



Cheasty Greenspace Wetland Reconnaissance and Wildlife Habitat Assessment



Lisa Adolfson

Background figure source: Johnson Southerland



Methods – Wetland Reconnaissance

- Reviewed existing information
- Field investigation
 - Dec 19th and Jan 5th
- Wetlands identified using Regional Supplement to the Corps of Engineers 1987 Wetland Delineation Manual
- Approximate locations GPSed
- *Not formally delineated*
- Wetlands rated using Ecology's 2014 system
 - Category IV lowest
 - Category I highest



Wetland 3 and buffer.

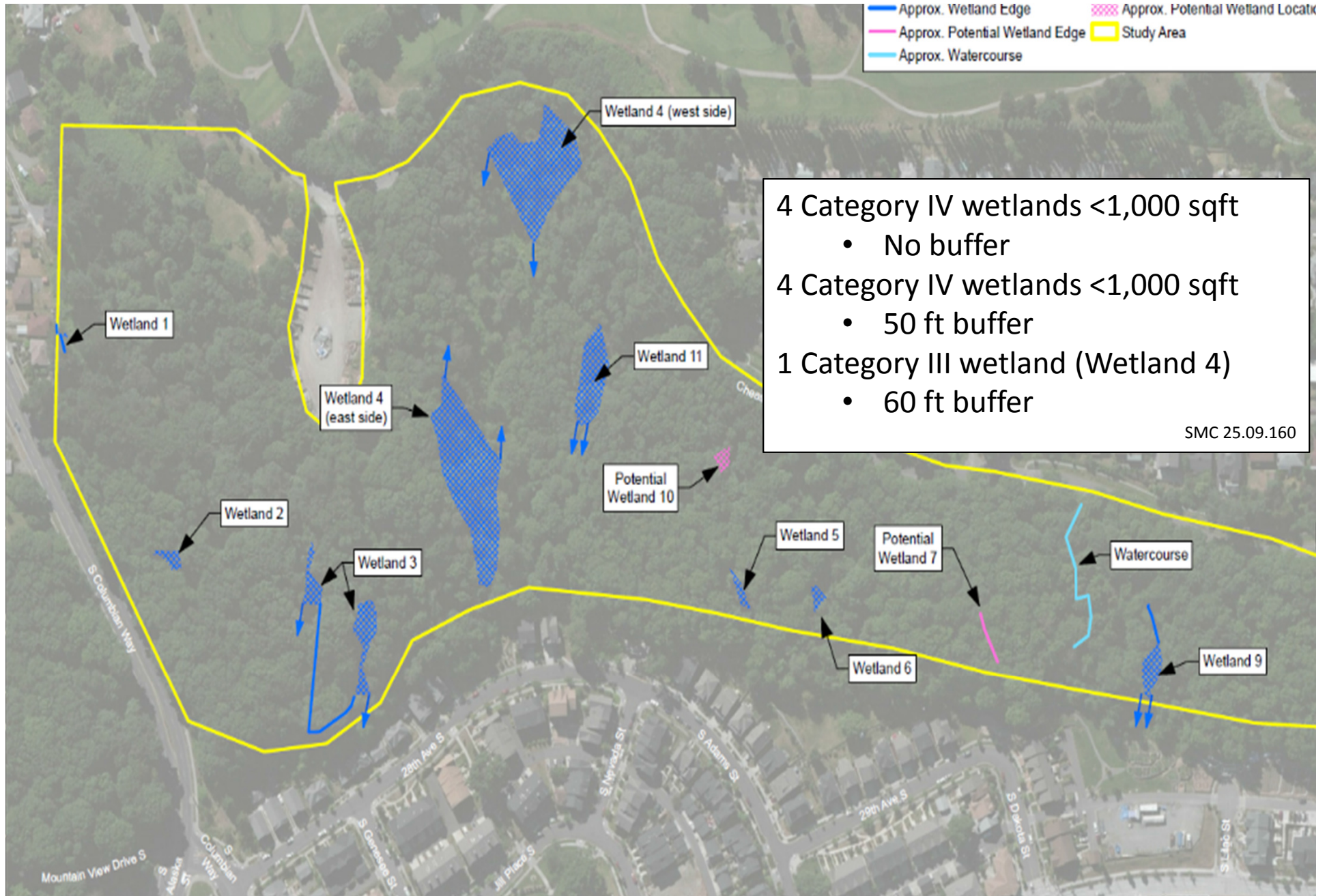
Methods – Wildlife Habitat Assessment

- Reviewed existing information
- Field investigation
 - Dec 19th and Jan 5th
- Habitat was assessed using Wildlife Habitat Relationships in Oregon and Washington by Johnson and O'Neil (2001)



Black cottonwood forested area.

Wetland Reconnaissance Results



Habitat Assessment

- One of a few undeveloped forest in the vicinity
- 3 major habitat types:
 - westside lowland conifer-hardwood forest
 - westside riparian wetlands
 - herbaceous wetlands
- Substantial wildlife habitat
- Well connected within Greenspace
- Threats to habitat integrity
 - Dumping of refuse
 - Multiple invasive species or nonnative plants
 - But invasive species removal activities successful and planted native vegetation is becoming established



Invasive species removal area and planted native tree.

Habitat Assessment

- Diverse community of trees and shrubs that provide food and shelter for songbirds and woodpeckers, amphibians, and small mammals.
- Bird observed were common species such as Steller's jay, northern flicker, and song sparrow.
- No mammals or amphibians were observed.
- Species expected to be present western gray squirrel, Northern raccoon, Virginia opossum, coyote, Pacific chorus frog, garter snake and potentially deer.



Wetland 2 surrounded by deciduous forest.

Regulatory Considerations

- Wetlands and Wildlife protected by City's Environmentally Critical Areas regulations (SMC 25.09).
- State and Federal – permit would be required for dredging or filling.
- Wetland buffers are regulated by the City.
- Wetland impacts could be avoided by using soft-surface trails and precast concrete or pin-pile supports for boardwalks or bridges which are not considered "fill".
- Trail projects by public agencies may be exempt under the City's regulations provided a number of conditions are met:
 - Benefits the public
 - Located and designed to minimize disturbance
- Additional design needed to determine whether the proposed project meets the exemption criteria.
- Trees in the City are specifically valued and protected under the Tree Protection Ordinance (SMC 25.11) and specific environmental policies (SMC 25.05.675).
- Exceptional trees are specifically protected and defined as a tree or group of trees that constitutes an important community resource because of its unique historical, ecological, or aesthetic value.





The background is a detailed topographic map of Cheasty Greenspace. It features contour lines indicating elevation, with labels such as 300, 310, 320, 330, 340, 350, 360, 370, 380, 390, 400, 410, 420, 430, 440, 450, 460, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 650, 660, 670, 680, 690, 700, 710, 720, 730, 740, 750, 760, 770, 780, 790, 800, 810, 820, 830, 840, 850, 860, 870, 880, 890, 900, 910, 920, 930, 940, 950, 960, 970, 980, 990, and 1000. The map shows several trails, including the 'Combined Use Segn Accessible Trail' and the 'Cheasty Trail'. Key locations marked include 'Jefferson Entry', 'Trail Info Node', 'Columbian Entry', 'Overlook Park Entry', 'Rajonka Entry', and 'P-pat Entry'. Streets shown include '22nd Place', 'Cheasty Boulevard', and '25th Ave'. A scale bar at the bottom left indicates a scale of 1 inch = 40 feet. A north arrow is also present.

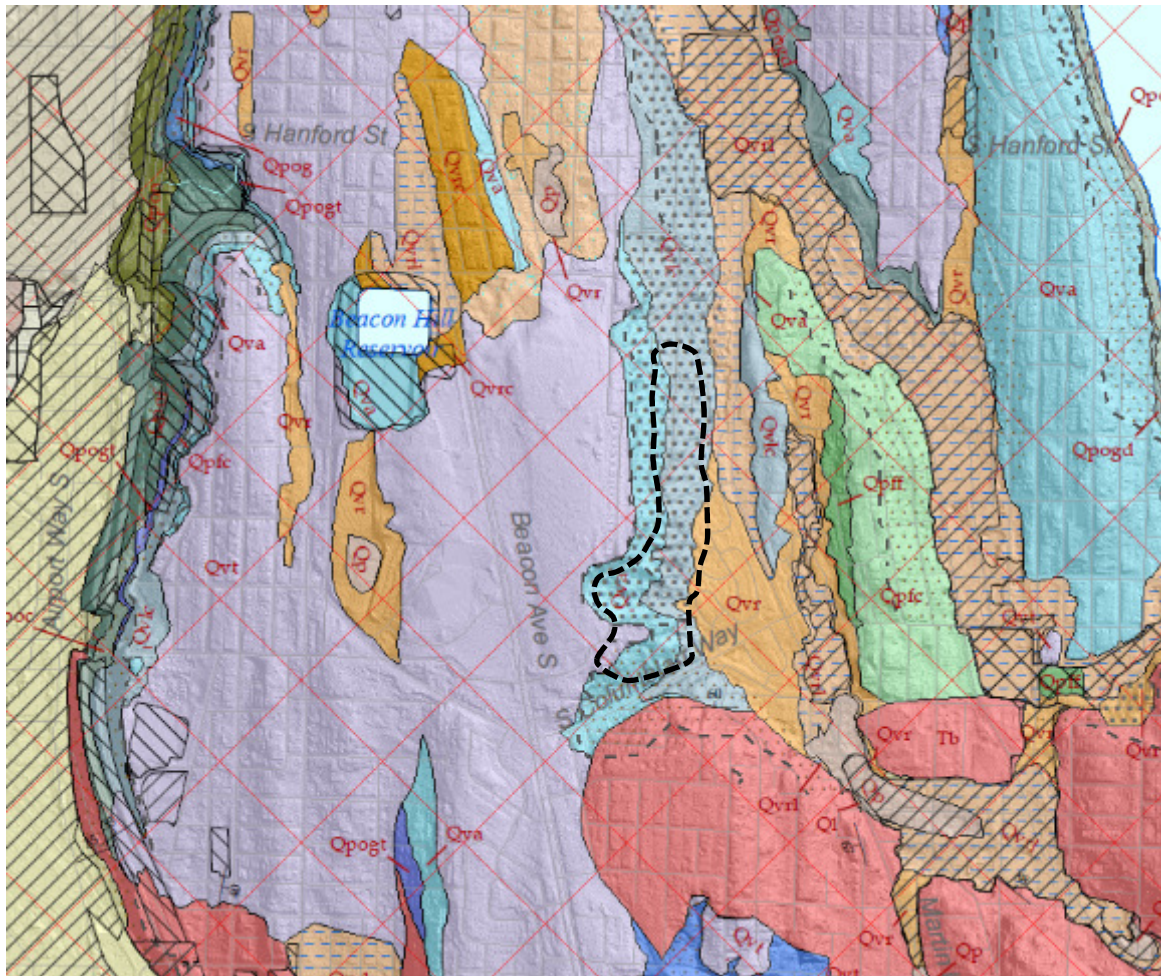
Cheasty Greenspace Geotechnical Reconnaissance

 HWA GEOSCIENCES INC.

Donald Huling,
P.E.

Background figure source: Johnson Southerland

Geologic Setting

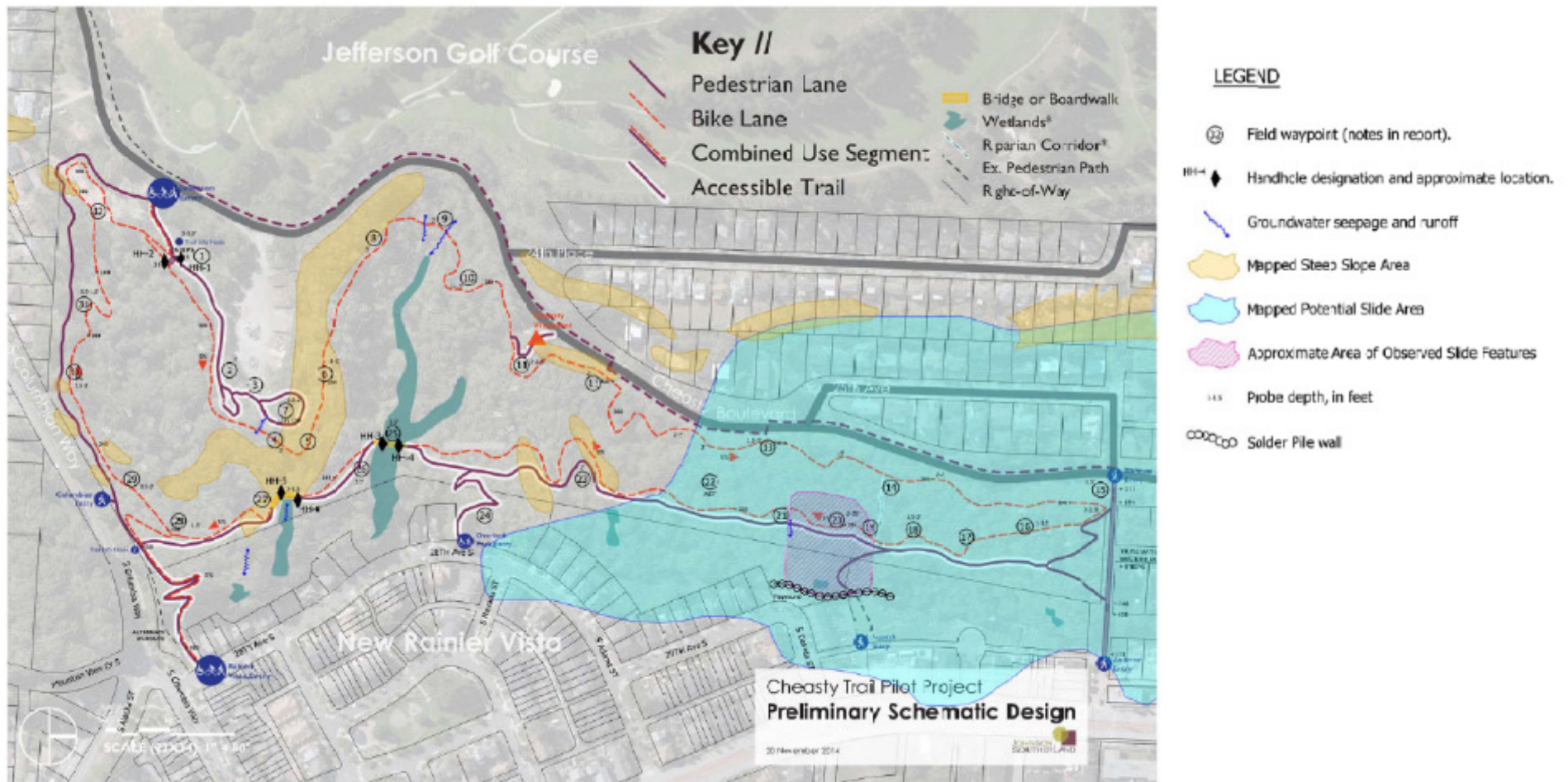


Qvt	Vashon till	Compact diamict of silt, sand and subrounded to well-rounded gravel, glacially transported and deposited under ice. Commonly fractured and has intercalated sand lenses. Generally forms undulating, elongated surfaces. Upper 1 meter of unit generally weathered and only medium dense to dense. Locally divided into:
Qva	Advance Outwash Deposits	Well-sorted sand and gravel deposited by streams issuing from advancing ice sheet. May grade upward into till. Silt lenses locally present in upper part and are common in lower part. Generally unoxidized to only slightly oxidized. May be overlain by Vashon till in areas too small to show at map scale. Includes Esperance Sand Member of the Vashon Drift of Mullineux and others (1965). Grades downward into unit Qvc with increasing silt content
Qvc	Lawton Clay of Mullineux and others (1965)	Laminated to massive silt, clayey silt, and silty clay with scattered dropstones deposited in lowland proglacial lakes. Marks transition from nonglacial to earliest glacial time, although unequivocal evidence for glacial or nonglacial origin may be absent. Deposits of correlative age and texture may be included in older fine-grained units where evidence of age and/or depositional environment is absent. Locally may include fine-grained sediment of unit Qob or distal deposits from the Cascade Mountains where indistinguishable from Qvc
Qvr	Recessional outwash deposits	Stratified sand and gravel, moderately sorted to well sorted, and less common silty sand and silt. Deposited in outwash channels that carried south-draining glacial meltwater during ice retreat away from the ice margin. Also includes deposits that accumulated in or adjacent to recessional lakes. Discontinuous. May include thin lag on glacial till uplands although deposits less than about 1 m (3 ft) thick not shown on map. Locally divided into:
Qvrl	Recessional lacustrine deposits	Laminated silt and clay, low to high plasticity, with local sand layers, peat, and other organic sediments, deposited in slow-flowing water and ephemeral lakes. Locally includes high-plasticity clay with swell potential. Lenses and layers of ash and diatomite may be present. Gradational with units Qvr, Qp, and Ql

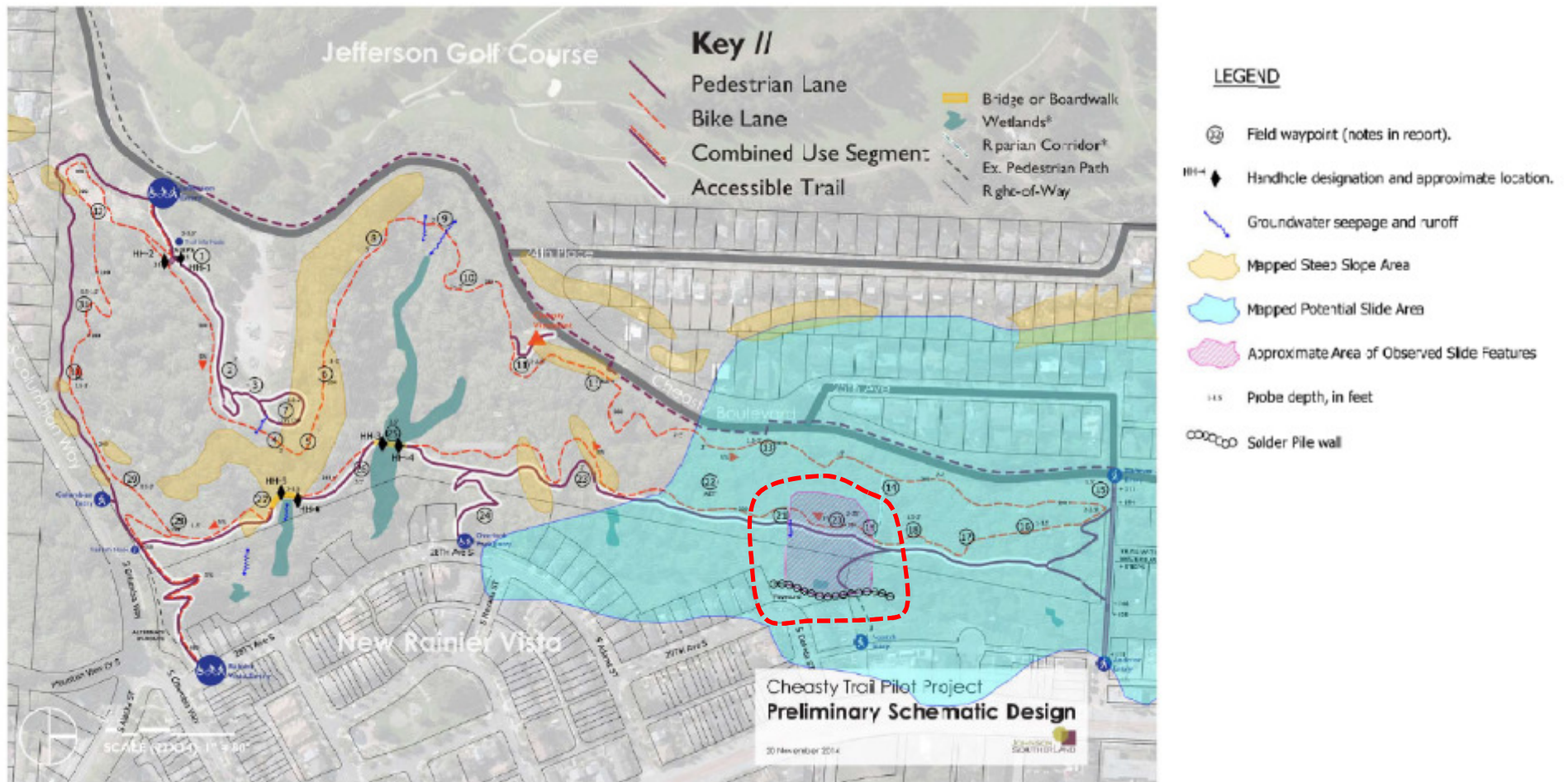
Lidar Imagery



Geotechnical Reconnaissance Results



Soldier Pile Wall



Existing Soldier Pile Wall



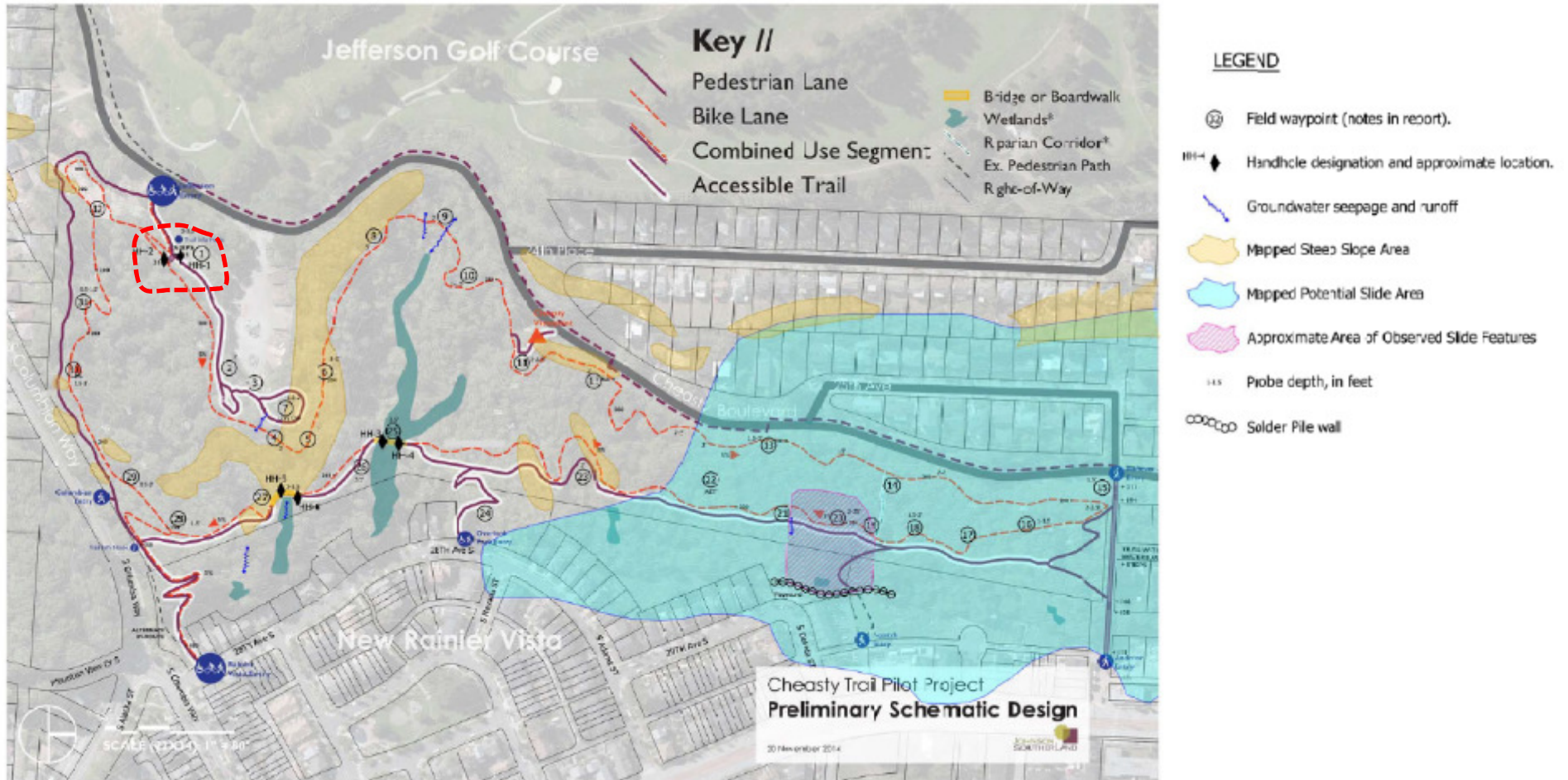
Lower Landslide Scarp



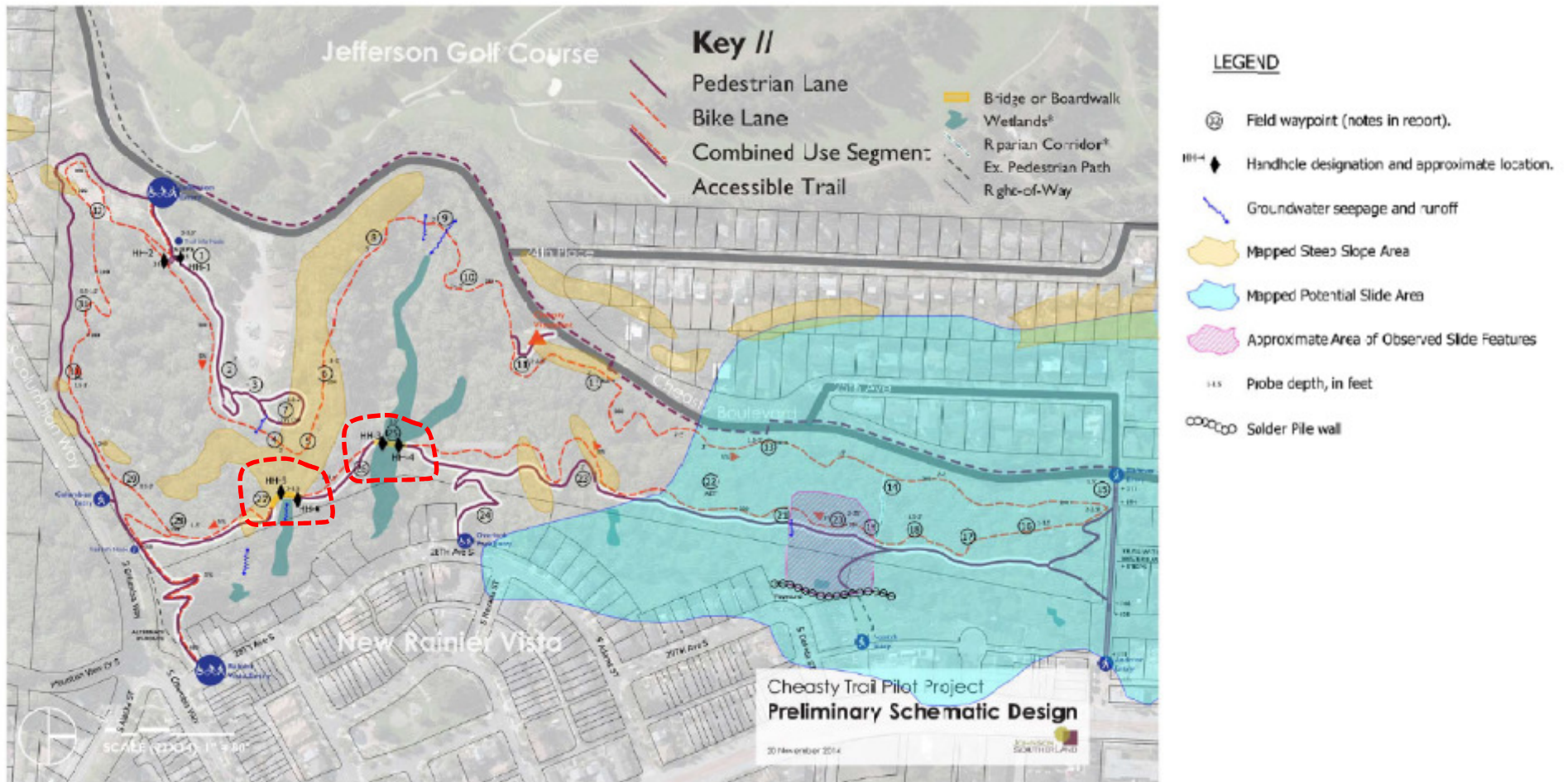
Upper Landslide Scarp



Proposed Stairs



Proposed Wetland Crossings



Boardwalks Supported with Diamond Piers



General Geotechnical Conclusions

- Trail should Follow Existing Topographic Contours
- Avoid Areas of observed Slope instability
- Avoid Areas of observed Groundwater seepage
- Cross wetlands with boardwalk structures
- Various trail surfacing treatments will be required in different areas to minimize trail maintenance
- Slight trail alignment shifts could reduce further issues associated with instability.