6-Lane Alternative Footprint

Madison Park Path - 37th Avenue East

Seattle Right-of-Way

Parcels

N

0 50 100 Feet

Exhibit 13. **37th Avenue East Option Property Effects**

SR 520 Bridge Replacement and HOV Project

File Path: \\Simba\proj\Parametrix\168395\180171 SR 520 Bridge Replacement\GIS\Layouts\MadisonPark\ZoominsA.mxd, Date: May 2, 2006

the area up to the public. The existing private drive would need to be widened up to 14 feet and realigned in some areas to accommodate the path. Doing so, however, would not result in any changes to the adjacent property uses.

What can be done to avoid or minimize negative effects?

In those situations where it is necessary to acquire property, WSDOT will conform to the requirements set forth in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. This will ensure just compensation for all properties and minimize any adverse effect on the current owners or residents.

Navigable Waterways

Affected Environment

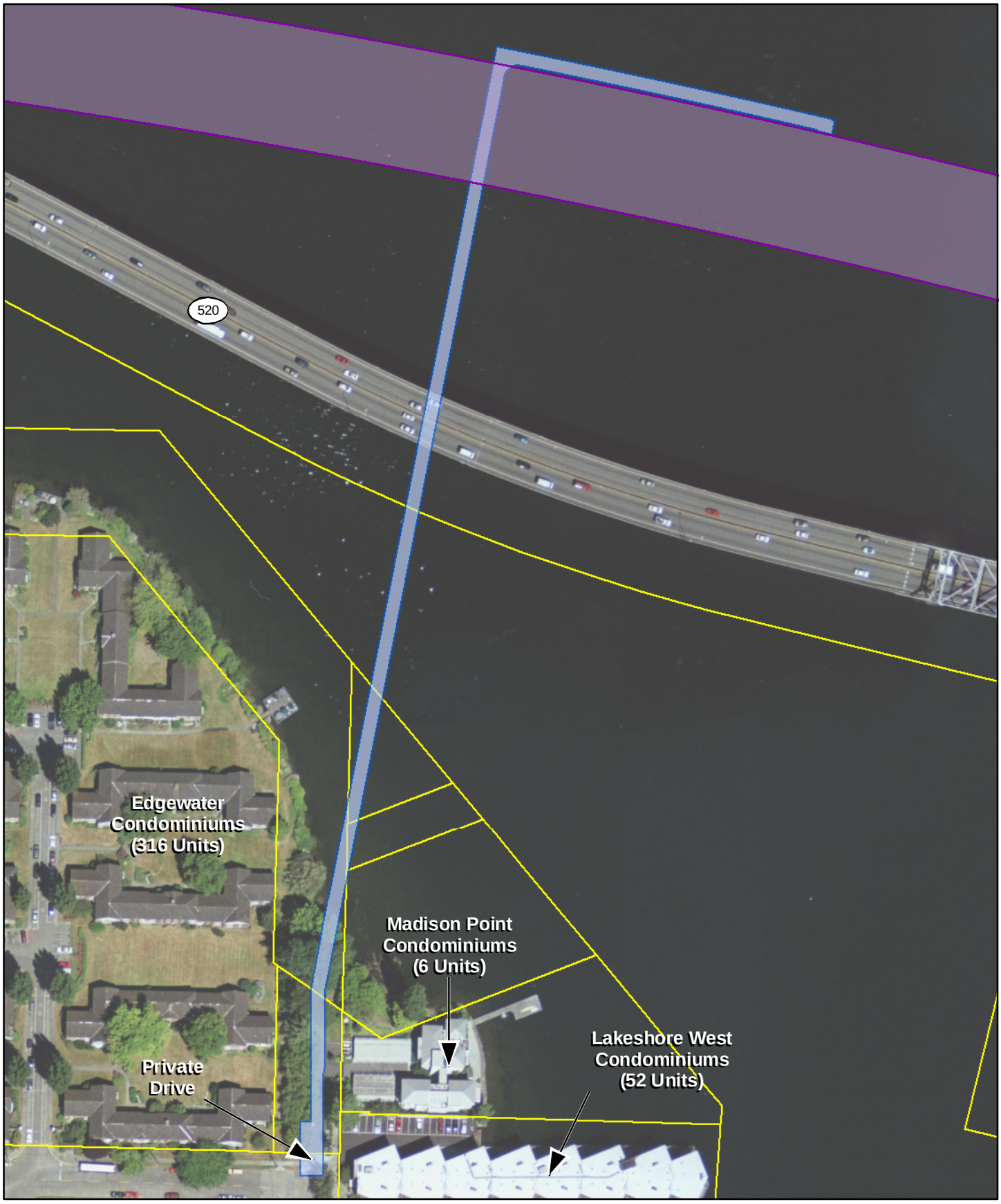
How was information collected?

The navigable waterways discipline team identified the navigable waterways in the project area through discussions with local U.S. Coast Guard personnel. The team reviewed the engineering drawings to determine how the Madison Park bicycle/pedestrian path options would affect navigation.

What are the navigational channels in the project area?

While neither option would cross any U.S. Coast Guard-identified navigational channel (NOAA 1997), both options would span parts of Lake Washington that are defined as navigable. Additionally, the northern shoreline of the Madison Park area has a series of docks used for mooring recreational boats.

The Seattle Fire Department has recently commissioned the construction of two new fireboats—the large platform boat and the fast attack boat that will change characteristics of the project area navigable waterways (**Exhibit 15**). The Fire Department's current freshwater boat is the Alki, which is moored at Fisherman's Terminal in the Ship Canal. This fireboat will be retired and replaced by the Chief Seattle when the Large Platform Boat is commissioned in November 2006. At the time



6-Lane Alternative Footprint

Madison Park Path - 37th Avenue East

Parcels

N

0 50 100 Feet

Exhibit 14. **43rd Avenue East Option Property Effects**

SR 520 Bridge Replacement and HOV Project

File Path: \\Simba\proj\Parametrix\168395\180171 SR 520 Bridge Replacement\GIS\Layouts\MadisonPark\Zoomins.mxd, Date: April 28, 2006

this report was prepared, the large platform boat is planned to be moored at Fire Station #5 in Elliot Bay and the Chief Seattle will move to Fisherman's Terminal (becoming the designated freshwater boat). The fast attack boat will rotate throughout their service area as the larger boats are in drydock for maintenance.

Exhibit 15. Moorage, Vertical Clearance, and Draft Requirements for Seattle Fire Department Fireboats

Fireboat	Moorage	Vertical Clearance	Draft
Chief Seattle	Fisherman's Terminal	32'	>6'
Large Platform Boat	Elliott Bay (First Station #5)	40'	>6'
Fast Attack Boat	Rotating	24'	2'

Data Sources: Nelsen (2004) and City of Seattle (2006).

Project Effects

Would the project affect navigation?

37th Avenue East Option

At 25 feet over the surface of Lake Washington, the 37th Avenue East option bicycle/pedestrian path bridge would not affect recreational or commercial vessel navigation. The section of Lake Washington that would be spanned by the 37th Avenue East option bridge is very shallow (less than 5 feet deep and as shallow as 1 to 3 feet in some places) and extensively covered with floating vegetation, which limits the use of this area to boats such as kayaks and canoes (see **Exhibit 9**). Such human-powered watercraft could easily pass under this bridge.

43rd Avenue East Option

At 25 feet over the surface of Lake Washington, the 43rd Avenue East option bridge would have the same vertical clearance as the western highrise of any of the SR 520 Bridge Replacement and HOV Project build alternatives. Based on the findings included in the SR 520 Bridge Replacement Project, approximately 95 percent of the recreational vessels in Lake Washington would be able to pass under this vertical restriction. Sailboats with fixed masts (meaning they cannot be lowered and raised while the boat is underway) would be unable to pass under this option bridge and moor at the north Madison Park docks.

Additionally, the Seattle Fire Department fireboat Chief Seattle will have to cross Lake Washington, pass under the eastern highrise, and then return to the north Madison Park area. This fireboat would not be

able to pass under the 43rd Avenue East option bridge and would therefore be unable to respond to any boat/dock fires in this area. The fast attack boat could respond to emergencies in the Edgewater Condominiums area west of the bridge but will not be consistently moored in the Ship Canal/Lake Washington. Consequently, there would be an extended response time if it were necessary for the fast attack boat to access this area.

What can be done to avoid or minimize negative effects?

Because no navigational adverse effects are expected with either bicycle/pedestrian path option, no mitigation is required.

Recreation

Affected Environment

How was information collected?

The recreation discipline team consulted maps created in GIS, parks and recreation plans, and conducted a visual survey of the Madison Park neighborhood to identify facilities along the existing bicycle routes. The team also obtained information from the City of Seattle's website about current and planned pedestrian, bicycle, and recreational facilities.

How does the City of Seattle plan for and accommodate bicycle use?

The Seattle Department of Transportation's Bicycle Program (Seattle Bicycle Program) plans for and develops the urban trail system to accommodate bicycles. They estimate that about 36 percent of Seattle's 520,000 citizens engage in recreational bicycling, and between 4,000 and 8,000 people bicycle commute in Seattle each day, depending on the time of year and weather conditions.

As such, the Seattle Bicycle Program has been working steadily toward developing an urban trail system to accommodate these bicyclists. The goal of Seattle's program is to:

- Facilitate bicycling as a viable transportation choice

- Afford citizens the opportunity to experience Seattle's unique scenic and natural amenities
- Provide access to healthful recreational activities
- Link major parks and open spaces with Seattle neighborhoods

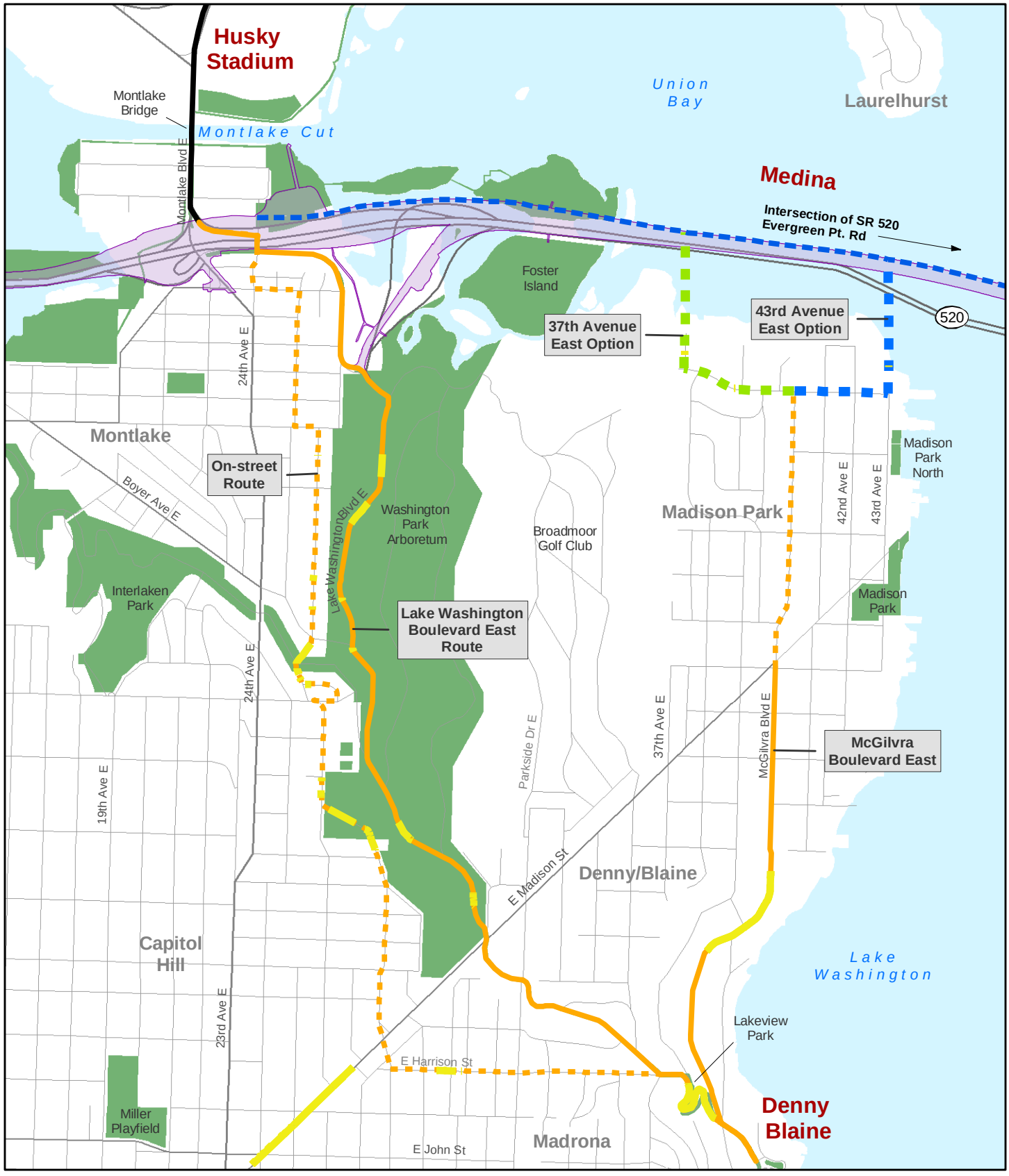
Urban trails include shared-use paths, bicycle lanes, signed bicycle routes, arterials with wide shoulders, and pedestrian pathways. Seattle has about 28 miles of shared-use paths; 22 miles of on-street, striped bicycle lanes; and about 90 miles of signed bicycle routes.

Bicycle Routes in the Study Area

The recreation discipline team identified several bicycle routes in the Madison Park area (see **Exhibit 16**). The existing routes that serve the Madison Park neighborhood generally run north to south and accommodate nonmotorized travel between areas north of the Lake Washington Ship Canal (the University of Washington and adjacent neighborhoods) and neighborhoods south of the Ship Canal and east of Capitol Hill (the Arboretum and Montlake, Broadmoor, Madison Park, Washington Park, Denny-Blaine, and Madrona neighborhoods). In addition to linking these areas, the routes are used by both commuter and recreational bicyclists as a through route connecting to the larger system of city and county bicycle routes. This larger system includes bicycle routes east of Lake Washington that are currently reached by a bicycle/pedestrian path on the I-90 bridge and by public transit busses with bicycle racks that cross the Evergreen Point Bridge.

Existing routes in the study area include Seattle's designated on-street bicycle route, informal on-street bicycle routes, and both sidewalks and unpaved paths located beside city streets. Many bicyclists also travel along streets that are not designated by Seattle for nonmotorized travel, including Lake Washington Boulevard, East Madison Street, and Arboretum Drive East. Currently, pedestrians in the study area use the sidewalks along neighborhood streets or the unpaved pedestrian trail along Lake Washington Boulevard and Arboretum Drive East.

As shown in **Exhibit 16**, the bicycle routes provide important connections between the recreational resources in the study area, including Lakeview Park, Madison Park, the Arboretum, and a discreet shoreline access located at the west end of McGilvra Street. Only the shoreline access, however, is located within the immediate vicinity of the proposed Madison Park bicycle/pedestrian path connection. These recreational facilities are discussed briefly below.



Bicycle Routes

- Bicycle Route
- On-street Route
- Grades > 5%

0 500 1,000 Feet

N

Exhibit 16. **Bicycle Routes Comparison of Distances and Grades**
SR 520 Bridge Replacement and HOV Project

File Path: \\Simba\proj\Parametrix\168395\180171 SR 520 Bridge Replacement\GIS\Layouts\MadisonPark\Transportation\Distances_Grades.mxd, Date: April 28, 2006

Parks in the Study Area

As discussed previously, Seattle considers parks an important element in their Bicycle Program. Their goals for the program include giving citizens the opportunity to experience Seattle's unique scenic and natural amenities and linking major parks and open spaces with Seattle neighborhoods. The primary amenities and parks located along the bicycle routes within the study area are discussed below.

Lakeview Park

Lakeview Park is located near the southern portion of the study area. It is a 4.5-acre combined lookout-boulevard-picnic park at Hillside Drive, just where Lake Washington Boulevard begins its switchbacking descent to Lake Washington. The lookout is planted with peonies backed by a stone wall and has a good view of the lake and the Cascades beyond.

Madison Park and Madison Park North

Madison Park is located along the shores of Lake Washington in the Madison Park neighborhood. It is a grassy 8.3-acre park located approximately 1/4 mile south of the proposed 43rd Avenue East option route. The park has a bathhouse and swimming beach that is patrolled by lifeguards during the summer. Madison Park North, which lies.1 mile north of Madison Park, is a 4.5-acre flat, grassy open space with a playground, bordered by a sidewalk on 43rd Avenue East.

Washington Park Arboretum

The Washington Park Arboretum is located west of the 37th Avenue East option on either side of Lake Washington Boulevard. Lake Washington Boulevard and the Arboretum are key elements of Seattle's Olmstead-designed system of parks and boulevards. The 194-acre Arboretum is owned and maintained by Seattle and the University of Washington. It displays labeled plantings of more than 4,000 species of trees, shrubs, vines, and flowers. The Arboretum's Master Plan proposes a new dual-use bicycle/pedestrian trail along Lake Washington Boulevard.

Shoreline Access – McGilvra Street/37th Avenue East

This public shoreline access area is located at the west end of East McGilvra Street. A "Public Shoreline Access" sign is located at the entrance near 37th Avenue East. The access area includes parking for two vehicles, a trail adjacent to the Broadmoor Golf Club, and a canoe launching dock. The trail is 300 feet long and follows a gravel path used

jointly by the public and two private residences for access to their adjacent single-family homes. The dock is located at the north end of the trail and extends into the water. Views from the dock include the Arboretum and Lake Washington; the dock also provides an opportunity for the public to launch canoes and gain access into the Arboretum.

Broadmoor Golf Club

The Broadmoor Golf Club, founded in 1924, is a premier private golf club located just west of and immediately adjacent to the proposed alignment of the 37th Avenue East option path. Broadmoor features an urban golf course on 115 acres of land adjacent to the Arboretum.

What is a Section 4(f)?

Section 4(f) of the Department of Transportation Act of 1966 (49 USC Section 303) prohibits the Federal Highway Administration (FHWA) from approving a project or program that uses land from a significant public park, recreation area, wildlife or waterfowl refuge, or historic site unless:

1. There is no feasible and prudent alternative to the use of the land.
2. The project includes all possible planning to minimize harm to the property.

If a feasible and prudent alternative that avoids such use is identified, it must be selected. If such use is unavoidable, then possible measures that minimize harm to the property must be identified and incorporated into the proposed project.

If any resources protected by Section 4(f) are used by a project, a Section 4(f) Evaluation must be prepared.

What is the applicability of Section 4(f) to recreational resources in the study area?

Section 4(f) would apply only the shoreline access at McGilvra/37th Avenue East. Although this public access is not well-known nor has it been designated on the Seattle Parks and Recreation plans, it is considered a valuable resource by the Seattle Parks and Recreation Department because it provides public access to the Arboretum area. As such, the shoreline access is a Section 4(f) resource and protection would apply if the Madison Park bicycle/pedestrian path results in a use of this property.

Project Effects

How would the project affect recreational resources?

Either option would be consistent with the Seattle Bicycle Program and would provide the following recreational benefits:

- **Quality of Life –** In general, the better conditions for bicycling and walking would benefit the quality of life for surrounding neighborhoods. Bicycling and walking can be considered an indicator of a community's livability—a factor that has a profound effect on attracting businesses and workers as well as tourism.
- **Increased Recreational Opportunities –** Either option would make a stroll or bicycle ride from Madison Park to along the SR 520 route possible. The scenic views from the bicycle/pedestrian path would encourage pedestrian use and activity.
- **Enhance Connectivity –** The bicycle/pedestrian path would increase the circulation and access to parks and neighborhoods. The path would be well delineated, signed, and marked and be designed to ensure a secure environment for pedestrians.

37th Avenue East Option

The 37th Avenue East option would be located within the property currently used for public shoreline access (see **Exhibit 13**). Construction of the bicycle/pedestrian path would require widening and paving the existing gravel path to a width of 14 feet. The existing purpose of the gravel path would not be eliminated because the path would continue to be used by the public for shoreline access and by the two private residences for access to their homes. However, the level and type of recreational activity on the path would change. The recreational activity would no longer be limited to serve only shoreline access, but it would be increased to serve a variety of pedestrians, including commuters, neighborhood residents, and recreational users such as joggers, walkers, and bicyclists.

Construction of the 37th Avenue East option bridge would also cross over the canoe launching dock that extends north of the shoreline. The new bridge, however, would be designed so people would still be able to carry and launch canoes conveniently from the dock. The alignment of the bridge and the location of the columns are in an early state of

design and could be adjusted based on input from the Seattle Parks and Recreation Department (Seattle Parks and Recreation) and other permitting agencies. Based on the early designs, the alignment generally follows the existing trail from McGilvra Street to the launching dock. The design profiles indicate that the bottom of the bridge deck would be 8 feet above the shoreline and 10 feet above the end of the dock. The bridge height would continue to increase as it approached SR 520.

The bridge and its columns may alter the character of the views from the launching dock by contrasting with the natural surroundings. However, the bridge could also provide new scenic views for people crossing it, and it may be possible to include view platforms to enhance these opportunities.

43rd Avenue East Option

The 43rd Avenue East option would have no direct effects on recreational uses.

What has been done to avoid or minimize negative effects on recreation resources?

For the 37th Avenue East option, WSDOT would coordinate with Seattle Parks and Recreation to further refine the design and ensure that shoreline access and the use of the canoe launching dock would continue unhindered.

What are the Section 4(f) effects?

37th Avenue East Option

As discussed in the *Recreation* section, the 37th Avenue East option would be located within the property used for public shoreline access (see **Exhibit 13**). This property is a publicly owned and operated facility and is open to the public. Although it is not well-known nor has it been designated on the Seattle Parks and Recreation plans, it is considered a valuable resource by Seattle Parks and Recreation because it provides public access to the Arboretum area. As such, the shoreline access is protected by Section 4(f).

Construction of the 37th Avenue East option would not constitute a use of the shoreline access because property will not be purchased for right-of-way, the temporary occupancy will not be adverse, and the value of the access will not be substantially reduced or lost.

Furthermore, the recreation analysis has indicated that those portions of the shoreline access property that are important to protect (the canoe launching dock and the access trail) would be preserved or replaced with similar or better equipment at a time and in a location that would result in no adverse effect to the recreational activity. WSDOT will coordinate with Seattle Parks and Recreation to further refine the design and ensure that shoreline access would continue unhindered.

43rd Avenue East Option

The 43rd Avenue East option would have no effects on Section 4(f) resources.

Transportation

Affected Environment

How was information collected?

The transportation discipline team consulted maps created in GIS and conducted a site visit to the Madison Park neighborhood to characterize the roadways and bicycle routes in the study area.

What are the affected roadways and bicycle routes in the study area?

There are two primary bicycle routes used to travel to, from, and through Madison Park (see **Exhibit 16**).

Of the existing routes, the on-street bicycle route has the lowest vehicle traffic volumes and speeds. However, this route crosses a number of busier streets (such as Boyer Avenue and Lake Washington Boulevard which have a higher likelihood of conflicts with cars.

Lake Washington Boulevard through the Arboretum is a curvy road with narrow lanes, no shoulders, and relatively high traffic volumes and speeds. Traffic often exceeds the posted 25 miles per hour (mph) speed limit. These conditions make it difficult for bicyclists to safely share the road with cars.

McGilvra Boulevard East, also a designated bicycle route, is within a few blocks of where either of the two options would connect to the Madison Park neighborhood. At its north end, McGilvra Boulevard is a

local residential street with two-way traffic, curbs, gutters, and sidewalks. It does not have any lane markings. At its south end, McGilvra Boulevard splits into two narrow lanes that are one-way and separated by a median. Today, vehicle and bicycle traffic on this street is primarily limited to local neighborhood trips and volumes are low.

East McGilvra Street, 37th Avenue East, and 43rd Avenue East are not currently designated on Seattle's Bicycling Guide Map (see **Exhibit 16**). East McGilvra Street is a short street that dead-ends to the east at Lake Washington and to the west at the Broadmoor Golf Club. Both 37th and 43rd Avenues East dead-end to the north. East McGilvra Street has sidewalks on both sides of the street, and 37th and 43rd Avenues East have sidewalks to the south but not to the north. To the north, 37th and 43rd Avenues East have low traffic volumes and function primarily as driveways for the residences located along them. These streets at this point do not have curbs, gutters, or lane markings.

On-street parking is allowed along East McGilvra Street, 37th and 43rd Avenues East, and McGilvra Boulevard East.

There are only two signalized intersections located within the immediate Madison Park vicinity: one at the East Madison Street/Lake Washington Boulevard East intersection and one at the East Madison Street/28th Avenue East/Martin Luther King, Jr. Way intersection. There are also very few stop-controlled intersections. Aside from East Madison Street and a couple of streets immediately adjacent to the Madison Park commercial district, traffic volumes are relatively low in this area.

Project Effects

How would the project affect nonmotorized travelers?

Both options would provide the following benefits for nonmotorized travelers:

- **Improved safety –** Both options would allow bicyclists and pedestrians to spend more time on a dedicated nonmotorized trail, where they would not have to share the road with motorized vehicles.
- **More direct routes –** The existing designated on-street route bicycle route (see **Exhibit 16**) winds through residential areas and switches

between parallel streets. This circuitous route is complicated and likely confusing for some riders. Either option would have only two turns—between the SR 520 bicycle/pedestrian path to Denny-Blaine Park.

- **Shorter travel times –** Both options would decrease travel distances and times over today's routes for travel between Denny-Blaine Park/Madison Park and the east side of Lake Washington. The 43rd Avenue East option would provide the greatest benefit by decreasing travel time for bicyclists by 11 minutes and decreasing travel time for pedestrians by 32 minutes.
- **Easier access –** The existing bicycle route is located on relatively level ground through the Madison Park neighborhood. It has a short climb south of East Madison Street to the Washington Park and Denny-Blaine neighborhoods. The path options would have grades of 5 percent or less between the SR 520 bridge and the existing routes. (as required by the ADA).

Depending on the option, nonmotorized traffic would increase slightly on 37th Avenue East or 43rd Avenue East, East McGilvra Street, and McGilvra Boulevard East. This increase would consist of a shift of existing bicycle trips to the new path and some new trips generated based on the new path. Because the path would provide better connectivity for trips around the lake rather than to major employment centers, it is likely that the majority of the additional bicycle trips would occur on the weekends. Bicycle traffic is expected to increase more than pedestrian traffic because the average trip distance from the path (to the University of Washington or east side of Lake Washington) is generally more conducive to bicycle travel (see **Exhibits 17** and **18**).

Bicyclists and pedestrians traveling to and from either option route would use existing roadways and sidewalks, including existing street crossings. East Madison Street, which is the busiest street that pedestrians and bicyclists may need to cross, has many well-marked, highly visible, block-style crosswalks. Because the Madison Street/ McGilvra Boulevard East intersection is near the Madison Park commercial district, drivers are accustomed to pedestrian and bicycle traffic at these crossings.

Exhibit 17. Distances and Average Travel Times for Existing and Proposed Nonmotorized Routes between Denny-Blaine Park and Husky Stadium

Route	Distance	Average Bicycle Travel Time	Average Walk Travel Time
Existing [a]			
Using the Lake Washington Blvd route	2.93 miles	20 min	49 minutes
Using the on-street route	3.23 miles	22 min	54 minutes
Madison Park Bicycle/Pedestrian Path Options[b]			
Using McGilvra and the 37th Avenue East option	3.31 miles	18 min[a]	55 minutes
Using McGilvra and the 43rd Avenue East option	3.65 miles	20 min[a]	61 minutes

[a]Used 9 mph as the average bicycle speed to reflect lower speed because of hills (>5%) and intersections along the route. Used 3.6 mph as the average walk speed.
[b] Used 11 mph as the average bicycle speed and 3.6 mph as the average walk speed based on Transportation Research Record 1636, *Flow Characteristics on Shared Hiking/Biking/Jogging Trails,* Paper No. 98-0117, Mark R. Virkler and Rajesh Balasubramanian

Exhibit 18. Distances and Average Travel Times for Existing and Proposed Nonmotorized Routes between Denny-Blaine Park and Medina/Evergreen Point Road

Route	Distance	Average Bicycle Travel Time	Average Walk Travel Time
Existing [a,b]			
Using the Lake Washington Blvd route	5.47 miles total 2.34 mi street 3.13 mi bus	26 min total Bike time: 16 min Bus time[b]: 10 min	49 min total Walk time: 39 min Bus time[b]: 10 min
Using the on-street route	5.78 miles total 2.65 mi street 3.13 mi bus	28 min total Bike time: 18 min Bus time[b]: 10 min	54 min total Walk time: 44 min Bus time[b]: 10 min
SR 520 Bicycle/Pedestrian Path [c]			
Using the Lake Washington Blvd route	5.47 miles	30 min	1 hr, 31 min
Using the on-street route	5.78 miles	32 min	1 hr, 36 min
Madison Park Bicycle/Pedestrian Path Options [c]			
Using McGilvra and the 37th Avenue East option	4.25 miles	23 min	1 hr, 11 min
Using McGilvra and the 43rd Avenue East option	3.84 miles	21 min	1 hr, 4 min

[a] Used 9 mph as the average bicycle speed to reflect lower speeds because of hills (>5%) and intersections along the route. Used 3.6 mph as the average walk speed.

[b] Bus time assumes an average wait time of 5 minutes during the a.m. and p.m. peak periods and a 5-minute travel time across the Lake. These times were estimated using on-line information from the King County Metro website for the Evergreen Point and Montlake Station bus stops (http://transit.metrokc/gov/tops/bike/i-520.html). Travel time across the lake could be longer because of traffic congestion on the SR 520 bridge.

[c] Used 11 mph as the average bicycle speed and 3.6 mph as the average walking speed based on Transportation Research Record 1636, *Flow Characteristics on Shared Hiking/Biking/Jogging Trails,* Paper No. 98-0117, M. Virkler and R. Balasubramanian

How would the path travel times differ between options?

Travel distances for the two current primary bicycle routes were compared with the proposed options. The existing routes used for comparison were Seattle's designated on-street bicycle route and the Lake Washington Boulevard route. **Exhibit 16** shows these routes.

The distances and travel times between Denny-Blaine Park and Husky Stadium and the proposed Madison Park bicycle/pedestrian path options are presented in **Exhibit 17**. The travel times shown below assume an average bicycle speed of 9 mph for the existing routes and 11 mph for either of the Madison Park bicycle/pedestrian path options. The transportation discipline team assumed that the average bicycle speed would increase with either of the path options because the route would be flatter and, as a result of being a dedicated nonmotorized path to the north of Madison Park, have less traffic-related delays (such as slowing at intersections). **Exhibit 16** shows where existing routes are sloped above a 5 percent grade.

As indicated in **Exhibit 17**, travel distances between Denny-Blaine Park and Husky Stadium would be longer with either of the Madison Park path options. However, given that both options would be nearly flat and grade-separated in the north, average travel times would be a couple of minutes shorter for bicyclists. Nonetheless, these travel times improvements are fairly inconsequential when considered in the context of overall trip time. It is likely that this route would only be a portion of a longer bicycle trip.

While **Exhibit 17** shows that pedestrian travel times would increase, this would not be likely to adversely affect pedestrian trips because many pedestrians are probably not traveling this route in its entirety. In fact, either path option could increase pedestrian travel on the portion of this route between Madison Park and the University of Washington/Husky Stadium. However, it is expected that the majority of any increase in pedestrian trips would occur on the weekends as recreational trips rather than work-related trips. As mentioned previously, neither of the options would improve connectivity between major employment centers.

Exhibit 18 presents the distances and travel times between Denny-Blaine Park and Medina (to the Evergreen Point Road bridge over SR 520) for the existing routes and the path options. The existing route travel times reflect the fact that today there is no regional shared-use

path across the Evergreen Point Bridge. Bicyclists and pedestrians traveling the SR 520 corridor must cross Lake Washington by bus. The last bus stop on the west side of the lake is the Montlake Freeway Transit Stop, and the last bus stop on the east side is the Evergreen Point Transit Stop.

As shown in **Exhibit 18**, the SR 520 bicycle/pedestrian path could slightly increase bicyclist and pedestrian travel times because it might take bicyclists a bit longer to cross the Evergreen Point Bridge by bicycle than bus. However, bicyclists and pedestrians would no longer be forced to transfer to a bus to cross the lake, which would improve their trip reliability. Bicyclists might also decrease their travel time by being able to bypass congestion, which they previously would have encountered while crossing the lake by bus. As mentioned above, these small changes in travel times are fairly inconsequential when considered in the context of overall trip time. It is likely that both the 37th Avenue East option and 43rd Avenue East option routes would only be a portion of a longer bicycle trip. The transportation discipline team expects that most pedestrians would continue to cross the lake by bus because they ultimately would be traveling to destinations beyond Medina.

Both bicycle/pedestrian path options would decrease the travel distance between Denny-Blaine Park and Medina. Bicyclists and pedestrians would have a more direct connection to destinations to the east and south of the SR 520/Montlake interchange.

The 43rd Avenue East option would provide the greatest benefit because it would be the shortest and therefore have the quickest travel time. The approximate 2-minute travel time difference between the two path options is fairly inconsequential when considered in the context of overall trip time. This route would probably only be a portion of a longer bicycle trip.

What has been done to avoid or minimize negative effects?

Because no transportation adverse effects are expected with either bicycle/pedestrian path option, no mitigation is required.

Visual Quality and Aesthetics

Affected Environment

How was information collected?

The visual quality discipline team reviewed the engineering plans and visited the Madison Park neighborhood to understand how the Madison Park bicycle/pedestrian path options could affect visual character and quality.

What are the affected views in the study area?

North Madison Park, where both of the path options would connect to existing roads, is a residential area with multifamily apartments and condominiums along the shoreline and single-family homes in the interior of the neighborhood.

Looking northeast from north Madison Park shoreline toward Husky Stadium.

Views from the Edgewater Condominiums complex and single-family residences along the north shoreline of Madison Park include a narrow stretch of open water, the wetland north of the Broadmoor Golf Club, and private docks and boats in the foreground; the Evergreen Point Bridge in the middle distance; and the University of Washington, Husky Stadium, and Laurelhurst hills in the distance. Eastward views from the northern and eastern shores of Madison Park are primarily of Lake Washington, with the floating portion of the Evergreen Point Bridge in the middle to far distance and the Medina hillsides and eastern highrise of the bridge in the far distance. The Cascade Mountains and Mount Rainier are also visible in the distance from some locations along the eastern shoreline.

Views are of average to high vividness from Madison Park's north shoreline because of the views of the Cascade Mountains, Mount Rainier, and Lake Washington.

Intactness is low for views from the northern shoreline of Madison Park because the Evergreen Point Bridge structures dominate those views and are not visually compatible with the natural-appearing landscapes. Intactness is moderately high for views from the Madison Park eastern shoreline because the bridge is a smaller element in the view and does not distract from the overall scenic view.

Unity is low where SR 520 is in the foreground of views across Lake Washington and Union Bay. The columns and elevated roadway and docks with boats break up the visual composition of natural-appearing areas and open water, and their presence is a dominant part of most views from the shoreline. Unity is average from the Madison Park eastern shoreline because the floating portion of the Evergreen Point Bridge is seen in the distance as part of an overall view that contains mid-rise buildings and docks.

Viewers include residents in Madison Park, boaters, beach-goers, and other people recreating along the lake shoreline. Motorists (commuters, tourists, delivery and transport, and visitors passing through the area) have near views from the roadway of the condominiums, single-family residences, private docks, and the vegetation of the marsh north of the Broadmoor Golf Club.

Residents and people using shoreline parks and Lake Washington and Union Bay are likely to have high sensitivity to landscape aesthetics because they either are in their home community or expect a pleasant, natural-appearing landscape for recreation. Motorists may also have high sensitivity to the scenic views from the roadway.

Visual quality is evaluated and discussed using these terms:

- **Vividness** is the degree of drama, memorability, or distinctiveness of the landscape components. For example, a view across Lake Washington can have high vividness because it is a memorable sight.
- **Intactness** is a measure of the visual integrity of the natural and human-built landscape and its freedom from encroaching elements. This factor can be present in well-kept urban and rural landscapes, as well as in natural settings. High intactness means that the landscape is free of eyesores and is not broken up by features that are out of place. An unbroken expanse of native vegetation would have high intactness.
- **Unity** is the degree of visual coherence and compositional harmony of the landscape considered as a whole. High unity frequently attests to the careful design of individual components and their relationship in the landscape.

Project Effects

How would the project affect views?

37th Avenue East Option

Overall, the 37th Avenue East option would become part of a view that now contains similar structures (docks, boat masts, and the SR 520 bridge). Visual changes would be low to moderately high depending on the viewer's proximity to the path. The views from Madison Park would change only slightly because the section of the new path that would be viewed over water is in the middle to far distance. The views

from adjacent homes, however, would experience more of a change because the path and its supporting columns would be highly visible in the near distance views.

The path option would not be visible from inland viewpoints in Madison Park because buildings and trees block views of the shoreline, Union Bay, and the existing SR 520 roadway. When the path is over land, it would be largely screened from all views by trees and shrubs.

The path option would not be visible from the University District or Laurelhurst because the Evergreen Point Bridge would block views. The path option bridge and columns would be visible to motorists on SR 520, but the path would be much narrower than SR 520and would not likely dominate any motorists' views.

Boaters traveling between SR 520 and the Madison Park shoreline would see the path, but those views would likely be from a distance because the marsh vegetation discourages sailing or boating in that area. The path option bridge over the water and columns would be part of a view that now contains docks, boat masts, and the SR 520 approach and bridge structure.

The path option bridge would slightly increase shading and shadow effects, and these could be noticeable to the adjacent residences path and columns would create narrow bands of shadow that would not noticeably change the overall brightness of the area.

The most noticeable construction effects would occur from staging and stockpiling areas, use or change of existing sidewalks and paths, vegetation removal, temporary erosion control measures, and the presence of construction equipment. In addition, light and glare could be increased by construction equipment if work were performed at night.

43rd Avenue East Option

The 43rd Avenue East option would generally affect views more than the 37th Avenue East option because 43rd Avenue East option would cross over a longer stretch of open water, be in a more visible location, and be closer to more residences. Visual changes would be low to moderately high, depending on the viewer's proximity to the path option. The path option bridge and its supporting columns would be in the near distance from some apartments with eastward views and those along 43rd Avenue East. From the residences on the north shoreline of Madison Park, the path option bridge and columns would be in the

middle distance but would cross a view that is now mostly a clear view across Lake Washington. The degree to which this new bridge would affect those eastward views would depend in part on whether the protective barrier on the path is a railing, creating a less massive structure, or a concrete wall, creating a more massive structure.

As with the 37th Avenue East option, the path option bridge over water would not be visible from inland viewpoints in Madison Park because buildings and trees block views of the Lake Washington, Union Bay, and the existing Evergreen Point Bridge. When the path is over land, it would be largely screened from view by mid-rise apartment buildings, trees, and shrubs along the north end of 43rd Avenue East.

The 43rd Avenue East option bridge would be visible to boaters on Lake Washington as a thin band, and the columns may visually merge with the background columns of the Evergreen Point Bridge. Since the path option bridge would be lower than the Evergreen Point Bridge alternatives, the path bridge would not interfere with middle distance views of the University of Washington or long distance views of the Olympic Mountains.

The 43rd Avenue East option would slightly increase shading and shadow effects that would fall primarily on open water. The path option bridge and columns would create narrow bands of shadow that would not noticeably change the overall brightness of the area. Unless the bridge was lit at night, there would be no changes to light and glare.

Temporary construction effects and mitigation approaches with this option would be the same as described for the 37th Avenue East option.

What can be done to avoid or minimize negative visual quality and aesthetics effects?

Mitigation would include replanting areas where vegetation was removed or planting new areas for visual or physical barriers and habitat replacement. The new landscaping should be compatible with the character of existing vegetation and the neighborhood. Fences would be installed to separate private and public properties.

Mitigation could also include designing the bicycle/pedestrian path in a way that minimizes its presence. Possible mitigation approaches include using pigment on the columns and/or pathway structure to help them blend with background vegetation or water; using railings rather than solid concrete protective barriers to minimize the apparent mass; and using downward-cast, soft illumination.

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Attachment 1. Species Cited in this Report

Common Name	Scientific Name
BIRDS	
Band-tailed pigeon	*Columba fasciata*
Red-winged blackbird	*Agelaius phoeniceus*
Northern pintail	*Anas acuta*
American wigeon	*Anas americana*
Northern shoveler	*Anas clypeata*
Eurasian wigeon	*Anas penelope*
Mallard	*Anas platyrhynchos*
Great blue heron	*Ardea herodias*
Lesser scaup	*Aythya affinis*
Canada goose	*Branta canadensis*
Bufflehead	*Bucephala albeola*
Common goldeneye	*Bucephala albeola*
Red-tailed hawk	*Buteo jamaicensis*
Cooper hawk	*Accipiter cooperii*
Belted kingfisher	*Ceryle alcyon*
Hairy woodpecker	*Picoides villosus*
Pileated woodpecker	*Dryocopus pileatus*
Marsh wren	*Cistothorus palustris*
Yellow warbler	*Dendroica petechia*
American coot	*Fulice americana*
Common yellowthroat	*Geothlypis trichas*
Bald eagle	*Haligeetus leucocephalus*
Peregrine falcon	*Falco peregrinus*
Hooded merganser	*Lophodytes cucullatous*
Double-crested cormorant	*Phalacrocorax auritus*
Pied-billed grebe	*Podilymbus podiceps*
Western grebe	*Aechmophorus occidentalis*
Common loon	*Gavia immer*
MAMMALS	
Big brown bat	*Eptesicus fuscus*
Mink	*Mustela vison*
Little brown bat	*Myotis lucifugus*
Beaver	*Castor canadensis*
AMPHIBIANS	
Pacific tree frog	*Hyla regilla*
Bullfrog	*Rana catesbeiana*
REPTILES	
Garter snake	*Thamnophis spp.*
FISH	
river lamprey	*Lampetra ayresi*
bull trout	*Salvelinus confluentus*

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Common Name	Scientific Name
cutthroat trout	*Oncorhynchus clarki*
steelhead / rainbow trout	*Oncorhynchus mykiss*
Chinook salmon	*Oncorhynchus tshawytscha*
coho salmon	*Oncorhynchus kisutch*
sockeye salmon / kokanee	*Oncorhynchus nerka*
largemouth bass	*Micropterus salmoides*
smallmouth bass	*Micropterus dolomieui*
black crappie	*Pomoxis nigromaculatus*
brown bullhead	*Ictalurus nebulosus*
longfin smelt	*Spirinchus thaleichthys*
northern pikeminnow	*Ptychocheilus oregonensis*
peamouth chub	*Mylochelius caurinus*
threespine stickleback	*Gasterosteus aculeatus*
pelagic sculpin	*Cottus aleuticus*
prickly sculpin	*Cottus asper*
yellow perch	*Perca flavescens*
bluegill	*Lepomis macrochirus*
Plants	
Black cottonwood	*Populus balsamifera*
Willows	*Salix spp.*
Hardhack	*Spirea douglasii*
Red osier dogwood	*Cornus sericea*
Cattail	*Typha latifolia*
White water lily	*Nymphaea odorata*