well established vegetation, which could degrade the southward view for park users.

Other views also would be affected by this option. Eastward views across Union Bay would be affected by the Union Bay Bridge, which was not part of the original 6-Lane Alternative. This bridge would be a column-supported ramp of four general purpose lanes (two lanes in each direction) that would extend over Union Bay from the Pacific Street interchange through the University of Washington Husky Stadium south parking lot to the intersection of Pacific Street and Montlake Boulevard. The Union Bay Bridge would provide a 110-foot or possibly a 70-foot vertical clearance over the Ship Canal portion of Union Bay (Exhibit 10).

Noise levels modeled in East Montlake Park average between 60 and 65 dBA. Noise levels within East Montlake Park would be reduced in the same manner described for the original 6-Lane Alternative. Construction of the proposed sound walls would reduce future (2030) noise levels by up to 5 dBA compared to existing conditions and by 6 dBA compared to the No Build Alternative.

Museum of History and Industry

Acquisitions and Relocations

Like the 6-Lane Alternative, this option would require the removal of the MOHAI building to accommodate the new SR 520 roadway and the stormwater treatment wetland. This would require the relocation of MOHAI, if the museum has not already relocated to another site. Additionally, MOHAI and other organizations considering use of the facility, such as the Arboretum Foundation, would lose that opportunity.

Proximity Effects

Because MOHAI would be relocated to a new site, there would be no additional proximity effects.

Washington Park Arboretum

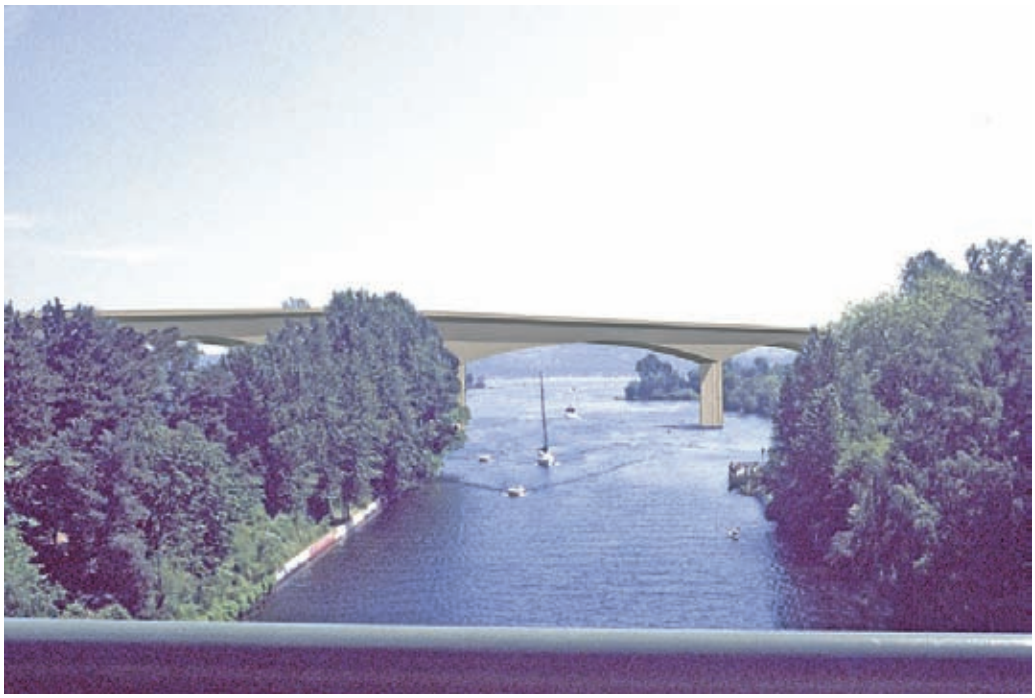
Acquisitions and Relocations

Foster Island

Like the 6-Lane Alternative, this option would acquire land from the Washington Park Arboretum at Foster Island. The effect would be

Existing View

6 Lanes with Pacific Street Interchange Option



Looking east from midspan of the Montlake Bridge toward the Pacific Street interchange ramp.

Exhibit 10. **Union Bay Bridge Visual Simulation**

SR 520 Bridge Replacement and HOV Project

similar to the original 6-Lane Alternative except that the option would have a wider footprint with a greater amount of acquisition in this area due to the proposed Pacific Street interchange and its on- and off-ramps. Under this option, the westbound lanes of the proposed highway would intrude roughly 100 feet northward into Foster Island beyond the existing park boundaries. The total area of acquisition would be 2.24 acres, or 7 percent of Foster Island (Exhibit 11). This is 0.44 acre more than the original 6-Lane Alternative.

About 0.3 acre of WSDOT right-of-way on Foster Island would be returned to the city of Seattle for park use after construction of the project. This is 0.8 acre less than the original 6-Lane Alternative. The resulting net loss would be 1.94 acres, or 6 percent of Foster Island.

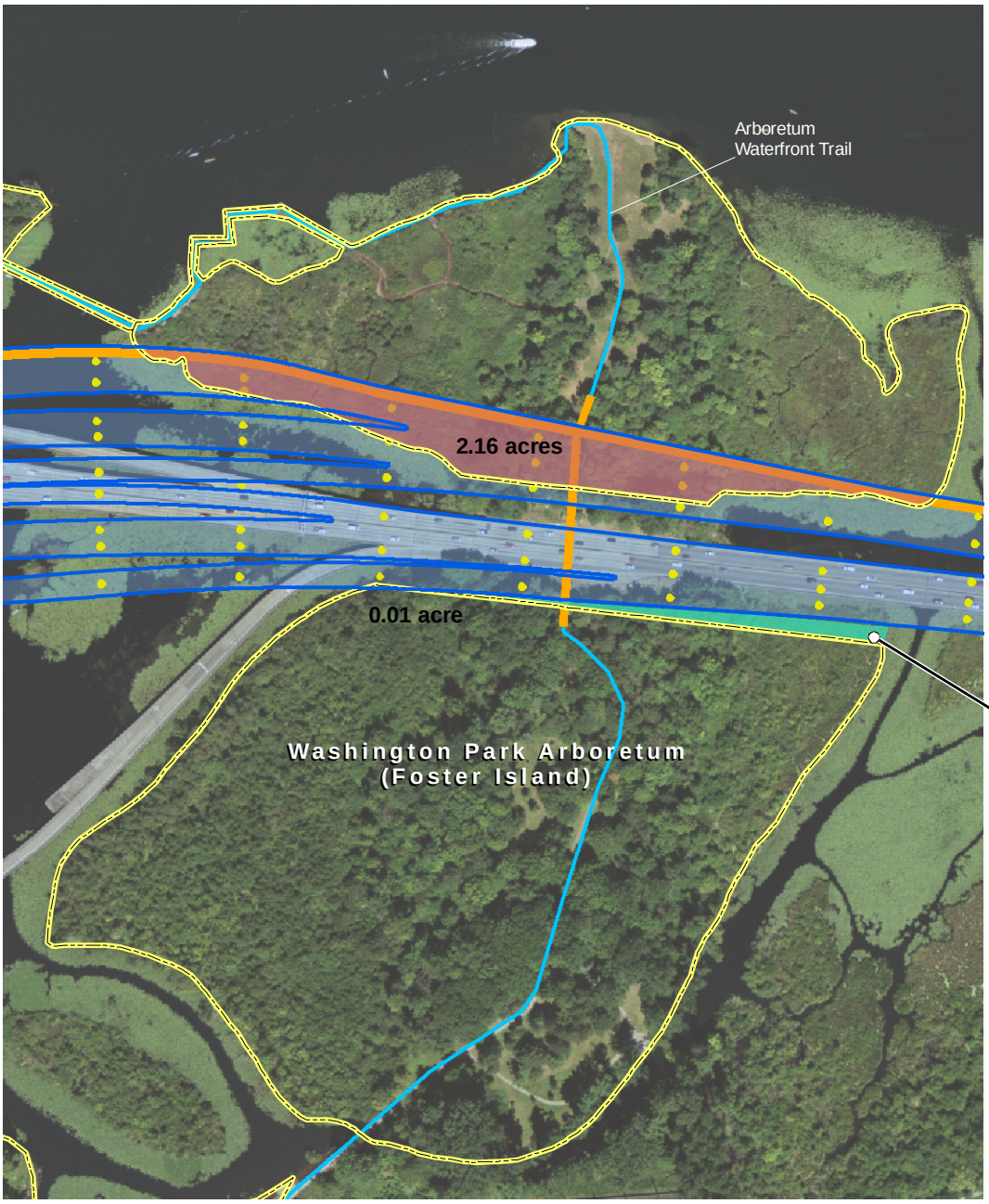
The Arboretum Waterfront Trail currently crosses under SR 520 in a low and narrow tunnel that many trail users find unpleasant and uncomfortable. Like the original 6-Lane Alternative, the highway mainline with this option would be wider and higher over the trail than it is today (Exhibit 11). This option would be roughly 50 feet high (same as the original 6-Lane Alternative at this location), which would allow the trail to be reconstructed at grade, instead of passing through the tunnel. See the *Recreation Discipline Report* (CH2M HILL 2005a) for a visualization of how this location would change under the 6-Lane Alternative. The change would be similar for this option except that the freeway would be 40 feet wider to accommodate the on- and off-ramps to the interchange.

Although the land underneath the footprint of the highway would be within the WSDOT right-of-way, it could be available for park use after construction, except for the area necessary for the columns to support the highway structure. The section of trail under the bridge would be three times longer than today and would have a dramatically different character because of less vegetation and more shading along the trail.

Marsh Island

Unlike the 6-Lane Alternative, the previously unaffected Marsh Island would be affected by the proposed Union Bay Bridge (Exhibit 12). The crossing would require acquisition of an additional 0.47 acre of parkland, or 12 percent of the 4.15-acre Marsh Island.

The bridge would be roughly 100 feet high and 100 feet wide (to accommodate two southbound lanes, a southbound turn pocket, two



Area within existing right-of-way that could be returned to Seattle for park use after construction:

0.30 acre for the 6 Lanes with Pacific Street Interchange

6 Lanes with Pacific Street Interchange Option

Park property line

Limits of construction

Area to be acquired (permanently)

Columns

Existing Trail/Bicycle Path

Trail/Bicycle Path

Path Under Roadway

Bicycle/Pedestrian Path

N

0 100 200 Feet

Exhibit 11. **Project Effects on Washington Park Arboretum (Foster Island)**

SR 520 Bridge Replacement and HOV Project

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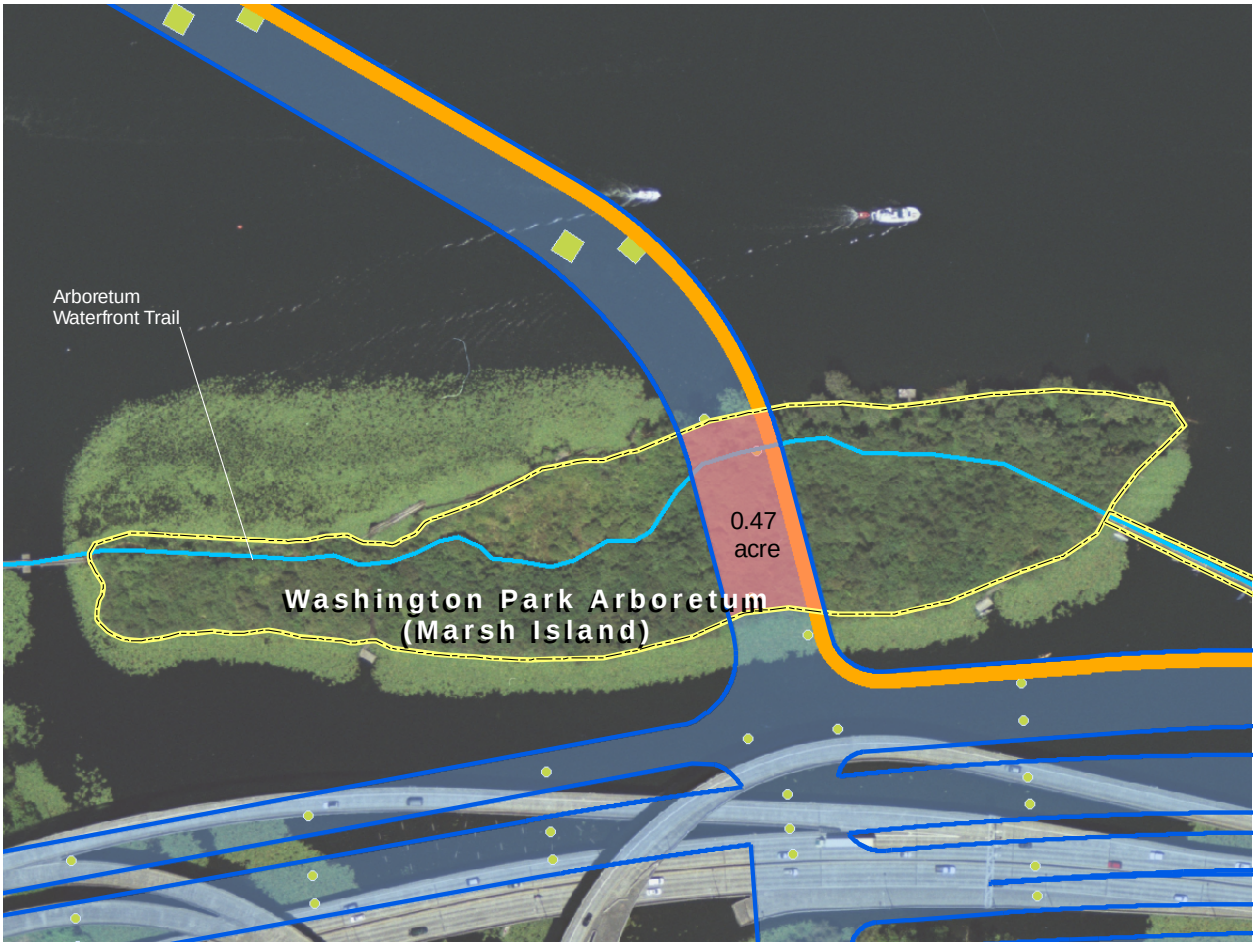

6 Lanes with Pacific Street Interchange Option

Park property line
Limits of construction
Area to be acquired
Columns

Existing Trail/Bicycle Path
Trail/Bicycle Path

Proposed Bicycle/Pedestrian Path
Bicycle/Pedestrian Path

N

0 100 200 Feet

Exhibit 12. **Project Effects on Washington Park Arboretum (Marsh Island)**

SR 520 Bridge Replacement and HOV Project

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northbound lanes, shoulders, a median, and a bicycle/pedestrian path) over the island and the Arboretum Waterfront Trail (measured from the bottom of the structure). Columns to support the bridge would be placed along the north and south sides of the island. The freeway would be much closer (20 feet at its closest location compared to 200 feet today) to the observation docks and the floating platform that connects Marsh Island with Foster Island (see Exhibits 9 and 13).

The Arboretum Waterfront Trail on Marsh Island would have some new shading effects except that the bridge would be much narrower and higher. Like Foster Island, the land underneath the footprint of the highway could be available for park use after construction, but it would have a dramatically different character with more shading along the trail.

WSDOT-Owned Peninsula

Although the WSDOT-owned peninsula is within the WSDOT right-of-way, it is perceived to be part of the Washington Park Arboretum and is used informally for recreational purposes. This land was originally purchased by WSDOT for the R. H. Thompson freeway expansion. However, the freeway was never constructed and the land has remained unused for transportation purposes except for the three ramps that currently cross over this area. The Seattle Department of Parks and Recreation has improved and maintained the areas near the ramps under the terms of a 1989 agreement with WSDOT. According to the Arboretum Master Plan EIS (City of Seattle Parks and Recreation Department 2001), the City wishes to enhance the use and appreciation of this area further in conjuction with implementation of the proposed master plan. As in the original 6-Lane Alternative, the existing unused R.H. Thompson Expressway ramps would be removed. However, the difference between this option and the original 6-Lane Alternative is that the two narrow Lake Washington Boulevard ramps would be removed and replaced with one wider ramp extending the length of the peninsula. The new ramp would be two lanes wide and would connect the new Pacific Street Interchange south to Lake Washington Boulevard. Some of the existing mature trees and grass on the peninsula would be removed to accommodate the new ramp. Additionally, because there would be one ramp versus three, more area would be available for recreational use in one large, contiguous area of open space.

Existing View

6 Lanes with Pacific Street Interchange Option

Looking east from the shoreline near the Museum of History and Industry parking lot across waterway in the Arboretum.

Exhibit 13. **Evergreen Point Bridge near Arboretum Visual Simulation**

SR 520 Bridge Replacement and HOV Project

Proximity Effects

Foster and Marsh Islands are peat and marsh landscapes that occupy the southern shore of Union Bay. They are prominent and unique landscape features in the Washington Park Arboretum. The waterways surrounding these islands consist of marshes and open water containing vegetation that cannot be seen in the main portion of the park. The Arboretum Waterfront Trail is a unique 0.5-mile trail that meanders on a series of floating piers and structures through the marsh. The trail gives the islands a sense of remoteness and separateness from the rest of the park. Raised observation platforms provide better views of the various wetlands around the islands. Exhibit 9 shows their locations.

Foster Island has been greatly altered by urban freeway construction. Although portions of the island still maintain a sense of wilderness, noise and visual intrusion from SR 520 have severely affected many areas. The elevated freeway ramps dominate the landscape and the freeway itself divides Foster Island in half. Like the original 6-Lane Alternative, this option would further degrade the park by increasing visual intrusion from the larger freeway. Over Foster Island, the freeway would be the same height as the original 6-Lane Alternative (40 feet higher than today) and slightly wider than the original 6-Lane Alternative (300 feet wide, with a 40-foot gap between the eastbound and westbound lanes). Its width would be roughly three times wider than today. Although a higher bridge with wider column spacing (250 feet compared to the current 100 feet) would open up the area underneath the bridge and views that are currently blocked by the low bridge, a wider and higher bridge would be more dominant and would be seen from more areas and from greater distances throughout the island.

Over Marsh Island, the Union Bay Bridge would be roughly 100 feet high and 100 feet wide. The bridge and its support columns would also be dominant and noticeable features, which would affect the visual environment for park and trail users (Exhibits 12 and 13).

Directly south of the island, the new interchange would rise up over the mainline, with eastbound and westbound on- and off-ramps and an inside transit-only eastbound on-ramp and westbound off-ramp. The interchange itself would sit about 80 feet above the water and in plain view of the floating portions of the trail. The mainline would be at a lower grade underneath the interchange and about 30 feet above the

water (20 feet higher than today). Overall, the width of the interchange would be 400 feet at its widest location, including the gaps between ramps. The structure would be more than twice as wide as the structure is today. The open water floating sections of the Arboretum Waterfront Trail are already greatly affected by the presence of SR 520 and this effect would be amplified with the construction and operation of a new interchange. SR 520 would be that much more of an obstruction. See Exhibit 14 for a comparison of bridge heights between the original 6-Lane Alternative and the options.

Exhibit 14. **Comparison of Bridge Heights Between the Options and the Original 6-Lane Alternative (in feet)**

Resource (see Exhibit 9 for stations)	Existing	Original 6-Lane Alternative	6 Lanes with Pacific Street Interchange
Station 70 near MOHAI [a]	0	5	5
Station 80 just south of Marsh Island [b]	9 (mainline)	27 (mainline)	27 (mainline)
	N/A (interchange)	N/A (interchange)	82 (interchange)
Station 93 over Foster Island at the Arboretum Waterfront Trail [a]	0	43	43

[a] Measured from ground level to the bottom of the structure.
[b] Measured from water level to the bottom of the structure.
N/A = Not applicable
Stationing is located on Exhibit 9.

Existing noise levels range from 63 dBA at the northern tip of Foster Island to 71 dBA along the Arboretum Waterfront Trail immediately north and south of the SR 520 mainline. Noise levels in the northern part of Washington Park Arboretum (Foster Island and Marsh Island) would be reduced in the same manner described for the original 6-Lane Alternative.

Construction of the proposed sound walls on both sides of the new SR 520 mainline would reduce noise levels by:

- 4 dBA compared to existing conditions and the No Build Alternative at the northern tip of Foster Island
- 11 dBA compared to existing conditions, and from 10 to 12 dBA compared to the No Build Alternative along the trail immediately north and south of the new SR 520 mainline

University of Washington's Recreational Facilities

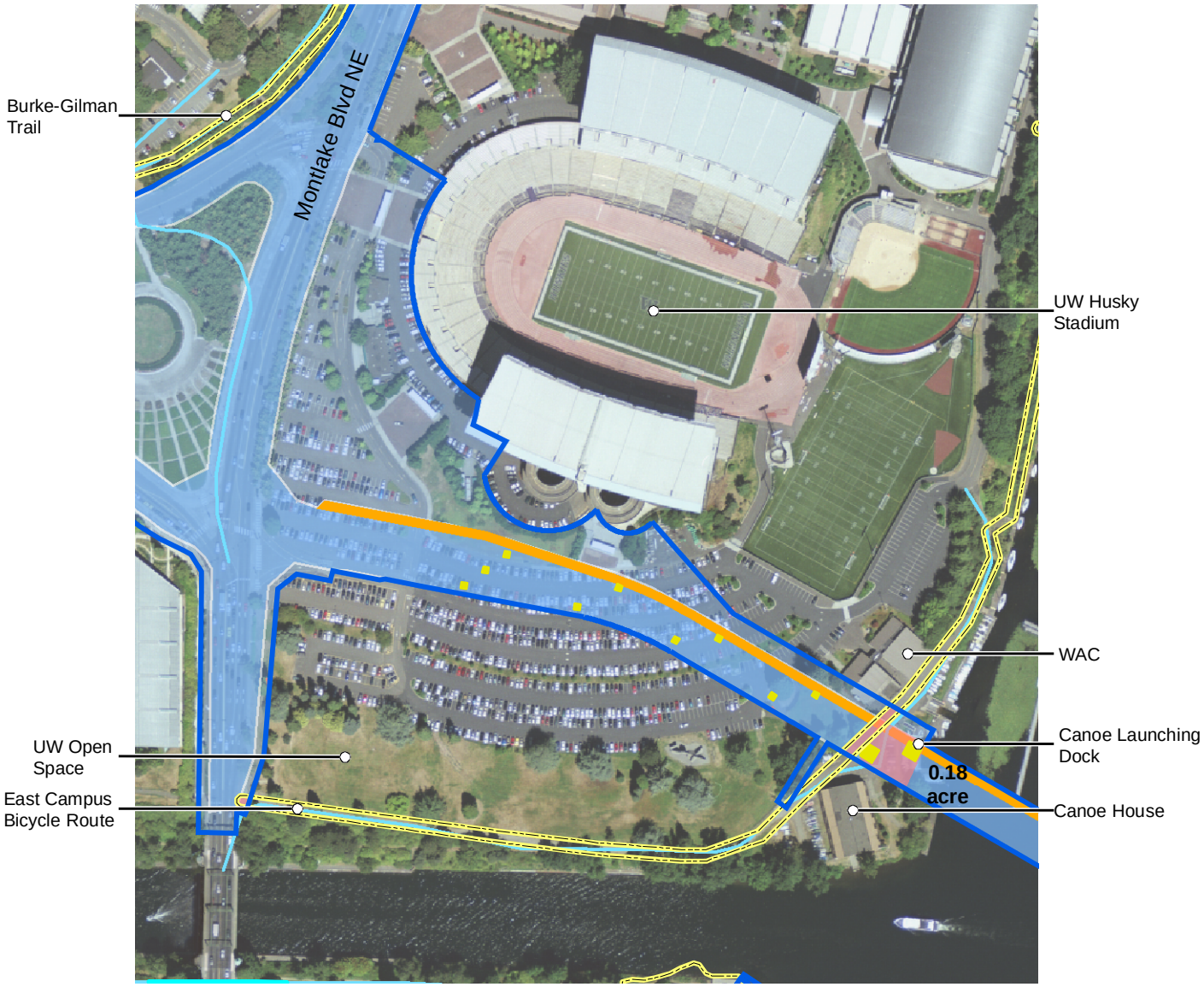
Acquisitions and Relocations

Unlike the original 6-Lane Alternative, this option includes the Union Bay Bridge, which would affect the University's southeast campus recreational facilities over the Waterfront Activities Center (WAC) and through the University of Washington Husky Stadium south parking lot to the intersection of Pacific Street and Montlake Boulevard (Exhibit 15). At this location, the Union Bay Bridge structure would be about 80 feet wide and 80 to 90 feet above the waterfront between the WAC facilities and the Canoe House. Along with the span itself, the placement of two bridge support columns would affect current operations and the overall recreational experience of users (see Exhibit 15). These columns would be 20 feet by 20 feet, with one at the canoe launching dock and the other located about 20 feet upland.

Approximately 0.94 acre of the WAC facilities would be affected by the Union Bay Bridge construction. Of this area, 0.18 acre would be acquired for the bridge columns. The rest of the area underneath the bridge could be used by the University of Washington. In total, approximately 10 acres of the southeast campus would be affected, of which about half would be temporarily affected by construction and the other half by the placement of the bridge columns and the bridge span itself (Exhibit 15). Most of the area is not used for recreational purposes but provides parking and access to the WAC and the open space. The parking areas would be restored once construction is complete. The effects on Husky Stadium parking are addressed in the *Addendum to Transportation Discipline Report* (CH2M HILL 2006).

Proximity Effects

The bridge alignment and column placement would adversely affect the launching dock, which could not operate as it does now and would need to be relocated on-site. Although the land underneath the footprint of the highway could be available for park use after construction, the overall character of the area would change from one that bears little or no trace of disturbance on the water side, except for the docks, to one that would be substantially encroached upon. Water access and facilities would need to be relocated on the remaining areas in and around the bridge and its columns. Even if relocated, the



6 Lanes with Pacific Interchange Option

- Park property line
- Limits of construction
- Edge of pavement
- Column
- Area over the WAC Facilities

Existing Trail/Bicycle Path

- Trail/Bicycle Path

Proposed Bicycle/Pedestrian Path

- Bicycle/Pedestrian Path

N

0 100 200 Feet

Exhibit 15. **Project Effects on the University of Washington Southeast Campus**

SR 520 Bridge Replacement and HOV Project

in-water columns would block the mostly pristine views toward the Arboretum, and the overhead bridge span would shade the docks and the waterway east of the Ship Canal currently used by boaters as passage into the Arboretum.

The Union Bay Bridge would be 110 feet or possibly 70 feet above the water at its highest point just east of the Ship Canal, and would be highly visible from all points around Union Bay, including the WAC and the Canoe House. The bridge overhead and the new piers would encroach upon the broad views from these facilities, their openness, and the unobstructed sky overhead. In addition, the bridge would be visible from the north stands of the Husky Stadium, but would not obstruct the iconic views of Lake Washington or Mount Rainier from the stadium.

Recreational activities (canoe and rowboat rentals, open space, and trail use) may still continue, but the shading, visual encroachments, and noise effects from the new bridge could affect the area's recreational success and appeal.

Existing noise levels range from 55 to 64 dBA near the University of Washington recreational facilities. The new sound walls would reduce noise levels along the Pacific interchange and Union Bay Bridge to between 53 and 62 dBA.

University of Washington Open Space and East Campus Bicycle Route

Proximity Effects

Unlike the original 6-Lane Alternative, this option would construct the Union Bay Bridge over a part of the University campus. The East Campus Bicycle Route is a gravel trail located along the southeast campus along Lake Washington and the Montlake Cut between the WAC and Montlake Boulevard. A vegetated slope provides a buffer between the trail and the Cut. The University of Washington Open Space is a large grassy area with trees and a climbing rock that is open for public use, including picnicking and other recreational activities.

The new Union Bay Bridge would be visible from much of the trail and open space areas. The bridge structure and columns would be a noticeable and dominant element which would affect the visual environment for trail and open space users.