Implementing the Arboretum Loop Trail

By Andy Mitton

Washington Park Arboretum is currently undergoing one of its largest capital construction projects in decades. The project is identified in the Arboretum’s 2001 master plan with a squiggly line paralleling Lake Washington Boulevard, and with an arrow pointing toward it that reads: “Multi-use trail—A safer route for recreational bike users.” Despite this seemingly simple route depicted on the plan, designing the actual trail project has been anything but straightforward.

Intended for pedestrians and slower-paced cyclists, the trail negotiates important plant collections, seven different environmentally critical areas—including steep hillsides, a creek, wetlands, peat soils and liquefaction zones (soils that lose stability during an earthquake)—historic structures and landscapes, and aging infrastructure. In the end, this singular project achieves 10 distinct goals stated in the Master Plan: improving visitor access and experience, increasing educational opportunities, enhancing the ecological function of Arboretum Creek, and providing better east-west connections through the Arboretum, to name a few.

The route begins at Madison Street to the south, sneaking behind the Stone Cottage and crossing a bridge just before Arboretum Drive. From there, the trail climbs the southern edge of the Pacific Connections Garden and leads down toward Azalea Way, passing through the future Chile and China eco-geographic forests. After crossing Azalea Way,
the route parallels Arboretum Creek, traversing a large wetland complex and meandering past Yew Hill and Honeysuckle Hill. The trail then connects just east of the Wilcox Bridge, avoiding several mature trees flanking the historic structure, to link up with Foster Island Road on its journey through the Oak Family collection to the Graham Visitor Center to the north.

Funding for the project’s first phase was provided by the Washington State Department of Transportation as mitigation for impacts to the Arboretum caused by constructing the new SR 520 floating bridge. This phase, anticipated to be open to the public by late 2016/early 2017, will provide a mile and a half of a new paved trail, an expanded and improved Birch Parking Lot near Interlaken Boulevard, three new pedestrian bridges made of weathering steel, 20 new park benches (which will be available for dedication through the Arboretum Foundation’s Memorial Bench Program), and improved access to the Graham Visitors Center, as well as new signage and enhanced way-finding. The new multi-use trail will connect to Arboretum Drive at its northern and southern termini, creating a continuous loop within the Arboretum, approximately two miles long—the “Arboretum Loop Trail”—and a great new way for visitors to experience the park.

A Trail for Pedestrians and Cyclists
As indicated in the Master Plan, the trail is intended to be multi-use. The design encourages slower speeds for cyclists to make the trail safe for other users. Bicycle speed will be slowed by curves that control sightlines and regulatory signage cautioning users of potential conflicts. A centerline stripe will help guide users around corners. The trail adds to two other nearby routes (Lake Washington Boulevard and the Lake Washington Bike Loop) commonly used by cyclists, and these routes will remain in place as the primary citywide and local trail connections for commuters and fast riders. Designed to work as part of this system, the Arboretum’s trail gives preference to pedestrians and slower-paced recreational cyclists who are not comfortable riding in traffic along Lake Washington Boulevard.

Trail Specs
The trail surface will be asphalt, 10 feet wide, with two-foot crushed rock shoulders, giving it a total width of 14 feet. Due to site constraints, the trail width in some areas (such as behind the Stone Cottage) will be reduced to eight feet. Portions of the trail (mainly in the south end of the Arboretum) will have an eight-percent slope gradient or steeper, which may make them
inaccessible to some users. To comply with federal accessibility standards—while also balancing the need to preserve the Arboretum’s historic landscape, buildings and plant collections—we have limited the number of these steeper trail segments. And to help accommodate accessibility, rest areas (benches with adjacent paved surfaces designed to fit a wheelchair, stroller or bike) will be provided every 400 feet along the length of the trail.

Several retaining walls will need to be constructed along the trail, where it cuts across steep slopes, in order to limit the amount of site disturbance and tree removal in those areas. The walls will be constructed of board-formed concrete (concrete patterned to look like wooden boards) that utilizes a pigment to dull the surface, making the finished product look original to the site.

**New Connections, Collections and Access**

Traveling parallel to Lake Washington Boulevard, the new trail will provide a north-south route through the Arboretum that will access a number of valuable plant collections currently off the beaten path. The project also will improve several much-needed east-west connections between the Arboretum and the surrounding neighborhood.

Visitors will enjoy a new route to explore collections such as the Birch and Poplars, Hawthorns, Larches, Ash Family, Walnut Family and Oak Family. Access to the Arboretum’s mature Viburnum collection just south of Honeysuckle Hill will be a new spring highlight. In addition, Arboretum visitors will get to experience a riverine wetland environment previously inaccessible for a large portion of the year due to saturated soils (see “Environmental Benefits and Critical Areas” below). The project also will provide an opportunity to create new collection planting areas. Key areas will include portions of the future eco-geographic forests of Chile and China. Plants phased in as part of the trail project will begin the work of transforming these areas into immersive forests for each bio-region. Other selected plants will help screen the trail from the Japanese Garden.

Increasing connections and safety are two priorities of the new trail. One of the biggest improvements will be at Boyer Avenue East, where a new curb cut and pathway on the east side of Lake Washington Boulevard will allow for better access across the street, and will connect with an ADA accessible ramp that leads down and over a culvert at Arboretum Creek to the new trail. (Seattle Department of Transportation is proposing to install a three-way stop at the intersection of Boyer Ave and the Boulevard, but this is not part of our project.) Access from Foster Island Drive up to the Graham Visitors Center also will be greatly improved with a new stairway and ADA ramp giving pedestrians a safe north-south route. The intersection of Arboretum Drive East and Foster Island Road will be modified with a curb bulb and three-way stop to control vehicle speeds and allow safer pedestrian crossing. Creating an improved connection to the crosswalk from the Birch Parking Lot leading west of Lake Washington Boulevard to the Pinetum and Japanese Garden also will be part of the plan.

**Impact to Plant Collections**

Design for the project involved an incredible amount of teamwork. Working together, the University
of Washington Botanic Gardens, Seattle Parks and Recreation, and the Arboretum Foundation carefully reviewed the trail route from numerous aspects. Laying out the trail involved the analysis of several different route options, wherein each route variation was identified on a site survey and then staked in the field to verify impacts to existing trees and other living collections. More than 2300 plants adjacent to the route were analyzed for potential impacts. In several areas, the trail alignment was shifted multiple times and resurveyed in the field to work around trees that were too large to move, or trees that provided important context to historic structures (see “Historic Landscapes” below) or a backdrop screening the trail from Lake Washington Boulevard. Once the route was settled, a spreadsheet was created by UW Botanic Gardens to identify how impacts to the collections would be handled.

Tree Transplants, Propagations, Removals and Trail Rerouting
The first criteria on the spreadsheet looked to see if a tree could be transplanted. Several factors limit moving woody plants, such as the large size of the specimen or tree, difficult site access, or a steep hillside. If a tree was determined too large to be moved, cuttings of the plant were taken to allow for propagation and replanting in the Arboretum. In a handful of locations, the trail was readjusted multiple times to save large trees. As a last resort, tree removals will be required in order to construct the trail. The trunks and stumps of several trees being removed will be utilized in creek restoration areas along Arboretum Creek.

Environmental Benefits and Critical Areas
Ecological function of Arboretum Creek will be greatly improved from the headwaters at the south end of Azalea Way. Three earthen berm culverts will be removed and the channel reworked to return portions of the creek to its original character. And as mentioned, several trees being removed for trail construction will be placed to provide habitat and stabilization for the new creek channel. A massive river birch that grew over a culvert pipe will be preserved in order to reduce visual impacts to the area.

A series of rain gardens in the expanded Birch Parking Lot will filter out water impurities and
slow the release of runoff into Arboretum Creek. Three catch basins along Lake Washington Boulevard will be rechanneled into bio-filtration swales to treat water before it enters the creek. This also will reduce the perennial issue of having to close the boulevard to clear leaves and debris from the catch basins.

In an area known as the Flats, just north of the Birch Parking Lot, the trail will travel through a riverine wetland adjacent to Arboretum Creek. Trail construction through this segment will be unique in that the trail profile will be raised. Small culverts placed at frequent intervals under the bermed trail will allow critters and water to move freely through this sloping wetland.

Currently, ivy and other invasive plants grow rampant along the creek. Trail construction will allow for many of these weedy sections to be restored. A large percentage of the trail restoration planting will consist of a diverse native plant mix, particularly in the areas that traverse through the wetlands in the Flats and along Arboretum Creek.

**Historic Landscapes**

Lake Washington Boulevard and Azalea Way are historic landscapes designed by the Olmsted Brothers that go back to 1903 and 1936, respectively, and the project team worked hard to maintain the original design intent of how these features are sited in the landscape. Trail design limited visual impact to major historic structures, such as the Stone Cottage and Wilcox Bridge, by preserving mature trees and vegetation. In the case of the Stone Cottage, new materials such as stone walls and steel guard railings will be crafted to look weathered and aged. In all cases, the trail has been designed to minimize and avoid significant impacts while improving access in these areas.

**Conclusion**

The Arboretum Loop Trail will be constructed in two phases over the coming two years and, if everything goes according to plan, open to the public in winter 2016–17. But this is only the beginning: A future phase will connect the trail to the University of Washington, when the full build out of SR 520 is complete, as part of the Arboretum’s North Entry improvements. When fully implemented, the multi-use trail will travel for two miles along the east side of Lake Washington Boulevard—connecting cyclists and pedestrians to and from the UW campus, Montlake and University neighborhoods. It will also connect them (via the 520 Bridge) to the Eastside, where there’ll be a regional link to Redmond.

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