4 environment
4. Environment

4.1 STREAMS

Four streams, mainly small tributaries or headwater segments, run through the central parts of the study area. Four additional creeks cross the southern Lakenmont extension. Streams in the central parts of the study area, from east to west, are Richards, Sunset, East and Vasa Creeks. Of these, all except a few parts of East Creek and a very small section of Vasa Creek are fish habitats. The streams have characteristic features of the city’s fish-bearing streams, like a generally low to moderate gradient, basins with relatively high impervious surface cover, altered hydrologic regimes, reduced floodplain connectivity, poor riparian conditions, and water quality problems (Kerwin 2001). Some sections of the streams have been modified by culverts, which block upstream fish passage, suggesting that there are opportunities to increase fish distribution by addressing these habitat access issues.

From its headwaters at the Factoria Mall, Richards Creek navigates through commercial areas and public open spaces, paralleling Richards Road and the Lake Hills Connector. It receives flow from Sunset and East Creeks and flows into Kelsey Creek near the intersection of SE 7th Street and the Lake Hills Connector. Richards Creek has one minor tributary off SE 20th Street.

From its headwaters near the 4400 block of 150th of Avenue SE, Sunset Creek flows through residential neighborhoods and commercial uses along I-90 as it flows towards Richards Creek. Four major culverts with a combined length of over 2,000 feet have altered the original character of the stream, limiting fish passage.

From its headwaters near 139th Avenue SE and SE 30th Street, East Creek flows into Richards Creek north of SE 30th Street. The upper segments of the creek flow largely through deciduous forested areas, but the lower segments have been heavily channelized around property boundaries and roadways. The tree roots and wood from the riparian buffer have contributed to pool formation, and in general, fish inhabit all segments that contain sufficient flow.

From its headwaters south of SE 35th Street (outside city boundaries) Vasa Creek flows through public greenways containing well-vegetated riparian buffers and continues through a fish-barring culvert beneath I-90. Downstream of the culvert, it has a low gradient and abundant surface flow through a riparian corridor into Lake Sammamish.

4.2 WETLANDS

Existing wetlands are around Richards Creek just south of Eastgate Way and around headwater segments of East Creek just north of SE 30th Street. These wetland areas link to a larger wetland stream complex north of Kamber Road. Other smaller wetland areas are on the site of the proposed ‘Bellevue Airfield Park’. Wetlands are possibly under-represented on this map since the sensitive areas notebook data is from the 1980s, and additional wetland areas are sometimes identified during the development process. For example, wetlands are known to exist on the transfer station site but they are not reflected in the sensitive areas notebook or the national wetlands inventory data.

Figure 12. Critical Areas
This graphic shows the location and distribution of critical areas and the potential impacts of critical area regulations on parcels in Richards Valley. If parcels were to redevelop, they would be subject to existing city regulations designed to protect riparian corridors, floodplains, wetlands and steep slopes.

Required stream buffers shown here are 100’ for fish-bearing streams and 50’ for non fish-bearing streams. This does not take into account lower buffer widths of 50’ (fish-bearing) and 25’ (non fish-bearing) required from developed parcels. These stream buffers do not reflect exceptions for existing building footprints, since critical area requirements do not render existing buildings non-conforming even though they may be on affected and thereby constrained sites.

Wetlands are possibly under-represented, because data from the sensitive areas notebook is from the 1980s, and additional wetland areas are sometimes identified during the development process. For example, wetlands are known to exist on various parcels around the transfer station site, but they are not reflected in the sensitive areas notebook or the national wetlands inventory, the two main sources of data.

Wetland buffers are not shown, because data on an individual parcel basis is not currently available.

- 100’ buffer (fish-bearing stream)
- 50’ buffer (non fish-bearing stream)
- wetlands (sensitive areas notebook)
- wetlands (national wetlands inventory)
- steep slopes
- Known wetland areas
4.3. TOPOGRAPHY AND STEEP SLOPES

The study area has a topographical pattern typical of the Puget Sound region, with prominent slopes with streams carving ravines to lower waters. There are a number of steep areas, mostly in areas of ravines or as a result of cuts made for I-90. The notable slopes are near Sunset ravine, along the southern edge of Bellevue College, south of I-90 along SE 36th Street, along the area just west of 150th Avenue, and along the northwest side of the landfill park site.

Local topography presents both challenges and opportunities. Topographic changes have isolated and fragmented land swaths in the study area, but have created strong natural edges and boundaries. Elevated areas in the study area have benefited from better visibility and views, and developed earlier than lower, valley areas.

From a livability standpoint, steep topography has made neighborhood accessibility and walkability challenging, by reducing street connectivity and continuity and by making the actual act of walking harder and hence slower, thereby reducing its attractiveness as a mode of transport.

While these are challenges, topography has created unique view corridors in the study area. Views of the Olympics from the Eastgate Park and Ride and parts of Bellevue College, are examples of great viewpoints created through topographical change.

Figure 13. Topography