sup> Street and Fremont Avenue North. The new bicycle signal will be similar to a vehicle signal (with red, green and yellow lights), but it will be slightly smaller in size. A sign will indicate the signal is for bicyclists only.
- Trim back bushes at Florentia Street to improve visibility.
- Provide a roof deck area on the new Operations and Maintenance Facility (shop) that will provide a refuge for pedestrians and bicyclists to wait off the roadway and sidewalk while the bridge is raised and/or lowered.

*Temporary Improvements*

- Provide a temporary six-foot bike lane on the north side of North 34<sup>th</sup> Street between Stone Way and Fremont Avenue North while the Burke-Gilman Trail is closed for construction.
- Place detour signs at locations that will give bicyclists ample opportunity to choose alternative routes during construction.

To improve bicycle safety and mobility between Florentia and Nickerson Streets the City will acquire a small “sliver” of land on the south side of the Ship Canal. The land is part of a triangle-shaped parcel that is bounded by Florentia Street, West Nickerson Street and 4<sup>th</sup> Avenue North (see Figure 2). The taking of this land may cause the existing espresso stand to be relocated approximately 8 feet to the west. The espresso stand is currently located a few feet into the City of Seattle right of way.

### **13. Historic and Cultural Preservation**

- a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.**

There are five historic resources within the Area of Potential Effect for the project:

- Fremont Bridge and approaches are listed in the National Register of Historic Places. The City of Seattle has also designated the Bridge as a historic landmark.
- McKenzie Building is listed on the City of Seattle historic inventory.
- Bleitz Funeral Home is listed on the City of Seattle historic inventory.
- McKenzie Apartments is listed on the City of Seattle historic inventory.
- "Waiting for the Interurban", a public sculpture is listed on the City of Seattle historic inventory.

The Fremont Bridge (including the approaches) is listed in the National Register of Historic Places. The Bleitz Funeral Home is potentially eligible for inclusion in the National Register of Historic Places.

The Federal Highway Administration, in consultation with the City of Seattle, Washington State Department of Transportation (WSDOT), and Washington State Office of Archaeology and Historic Preservation (OAHP), has determined that the Fremont Bridge Approach Replacement Project will have an adverse effect on the Fremont Bridge, particularly the approaches and the four steel trolley poles scheduled for removal (OAHP Log 111703-12-FHWA, 9/22/04). The parties are currently negotiating a Memorandum of Agreement (MOA) to resolve the adverse effect.

The City has reviewed the proposed plans with the Department of Neighborhoods staff as well as the City landmark nomination and designation file. The local designation governs the seismic retrofit of the concrete piers that is being proposed on the part(s) of the approach structures of the Fremont Bridge. This work qualifies as "in-kind maintenance and repair" and does not require a Certificate of Approval. The remainder of the work is not subject to the Landmarks Preservation Board approval.

The "Waiting for the Interurban" sculpture will be temporarily relocated to a storage area during the replacement of the north approach. The relocation will ensure the sculpture is protected during construction. It is estimated the sculpture will be relocated for 9 to 12 months. The sculpture will be returned to its original location after completion of the project.

- b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.**

There are no other known landmarks or evidence of historic, archaeological, scientific, or cultural importance on or next to the site. Appendix F includes a summary of the preliminary archaeological research that was conducted as part of this project.

- c. Proposed measures to reduce or control impacts, if any:**

Mitigation measures will be negotiated as part of the Memorandum of Agreement. Proposed measures include documentation of the approach structures, replacement of lighting and railings with historically appropriate types, and an interpretive display.

## 14. Transportation

- a. **Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.**

The south bridge approach is accessed via Westlake Avenue North, Dexter Avenue North, and West Nickerson Street. The north bridge approach is accessed by Fremont Avenue North and North 34<sup>th</sup> Street (see Figure 2). The project will not provide any additional access to the bridge approaches.

- b. **Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?**

The following table lists the nearest bus stops to the project site.

**Table 2: Bus Stops**

| <b>Bus Stop Location</b>                               | <b>Distance to Bridge</b> |
|--|---------------------------|
| Fremont Avenue North and North 34 <sup>th</sup> Street | 0.05 mile                 |
| Westlake Avenue North & Dexter Avenue North            | 0.07 mile                 |
| Nickerson Street & Florentia Street                    | 0.08 mile                 |
| Dexter Avenue North & 4 <sup>th</sup> Avenue North     | 0.09 mile                 |
| Nickerson Street & 3 <sup>rd</sup> Avenue North        | 0.10 mile                 |

The transit agency, King County Metro, has indicated that they will use alternative routes during construction when bridge traffic is limited to one lane in each direction to minimize disruption and confusion to the riders. The use of alternative routes by buses during construction may increase the travel time for some riders. The transit agency has not finalized the alternative routes at this time. The agency will provide notification to transit users (with a special emphasis on transit-dependent users) of the planned route changes.

- c. **How many parking spaces would the completed project have? How many would the project eliminate?**

The replacement of the approaches will not permanently create or eliminate any parking spaces. The replacement of the Operations and Maintenance Facility includes replacing the existing parking spaces. The new facility will not provide more parking spaces than currently exist. Some parking spaces may be removed during construction, which are summarized in the following list.

- Five to six parking spaces on North 34<sup>th</sup> Street east of Fremont Avenue North will be temporarily removed during construction to provide a bicycle lane.
- Three parking spaces may be permanently removed on Evanston Avenue North between North 36<sup>th</sup> Street and North 35<sup>th</sup> Street. (The Fremont Bridge project would only require the temporary removal of these parking spaces, but other on-going traffic improvement projects in the area will require the permanent removal of these parking spaces.)
- The City is considering a minor widening of the north side of North 36<sup>th</sup> Street, between Evanston Avenue North and Dayton Avenue North to avoid the removal of

on-street parking. If the widening does not happen, then there will be a loss of four to five parking spaces. (The Fremont Bridge project would only require the temporary removal of these parking spaces, but other on-going traffic improvement projects in the area will require the permanent removal of these parking spaces.)

**d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).**

The main improvements will be limited to removal and replacement (including paving) of the existing north and south approaches to the Fremont Bridge. During the construction period, various improvements are proposed to mitigate traffic impacts on detour routes. These improvements will mainly consist of temporary traffic control measures such as turn restrictions and signalization of impacted intersections. The Traffic Analysis includes the traffic improvement plan recommended for the construction period (see Appendix C for detailed information). The congestion impacts of the partial closures of the Fremont Bridge would likely result in a redistribution of traffic movements to alternative routes such as SR-99 (Aurora Bridge), 15th Ave Northwest (Ballard Bridge), and Eastlake Avenue on the east side of Lake Union (see Figure 6 and Figure 7). To address these potential impacts, various measures were analyzed to test their effectiveness.

During the Type, Size and Location (TS&L) phase of the project, the following improvements were identified to help mitigate traffic impacts during construction:

- Temporary signals at on/off ramps to SR-99 (Aurora)
- Temporary signal at Evanston Avenue North and North 36<sup>th</sup> Street
- Temporary signal at Fremont Avenue North and North 36<sup>th</sup> Street

Through other City of Seattle transportation projects (i.e., the Bridge Way/Fremont Circulation Project), the City has received funding to permanently implement these improvements through a Transportation Improvement Board (TIB) grant. The Fremont Bridge Approach Replacement project will provide matching funds for the TIB grant. Other improvements to be implemented under the TIB funding source are listed below. These improvements will help mitigate traffic impacts from the approach replacement project. The permanent implementation of these specific improvements is the result of other ongoing traffic analysis work and related recommendations as part of the Bridge Way Study and Fremont Circulation Plan.

- Permanently remove eastbound left turn (i.e., “hard left”) to northbound Fremont Avenue at North 35<sup>th</sup> Street. The “through” movement from Fremont Place North to North 35th Street will be maintained.
- Permanently extend eastbound left turn at Fremont Place North/Evanston Avenue North/North 36th Street.
- Permanently add signal at Fremont Place North/Evanston Avenue North/North 36th Street.
- Permanently add signal at Fremont Avenue North/North 36<sup>th</sup> Street.
- Permanently add signal at SR-99 Northbound Off-Ramp/Bridge Way/North 38<sup>th</sup> Street.
- Permanently add signal at Bridge Way/North 38<sup>th</sup> Street on-ramp to Southbound SR-99.
- Reconfigure Evanston Avenue North to two-way traffic south of North 36<sup>th</sup> Street (permanently after construction period).

- Permanently allow left turn movement for Northwest Fremont Way to southbound Fremont Avenue (Fremont Way/Fremont Avenue North/North 39<sup>th</sup> Street intersection).

In addition, the following roadway reconfigurations will be temporarily implemented as a result of the reduction in capacity on the bridge approaches during construction.

- Temporarily remove one westbound left turn lane at Fremont Avenue North/North 4th Street.
- Temporarily remove one eastbound right turn lane at Fremont Avenue North/North 35th Street.
- Temporarily remove one westbound lane on North 34<sup>th</sup> Street east of Aurora Bridge.
- Temporarily remove one westbound lane on North 34<sup>th</sup> Street between Stone Way and Fremont Avenue North (to facilitate bicycle movements impacted by the closure of the Burke-Gilman Trail). This is a measure to improve bicycle safety.
- Temporarily remove northbound left turn at Fremont Avenue North/North 34th Street. It is important to note that currently there is a left turn restriction for northbound left turns at Fremont Avenue North/North 34<sup>th</sup> Street during the PM peak. The analysis assumed that this restriction is maintained during both the AM and PM peak hours.

The following improvements are planned as part of other on-going traffic improvement projects.

- Reconfigure Evanston Avenue North to two-way traffic south of North 36th Street (permanently after construction period)
- Add a signal to North 39th Street and Stone Way
- Upgrade the signal at Bridge Way and Stone Way
- Upgrade the signal at Stone Way and North 40th Street
- Upgrade the signal at Nickerson Street and 3rd Avenue West
- Upgrade the signal at Westlake Avenue and Nickerson Street
- Upgrade the signal at North 36th Street and Dayton Avenue
- Upgrade the signal at North 36th Street and Phinney Avenue

**e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.**

The project is located immediately adjacent to the Lake Washington Ship Canal, which is used for water transportation. The existing rail line along the north and south sides of the Lake Washington Ship Canal has been removed with right-of-way franchises abandoned for use as a non-motorized trail.

**f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur**

The main purpose of this project is to replace the existing approach structures; therefore the completed project will not generate additional vehicular trips beyond the existing volumes. The Traffic Analysis (Appendix C) includes additional information on the existing and expected traffic volumes.

**g. Proposed measures to reduce or control transportation impacts, if any:**

The partial and full closures (estimated to be up to ten weekends) of the bridge would only have temporary transportation impacts during the replacement of the approaches.

Additional closures (estimated to be up to 4 weekends) may be necessary if the mechanical/electrical upgrade takes place after the approach replacement.

A number of transportation control measures are planned, and the Traffic Analysis includes a full description of the planned measures (see Appendix C). Drivers will utilize a variety of alternative routes that are in close vicinity during partial and full bridge closures. Some of the alternative routes available are higher-capacity arterials. The Aurora Bridge (SR-99), for example, is less than a quarter of a mile from the project while the Ballard Bridge (15<sup>th</sup> Avenue West) is less than a mile from the Fremont Bridge. Both bridges cross the Ship Canal running parallel to the Fremont Bridge (see Figure 6 and Figure 7). The elements of the final plan are listed on the previous page (Question 14, D). See Traffic Study in Appendix C for more details.

The results of the Construction-Phase analysis indicated that significant volume shifts would occur for the diversion routes such as SR-99 (Aurora Bridge) and the Ballard Bridge. However, due to the benefits of the various improvements assumed, overall congestion levels for the construction-Phase (2007) would be similar or slightly higher than the No-Action scenario (where the existing four-lane bridge section is maintained and no traffic diversion is assumed). For several intersection locations such as 4<sup>th</sup> Avenue North/West Nickerson Street and Fremont Avenue North/North 36<sup>th</sup> Street, traffic delays are in fact lower for the Construction-Phase scenario compared to the No-Action conditions due to the redistribution.

Post-construction operational conditions would reflect the general re-establishment of traffic patterns and volume levels shown in the No-Action scenario (i.e. prior to the start of construction). Resulting post-construction traffic operations in 2007 and 2025 indicate that some increases in delay may occur in specific cases (at two signals) where new signals modify traffic flow patterns for some intersection movements (example: North 38<sup>th</sup> Street & Bridge Way signal). However, overall system delays are noticeably reduced in the 2007 and 2025 Post-Construction scenario compared to No-Action.

The Burke-Gilman Trail will be temporarily closed at Stone Way North and detoured up onto North 34<sup>th</sup> Street where it will join back up to the existing trail in the vicinity of Phinney Avenue North. A westbound bicycle lane would be temporarily added on North 34<sup>th</sup> Street during construction. The Ship Canal Trail will be rerouted up onto the sidewalk/trail next to Westlake Avenue North/West Nickerson Street. This trail will be closed just east of the Fremont Bridge. On the west end it is anticipated that the Ship Canal Trail will be closed at the ramp in the vicinity of 3rd Ave North and Etruria Street (see Figure 5). See Item A.11 of the project description for more details on non-motorized improvements.

Impacts to freight traffic may also be experienced during construction. The proposed construction phasing plan calls for the reconstruction of the bridge approaches in the second 9 months of the 18-month duration. During this time, the two available lanes across the bridge (one lane in each direction) would be relatively narrow at approximately 10 feet in width. As such, larger freight vehicles may find difficulty adjusting to this limited lane width and would likely result in reduced overall speeds and capacity across the bridge. The northbound right turn "sweep" lane at N 34<sup>th</sup> St/Fremont Ave N would also be eliminated, thereby reducing the turning radius for the northbound right turn lane. This compromised turning movement would further exacerbate the operational impacts for freight from the proposed lane narrowing alone. Due to these factors, freight movements in the study area would be encouraged to redistribute to alternative routes to the Fremont Bridge (i.e. SR-99, 15<sup>th</sup> Ave NW, etc) during the construction phase.

The transportation impacts from trucks during the construction period are not anticipated to be great. The number of trucks on a given construction site varies greatly, depending on the type of work being performed and the fleet inventory of the contractors performing the work. However, project engineers estimate that truck activity going to or coming from the construction site will range from a low of approximately 4 trucks per day during micropile installation to a high of approximately 6 trucks per hour during concrete pours for the north and south approach decks. Please note these estimates are subject to change based on the chosen contractor's work plan.

During the nine month construction period for the replacement of the Operations and Maintenance Facility, the number of trucks on site will vary depending on the phase of work being performed. In general there may average a maximum of 8 to 10 construction company trucks (one-way) on site arriving early and leaving at the end of the work day, with one truck coming or leaving the site hourly during the 10 hour work day. There may be an average of 2 to 3 material delivery trucks (one-way) per day, in the early phases these will include grading and concrete trucks. These estimates are subject to change based on the chosen contractor's work plan.

## **15. Public Services**

- a. **Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.**

No.

- b. **Proposed measures to reduce or control direct impacts on public services, if any.**

The Social Elements Discipline Report includes a description of public services in the project area (see Appendix G). The following measures are planned to reduce temporary impacts to public services during construction.

- Construction activities are being planned to minimize changes in access to community and social services.
- Notices of planned construction activities, planned temporary road closures and detours, changes in other access routes, and the schedule for these activities will be mailed periodically to all public facilities, schools and social services operating in the project area.
- Construction activities, planned temporary road closures and detours, and the schedule for these activities are being coordinated with the City of Seattle Fire and Police departments and the School District as well as King County Metro Transit.

There will be no permanent impacts to public services after project completion.

## **16. Utilities**

- a. **Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, storm drain, sanitary sewer, septic system, other.**

Water, telephone and sanitary sewer are available at the site. During construction, underground and aboveground utilities may need to be temporarily or permanently relocated as a result of this project. Any disruptions to utilities during construction will be minor, and utilities companies and/or residents will be contacted ahead of time.

No utilities would be permanently impacted by this project. Qwest will permanently relocate as mentioned below.

**b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.**

Submarine cables currently lay on the bottom of the Ship Canal, which provide power and communications to the north bascule portion of the bridge. These cables have been in place since 1917 when the bridge opened. This project will replace these cables, and it is envisioned the new submarine cable(s) will be laid on the bottom of the Ship Canal and allowed to sink down by its own weight into the mud/silt. It is not expected the original cables will be removed as part of this project. Stormwater facilities for the bridge approaches will be modified to provide oil-water separation and water quality wet vaults as required under the City of Seattle drainage ordinance, Title 22.800 Stormwater, Grading, and Drainage Control Code. Existing electrical distribution services, communications fiber optics, and sanitary sewers crossing under the bridge approaches will remain and be protected in place.

Qwest will be relocating its communication cables in the project area. The Qwest cables that are underground and overhead will be properly disposed. Qwest communication cables in the waterway will not likely be removed.

No other utilities are required.

### **C. SIGNATURE**

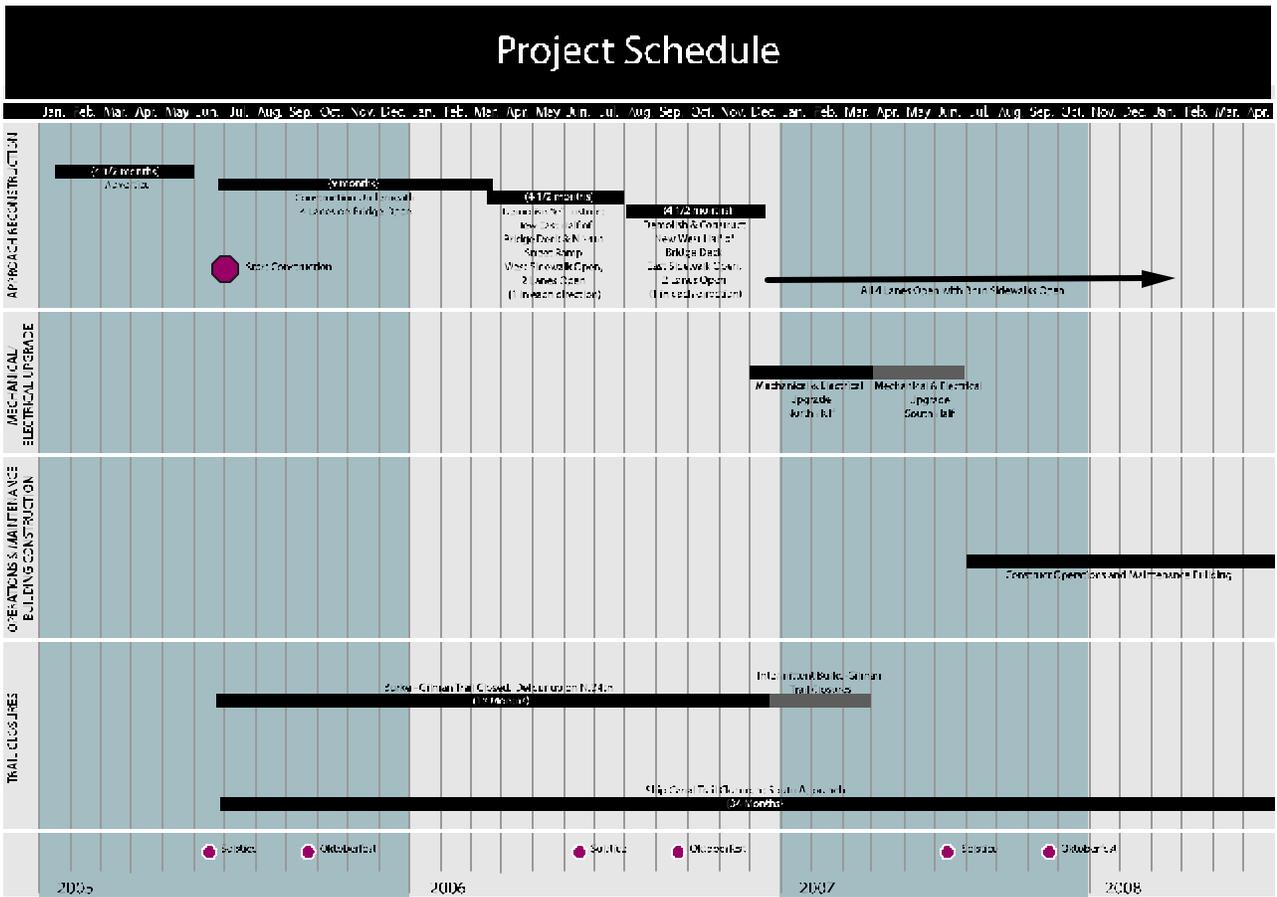
**The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.**

**Signature:** .....

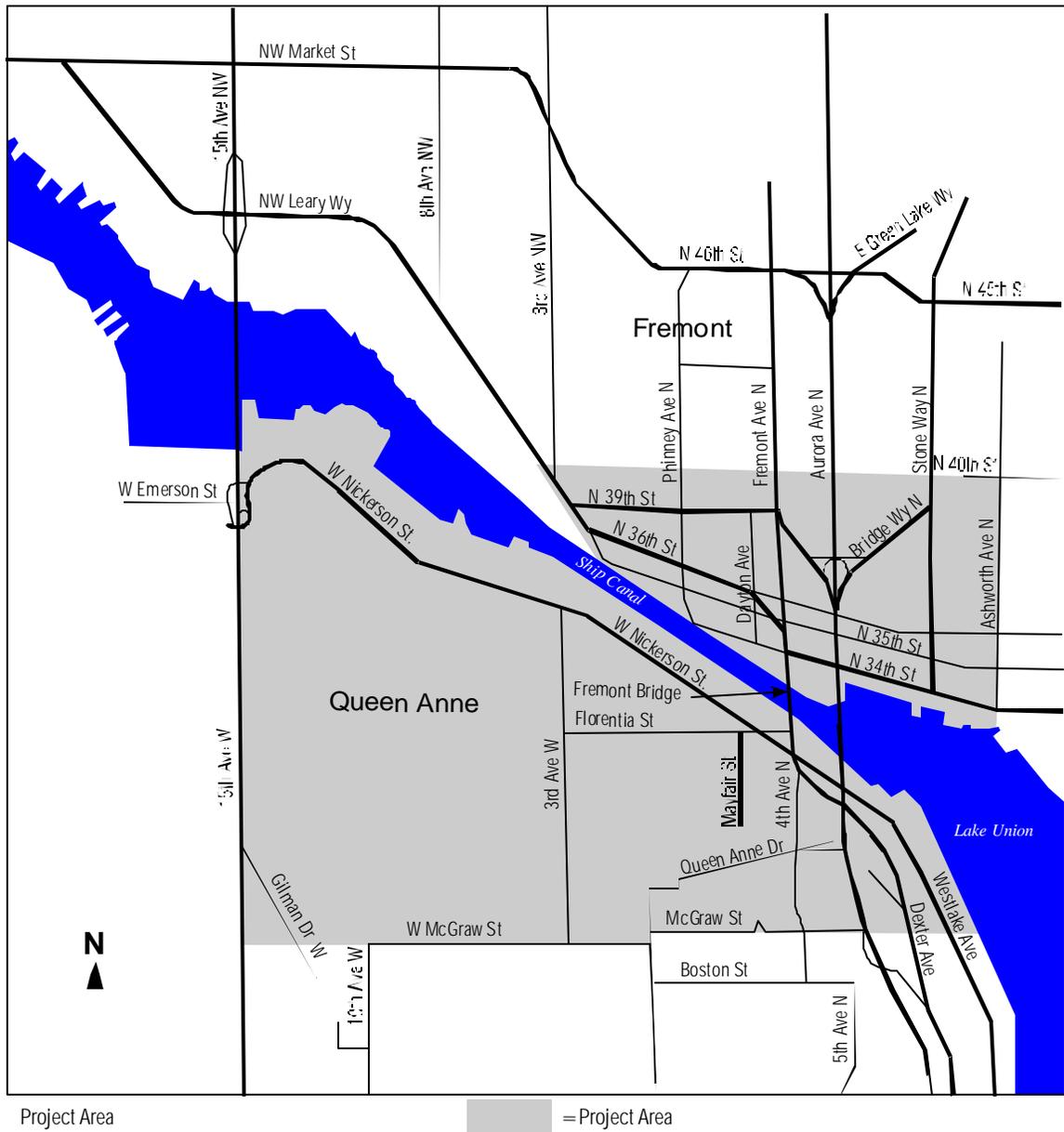
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# Figures #1-7

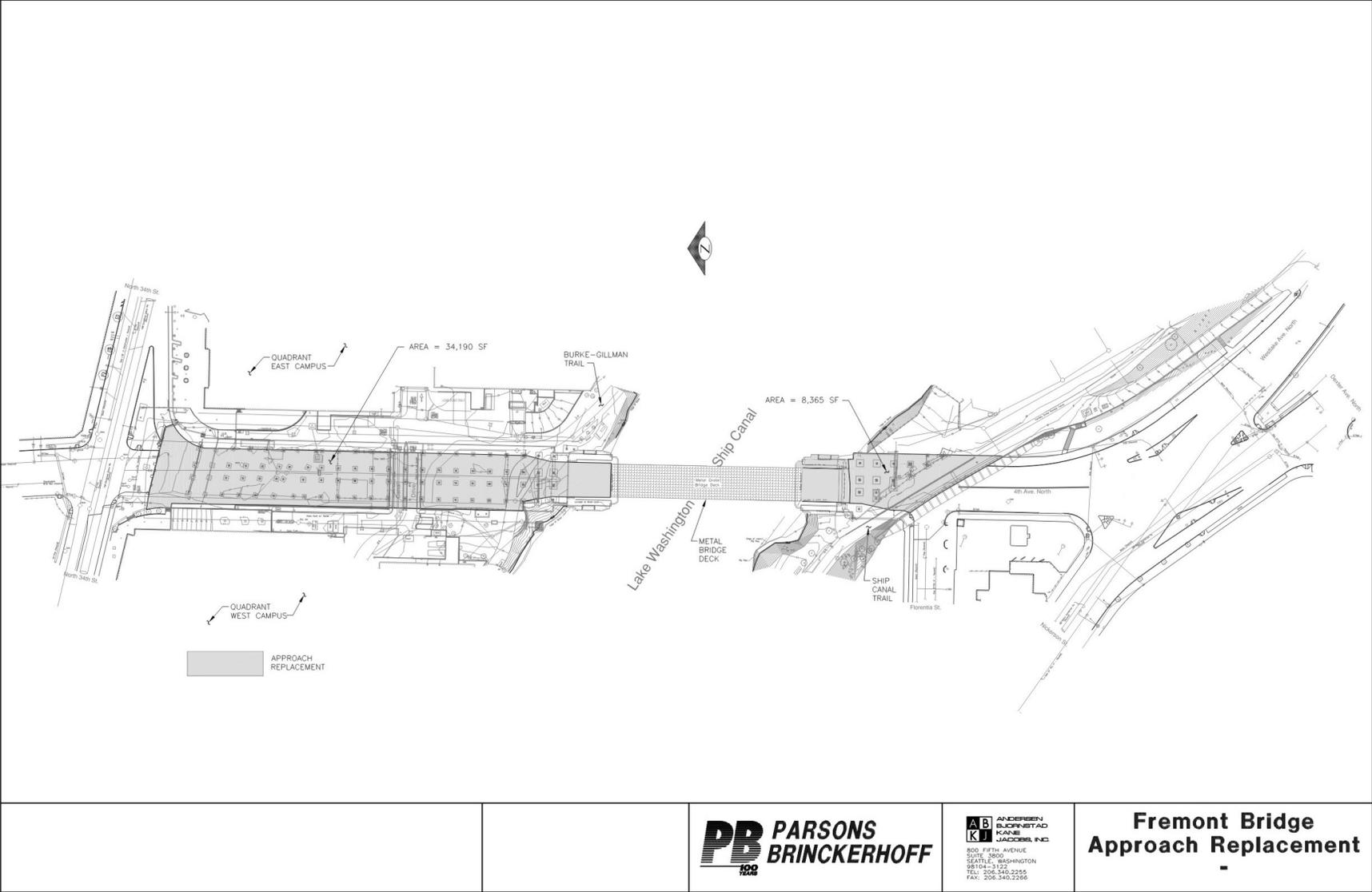
Figure 1: Project Schedule



**Figure 2: Study Area Map**



**Figure 3: Layout of Fremont Bridge and Approaches**



**Figure 4: Existing and Proposed Layout of Approaches**

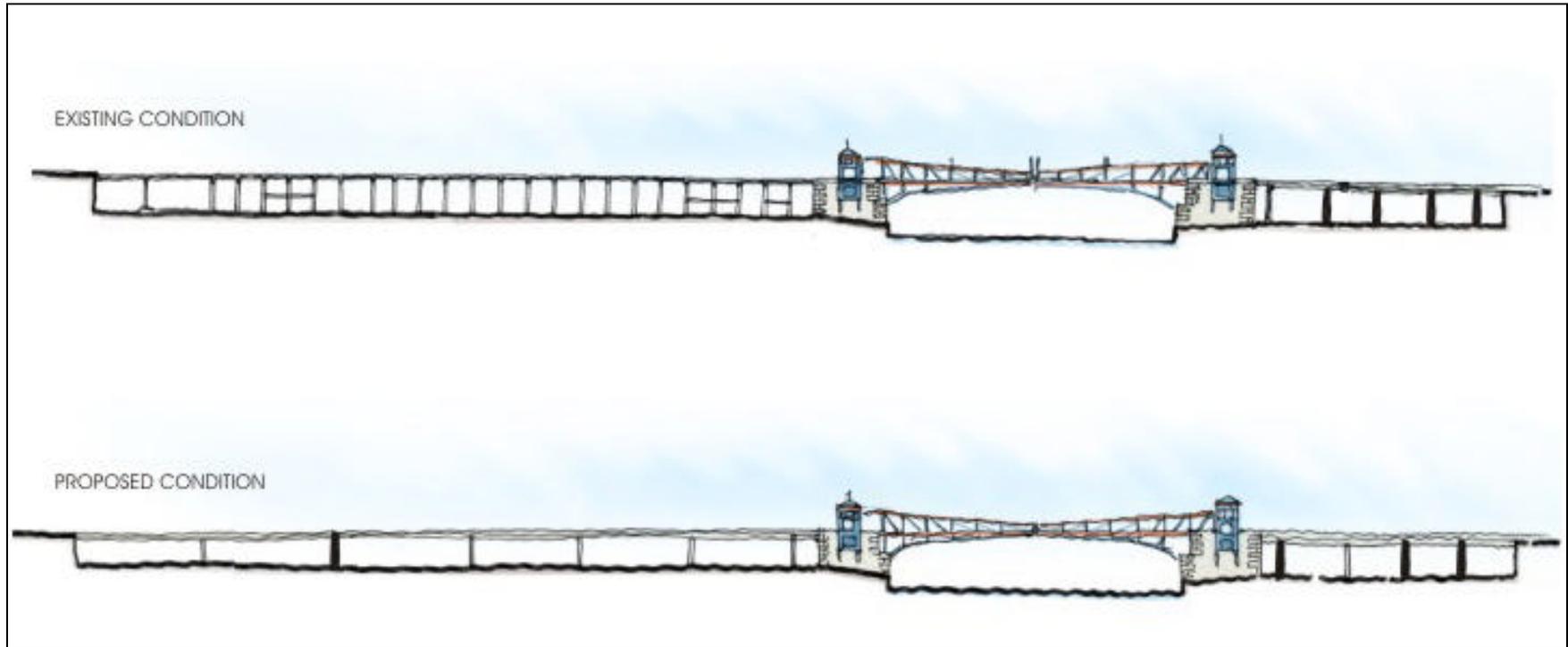
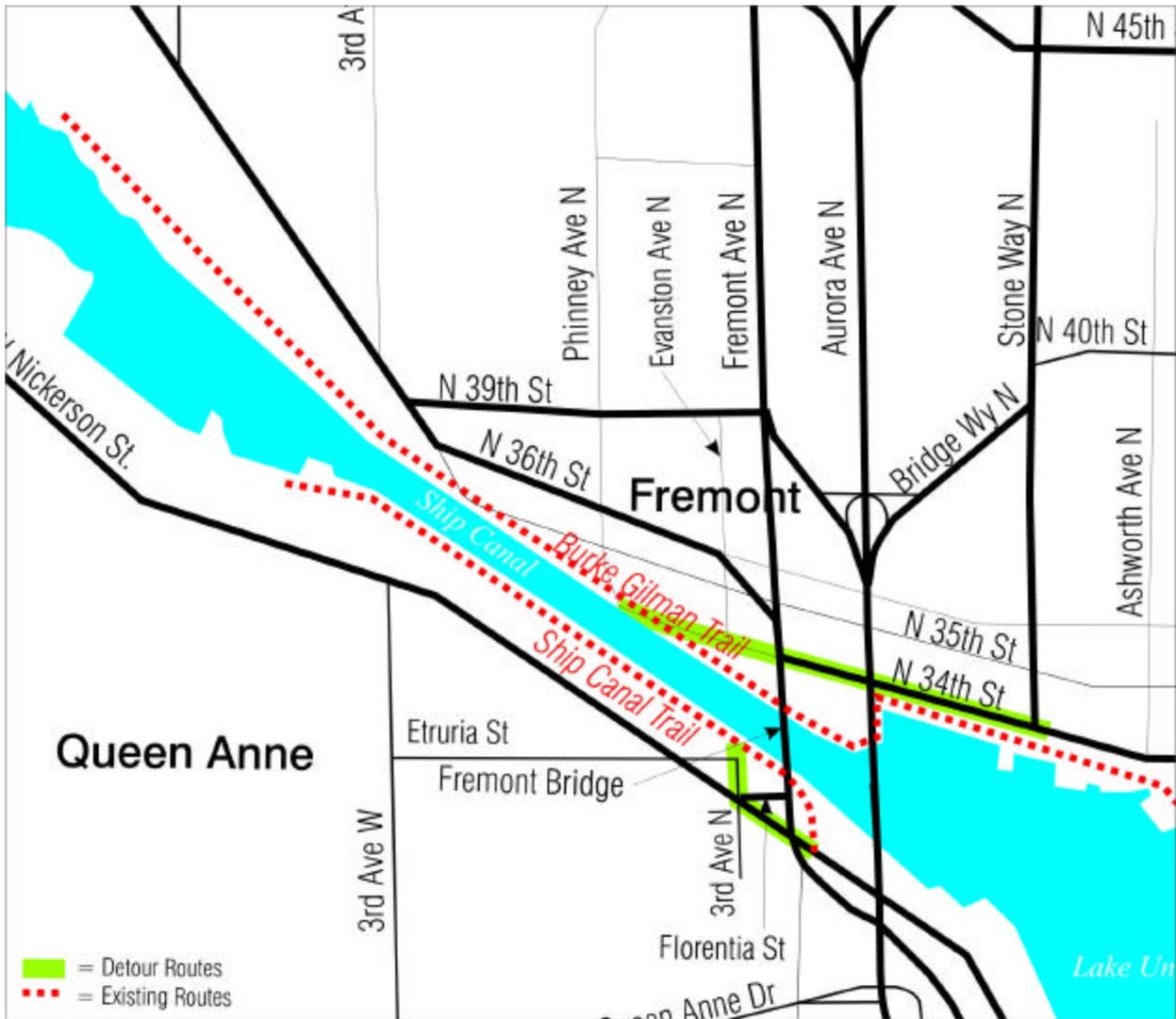
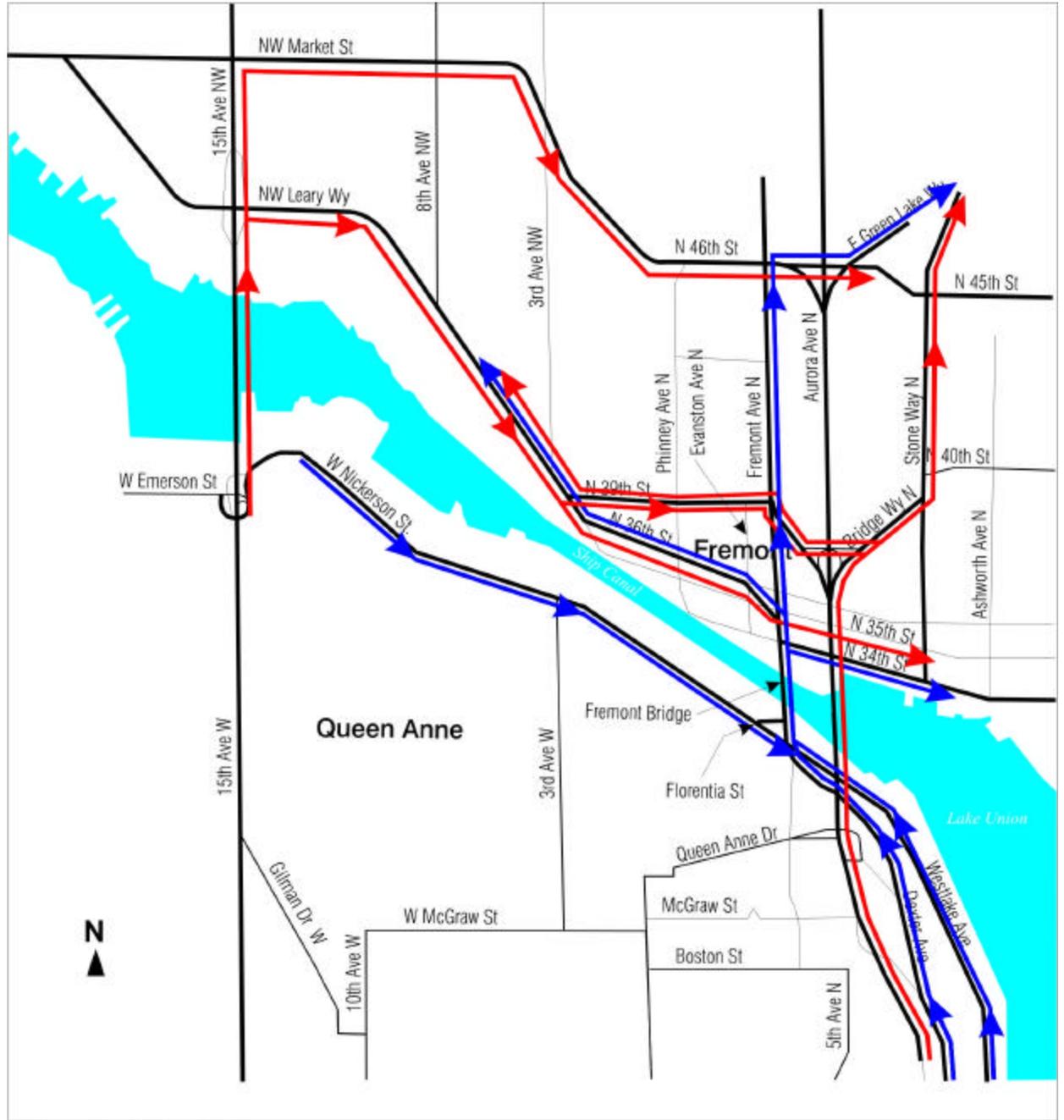


Figure 5: Bicycle and Pedestrian Facilities in Project Area



**Figure 6: Northbound Alternative Routes**





# Appendices A-G

Please contact Urania Perez at the City of Seattle for a copy of any of the appendices at 206.684.510 or [urania.perez@seattle.gov](mailto:urania.perez@seattle.gov) or at the project's website (<http://www.cityofseattle.net/transportation/fremontbridgeapproaches.htm>).

# ***Biological Assessment***

## **Appendix A**

***Air Quality Technical Report***  
**Appendix B**

# ***Traffic Analysis Support Technical Memorandum***

## **Appendix C**

# ***Hazardous Materials Discipline Report***

## **Appendix D**

# ***Economic Elements Discipline Report***

## **Appendix E**

## ***Section 106 Technical Documentation***

### **Appendix F**

# ***Social Elements Discipline Report***

## **Appendix G**