



**LAND USE COMMITTEE**  
**TUESDAY, OCTOBER 27, 2020 10:30 A.M.**  
**REMOTE ATTENDANCE**

To comply with Governor Inslee's [Proclamation 20-28](#), the Finance Committee Meeting will be conducted remotely, not in person. However, you may view the meeting by watching live through Zoom.

Link: <https://us02web.zoom.us/j/83791135837>

The public may also listen to the meeting via telephone by dialing toll-free:

**(888) 788-0099** or **(877) 853-5247** – when prompted, enter Webinar ID **837 9113 5837**  
press # (participant ID not required)

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**[2020 COMPREHENSIVE PLAN AMENDMENTS](#)**

*RYAN ANDREWS, PLANNING MANAGER*

*(BRIEFING)*



## LAND USE COMMITTEE

October 27, 2020

**SUBJECT:** 2020 Comprehensive Plan Amendments

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**RECOMMENDATION:** Receive briefing from staff on annual Comprehensive Plan Amendments. No action needed as the amendments will be formally considered by the full Council at a future regular meeting.

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**STAFF CONTACT:** Scott Spence, City Manager *SS*  
Rick Walk, Community and Economic Development Director *RW*  
Ryan Andrews, Planning Manager *RA*  
Jessica Brandt, Associate Planner *JB*  
Doug Christenson, Stormwater Engineer *DC*

**ORIGINATED BY:** Community and Economic Development Department

**ATTACHMENTS:**

1. [October 6 Planning Commission Public Hearing Minutes](#)
2. [Project No. 20-54 Planning Commission Record](#)
3. [Project No. 19-370 Planning Commission Record](#)
4. [Stormwater Comp Plan Planning Commission Record](#)

**FISCAL NOTE:** None

**PRIOR REVIEW:** Planning Commission Public Hearing 10/06/20 (all amendments)  
Planning Commission Briefing 06/16/20 (private amendments)  
City Council/Planning Commission Joint Worksession 01/23/20  
Planning Commission Introductory Briefing 01/16/20 (private amendments)

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### BACKGROUND:

The Growth Management Act requires that the City's Comprehensive Plan be amended only once a year. As part of the annual cycle of comprehensive plan amendments for 2020, the City received two private applicant-initiated requests and completed an update to the City's Stormwater Comprehensive Plan.

The private requests were added to the Comprehensive Plan Amendment Docket at the joint worksession with the Planning Commission and City Council held on January 23. The private amendment requests are summarized below:

Project #20-54: A proposed Comprehensive Plan Amendment and Rezone request from Community Commercial to High Density Residential and Neighborhood Commercial. Of the total 11.51 acres of the property, 9.51 acres is proposed to be designated as High Density Residential and the remaining 2 acres on the SW corner is proposed to be designated as Neighborhood Commercial. The proposed rezone is for property located at 3200 Willamette Dr NE. Assessor's parcel no. 11801240100. Section 01 Township 18 Range 1W Quarter SE.

Project #19-370: A proposed Comprehensive Plan Amendment and Rezone for ten parcels totaling approximately 60 acres that are currently a mixture of undeveloped properties and small warehouses located along Carpenter Road NE between Interstate 5 and Britton Parkway NE. The eastern side of Carpenter Road NE is currently zoned Hawks Prairie Business District Business Commercial and the parcels west of Carpenter Road are zoned both Mineral Extraction and Low Density Residential 3-6. The application is to rezone these parcels to Light Industrial Commercial.

In addition to the private amendments, the City reviews and periodically updates the various utility elements of the Comprehensive Plan. The Stormwater Comprehensive Plan (SCP) was last updated in 2013 and is a guide for the activities, programs and projects of the city's Storm and Surface Water Utility, and an informational reference for Lacey Stormwater Utility ratepayers. Three main factors are driving the 2020 SCP update: (1) increasing requirements mandated by the updated 2019-2024 Western Washington NPDES Phase 2 Municipal Stormwater Permit; (2) a necessary update to the Stormwater Capital Improvement Program (CIP) project plan; and (3) an updated Stormwater Utility financial analysis, including recommendations for service charge rates to ensure adequate funding of utility programs and projects.

The Planning Commission conducted a public hearing for the annual Comprehensive Plan amendments at their meeting on October 6. The Planning Commission received oral and written comments for the private amendments, which are captured in the meeting minutes and included with the record for each application. No comments were received for the Stormwater Comprehensive Plan. At the conclusion of the public hearing, the Planning Commission voted unanimously to recommend approval on each amendment to the City Council.

Staff will brief the Land Use Committee on the amendments. No action is needed by the Committee as the amendments will be formally considered by the full Council at the November 19 meeting for consideration.

**ADVANTAGES:**

1. Adoption of the Plan amendments completes the priority items established by the City Council related to the 2020 Planning Commission work program.
2. Approving the private Comprehensive Plan amendment and rezones will support the City's goals for economic development and housing.
3. Approving the Stormwater Comprehensive Plan supports the Storm and Surface Water Utility and implements NPDES permit requirements.

**DISADVANTAGES:**

1. None identified.



## **MINUTES**

Lacey Planning Commission Meeting  
Tuesday, October 6, 2020 – 4:00 p.m.  
Conducted remotely via videoconference

Meeting was called to order at 4 p.m. by Sharon Kophs.

Planning Commission members present: Sharon Kophs, Dave Wasson, Gail Madden, Mark Mininger, Shaunesy Behrens, and Robin Vasquez. Staff present: Jessica Brandt, Doug Christenson, and Ryan Andrews.

Sharon noted a quorum present.

**Robin Vasquez made a motion, seconded by Dave Wasson, to approve the agenda for tonight's meeting. All were in favor, the motion carried.**

**Dave Wasson made a motion, seconded by Mark Mininger, to approve the September 15 meeting minutes. All were in favor, the motion carried.**

1. **Public Comments:** None.

2. **Commission Members Reports:**

- Mark reported on his recent attendance at a Pattison Lake Association, and noted that they are considering becoming a lake management district or special use district.

3. **Director's Report:** None. Sharon asked if Rick could give Commission a 5G update.

4. **Public Hearing:**

**Stormwater Comprehensive Plan Update: Doug Christenson, Stormwater Engineer.**

- Sharon opened the public hearing at 4:04 p.m.
- Doug Christenson gave a brief presentation.
- No members of the public gave testimony.
- Sharon closed the public hearing. A brief discussion followed.
- **Dave Wasson made a motion, seconded by Robin Vasquez, to refer the Stormwater Comp Plan Update to Council for adoption. All were in favor, the motion carried.**

**2020 Private Comprehensive Plan Amendments/Rezoning: Ryan Andrews, Planning Manager; Jessica Brandt, Associate Planner.**

**Project #19-370:**

- Sharon opened the public hearing 4:25 p.m.
- The applicant, OSG Properties, has proposed a Comprehensive Plan Amendment and Rezone for ten parcels currently zoned Hawks Prairie Business District Business Commercial, Mineral Extraction, and Low Density Residential 3-6 to Light Industrial Commercial.
- Ryan gave a brief presentation and answered questions from Commissioners.
- Brandy Willie with OSG Properties addressed Planning Commission.
- **Kyler Danielson** with Lakeside Industries spoke in favor of the rezone application as it will satisfy the city's need for additional Light Industrial Commercial areas and provide Lakeside with more development opportunities in the future.
- Sharon closed the public hearing at 4:45 p.m.
- **Gail Madden made a motion, seconded by Robin Vasquez, to refer the Comp Plan Amendment and Rezone from HPBDBC, ME, and LD 3-6 to LI-C to Council for approval. All were in favor, the motion carried.**

**Project #20-54:**

- Sharon opened the public hearing at 4:47 p.m.
- The applicant, Ever Success Inc., has proposed a Comprehensive Plan Amendment and Rezone from Community Commercial to High Density Residential and Neighborhood Commercial for property located at 3200 Willamette Dr. NE.
- Jessica Brandt gave a brief presentation.
- Jessica noted that the applicant held a virtual meeting. Some concerns that were brought up by the attendees included compatibility, increased crime rates, and increased traffic.
- Staff supports the Comp Plan Amendment and Rezone.
- The applicant addressed Planning Commission.
- Sharon opened the hearing for public testimony.
- **James Baker** addressed planning commission and expressed his concerns regarding increased building heights as it would not be compatible with the area, and noise concerns. He asked that Planning Commission consider limiting building height and increasing buffer size.
- **Edward Steiner** addressed Planning Commission and asked about future additional access ways to I-5 North to alleviate congestion in the area. Ryan noted there are no plans at this time and discussed State and Federal restrictions that prevent that.
- **Ron Germeau**, President of Meridian Campus Residential Owners Association, expressed concerns about developments meeting the residential owners association regulations. Ryan noted that the applicant will work with them on that as the city does not get involved in that type of issue.
- Staff answered questions from Planning Commissioners regarding building height design standards and potential grocery stores in the area.
- Rich Cobb addressed the issue regarding the residential owners association.
- No further testimony was given. Sharon closed the public hearing.
- **Dave Wasson made a motion, seconded by Robin Vasquez, to refer the Comp Plan Amendment and Rezone from CC to HD-Res and NC to Council for approval. All were in favor, the motion carried.**

**5. Communications and Announcements:**

- Ryan noted a public hearing for the Shoreline Master Program will be held at the next Planning Commission meeting.

**6. Next meeting:** October 20, 2020.

**7. Adjournment:** 5:33 p.m.



**PLANNING COMMISSION STAFF REPORT**  
**October 6, 2020**

**SUBJECT:** Ever Success Inc./Richard E. Cobb Comprehensive Plan Amendment and Rezone Application. Project no. 20-54

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**RECOMMENDATION:** Conduct a public hearing and make a formal recommendation to the City Council on the Ever Success Inc. Rezone and Comprehensive Plan Amendment request. Staff recommends approval of the request.

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**TO:** Lacey Planning Commission

**STAFF CONTACTS:** Rick Walk, Director of Community and Economic Development *RW*  
Ryan Andrews, Planning Manager *RA*  
Jessica Brandt, Associate Planner *JB*

**ATTACHMENT(S):**

1. Ever Success Inc. CPA and Rezone Application
2. Map of Existing Zoning
3. Aerial Photo and Map of Proposed Zoning
4. Project Narrative
5. Heartland Retail Assessment Study, December 20, 2019
6. SCJ Traffic Analysis, Feb. 28, 2020
7. HOA Crime Report
8. Northeast Lacey Commercial and Residential Crime Report

**PRIOR COUNCIL/  
COMMISSION/**

**COMMITTEE REVIEW:** Planning Commission Introductory Briefing March 17, 2020  
Planning Commission Briefing June 16, 2020  
City Council/Planning Commission Joint Worksession January 23, 2020

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**I. GENERAL INFORMATION**

**A. Applicant/Owner:**

Richard E. Cobb  
Ever Success Inc.  
1401 Marvin Rd NE, Suite 304 #561  
Lacey, WA 98516

**B. Action:**

Designation of one parcel from Community Commercial to High Density Residential and Neighborhood Commercial on the Comprehensive Land Use Plan and Zoning map.

**C. Proposal Description:**

This is a non-project action to designate a parcel from Community Commercial to High Density Residential and Neighborhood Commercial. Of the total 11.51 acres of the property, 9.51 acres is proposed to be designated as High Density Residential and the remaining 2 acres on the SW corner is proposed to be designated as Neighborhood Commercial.

Please see attached application for amendment to the Comprehensive Land Use Plan and Zoning map.

**D. Legal Description**

See attached application packet for legal description.

**E. Location:**

The location of the proposal is the northeast corner of 31<sup>st</sup> Avenue NE and Willamette Dr NE. It does not have an address yet. Assessor's parcel no. 11801240100.

**F. Site Information**

Project size: approximately 11.5 acres

Site Access: Willamette Drive NE and 31<sup>st</sup> Avenue NE

Water: City of Lacey

Sewer: City of Lacey

Power/Natural Gas: Puget Sound Energy

Fire Protection: Lacey Fire District # 3

**G. Reason for Request:**

The purpose of the rezone request is to accommodate the high need for residential development and address the decreasing demand for large-scale commercial development by providing multi-family housing and neighborhood-scale commercial development.

**H. Existing Zoning**

Community Commercial: This designation implements goals of the Northeast Area Plan with opportunity for retail commercial uses for Hawks Prairie Planning Area.

**I. Proposed Zoning**

High Density Residential: This designation implements the policies of the Land Use Element for residential areas in the Hawks Prairie Planning Area and promotes housing variety consistent with the Housing Element. The Comprehensive Plan's vision provides the opportunity for every citizen to have a range of affordable housing options in whatever

neighborhood they choose to live. The designation permits multifamily residential development that is compatible with medium and low density residential.

Neighborhood Commercial: This designation implements the policies of the Land Use Element to provide an adequate supply of land for high quality commercial uses to serve the day-to-day needs of a neighborhood based on appropriate site characteristics, community needs, and adequacy of facilities and services.

## **II. LAND USE OF THE SUBJECT SITE AND SURROUNDING AREA**

### **Existing Land Use and Ownership Patterns:**

#### **Subject Site:**

The subject parcel is undeveloped and is forested primarily with third-growth Douglas fir that was once Weyerhaeuser timber land. Upon development of the property, a report will be prepared by the City's arborist to determine the condition and potential for retaining existing trees. As a condition of development, open spaces including a tree tract will need to be identified and preserved. No critical areas have been identified on the subject site. The current Comprehensive Land Use Plan and zoning maps designate the property as Community Commercial District.

#### **Surrounding Properties:**

The properties to the north are zoned High Density Residential and is developed. To the east is open space owned by Meridian Campus Commercial Owners Association. Three single-family parcels are adjacent to the northeast corner of the subject property, separated by the 50 foot wide open space tract. To the south is developed Moderate Density Residential and Community Office. To the west is a mix of undeveloped and developed land zoned Community Office.

## **III. ENVIRONMENTAL DETERMINATION:**

A Determination of Nonsignificance (DNS) was issued on March 18, 2020. Based upon information contained in the environmental checklist, the sites expected designation, and development of the site in any capacity would not have significant impacts to the environment. The DNS had a 14-day comment period, which ended on April 1, 2018. The City did not receive any comments from the public and received one comment from the Washington State Department of Ecology related to the Tacoma Smelter Plume and its impact on future construction projects on the subject property; therefore, the DNS became final on April 1, 2018. A determination of environmental non-significance granted by the responsible official fulfills the City's requirements for environmental review under RCW 43.21.C.

## **IV. APPLICABLE COMPREHENSIVE GOALS AND POLICIES/LONG RANGE PLANNING ISSUES:**

The Comprehensive Plan has four elements that can be used as a guide for consideration of this application. The four Elements are the Land Use Element, Northeast Area Plan, The Housing Element, and the Economic Development Element.

#### **A. Land Use Element**

The 2016 Land Use Element focuses on the need for more diverse housing types to support an aging population. The following discussion summarizes the need for more diverse housing types:

*“Changing demographics are showing that the aging baby boomer (born between 1946 and 1964) population and the millennial (born early 1980’s to 2000’s) population are increasingly seeking walkable, urban neighborhoods with smaller homes. Changing demographics will most likely lead to an increase in demand for housing in infill areas and in areas with access to convenient and frequent transit service found along the urban corridor areas. As shifts in demographics and housing preferences occur over the long term, providing a diverse mix of residential housing options will better serve the community as a whole.*

*The intensity and form of infill permitted in the growth area will have a significant impact on the way housing is provided, the cost and efficiency of utilities and services, as well as the overall character of our growth area. Attention will need to be given when integrating higher density and mixed-use development into existing suburban areas. Input and meaningful public participation will be required to successfully implement infill and redevelopment goals. The intent is to improve opportunities for residents while increasing the quality of life as new development and infill occurs.” Land Use Element, page 3-7.*

Residential, Goal 1: Ensure sustainable and wise use of land resources to provide an adequate amount and mix of housing types for the anticipated increase in population.

Policy A: Assign land use designations that will provide for adequate opportunity for increased densities and a diversity of housing types.

Infill, Goal 1: Adopt zoning strategies that will promote the intensification, densification, and evolution of Lacey’s land use distribution and form into a sustainable pattern of high quality urban development

Policy A: Identify areas to focus infill density and mixed-use concepts based upon potential capacity, built condition, and infrastructure.

Commercial and Industrial Goal 1: Designate an adequate supply of land for high quality commercial uses based on appropriate site characteristics, community needs, and adequacy of facilities and services.

Commercial and Industrial, Goal 2: Create vibrant, integrated and well-designed commercial districts in designated areas in the community.

#### **B. Northeast Area Plan**

The Northeast Area Planning Element, a sub-area plan completed in the early 1990's for the Hawks Prairie Area, contains several policies that address this request that support a mix of commercial and residential uses:

Northeast Area Planning Element, Commercial Goals and Policies:

Goal: To encourage commercial uses which meet the everyday service and convenience needs of the study area and of the service area in eastern Thurston and southern Pierce Counties.

Policies:

4. Retail/commercial centers should incorporate and include a wide range of activities.

#### **C. Housing Element**

The proposal is consistent with the policies of the Housing Element, which sets forth policies for a diversity of housing styles, choices, and affordability.

Goal 1: Have sufficient number of single-family dwellings, multifamily units, and group and special needs housing to provide a selection of rental and home-ownership affordable housing opportunities for all persons.

Policy A: Provide opportunities for development of all housing types to accommodate future needs for each type of housing

Policy C: Encourage a wide variety of housing from low to high income in range to allow placement and mobility within the housing market.

Goal 4: Achieve housing that is compatible and harmonious with existing neighborhood character while allowing infill and providing for environmental sensitivity.

Policy A: When designating areas for infill and zoning classifications, consider and place emphasis on the composition of the neighborhood, housing need, available infrastructure, principals of walkability and healthy communities

Policy C: Continue to utilize design review guidelines for all residential developments.

#### **D. Economic Development Element**

The proposal is consistent with the policies of the Economic Development Element which sets forth policies for diversification of sales tax base and employment opportunities to support this area of Lacey:

Goal 2: Lacey is Business Ready—The economic needs of Lacey’s citizens are met because Lacey is prepared to meet the needs of all of its business customers.

Policy A: Ensure an adequate supply of developable, appropriately-zoned land is available to meet the various uses needed by Lacey businesses now and in the future.

## **V. STAFF ANALYSIS**

The Land Use Element, Northeast Area Plan, Economic Development Element, and the Housing Elements of the Comprehensive Plan currently contain goals and policies that support the request. A major emphasis of the Plan is to provide opportunities for more housing to add to the City’s diversity of housing stock while maintaining the quality of the existing neighborhood. The Plan also points to Community Nodes and Corridors, one of which is 31<sup>st</sup> Ave NE and Willamette Dr NE. The proposal is aligned with both of these objectives.

### **Proposed Rezone Request**

The purpose of the rezone request is to consider re-designating the property to High Density Residential and Neighborhood Commercial to offer a mixture of complementary commercial services and residential units to serve the NE Lacey area. The applicant has been unsuccessful in attracting users under the current Community Commercial District zoning. Two recent market studies support this request.

The City of Lacey has seen higher job growth than housing growth, creating a high demand for new housing. Currently about 70% of the Lacey housing stock is single family residential. The 2010 census, referenced in the Comprehensive Plan, estimates that 42,393 persons were residing in the Lacey, with an additional 33,140 residing in the unincorporated UGA, for a total population of 75,533. For the twenty-year planning period, it is estimated that the population of Lacey will be 53,090, with another 54,630 people residing in the UGA for a total population of 107,720. This increase of over 32,000 people equates to an approximately 42% increase in population by the year 2035. Household characteristics are important to determine the type of housing units the population will need. Census information provides specific household characteristic information for Thurston County and the city of Lacey. In 2010 there were a total of 16,949 households in Lacey. Statistics show that the average household size is 2.44 persons, which is down slightly from 2.47 persons in 2000. This highlights the need for many more housing units, and a wider variety of housing types, especially multi-family development.

The proposal is consistent with the zoning in the surrounding area. The proposed rezone would be consistent with the existing High Density Residential zone to the north. With the changes made to the High Density Residential zoning district in 2016 associated with the 2016 Comprehensive Plan update to allow 12+ units per acre, the property could accommodate a minimum of 114 units with no maximum number of units required. As



there is no maximum density within this zone, the maximum number of units are controlled by other standards including maximum height standards, parking requirements, and compatibility requirements when adjacent to existing single-family residential areas. This would apply specifically to the northeast corner of the parcel in this instance. It would also be a logical transitional zone between the adjacent single-family residential areas given the compatibility requirements between buildings above 40 feet in height in the High Density zone when adjacent to existing residential areas.

Regarding the commercial portion of the requested resignation, the primary difference between the existing Community Commercial and proposed Neighborhood Commercial is the intensity of development and the geographic area it is meant to serve. Community Commercial is intended to serve multiple planning areas as opposed to Neighborhood Commercial, which is intended to serve the planning area it is in. The minimum lot size, building size, parking standards, landscaping and site design standards of the districts match that intended intensity. The demand is higher for Neighborhood Commercial uses than for Community Commercial uses in the immediate area, which is supported by a recent market study.

### Market Analysis

Heartland, a consulting firm, conducted a retail assessment study in December 2019 of the property to help determine the suitability of retail at the site both from the site layout and market demand perspective. That study referenced and reviewed a 2016 project feasibility study that assessed the market for supported uses on the site.

There are over 800 acres of commercially zoned land in the area and 70% of all commercially zoned land in area is vacant. The prevalence of vacant commercially zoned land within this area indicates the potential presence of large amounts of unrealized commercial development capacity. The property is not freeway adjacent, therefore it is less likely to draw visitors from outside. Alternatively, the property is convenient in terms of access for households to the north.

The market study found that the property would have difficulty developing as a competitive retail site within that trade area. The study recommended that the site be developed with a mix of uses including apartments and retail. It also recommended focusing on convenience retail while recommending against trying to compete with larger retail development planned along I-5. The study evaluated the potential for a larger neighborhood center development type and concluded that a smaller scale version of this type of development could be feasible, although it would be impacted by the development of other nearby retail sites. Lastly, the study found that the site is neither a destination nor community shopping center (grocery anchor site), rather, it is suitable for a Neighborhood Community Convenience Site with potential for mixed use.

City staff reviewed the 2019 study, which includes the 2016 study recommendations, and concur with its findings and recommendations.

### Infrastructure and Transportation Analysis

Willamette Drive NE is designated as a boulevard and 31st Ave NE is designated as a collector by the “Functional Classification Map” within the 2030 Transportation Plan. Both roadways are developed with bike lanes, planter strips, and sidewalk improvements. The city has recently constructed a roundabout at the Willamette Drive NE and 31st Ave NE intersection. This intersection is designated as a “neighborhood node” in the Lacey Comprehensive Plan Land Use Element, meaning it’s meant for more intense development that provides basic services to the adjacent neighborhoods. Any future retail development will need enough density to support it. Willamette Drive NE was originally constructed to handle more capacity than what it currently experiences because Meridian Campus was originally approved for many more units than what was constructed. New residential development if at a high enough density, along with existing residential development, could support that future retail development. The two uses depend on each other to be successful.

A 12” gravity main sewer line currently runs along Willamette Dr NE along the west side of the property. City water and stormwater lines run on the south, west, and the northwest corner of the property. The City has capital projects in the planning and/or design phases that will create enough capacity to mitigate impacts related to this proposal.

SCJ Alliance completed a traffic analysis using the existing zoning and proposed zoning scenarios. Trip generation calculations were performed using rates contained in the 10th edition of the Trip Generation Manual by the Institute of Transportation Engineers (ITE) for the AM peak hour, PM peak hour and daily. The estimated trip generation for the proposed zoning change shows a decrease in trips for the PM peak hour and daily new-to -network volumes. The AM peak hour shows a slight increase in total new-to network trips. The City analyzes transportation impacts and concurrency based on PM trips.

A new bus route, Route 65 Hawks Prairie, started on March 22, 2020. The route heads outbound on Martin Way and uses Carpenter Road to access north Lacey. The route continues outbound on Willamette Drive. It will provide 30 minute service seven days a week.

### Public Outreach and Neighborhood Concerns

The applicant held a voluntary informational webinar on August 11, 2020. The invitation was sent to the Meridian Campus Commercial Owners Association, the Meridian

Campus Residential Owners Association (1606 homes), and Continental Crest Homeowners Association (132 homes). The virtual meeting attracted 35 attendees.

Following the presentation from city staff and the applicant the attendees asked a number of questions about the proposal. The concerns fell mainly into a few categories: high density residential compatibility, crime, and traffic. Those issues are addressed below:

High Density Residential Design Standards: Concerns regarding allowed building height, privacy, and general aesthetics of apartment buildings were raised during the community meeting. Compatibility with adjacent parcels is addressed through project permit review through the following standards which were amended as a result of implementing the 2016 Comprehensive Plan. The maximum height allowed within the High Density zone is eighty feet provided that where building height is greater than forty feet and within eighty feet of an existing single-family residence (measured from the foundation walls) and not separated by a street or alley the following design elements are required:

- A fifteen-foot buffer of Type 1 landscaping is required between the building wall and any abutting single-family residential property line and shall include a six-foot sight obscuring wall or fence.
- Buildings over forty feet shall step back one foot for each one foot of additional building height above forty feet.
- Upper-story balconies facing existing single-family residential uses on buildings exceeding forty feet shall be constructed with opaque sides a minimum of forty-two inches high.
- Design review.

Crime Rates in Northeast Lacey: Concerns and perceptions that apartment buildings attract crime and have higher crime rates than single family neighborhoods were expressed during the community meeting. The Lacey Police Department reviewed calls for service in Northeast Lacey and found that apartment buildings do not get more calls for service than commercial development. They also found that apartments do not necessarily get more cases than single-family residential neighborhoods.

Northeast Lacey from Jan 1, 2020 to Sept. 18, 2020

Britton Place Apartments- 192 units, 13 cases 6.7%  
Tolmie Cove Apartments- 44 units, 5 cases 11%  
Continental Crest HOA – 132 parcels, 8 cases 6.1%  
Home Depot – 56 cases  
Costco – 14 cases  
Britton/Marvin Retail complex – 2 cases

#### HOA crime rates in Lacey for 2018

| HOA             | Cases Per Parcel |
|-----------------|------------------|
| Jubilee         | 1.21%            |
| Weatherwood     | 3.70%            |
| Meridian Campus | 4.43%            |
| Wedgewood Manor | 4.61%            |
| Lexington       | 4.74%            |
| Kensington      | 4.94%            |
| Stonegate       | 5.42%            |
| Edgewater       | 6.63%            |
| Campus Glen     | 7.50%            |
| Lakepoint       | 9.54%            |
| Pattison Park   | 10.25%           |
| Horizon Point   | 10.65%           |
| Avonlea         | 11.92%           |
| Emerald Heights | 13.85%           |
| Clearbrook      | 15.19%           |

The Lacey Police Department found that apartment buildings do not get more calls than commercial development. They also found that apartments do not necessarily get more cases than single-family residential neighborhoods.

Traffic in Northeast Lacey: Concerns about increased traffic in the area were raised by attendees at the community meeting. As mentioned above, SCJ Alliance completed a traffic analysis using the existing zoning and proposed zoning scenarios. Trip generation calculations were performed using rates contained in the 10th edition of the Trip Generation Manual by the Institute of Transportation Engineers (ITE) for the AM peak hour, PM peak hour and daily. The City analyzes transportation impacts and concurrency based on PM trips. The estimated trip generation for the proposed zoning change shows a decrease in trips for the PM peak hour and daily new-to -network volumes. The AM peak hour shows a slight increase in total new-to network trips. Any development on this parcel will generate trips, but under the proposed zoning change, overall trips will go down even though peak trips might change.

## **VI. PLANNING COMMISSION AUTHORITY AND RESPONSIBILITY**

The Planning Commission has the responsibility and authority to recommend action to the Lacey City Council on the proposed Comprehensive Land Use Plan amendment and rezone application. The Planning Commission must hold at least one public hearing on the proposal. Based upon public comments, staff analysis, review of the Comprehensive Land Use Plan, and other applicable information, the Commission must make a recommendation to the Lacey City Council

as to the merits of the application and the designation the Planning Commission believes is in the public's best interest.

## **VII. STAFF FINDINGS AND CONCLUSIONS:**

- A. The Land Use Element and Housing Element identify the need for land resources to support more intense housing development within the Hawks Prairie Planning Area.
- B. The Northeast Plan and Economic Development Element encourage commercial uses which meet the everyday service and convenience needs
- C. The High Density Residential and Neighborhood Commercial zoning designation will be consistent with the surrounding properties and will act as a logical transition between the residential zones to the north, east and south. Similarly, to the south and west, which is a mix of undeveloped and developed land zoned Community Office, has no compatibility issues.
- D. The Neighborhood Commercial zoning designation will provide residents with retail opportunities for meeting basic needs. The property is not freeway adjacent, therefore it is less likely to draw visitors from outside. Alternatively, the property is convenient in terms of access for households to the north.
- E. The property's location at 31<sup>st</sup> Avenue NE and Willamette Dr NE could support neighborhood scale retail to serve the growing residential areas in this portion of the Hawks Prairie Planning Area and is identified within the Comprehensive Plan as a neighborhood node that will support more intensive development.
- F. The Comprehensive Plan Housing Element describes the need for sustainable and wise use of land resources to provide an adequate amount and mix of housing types for the anticipated increase in population. Approximately 70% of Lacey's housing stock is single family residential, which is not adequate in providing enough housing for anticipated population growth.
- G. The property is adequately served with City utilities and will extend utilities throughout the property as a condition of development. The City has capital projects in the planning and/or design phases that will create enough capacity to mitigate impacts related to this proposal.
- H. Compatibility with adjacent parcels is addressed through zoning regulations in LMC 16.18 and design standards in LMC 14.23
- I. The location is well-served with transportation connections to Willamette Dr NE and 31<sup>st</sup> Ave NE and the roads have enough capacity to support denser development based on the original Meridian Campus Plan.

- J. Traffic studies indicate a redesignation to Neighborhood Commercial and High Density Residential will create less traffic overall. Overall trips will go down even though PM peak trips might slightly increase.
- K. Regular fixed-route transit serves the subject site.
- L. The Lacey Police Department found that apartment buildings do not get more calls for service than commercial development and that apartments do not necessarily get more cases than single-family residential neighborhoods.

#### **VIII. STAFF RECOMMENDATION CONCERNING ACTION ON THE PROPOSED COMPREHENSIVE PLAN AMENDMENT APPLICATION**

Based upon the analysis provided in this report, and the conclusions and findings identified in section VII of this report, staff recommends approval of the change from Community Commercial to High Density Residential and Neighborhood Commercial

#### **IX. STAFF RECOMMENDATION CONCERNING ACTION ON THE PROPOSED ZONING AMENDMENT APPLICATION**

Based upon the analysis provided in this report and the conclusions and findings identified in section VII of this report, staff recommends the change from Community Commercial to High Density Residential and Neighborhood Commercial for the subject property. An additional finding is proposed for the zoning designation that designation of the zone as High Density Residential and Neighborhood Commercial is consistent with the change to the Comprehensive Land Use Plan map.



**CITY OF LACEY**  
Community & Economic Development Department  
420 College Street SE  
Lacey, WA 98503  
(360) 491-5642

**OFFICIAL USE ONLY**

Case Number: \_\_\_\_\_  
Date Received: \_\_\_\_\_  
By: \_\_\_\_\_

Related Case Numbers:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## **COMPREHENSIVE PLAN AMENDMENT GENERAL APPLICATION**

**OWNER NAME:** Ever Success Inc. / Richard E. Cobb

**MAILING ADDRESS:** 1401 Marvin Rd NE, Suite 304 #561

**CITY, STATE, ZIP:** Lacey WA 98516

**TELEPHONE:** (360) 456-7071

**APPLICANT NAME:** \* Dan Penrose, SCJ Alliance

**MAILING ADDRESS:** 8730 Tallon Lane NE

**CITY, STATE, ZIP:** Lacey WA 98516

**TELEPHONE:** (360) 352-1465

**ADDRESS OF PROPOSAL:** 31st Ave NE at Willamette Dr NE (northeast corner of intersection)

\* The applicant is the person whom staff will contact regarding the application, and to whom all notices, and reports shall be sent, unless otherwise stipulated by the applicant.

### **GENERAL DESCRIPTION OF PROPOSAL**

Redesignate the 11.51-acre parcel at the corner of 31st Ave NE and Willamette Dr NE from Community Commercial District (CCD) to High Density Residential (HD) and Neighborhood Commercial (NC). Of the total 11.51 acres of the property, 9.51 acres is proposed to be designated as HD, which would allow future multi-family development. The remaining 2 acres on the southwest corner of the property is proposed to be designated as NC, which would allow future small scale convenience center and mixed-use residential units.

**GENERAL LOCATION OF PROJECT** (Give street address or, if vacant, indicate lot(s), block and subdivision; or tax lot number, access street, and nearest intersection.)

Northeast corner of 31st Ave NE and Willamette Dr NE

SECTION: 01 TOWNSHIP: 18 RANGE: 1W

ASSESSOR'S TAX PARCEL NUMBER: 11801240100

**FULL LEGAL DESCRIPTION OF SUBJECT PROPERTY** (attach additional sheet if necessary):

Section 01 Township 18 Range 1W Quarter SE NW & NE NW com at NW cor of SW NE thence alg W ln of said sub S01-40-54W 279.25F to N ROW ln of 31 Ave NE thence alg said ROW in S60-16-33W 58.58F to POB.

**COMPREHENSIVE PLAN, ZONING, AND LAND USE ISSUES**

CURRENT ZONE CLASSIFICATION: CCD

COMPREHENSIVE DESIGNATION: CCD

CURRENT LAND USE AND IMPROVEMENTS: None - vacant land

PAST LAND USE OR HISTORY: None - vacant land

CURRENT COMPREHENSIVE PLAN LANGUAGE (if applicable): Supporting Comprehensive Plan language can be found in the attached project narrative. No change to Comprehensive Plan text is requested.

REQUESTED NEW COMPREHENSIVE PLAN LANGUAGE (if applicable): No change to Comprehensive Plan text is requested



**DOES THE PROPOSED AMENDMENT AFFECT BOTH THE CITY AND THURSTON COUNTY?**  
**(PLEASE EXPLAIN):** \_\_\_\_\_

The property is within the City of Lacey incorporated city limits, so the proposed amendment affects only the City

**WAS THIS ISSUE, OR PROPERTY AND ITS DESIGNATION, DISCUSSED DURING THE COMPREHENSIVE PLAN DEVELOPMENT, REVIEW, AND ADOPTION PROCESS? IF SO, PLEASE EXPLAIN:** \_\_\_\_\_

Not known

**IS THE PRESENT COMPREHENSIVE PLAN LANGUAGE, OR DESIGNATION AND ITS RELATED ZONING, THE RESULT OF A MISTAKE? WHAT KIND OF MISTAKE (i.e., mapping, typographic)? PLEASE EXPLAIN:**  
No.

**IF THE AMENDMENT IS A MAP AMENDMENT, HOW MANY ACRES OF DEVELOPED AND UNDEVELOPED PROPERTY IN THE LACEY GROWTH AREA ALREADY EXIST IN THIS DESIGNATION?**

**DEVELOPED:** HD 283 acres NC 14 acres

**UNDEVELOPED:** HD 115 acres NC 22 acres

**HOW WILL THE AMENDMENT CHANGE THIS?** Increase of 9.51 acres HD and 2 acres NC, bringing the City's undeveloped HD supply to 125 acres and undeveloped NC supply to 24 acres. Decrease of 11.51 total acres from the CCD zone (120 to 108 acres)

**IS THERE A DEMONSTRATED NEED FOR THIS CHANGE AND IS IT A WISE ALLOCATION OF LAND RESOURCES? PLEASE EXPLAIN:** \_\_\_\_\_

See attached project narrative

**EXPLAIN THE NEED FOR CHANGE AND HOW THE AMENDMENT IS CONSISTENT WITH THE FOLLOWING:**

- **State Growth Management Act (GMA):** \_\_\_\_\_  
See attached project narrative
- **County-Wide Planning Policies (CWPP):** \_\_\_\_\_  
See attached project narrative
- **Lacey Comprehensive Plan:** \_\_\_\_\_  
See attached project narrative
- **Regional Transportation Plan (RTP):** \_\_\_\_\_  
See attached project narrative
- **Other Applicable City Plans or Documents:** \_\_\_\_\_  
See attached project narrative
- **Neighboring Jurisdictions' Comprehensive Plan (where your proposal affects multiple jurisdictions, for example: Olympia or Tumwater):** \_\_\_\_\_  
See attached project narrative

### UTILITIES AND ROADS

WATER SUPPLY (name of utility if applicable): City of Lacey (existing)

☐ EXISTING ☐ PROPOSED

SEWAGE DISPOSAL (name of utility if applicable): City of Lacey (existing)

☐ EXISTING ☐ PROPOSED

ACCESS (name of street(s) from which access will be gained): 31st Ave NE and Willamette Dr NE

### SUPPLEMENTAL INFORMATION

THIS APPLICATION MUST BE ACCOMPANIED BY THE FOLLOWING INFORMATION:

- 1- A complete list of all property owners and addresses as listed of the Thurston County Assessor within a 300-foot radius of the external boundaries of the subject property.
- 2- A site plan drawing or drawings at a scale of not less than one inch for each two hundred feet which shall include or show:
  - a. The boundaries of the property;
  - b. Size of property impacted by amendment;
  - c. Location of existing natural features, such as trees, streams, or lake frontages.
- 3- Environmental checklist.
- 4- Supplemental information and/or special reports may be required including:
  - a. Environmental sensitive areas and issues;
  - b. Traffic impacts;
  - c. Other.

### INITIATED BY:

☐ Planning Commission. Date of Initiation: \_\_\_\_\_

☐ City Council. Date of Initiation: \_\_\_\_\_

☐ Property owners as follows:

I (We) understand and agree with the above explained need for the map change and are current owners of the property within the City of Lacey.

Richard E. Cobb

Signature

Richard E. Cobb

Printed Name

ADDRESS: 1401 Marvin Rd. NE, Suite 304 #56, Lacey, WA 98516

Signature

Printed Name

ADDRESS: \_\_\_\_\_

Signature

Printed Name

ADDRESS: \_\_\_\_\_

Signature

Printed Name

ADDRESS: \_\_\_\_\_

**CITY OF LACEY**

Community & Economic Development Department  
420 College Street SE  
Lacey, WA 98503  
(360) 491-5642

**OFFICIAL USE ONLY**

Case Number: \_\_\_\_\_

Date Received: \_\_\_\_\_

By: \_\_\_\_\_

Related Case Numbers:  
\_\_\_\_\_  
\_\_\_\_\_

## REZONE APPLICATION

**OWNER NAME:** Ever Success Inc. / Richard E. CobbMAILING ADDRESS: 1401 Marvin Rd NE, Suite 304 #561CITY, STATE, ZIP: Lacey WA 98516TELEPHONE: (360) 456-7071*Richard E. Cobb* DATE: 3/2/2020

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

**SIGNATURE(S)**

I (We), the above-signed, do hereby affirm and certify, under penalty of perjury, that I/we am/are one (or more) of the owner(s) under contract of the below described property and that the following statements and answers are in all respects, true and correct on my information and belief as to those matters.

**APPLICANT NAME:** Ever Success Inc. / Richard E. CobbMAILING ADDRESS: 1401 Marvin Rd NE, Suite 304 #561CITY, STATE, ZIP: Lacey WA 98516TELEPHONE: (360) 456-7071**SIGNATURE:** *Richard E. Cobb* **DATE:** 03/02/2020**ENGINEER/ARCHITECT NAME:** N/A (proposal is a non-project action)

MAILING ADDRESS: \_\_\_\_\_

CITY, STATE, ZIP: \_\_\_\_\_

TELEPHONE: \_\_\_\_\_

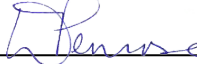
**SIGNATURE:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**AUTHORIZED REPRESENTATIVE:** Dan Penrose, SCJ Alliance

**MAILING ADDRESS:** 8730 Tallon Lane NE

**CITY, STATE, ZIP:** Lacey, WA 98516

**TELEPHONE:** (360) 352-1465

**SIGNATURE:**  **DATE:** 03/02/2020

**NAME OF PROJECT:** Ever Success Property – Rezone and Comprehensive Plan Amendment

**SUMMARY OF REQUEST (List Type of Uses):** The applicant is seeking a Rezone and concurrent Comprehensive Plan Amendment of the subject property from the current designation of Community Commercial District (CCD) to High Density Residential (HD) and Neighborhood Commercial (NC).

### PROPERTY LOCATION

☐ North ☐ South ☒ East ☐ West Side of Willamette Dr NE between 31<sup>st</sup> Ave NE  
(ROAD NAME)  
and Deni Dr NE  
(ROAD NAME)

**Property Address:** Intersection of Willamette Dr NE and 31<sup>st</sup> Ave NE (property not addressed)

**Section:** 01 **Township:** 18 **Range:** 1W **Assessor's Parcel Number:** 11801240100

**Full legal description of subject property:** Section 01 Township 18 Range 1W Quarter SE NW & NE NW com at NW cor of SW NE thence alg W ln of said sub S01-40-54W 279.25F to N ROW ln of 31 Ave NE thence alg said ROW ln S60-16-33W 58.58F to POB.

**TOTAL SQUARE FOOTAGE OF THE REZONE AREA:** 501,375.6 sq ft (11.51 acres)

**How does the rezone request conform to the Comprehensive Plan?** The rezone is consistent with the community vision articulated in the Comprehensive Plan, and with the intent of early planning efforts for the Hawks Prairie Planning Area (originally conveyed in the 1992 Northeast Area Planning Element, one of the City's first subarea plans). It is also reflective of a number of Comprehensive Plan goals and their associated policies (see more on compatibility with Lacey's Comprehensive Plan in the attached Project Narrative).

**ACCURATE SITE PLAN DRAWN IN INK TO SCALE WITH DIMENSIONS MUST BE SUBMITTED ALONG WITH THE APPLICATION. PLEASE SHOW THE FOLLOWING:**

1. Location of proposed uses, buildings, parking areas, landscaping areas, ingress, egress, etc.
2. Location of all existing uses and structures on the property, with distances from property lines.
3. Major physical features of the property to be rezoned.
4. Barscale and north arrow.

**PLEASE ANSWER THE FOLLOWING QUESTIONS**

*What is the relationship between the proposed use of the land to be rezoned and the surrounding land use? (i.e., Is your proposed use of land significantly different than existing land uses surrounding your property?) Please Explain:* The Current Zoning map included with this application shows existing zoning for the site and surrounding parcels (Attachment D). Currently the site is vacant; current uses on the adjacent properties include low-density residential to the east, high-density residential to the north, and moderate-density residential and office uses across 31st Ave to the south. Across Willamette Dr to the west are some office uses, as well as properties that are zoned Community Office (CO) but as yet undeveloped. The proposal will be compatible with surrounding land uses and will not affect the current land uses on nearby properties.

*Why is the property not usable as presently zoned, including the events that led you to this conclusion?* Lacey's Hawks Prairie Planning Area contains over 800 acres of commercially zoned land, over 70% of which is currently vacant. This particular property has sat vacant for over a decade, unable to feasibly be developed under the current zoning. The prevalence of vacant commercially zoned land in this area indicates a limited demand for new retail space. The current supply of retail land clustered closer to I-5 on Marvin Road has yet to be absorbed, and the distance from this corridor limits the customer draw at the subject property to local traffic and residents. In this same context, the current housing supply has not kept up with demand pressures from new residents to Lacey and the greater Thurston County region. This property is well situated to meet this need as it is adjacent to similarly zoned HD properties to the north.

*How would the proposed zone change be in the interests of not only the applicant but also the surrounding properties and the public as a whole?* Based on OFM's 20-year population projections, it is estimated that the Hawks Prairie Planning Area will need to accommodate 4,690 housing units by 2035 – nearly double the 2,420 units that existed in the planning area in 2010. The City's Comprehensive Plan indicates the planning area currently has capacity to accommodate 3,042 single-family homes but only 91 multifamily units. Additionally, housing vacancy rates in Lacey were less than 4% in 2018, and only 115 acres of vacant land zoned as High Density Residential (HD) is available in the City. This proposal would add 9.51 acres to that total, an 8% increase. Growth in the Hawks Prairie area and changing nationwide trends in retail shopping have lessened the need for more retail space and increased the need for residential units. The proposed 2-acre section of NC zoning would provide local small-scale convenience retail for local residents without adding to the glut of large-scale commercial space that already exists in the area.

# **ADJACENT PROPERTY OWNERS LIST**

**PROJECT:** Ever Success Property – Rezone and Comprehensive Plan Amendment

**PLEASE SUBMIT AN ADJACENT PROPERTY OWNERS MAILING LIST**

**Include all property owners within 300 feet of exterior boundary  
of the property involved.**

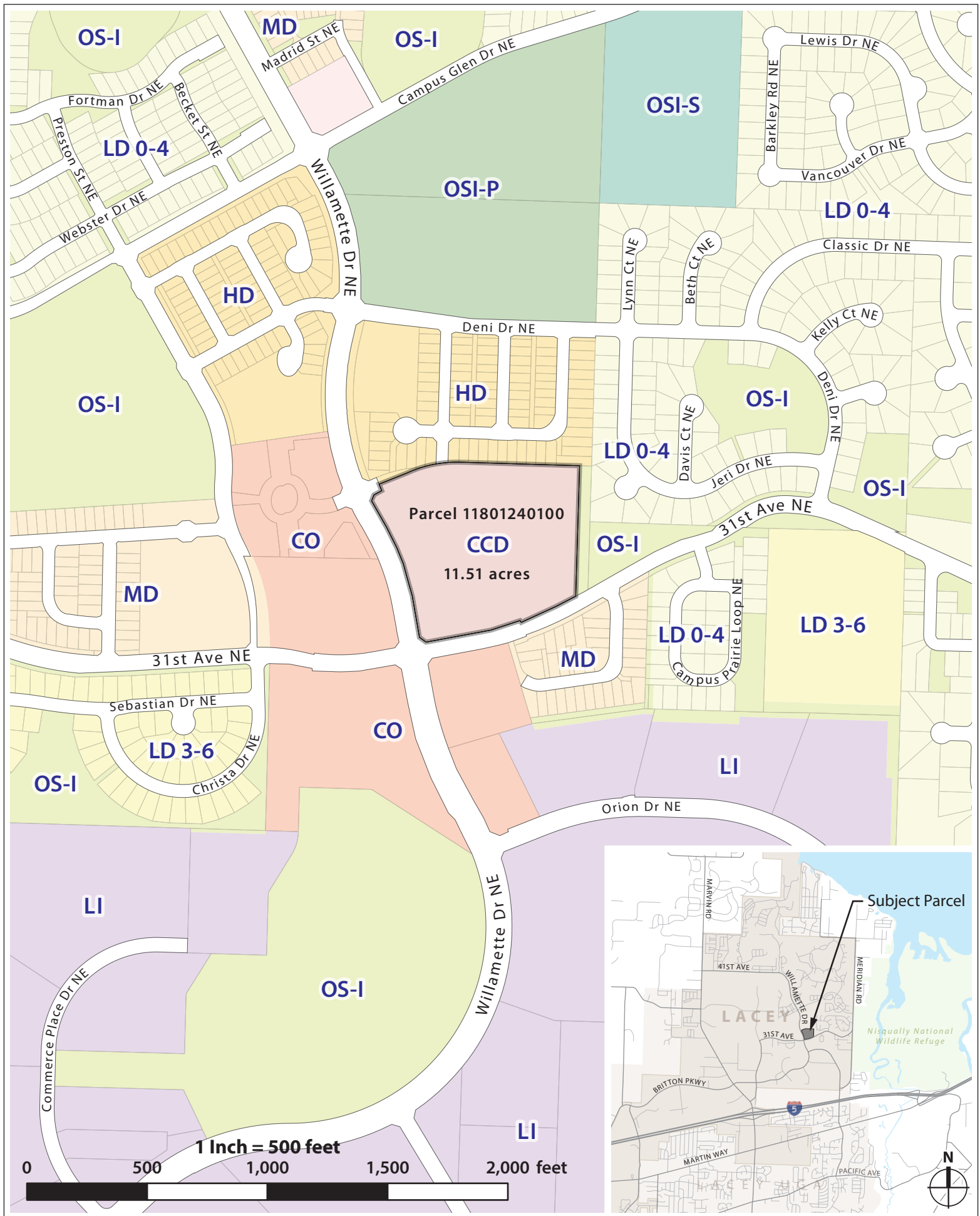
**Addresses are to be obtained from:**

**Office of County Assessor, Bldg #1, First Floor. Phone: 786-5410**

**\* \* \* Please be sure to also include the mailing information for the:  
OWNER, APPLICANT, ENGINEER/ARCHITECT & REPRESENTATIVE.**

**SEE EXAMPLE BELOW**

|                                                                  |
|------------------------------------------------------------------|
| <p>SAMPLE<br/>Joe Jones<br/>PO Box 1900<br/>Lacev. WA. 98503</p> |
|------------------------------------------------------------------|



# CURRENT ZONING

Ever Success Property (Parcel 11801240100)  
Comprehensive Plan Amendment General Application







# Ever Success Property

## Project Narrative & Responses

### Applicant:

Richard E. Cobb  
Ever Success Inc.  
1401 Marvin Rd NW, Suite 304 #561  
Lacey, WA 98516  
Phone: (360) 456-7071

### Contact Person:

Dan Penrose  
SCJ Alliance  
8730 Tallon Ln NE, Suite 200  
Lacey, WA 98516  
Phone: (360) 352-1465

### General Description of Proposal:

The applicant is seeking a Comprehensive Plan Map Amendment and concurrent Rezone of the subject property from the current designation of Community Commercial District (CCD) to High Density Residential (HD) and Neighborhood Commercial (NC). Of the subject property's 11.51 acres, 9.51 acres would be designated HD and the remaining 2 acres would be designated NC.

### Subject Property:

The 11.51-acre site is located at the northwest corner of the intersection of Willamette Dr NE and 31<sup>st</sup> Ave NE, parcel number 11801240100. The site is currently vacant. A site map is included with this submittal to assist in identifying the subject parcel. The assessor's simplified legal description is as follows: Section 01 Township 18 Range 1W Quarter SE.

### Comprehensive Plan Amendment General Application Questions:

#### **Is there a demonstrated need for this change and is it a wise allocation of land resources? Please explain:**

Lacey's Hawks Prairie Planning Area contains over 800 acres of commercially zoned land, over 70% of which is currently vacant<sup>1</sup>. The prevalence of vacant commercially zoned land in this area indicates a limited demand for new retail space, with existing retail averaging 24 months on the market prior to occupancy. The current supply of retail land clustered closer to I-5 on Marvin Road has yet to be absorbed, and the distance from this corridor limits the customer draw at the subject property to local traffic and residents. In this same context, the current housing supply has not kept up with demand pressures from new residents to Lacey and the greater Thurston County region. Based on OFM's 20-year population projections, it is estimated that the Hawks Prairie Planning Area will need to accommodate 4,690 housing units by 2035 – nearly double the 2,420 units that existed in the planning area in 2010<sup>2</sup>. The City's Comprehensive Plan indicates the planning area currently has capacity to accommodate 3,042 single-family homes but only 91 multifamily units. Additionally, housing vacancy rates in Lacey were less than 4% in 2018, and only 115 acres of vacant land zoned as High Density Residential (HD) is available in the City. This proposal would add 9.51 acres to that total, an 8% increase. Growth in the Hawks Prairie area and changing nationwide trends in retail shopping have lessened the need for more retail space and increased the need for residential units. This property is well situated to meet this need as it is adjacent to

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<sup>1</sup> Retail Assessment – Ever Success Property, Heartland LLC, December 2019

<sup>2</sup> Housing Element, City of Lacey 2016 Comprehensive Plan

similarly zoned HD properties to the north. The proposed 2-acre section of NC zoning would provide local small-scale convenience retail for local residents without adding to the glut of large-scale commercial space that already exists in the area. Support for this proposal is found in the Community Vision chapter of Lacey's Comprehensive Plan, as well as the Housing Goals and Policies that support a diversity of housing types and infill development.

**Explain the need for change and how the amendment is consistent with the following:**

- **State Growth Management Act (GMA):** The proposed amendment is consistent with a number of the GMA's tenets, including:
  - *Urban growth: Encourage development in urban areas where adequate public facilities and services exist or can be provided in an efficient manner.* The amendment would encourage development in the heart of the Hawks Prairie Planning Area. Focused growth over time has been anticipated for decades in this planning area, and adequate public facilities and services have been provided or planned in this area in anticipation of this growth.
  - *Reduce sprawl: Reduce the inappropriate conversion of undeveloped land into sprawling, low-density development.* The amendment would encourage dense residential development, along with appropriately scaled convenience retail to serve local residents, in an area of the City that is planned to accommodate growth.
  - *Housing: Encourage the availability of affordable housing to all economic segments of the population of this state, promote a variety of residential densities and housing types, and encourage preservation of existing housing stock.* The addition of HD zoning in this area would add to the variety of housing types and densities provided in this rapidly urbanizing area of Lacey.
  - *Environment: Protect the environment and enhance the state's high quality of life, including air and water quality, and the availability of water.* This proposal indirectly promotes the protection of natural resources by encouraging focused dense residential development within the city limits and in proximity to local services rather than sprawling out into undeveloped land.
- **County-Wide Planning Policies (CWPP):** Thurston County works closely with its cities and towns to develop and update the GMA-required CWPP, providing a flexible, yet accountable planning framework which promotes community individuality while ensuring regional consistency on strategic policy issues. On a basic level, then, a proposal consistent with Lacey's Comprehensive Plan would generally also be consistent with the CWPP. Specifically, this proposal is consistent with a number of countywide policies, particularly policies 3.1 ("*Concentrate development in urban growth areas and protect rural areas...*"), 3.2 ("*Coordinate urban services, planning, and development standards...*"), and 3.4 ("*Provide capacity to accommodate planned growth...*"), by encouraging concentrated development in an area already planned for growth.
- **Lacey Comprehensive Plan:** With the development of the Northeast Area Planning Element – one of the City's first subarea plans – in the early 1990s, the City of Lacey laid the groundwork for future growth in what's now known as the Hawks Prairie Planning Area. This subarea plan emphasized a desire to develop the area as "an aesthetically attractive, high quality employment center with a moderate mixture of other uses to complement the development," and today's planning efforts in the Hawks Prairie Planning Area are derived from this early statement of planning goals. Additionally, Lacey's

Comprehensive Plan establishes a community vision: “Provide a balance of land use activity that promotes the overall quality of life and protects environmentally sensitive areas to make Lacey a great place to live, work, learn, shop, and play.” By proposing a mix of land uses in an area already planned for development, and encouraging small-scale local retail that is integrated into the residential development, this proposal is consistent with the community vision and with the intent of the early Northeast Area planning efforts.

The proposal is particularly compatible with the following Comprehensive Plan goals and their associated policies:

- Housing Goals and Policies
  - » *Goal 1: Have a sufficient number of single-family dwelling units, multifamily units, and group and special need housing to provide a selection of rental and home ownership affordable housing opportunities for all persons.*
  - » *Goal 4: Achieve housing that is compatible and harmonious with existing neighborhood character while allowing infill and providing for environmental sensitivity.*
- Residential Goals and Policies
  - » *Goal 1, Residential: Ensure sustainable and wise use of land resources to provide an adequate amount and mix of housing types for the anticipated increase in population.*
  - » *Goal 1, Infill: Adopt zoning strategies that will promote the intensification, densification, and evolution of Lacey’s land use distribution and form into a sustainable pattern of high quality urban development.*
- Commercial & Industrial Goals and Policies
  - » *Goal 1: Designate an adequate supply of land for high quality commercial uses based on appropriate site characteristics, community needs, and adequacy of facilities and services.*
  - » *Goal 2: Create vibrant, integrated and well-designed commercial districts in designated areas in the community.*
- Hawks Prairie Planning Area Goals and Policies
  - » *Goal 1: The Hawks Prairie Planning Area shall develop consistent with the vision provided in Lacey’s Northeast Area Plan and associated design requirements.*
- **Regional Transportation Plan:** TRPC’s Regional Transportation Plan serves as a strategic blueprint for Thurston County’s transportation system and aims to coordinate transportation and land uses throughout the county. This proposal is consistent with the intent of the Regional Transportation Plan and its guiding principles; this is particularly evident in the following goals and their associated policies:
  - *Goal 1, Transportation and Land Use Consistency: Ensure the design and function of the transportation facilities are consistent with and support sustainable, healthy urban, suburban, and rural communities.*
  - *Goal 2, Multimodal Transportation System: Work toward an integrated, multimodal transportation system that supports the adopted land use plans, reduces overall need to drive, and encourages transit, walking, and cycling as choices.*
  - *Goal 10, Public Transportation: Provide a robust level of reliable, effective public transportation options to increase the share of all trips made by public transportation.*
  - *Goal 11, Bicycling: Increase the share of all trips made safely and conveniently by bicycling.*
  - *Goal 12, Walking: Increase the share of all trips made safely and conveniently by walking.*

This proposal links land use to transportation and supports Goals 1, 2 and 10 by encouraging concentrated residential development in an area with an established transportation network, near a transit stop, and close to local convenience retail. By encouraging residential development in proximity to services and retail, the proposal also encourages the use of non-motorized transportation modes for short trips in support of Goals 11 and 12.

- **Other Applicable Plans or Documents:** No additional plans or documents have been identified as being applicable to this proposal at this time.
- **Neighboring Jurisdictions' Comprehensive Plans:** The proposal site is located completely within Lacey's incorporated city limits, so no neighboring jurisdictions would affect or be affected by future site development.

# Vicwood Development Group

## Retail Assessment – Ever Success Property

December 20, 2019

H E A R T L A N D

# Table of Contents

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# Introduction

## Project Background

Vicwood Development Group (“Vicwood”) asked Heartland to provide an evaluation of the suitability of retail at its property located in Lacey, WA. Under the Ownership of Ever Success Inc, the property consists of 11.5 acres of land located within the Meridian Campus Master Planned Neighborhood at the intersection of Willamette Dr NE and 31<sup>st</sup> Ave NE and is identified as Parcel 11801240100 with the Thurston County Assessor (“the Property”). The following summarizes the parameters of Heartland’s analysis:

- > Vicwood is working with SCJ Alliance, a Thurston County based Civil Engineering and Planning Firm on a rezone application for the Property.
- > The subject property is currently zoned Community Commercial District (CCD) and Vicwood is pursuing a rezone to a high-density multifamily zoning designation to allow for multifamily development in the future. As part of the rezone application, the City has indicated that it desires a portion of the property to be zoned for future retail development under its Neighborhood Commercial zoning designation.
- > Vicwood seeks an analysis to help determine the suitability of retail at the site, both from a site layout and market demand perspective. Ultimately, Vicwood and SCJ will apply the analysis to inform the size and location of the Property area to be zoned for future retail use.

## Project Approach and Methodology

Heartland analyzed the

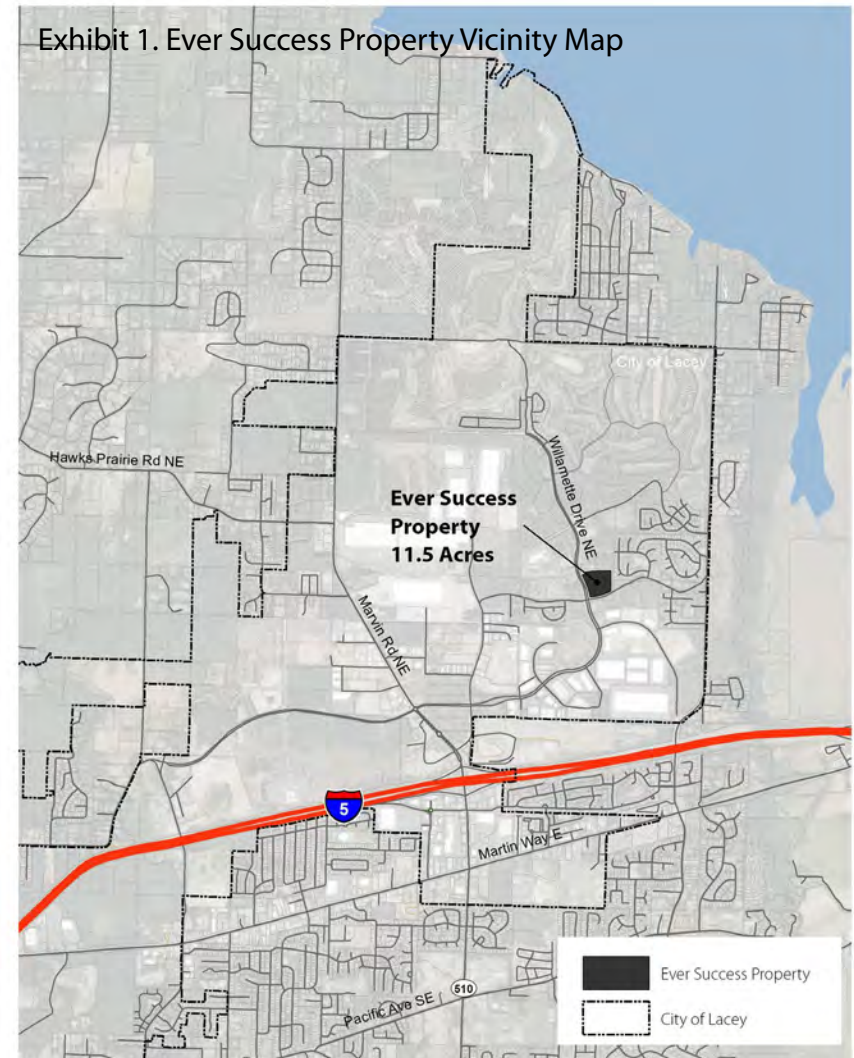
- > **Document Review.** Compilation and review of applicable reports and existing studies related to the Property.
- > **Market Assessment.** Assessment of applicable real estate market conditions and zoning requirements.
- > **Retail Typologies and Site Use.** Evaluate retail development typologies and site suitability.

# Market Assessment

In order to inform the retail assessment, Heartland prepared a market assessment to provide context for the Property and the local real estate market with a targeted focus on retail supply and demand locally. The Market Assessment includes the following tasks:

- > Review of 2016 *Project Feasibility Report* by Fergan Research & Development Services, including synthesis of key findings and recommendations related to the Property.
- > Review of the Lacey Community Market Study from 2015 conducted by Wahlstrom & Associates on behalf of the City of Lacey.
- > Analysis of retail market data including both current and historical vacancy rates, absorption and lease rates as well as a review of household growth trends and future capacity.
- > Collection and analysis of retail supply and demand data to identify potential gaps in retail offerings in the Properties retail trade area (10 minute drivetime for the purposes of the analysis).
- > A review and inventory of current retail supply, including existing and proposed retail developments as well as commercial lands reserved for future retail development within the vicinity of the Property.

**Exhibit 1. Ever Success Property Vicinity Map**





# Market Assessment

## Findings – Project Feasibility Report, 2016

*Fergan Research & Development Services*

In 2016, Vicwood Development Group enlisted Fergan Research & Development Services to conduct a project feasibility study of the Meridian Campus Property. Their work included an assessment of market supported uses on the site. Applicable findings from that study are highlighted below.

- The Property is a large neighborhood commercial site located deep in the Hawk's Prairie Neighborhood that would have difficulty developing as a competitive retail site within that trade area.
- The Study recommended that the site be developed with a mix of uses including apartments and retail.
- The Study recommended focusing on convenience retail while recommending against trying to compete with larger retail development planned along I-5.
- The Study evaluated the potential for a larger neighborhood center development type and concluded that a smaller scale version of this type of development could be feasible, although it would be impacted by the development of other nearby retail sites.
- Study defined trade area as Tract 122.22 with a 2016 population of 9,511 and projected 2020 population of 10,826
- The Study found that the site is neither a destination or community shopping center (grocery anchor site), rather, it is suitable for a Neighborhood Community Convenience Site with potential for mixed use development
- Voids or gaps in services that the study cited included:
  - Gas stations
  - Banks
  - Police stations
  - A library
  - A post office
- At the time of the report there was:
  - 1.7 million square feet of industrial square feet north of I-5 in Northeast Lacey
  - 14,500 residents with an additional 6,000 residents projected to live in the area
- The study cited the Lacey Gateway planned development at Marvin Road and I-5 as a major pipeline project to consider.
- The Study cited 970 acres of undeveloped commercial land in the Hawks Prairie area of Lacey:
  - 670 acres of industrial land
  - 300 acres of commercial land (Hawks Prairie Business District, Community Commercial, Neighborhood Commercial, Business Park)
- The Study cited 660 acres of undeveloped or underdeveloped residential land in the Hawks Prairie area of Lacey:
  - 410 acres of lower density single family residential (Up to 6 units per acre)
  - 250 acres of high density (6-20 units per acre)

# Market Assessment

## Vacancy and Rent Growth

Heartland began with an examination of retail market trends to better understand market performance and trends. **Exhibits 2 and 3** illustrate vacancy and rent trends since 2015.

- The retail vacancy rate in both the Olympia Market and the Lacey Submarket have been compressed over the past five years, with the Lacey Submarket well below vacancy rates across the Olympia region.
- Retail vacancy, particularly in the Lacey Submarket, is well below the national average.
- Despite these low vacancies, rent growth has been relatively modest.

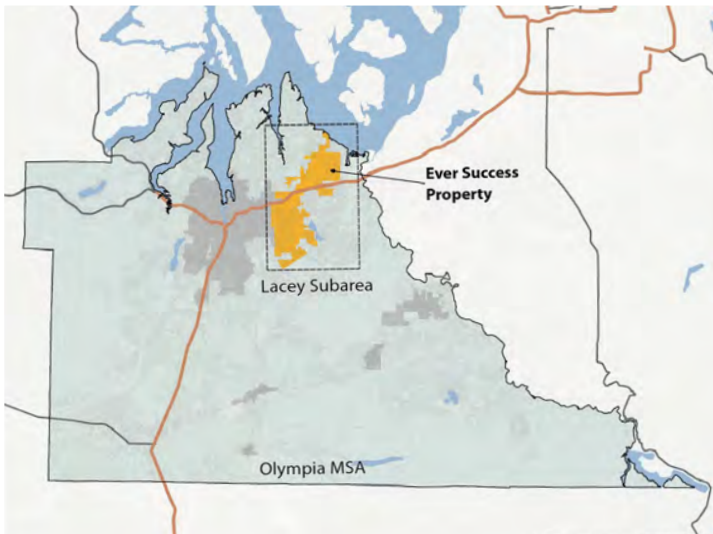


Exhibit 2. Vacancy Trends, Olympia MSA, 2015-2019

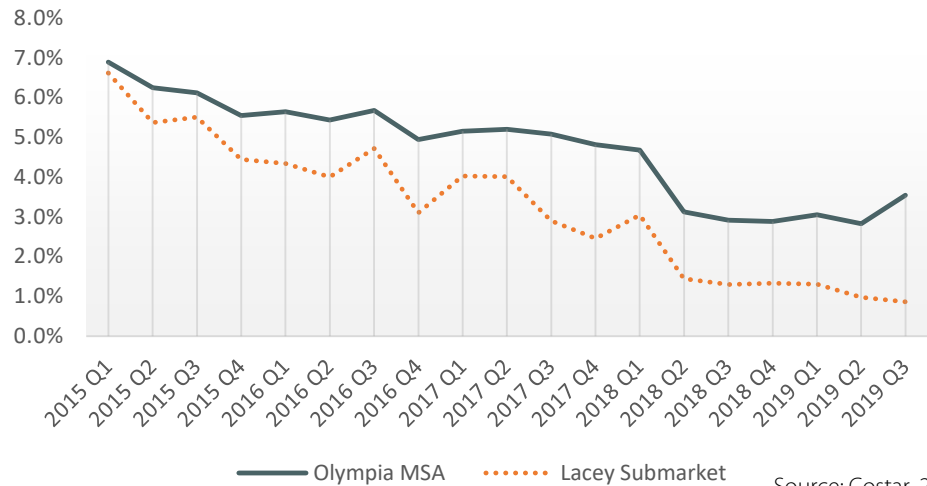
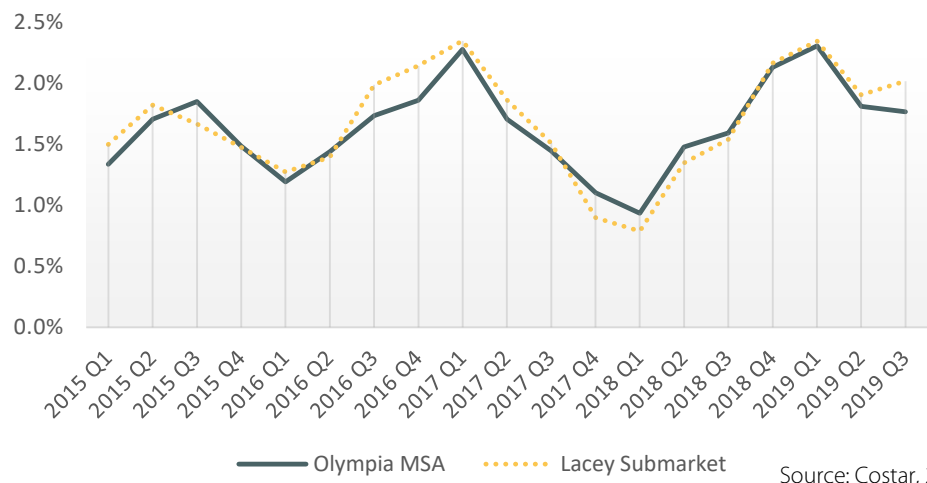


Exhibit 3. Rent Growth, Olympia MSA, 2015-2019



# Market Assessment

## Retail Development and Inventory

### Lacey Submarket Past 5 Years

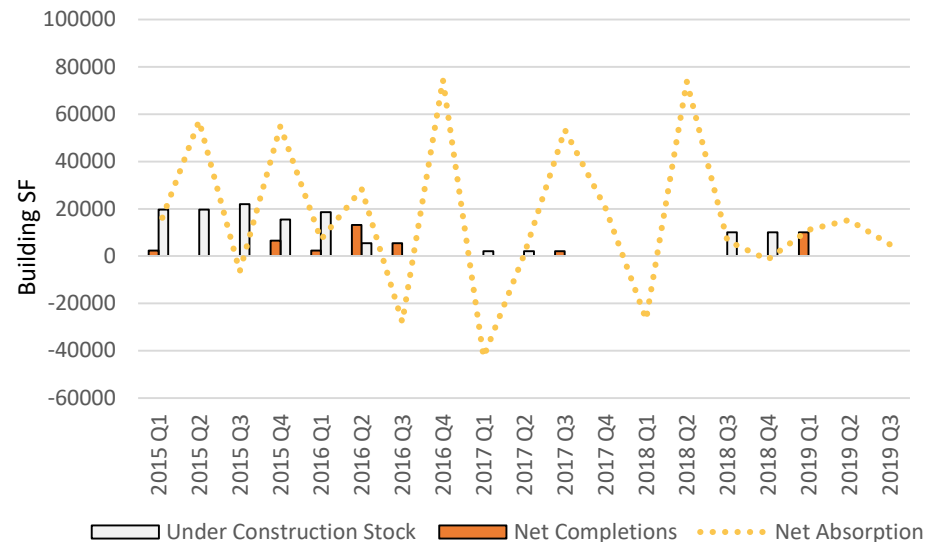
**Exhibit 4** illustrates new deliveries and net absorption over the last five years in the Lacey Submarket.

- Over the Past 5 years, new retail construction and deliveries have continued to trend downward, and absorption largely remained positive.
- This trend could be an indication that much of the new construction is built to suit for a defined retail tenant.
- The observed low stock of retail space under construction in a market with such tight vacancy could indicate that speculative retail development is less common, especially given macro trends related to bricks and mortar retail.

### Existing Inventory

**Exhibits 5 and 6** on the following page provides greater detail on historical deliveries of retail square footage as well as a review of where retail is concentrated within Lacey by retail category. One of the larger retail clusters in Lacey and the Olympia MSA can be found south of Interstate 5 along Martin Way. This area serves as a retail hub for the region.

**Exhibit 4. New Construction Deliveries and Absorption, Lacey Submarket, 2015-2019**

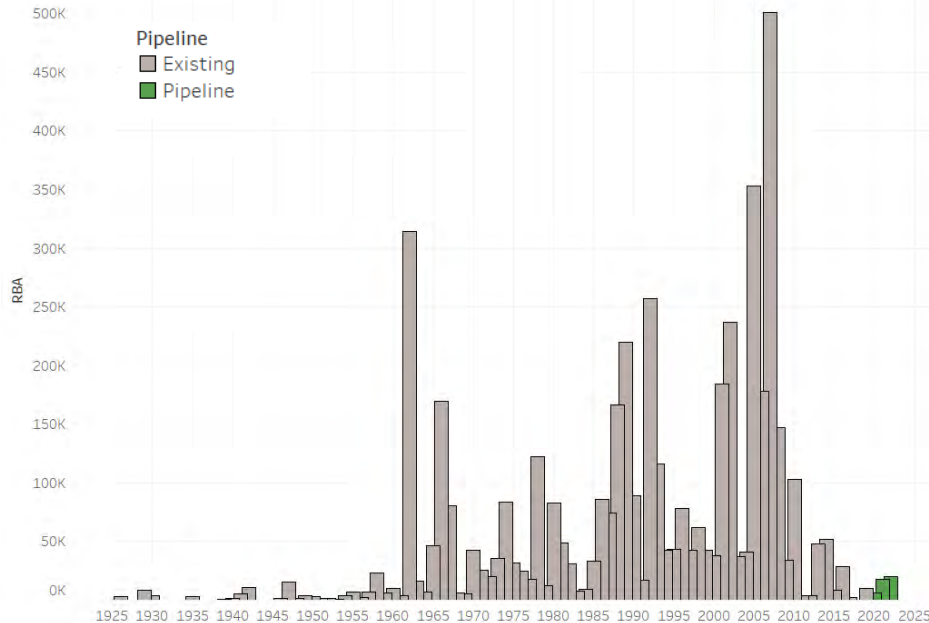


Source: Costar, 2019.

# Market Assessment

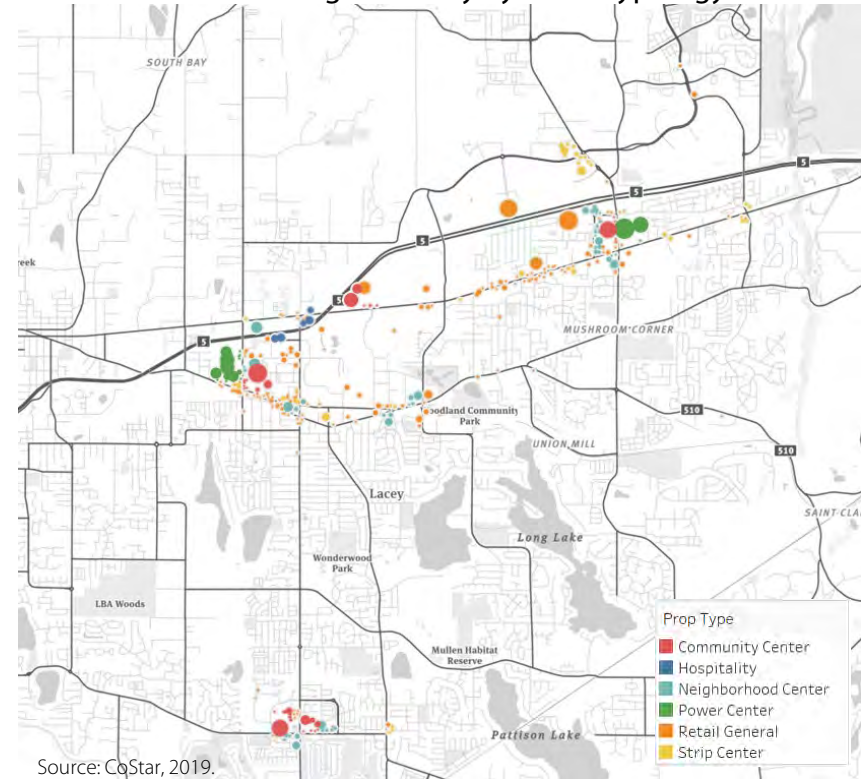
## Lacey Submarket Existing Retail Inventory

Exhibit 5. Retail Building Inventory by Year Built



| Retail Type         | Total Land Area (Acres) | Building Area (SF) |
|---------------------|-------------------------|--------------------|
| Hospitality         | 7                       | 180,446            |
| General Retail      | 373                     | 1,575,475          |
| Community Center    | 166                     | 1,014,797          |
| Neighborhood Center | 140                     | 793,178            |
| Power Center        | 121                     | 1,023,026          |
| Strip Center        | 122                     | 412,248            |
| <b>TOTAL</b>        | <b>929</b>              | <b>4,999,170</b>   |

Exhibit 6. Retail Building Inventory by Retail Typology



Source: CoStar, 2019.

Costars property database identifies the property type through multiple data sources including assessor data, listing data, and tenant data. Using these property type categories we can get a general idea of inventory, retail type, and location/clustering within the Lacey Retail Submarket.

*Further analysis of the existing retail inventory is included in the appendix.*

Source: Costar, 2019.

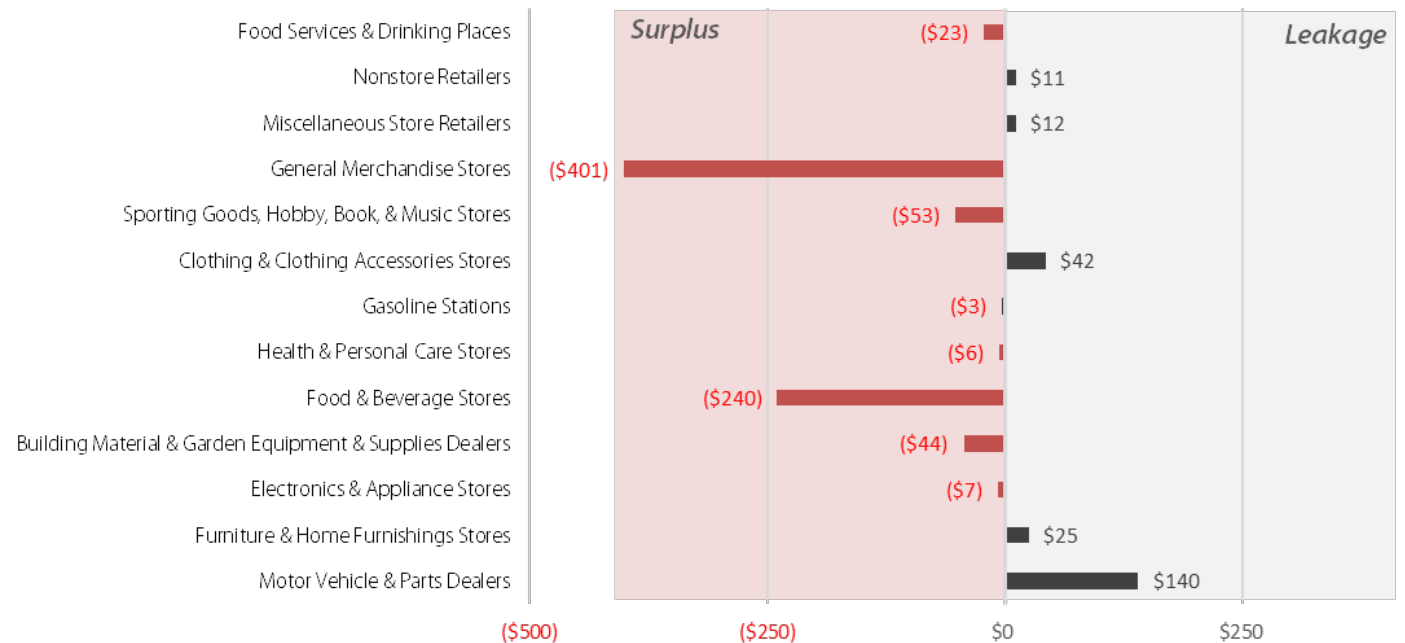
# Market Assessment

## Retail Supply and Demand

In order to better understand retail supply and demand, Heartland collected data on retail spending within a 10-minute drivetime of the Property. **Exhibit 7** illustrates the difference between retail demand/spending power and retail supply. Negative values illustrate where there is surplus of retail supply, meaning there is more retail spending occurring than there is demand for by residents with the area. Positive values indicate retail leakage, wherein residents are traveling outside the area to meet their needs for retail goods.

The exhibit illustrates that within 10 minutes of the Property, there is generally a surplus in retail offerings. This indicates that in terms of market capture, there are currently abundant retail offerings serving residents within 10-minute drivetime of the Property for most retail categories. This is an important factor to consider when evaluating retail suitability at the Property.

Exhibit 7. Retail Supply and Demand, 10-minute Drivetime from Property



Source: ESRI Business Analyst, 2019.



# Market Assessment

## Focused Trade Area

The area from which the Property is most likely to draw customers from is depicted in **Exhibit 8**. The area, dubbed the Property's Focused Trade Area, is defined by the following factors:

- > Generally the area north of I-5 within the Meridian Campus/Hawks Prairie community.
- > Supply of existing retail services to the south – Limited to area north of Interstate 5 as it is unlikely that customers will be drawn from south of here.
- > Drive time – limited to households within 10 minutes drive north of Interstate 5

This area can be used to inform the type of retail suitable for the site, as this is the area that the retail would likely serve. The area is also home to competing retail locations, discussed further in the following pages.

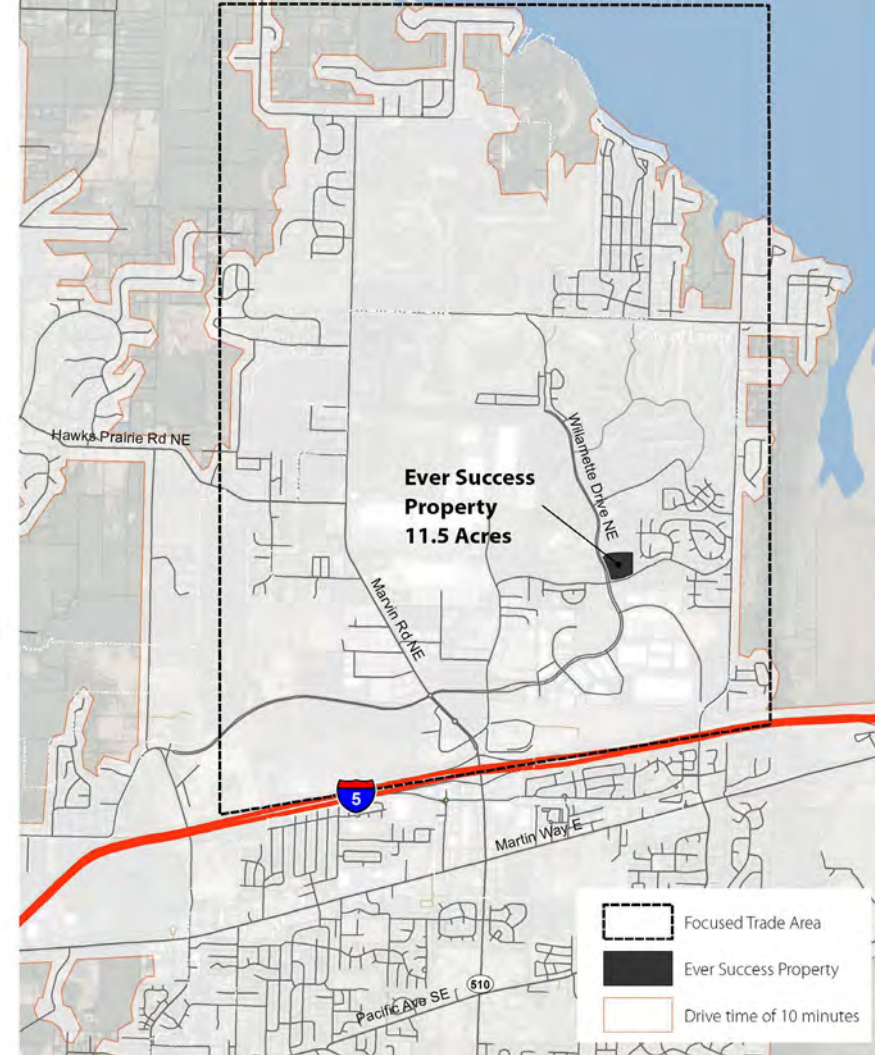
## Ever Success Property Location Attributes

- > 1.5-2.0 Miles from I-5 freeway access
- > Zoned Community Commercial
- > Within the Meridian Campus Master Plan

## Focused Trade Area Attributes:

- > 4,500 jobs
- > 16,000 people
- > Predominantly single-family housing
- > Mix of adjacent industrial, light industrial and retail uses
- > Currently served by major retail cluster directly south of I-5 via Marvin Rd NE

Exhibit 8. Focused Trade Area



# Market Assessment

## Commercial Land Supply

**Exhibit 9 and 10** illustrate the existing supply of commercially zoned lands within the Focused Trade Area of the Property.

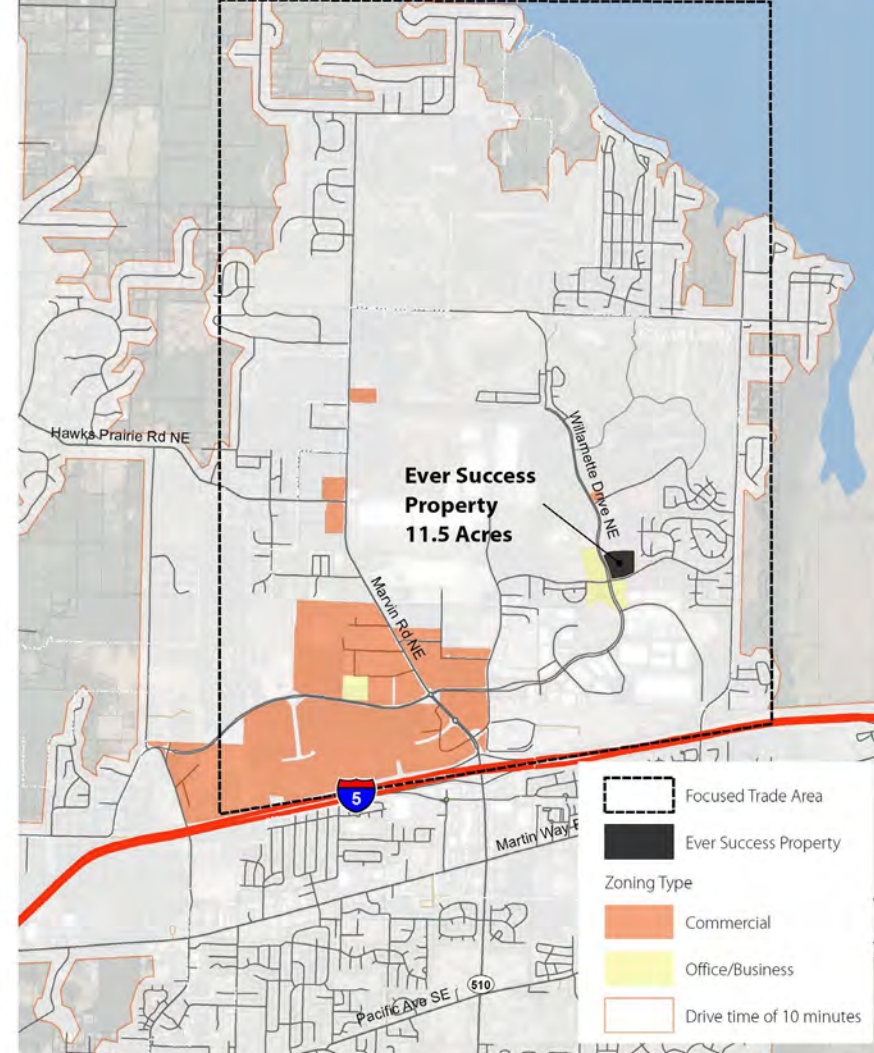
- There are over 800 acres of commercially zoned land in the Focused Trade Area.
- 70% of all commercially zoned land in this Focused Trade Area is vacant.
- At least 40% of each commercial zoning designation within this Focused Trade Area is vacant.
- The prevalence of vacant commercially zoned land within this Focused trade area indicates the potential presence of large amounts of unrealized commercial development capacity.

**Exhibit 9. Commercially Zoned Land, Focused Trade Area, Summary**

| Commercial Zones                                    | Total Acres  | % Total Area | Vacant Acre  | % of Comm Zones | % of Zone |
|-----------------------------------------------------|--------------|--------------|--------------|-----------------|-----------|
| COMMUNITY OFFICE                                    | 34.0         | 4.1%         | 15.4         | 1.9%            | 45.3%     |
| COMMUNITY COMMERCIAL                                | 29.7         | 3.6%         | 19.7         | 2.4%            | 66.4%     |
| LIGHT INDUSTRIAL COMMERCIAL                         | 150.1        | 18.2%        | 61.0         | 7.4%            | 40.6%     |
| HAWKS PRAIRIE BUSINESS DISTRICT-BUSINESS/COMMERCIAL | 519.7        | 63.1%        | 396.2        | 48.1%           | 76.2%     |
| HAWKS PRAIRIE BUSINESS DISTRICT-COMMERCIAL          | 82.5         | 10.0%        | 75.3         | 9.1%            | 91.3%     |
| NEIGHBORHOOD COMMERCIAL                             | 7.9          | 1.0%         | 7.9          | 1.0%            | 100.0%    |
| <b>Focus Area Total</b>                             | <b>823.9</b> |              | <b>575.5</b> |                 |           |

Source: Thurston County, 2019.

**Exhibit 10. Commercially Zoned Lands Map**



# Market Assessment

## Retail Land on Market or Planned

To evaluate the current and future supply of retail lands in the Focused Trade Area, Heartland analyzed properties currently on market or planned (**Exhibit 11 and 12**). The inventory of such properties in the vicinity of the Ever Success Property provides context for evaluating future absorption and retail demand.

- Retail land that is currently available on market is generally clustered around Marvin Road and approximately 1.25 miles from the Ever Success Property.
- There are over 78 acres of retail land on market, not including the Lacey Gateway Town Center Master Plan.
- The average time on market for the properties in the table below is 24 months, with several properties having been market for significantly longer.

Exhibit 12. Retail Land Available or Planned Map

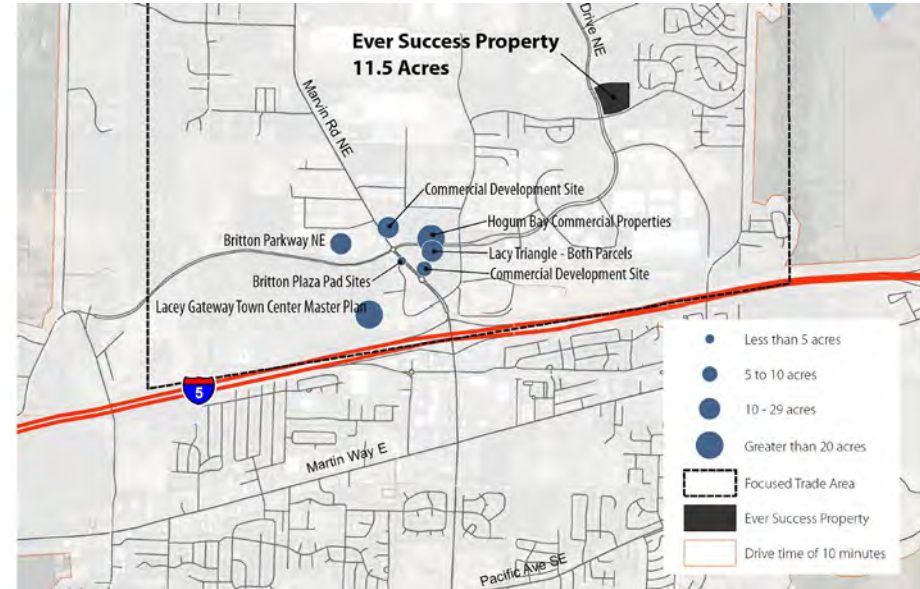


Exhibit 11. Retail Land Available or Planned Summary Table

| What                                  | Status    | Where                       | Retail Center Typology     | Distance   | Acreage | Zoning        | Commercial Planned SF | Time On market |
|---------------------------------------|-----------|-----------------------------|----------------------------|------------|---------|---------------|-----------------------|----------------|
| Lacey Gateway Town Center Master Plan | Proposed  | I-5 and Marvin Rd           | Regional Lifestyle Center  | 1.25 Miles | 250     | HPBDBC        | 2,000,000             |                |
| Commercial Development Site           | For Sale  | 2800 Marvin Rd NE           | Neighborhood Retail Center | 1 Mile     | 14      | HPBD-BC/C     | 120,000               | 45 months      |
| Britton Plaza Pad Sites               | For Sale  | Marvin Rd NE                | Retail                     | 1.2 Miles  | 4       | HPBD-C        | 32,220                | 2 months       |
| Commercial Development Site           | For Sale  | Marvin Rd NE                | Retail/Commercial          | 1.25 Miles | 9       | HPBD-C        | 80,000                | 28 months      |
| Hogum Bay Commercial Properties       | For Sale  | 2563-2775 Hogum Bay Road NE | Retail/Commercial          | 1.2 Miles  | 22      | LI-Commercial | -                     | 24 months      |
| Lacy Triangle - Both Parcels          | For Sale  | 0 Willamette Drive NE       | Retail/Commercial          | 1.2 Miles  | 18      | HPBD-C        | -                     | 15 months      |
| Britton Parkway NE                    | For Lease | Britton Pky & Marvin Rd NE  | Retail/Commercial          | 1.25 Miles | 11      | HPBDBC        | -                     | 30 months      |



# Retail Typologies and Recommendations

## Retail Assessment Findings

Key site attributes affecting retail viability include:

- The Property is not freeway adjacent, therefore it is less likely to draw visitors from outside the Focused Trade Area as previously discussed. Alternatively, the Property is convenient in terms of access for households to the north.
- The existing cluster of on-market and undeveloped freeway adjacent retail land (78 acres not including Lacey Town Center) impacts the viability of a larger retail development at this location.
- Overall the retail market in Lacey has low vacancy with relative few deliveries of new retail space over the last five years. New retail has largely been built to suit, with some smaller scale speculative development in the form of neighborhood retail and pad sites.
- The Property is likely *not* a desirable location for an anchored neighborhood or community retail center but could be a suitable

location for a small-scale retail convenience center, providing amenities and services for the Focused Trade Area.

## Retail Typologies

**Exhibit 13** below illustrates several retail formats considered for the Property. The table includes the approximate land consumption typically associated with each format. For the Ever Success Property, the most suitable retail typology is a Convenience Center. These typically range from 10,000 sf to 30,000 sf. They can be in the form of a more typical strip center, or can include upper floors with office and professional services. Based on the analysis provided herein, it is recommended to plan for as much as 15,000 sf of retail at this site, likely requiring approximately 2 acres of land to accommodate the building footprint, parking and circulation. This size of development could accommodate a stand alone drugstore or a mix of smaller retail and restaurant uses.

**Exhibit 13. Existing Development Types in Trade Area**

| Type                         | SqFt                   | Land Consumption    | Uses                                                                       |
|------------------------------|------------------------|---------------------|----------------------------------------------------------------------------|
| Community Center             | 125,000 +              | 12+ acres           | Grocery anchored, specialty shops, discount stores and/or drug stores      |
| Anchored Neighborhood Center | 50,000 – 125,000       | 5 to 12+ acres      | Grocery or drug store anchored, convenience and specialty retail           |
| <i>Convenience Center</i>    | <i>10,000 – 30,000</i> | <i>1 to 3 acres</i> | <i>Retail Pads and strip format retail for convenience-based retailers</i> |

# Retail Typologies and Recommendations

Building on the aforementioned findings on the previous page, the following are the key attributes that support a convenience center typology at this location.

- Site location and lack of proximity to an Interstate 5 access point mean the site is less attractive for larger format retailers dependent on drawing customers from outside the Focused Trade Area.
- The existing supply of retail in the Focused Trade Area as well as to the south of Interstate 5 currently meets the demands of current residents. In fact, there is a surplus of retail supply in the area, meaning the area draws customers from throughout the region.
- The existing supply of both planned and available retail lands within the Focused Trade Area, with relatively better proximity to both the residential population to the north and Interstate 5 entrance/exit, also impacts the viability of a larger format retail typology at this location.
- The convenience center format and associated land would also accommodate a mixed-use format in the future, with retail as a ground use and multifamily or office uses located above, assuming market support of this type of development.

## Prototypical Convenience Center Examples

A wide variety of uses and building typologies fit within the convenience/strip center retail category. As previously discussed, the size of such facilities typically range anywhere from 10,000 square feet to 30,000 square feet. For the Ever Success Property, it is important to size the commercially zoned area to accommodate a variety of potential uses in the future, hence the recommendation to accommodate approximately 15,000 sf. This would allow for various retail building typologies and users that may include both ground floor and upper floor uses. In addition, if market conditions warrant consideration of denser development in the form of mixed-use multifamily housing, it is important for the site to be able to accommodate this in the future as well.

On the following pages are examples of existing retail developments that have been developed throughout the Puget Sound Region. They represent a variety of formats and site layouts that are similar to the typology recommended herein. They also illustrate the unique ways in which a retail site of this size can be developed and tailored to meet the needs of nearby residents.

# Retail Typologies and Recommendations

## Retail Typologies and Fit

### Walgreens Drugstore

Standalone Pad Site  
8333 Martin Way E  
Lacey, WA  
14,490 Square Feet  
2.29 Acres  
Built 2003



### Steilacoom Blvd. Plaza

Mixed Use Strip Center  
8520 Steilacoom Blvd SW  
Lakewood, WA  
23,972 Square Feet  
1.7 Acres  
Built 2007





# Retail Typologies and Recommendations

## Retail Typologies and Fit

### McNeil Building

Standalone Mixed Use

1584 McNeil St

Dupont, WA

7,892 Square Feet

0.6 acres

Built 2005



### Dupont Station

Storefront Retail Convenience Center

975 Ross Ave

Dupont, WA

10,991 Square Feet

1.24 Acres

Built 2006





# Retail Typologies and Recommendations

## Retail Typologies and Fit

### Hilltop Center

Retail Strip/Convenience Center  
15610 NE Woodinville-Duvall Rd  
Woodinville, WA  
14,896 Square Feet  
1.6 acres  
Built 2008



### Gateway Plaza at Snoqualmie Ridge

Retail Strip/Convenience Center  
8030 Douglas Ave SE  
Snoqualmie, WA  
10,949 Square Feet  
1.7 Acres  
Built 2008



# A. Appendix

# Retail Typologies and Recommendations

## Retail Category Definitions

The following are definitions of the retail categories shown the following retail inventory maps. The definitions and associated data are used for the purposes of organizing and visualizing the retail data collected for this analysis. For the purposes of this analysis, the data and associated definitions were leveraged to profile the inventory of existing retail in the region.

**Community Center.** Typically offers a wider range of apparel and other soft goods than neighborhood centers. Among the more common anchors are supermarkets, super drugstores, and discount department stores. Community center tenants sometimes contain value-oriented big-box category dominant retailers selling such items as apparel, home improvement/furnishings, toys, electronics or sporting goods. The center is usually configured in a straight line as a strip, or may be laid out in an L or U shape, depending on the site and design. Of all the center types, community centers encompass the widest range of formats. For example, certain centers that are anchored by a large discount department store often have a discount focus. Others with a high percentage of square footage allocated to off-price retailers can be termed as off-price centers. The size of such a center ranges from 100,000 to 350,000 square feet.

**Hospitality** This type of property includes all types of lodging facilities including hotels and motels. Hotels are facilities that offer lodging accommodations and a wide range of other services, e.g., restaurants, casinos, convention facilities, meeting rooms, recreational facilities, and commercial shops. These facilities can be labeled Resort, Mixed Use, Luxury, Full Service, Extended Stay, Convention, Apartment, All Suite, etc

**Neighborhood Center** Provides for the sales of convenience goods (food, drugs, etc.) and personal services (laundry, dry cleaning, etc.) for day-to-day living needs of the immediate neighborhood with a supermarket being the principal tenant. In theory, the typical GLA is 50,000 square feet. In practice, the GLA may range from 30,000 to 100,000 square feet.

**Power Center** The center typically consists of several freestanding (unconnected) anchors and only a minimum amount of small specialty tenants. 250,000 -- 600,000 SF. A Power Center is dominated by several large anchors, including discount department stores, off-price stores, warehouse clubs, or "category killers," i.e., stores that offer tremendous selection in a particular merchandise category at low prices.

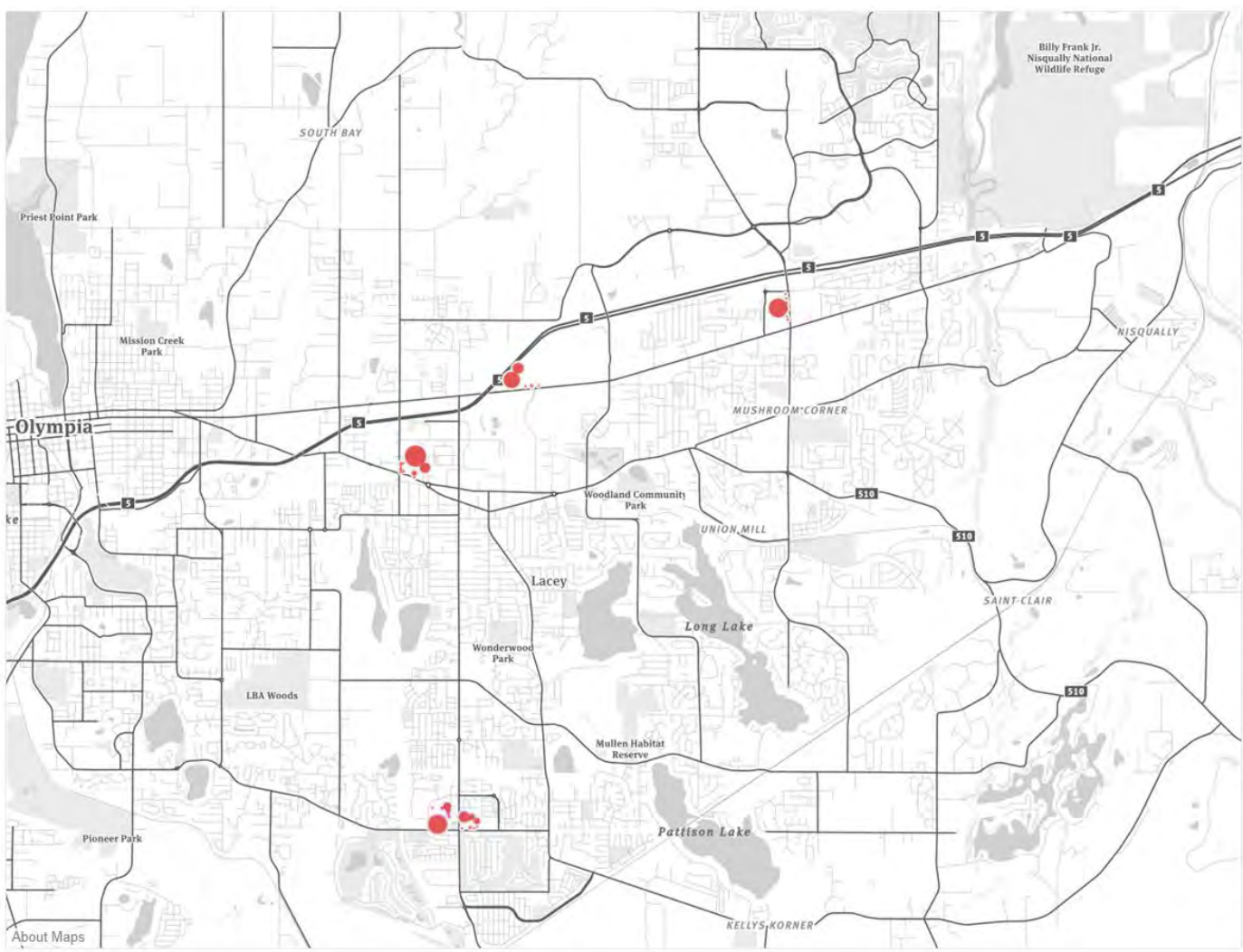
**Retail General** Representative of a diverse range of retail uses that are typically stand alone or secondary in nature to a primary use.

**Strip Center** A strip center is an attached row of stores or service outlets managed as a coherent retail entity, with on-site parking usually located in front of the stores. Open canopies may connect the storefronts, but a strip center does not have enclosed walkways linking the stores. A strip center may be configured in a straight line or have an "L" or "U" shape.

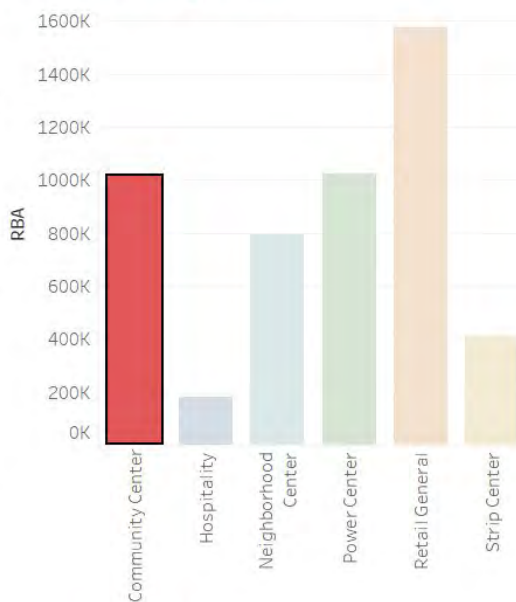
Source: Costar, 2019.

# Market Assessment Refresh

## Community Center



Retail Categories



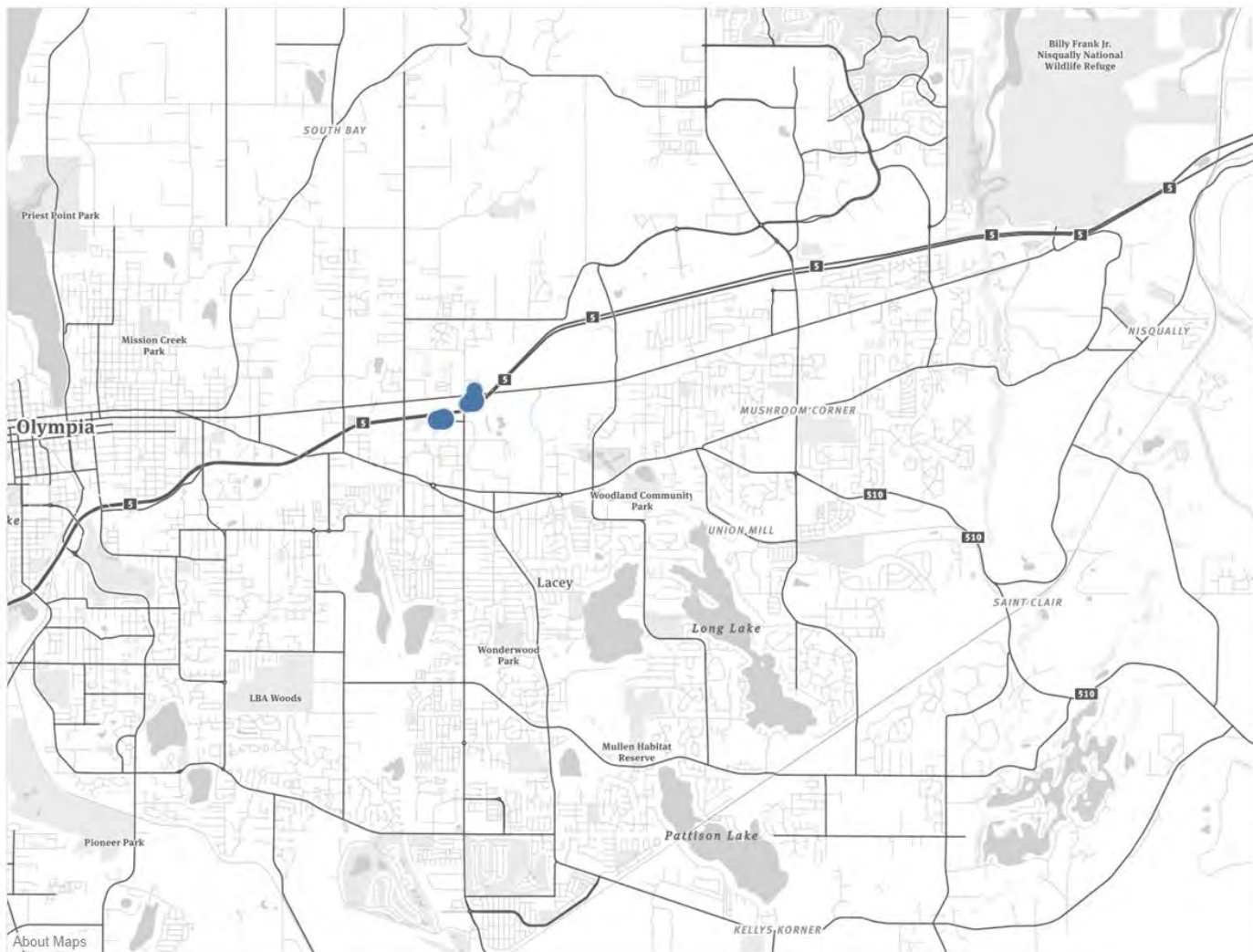
Inventory Table

| Decade Built | # Bldgs | RBA     |
|--------------|---------|---------|
| 1960-1969    | 2       | 9,337   |
| 1970-1979    | 2       | 9,829   |
| 1980-1989    | 5       | 429,518 |
| 1990-1999    | 16      | 316,630 |
| 2000-2009    | 5       | 214,059 |
| 2010-2019    | 2       | 3,709   |
| Before 1960  | 1       | 1,300   |

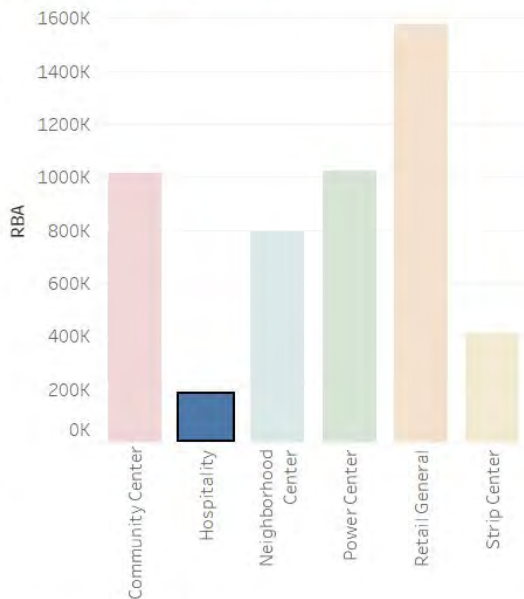


# Market Assessment Refresh

## Hospitality



### Retail Categories

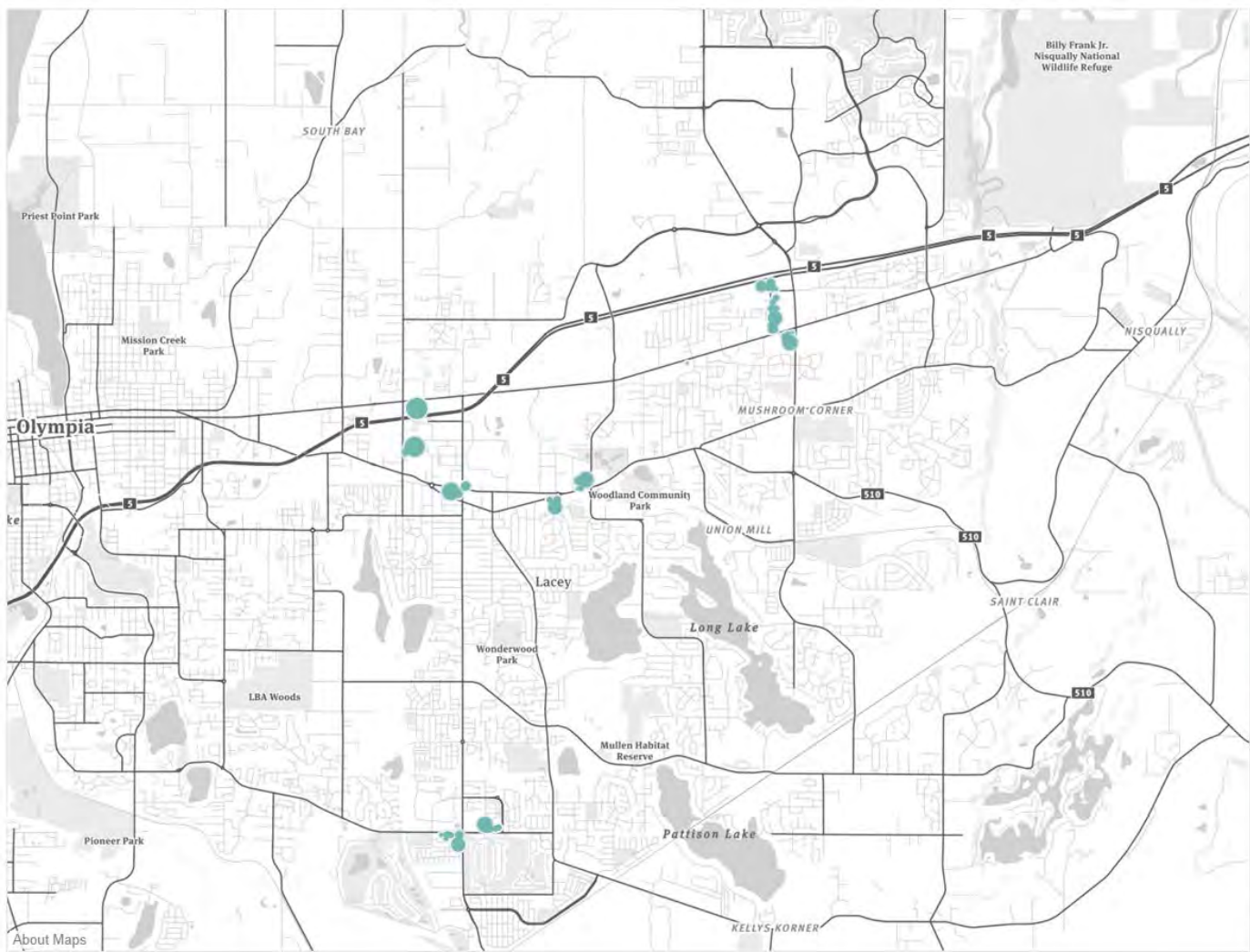


### Inventory Table

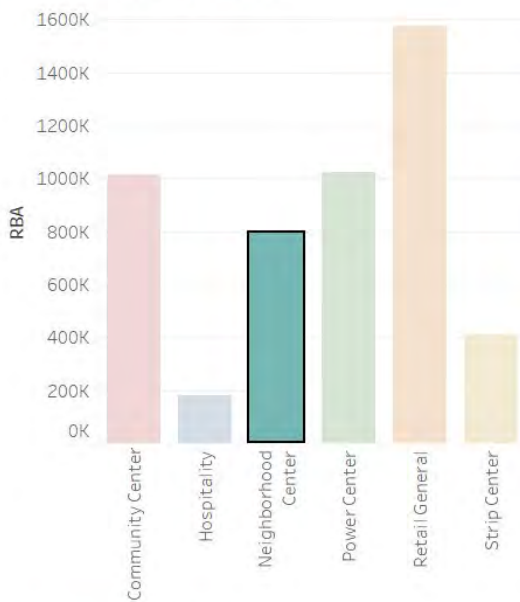
| Decade Built | # Bldgs | RBA    |
|--------------|---------|--------|
| 1980-1989    | 1       | 47,139 |
| 1990-1999    | 2       | 51,608 |
| 2000-2009    | 2       | 81,699 |

# Market Assessment Refresh

## Neighborhood Center



### Retail Categories

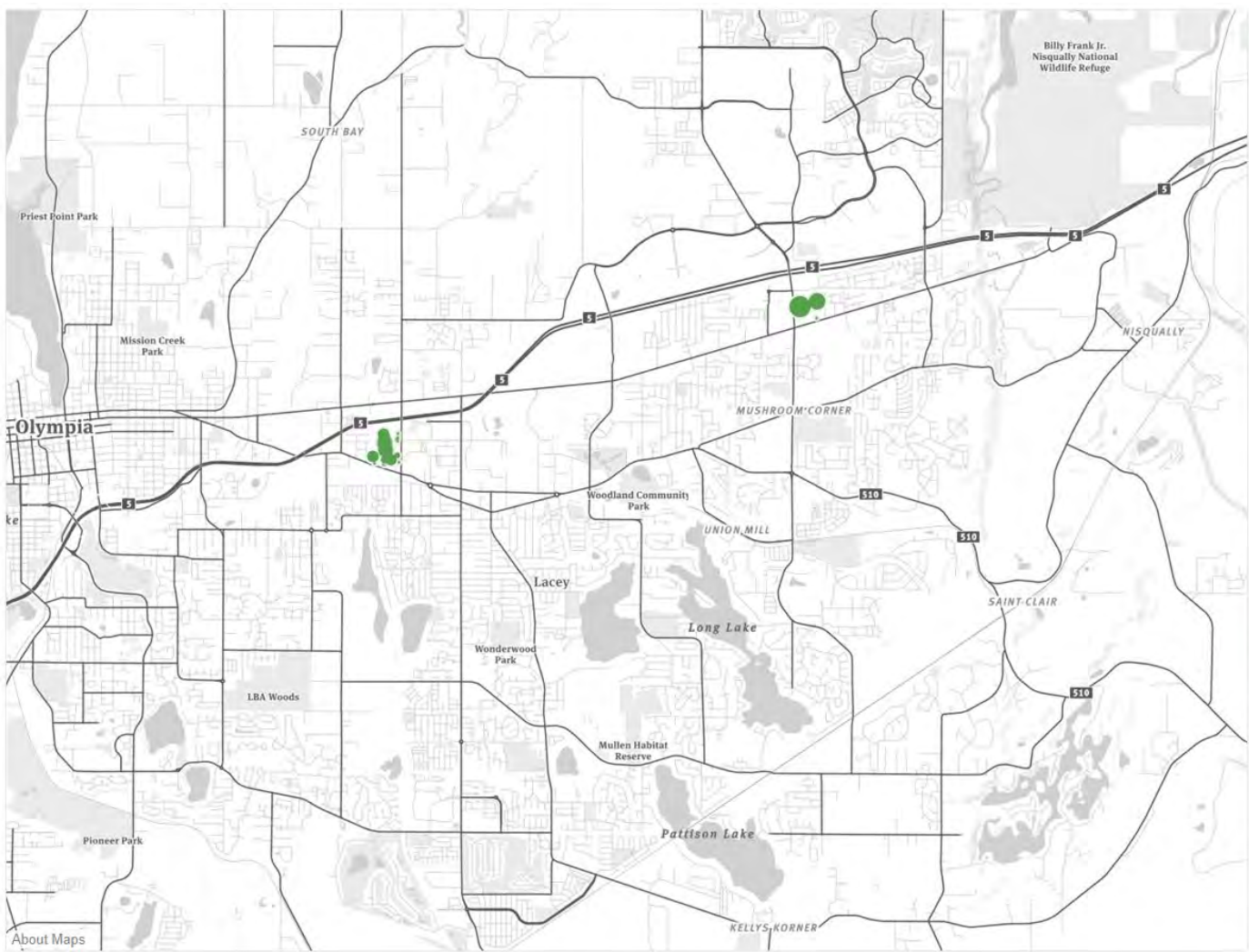


### Inventory Table

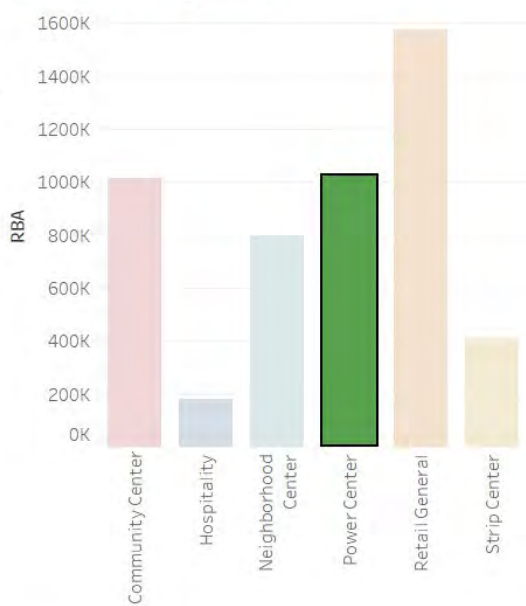
| Decade Built     | # Bldgs | RBA     |
|------------------|---------|---------|
| 1960-1969        | 5       | 72,445  |
| 1970-1979        | 3       | 161,087 |
| 1980-1989        | 7       | 130,416 |
| 1990-1999        | 8       | 126,451 |
| 2000-2009        | 17      | 186,775 |
| 2010-2019        | 10      | 108,404 |
| Planned/Proposed | 1       | 6,000   |

# Market Assessment Refresh

## Power Center



### Retail Categories



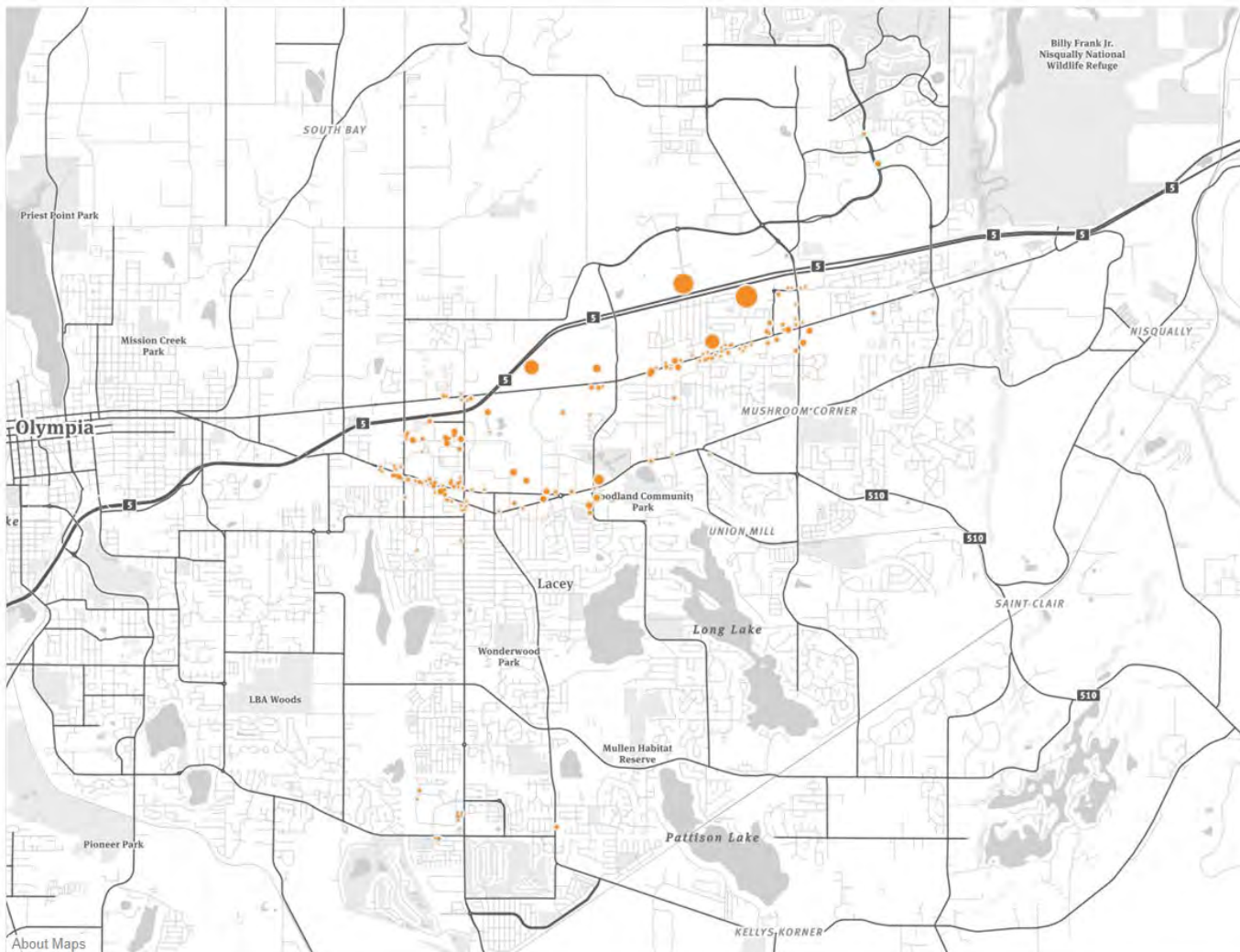
### Inventory Table

| Decade Built | # Bldgs | RBA     |
|--------------|---------|---------|
| 1960-1969    | 8       | 449,265 |
| 1990-1999    | 2       | 1,110   |
| 2000-2009    | 10      | 558,247 |
| Before 1960  | 1       | 5,359   |

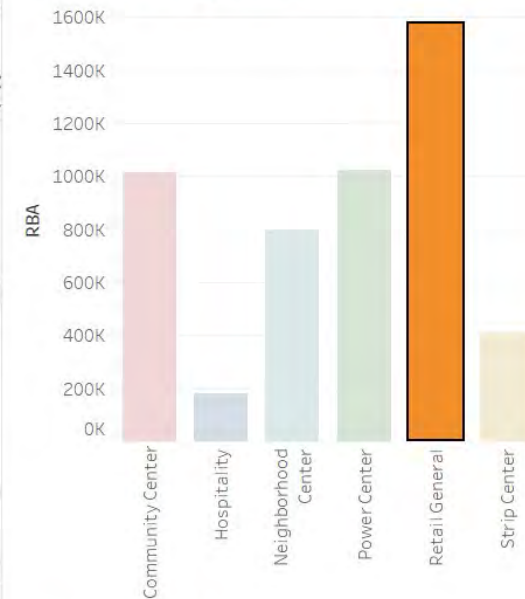


# Market Assessment Refresh

## Retail - General



### Retail Categories

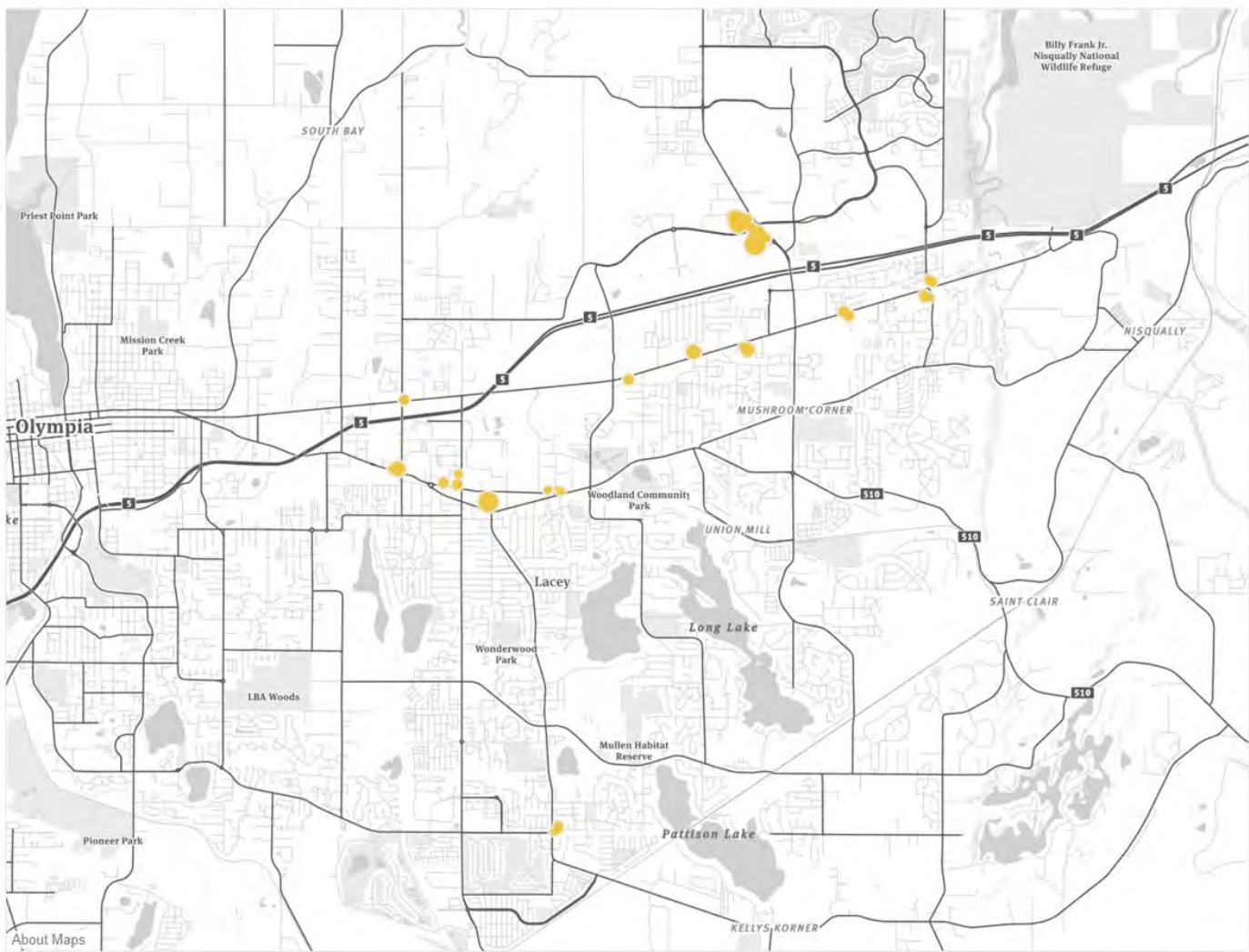


### Inventory Table

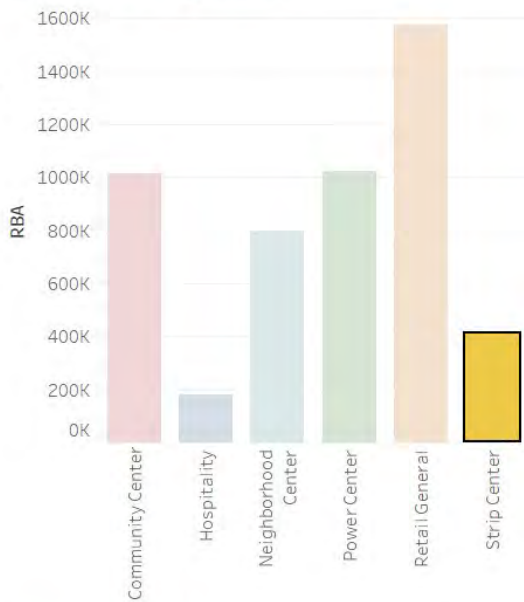
| Decade Built | # Bldgs | RBA     |
|--------------|---------|---------|
| 1960-1969    | 23      | 110,574 |
| 1970-1979    | 38      | 184,755 |
| 1980-1989    | 30      | 132,528 |
| 1990-1999    | 25      | 262,744 |
| 2000-2009    | 31      | 631,021 |
| 2010-2019    | 8       | 123,807 |
| Before 1960  | 28      | 74,784  |

# Market Assessment Refresh

## Strip Center



### Retail Categories



### Inventory Table

| Decade Built     | # Bldgs | RBA    |
|------------------|---------|--------|
| 1960-1969        | 1       | 18,348 |
| 1970-1979        | 4       | 61,369 |
| 1980-1989        | 4       | 20,467 |
| 1990-1999        | 4       | 31,549 |
| 2000-2009        | 9       | 78,297 |
| 2010-2019        | 3       | 23,885 |
| Before 1960      | 6       | 32,978 |
| Planned/Proposed | 3       | 37,600 |



February 28, 2020

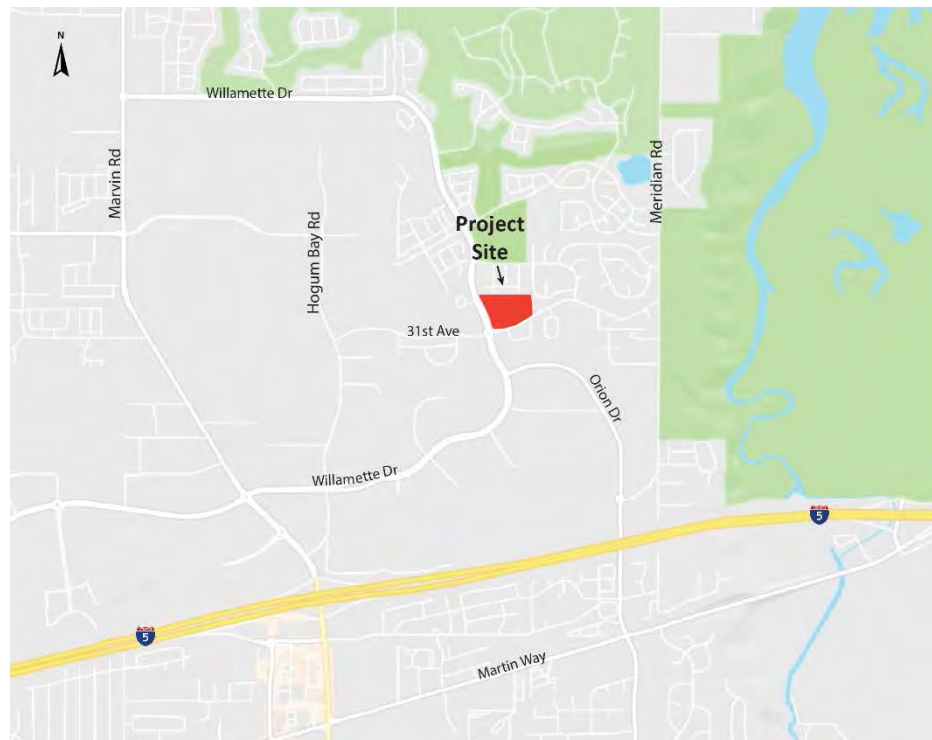
Jessica Brandt, Associate Planner  
Community & Economic Development Department  
City of Lacey  
420 College St SE  
Lacey WA 98503

Re: Vicwood Meridian Campus Comp Plan Amendment – Trip Generation Comparison  
SCJ Project #3298.01

Dear Jessica,

Vicwood Development Corp and Ever Success Inc. are proposing to redesignate an 11.51 acre parcel at the corner of 31st Ave NE and Willamette Dr NE in Lacey, Wa. The following trip generation comparison was prepared for the existing zoning and proposed zoning as requested by the City of Lacey. **Figure 1** illustrates the proposed rezone site vicinity.

**Figure 1. Site Vicinity Map**





## Project Description

The project includes redesignating an 11.51 acre parcel from Hawks Prairie Community Commercial District (CCD) to High Density (HD) Residential and Neighborhood Commercial (NC). Of the 11.51 acres of the property, 9.51 acres is proposed to be designated as HD residential, which would allow future multi-family development. The remaining 2 acres on the SW corner of the property is proposed to be designated as NC, which would allow future small scale convenience center and mixed-use residential units.

## Project Trip Generation

Trip generation calculations were performed using rates contained in the 10<sup>th</sup> edition of the Trip Generation Manual by the *Institute of Transportation Engineers (ITE)* for the AM peak hour, PM peak hour and daily. The zoning designations and build out scenarios are described below. For the AM and PM peak periods Peak Hour of Adjacent Street was used. When available the fitted curve equations were used if, per ITE guidance, the fitted curve equation had an  $R^2$  of at least 0.75.

### Existing Zoning Scenario

The site is currently zoned Hawks Prairie Community Commercial District (CCD). The land use category “Shopping Center” (land-use code 820) was used to estimate the existing trip generation. This category was selected because it represents a wide range of commercial developments. The PM peak hour and daily trip generation rates used were calculated by applying the fitted curve equation provided in the Trip Generation Manual. The site was estimated with a 25% buildout.

It is anticipated that a shopping center land use designation will attract some traffic from people already driving on the area roadways. These trips are not new trips added to the local roadways (primary trips) but represent “pass-by” trips according to the following definition:

*Pass-by trips:* Pass-by trips are trips made as an intermediate stop from an origin to a primary destination (i.e., stopping to shop on the way home from work) by vehicles passing directly by the project driveway.

The pass-by percentages used are 34% for the PM peak hour, which was taken from the 3<sup>rd</sup> edition of the Trip Generation Handbook by ITE. The Trip Generation Handbook does not contain pass-by information for daily and 20% was used.

The AM peak hour, PM peak hour and daily trip generation calculations are attached.

### Proposed Zoning Scenario

The proposed zoning for the site includes two separate zones: Neighborhood Commercial and High Density Residential.

A small portion of the site, totaling 2 acres, would be zoned Neighborhood Commercial. To be consistent with the existing zoning scenario the land use category “Shopping Center” was used for the 2 acres of neighborhood commercial. For this land use the PM peak hour and daily trip generation rates were calculated by applying the fitted curve equation provided in the Trip Generation Manual. This zoning scenario also estimated the site with a 25% buildout. As discussed above, the shopping center trip generation includes a pass-by percentage for the PM peak hour and daily volumes.





The remaining 9.51 acres of the site would be zoned High Density Residential. The land use category "Multifamily Housing Mid-Rise (land-use code 221) was used, which includes multifamily buildings between three and ten stories. For this land use the daily trip generation rate was calculated by applying the fitted curve equation provided in the Trip Generation Manual. The number of units assumed (288) was determined using 25 units per acre (238) for the high density portion and 50 units in the neighborhood commercial portion.

The AM peak hour, PM peak hour and daily trip generation calculations are attached.

### ***Trip Generation Comparison***

The existing and proposed zoning trip generation results are shown in tables 1, 2 and 3. **Table 1** shows the AM peak hour comparison, **Table 2** the PM peak hour comparison and **Table 3** the daily comparison.

**Table 1. AM Peak Hour Trip Generation Comparison**

| Alternative        | New-to-Network Volumes |           |          |
|--------------------|------------------------|-----------|----------|
|                    | Enter                  | Exit      | Total    |
| Existing Zoning    | 73                     | 45        | 118      |
| Proposed Zoning    | 39                     | 85        | 6        |
| <b>Trip Change</b> | <b>-34</b>             | <b>40</b> | <b>6</b> |

**Table 2. PM Peak Hour Trip Generation Comparison**

| Alternative        | New-to-Network Volumes |             |             |
|--------------------|------------------------|-------------|-------------|
|                    | Enter                  | Exit        | Total       |
| Existing Zoning    | 204                    | 220         | 424         |
| Proposed Zoning    | 133                    | 110         | 243         |
| <b>Trip Change</b> | <b>-71</b>             | <b>-110</b> | <b>-181</b> |

**Table 3. Daily Trip Generation Comparison**

| Alternative        | New-to-Network Volumes |              |              |
|--------------------|------------------------|--------------|--------------|
|                    | Enter                  | Exit         | Total        |
| Existing Zoning    | 2802                   | 2803         | 5605         |
| Proposed Zoning    | 1636                   | 1637         | 3273         |
| <b>Trip Change</b> | <b>-1166</b>           | <b>-1166</b> | <b>-2332</b> |



The estimated trip generation for the proposed zoning change shows a decrease in trips for the PM peak hour and daily new-to-network volumes. The AM peak hour shows a slight increase in total new-to-network trips.

If you have any questions or comments about the enclosed information, please contact me at (360) 352-1465.

Respectfully,  
SCJ Alliance

Ryan Shea  
Transportation Planner

Enclosures: Trip Generation Calculations



## Vicwood Meridian Campus Comp Plan Amendment

Trip Generation

### Existing Zoning

| PM Peak Hour Trip Generation |     |                 |              |         |           |              |     |             |     |       |         |       |                      |     |       |
|------------------------------|-----|-----------------|--------------|---------|-----------|--------------|-----|-------------|-----|-------|---------|-------|----------------------|-----|-------|
| Site Plan Description        | LUC | ITE Description | Variable     | Value   | Trip Rate | Distribution |     | Total Trips |     |       | Pass-By |       | New-to-Network Trips |     |       |
|                              |     |                 |              |         |           | In           | Out | In          | Out | Total | %       | Total | In                   | Out | Total |
| Commercial                   | 820 | Shopping Center | 1,000-sf gfa | 125.235 | 5.13      | 48%          | 52% | 308         | 334 | 642   | 34%     | 218   | 204                  | 220 | 424   |

Fitted Curve Equation for LU 820: 5.13

| AM Peak Hour Trip Generation |     |                 |              |         |           |              |     |             |     |       |         |       |                      |     |       |
|------------------------------|-----|-----------------|--------------|---------|-----------|--------------|-----|-------------|-----|-------|---------|-------|----------------------|-----|-------|
| Site Plan Description        | LUC | ITE Description | Variable     | Value   | Trip Rate | Distribution |     | Total Trips |     |       | Pass-By |       | New-to-Network Trips |     |       |
|                              |     |                 |              |         |           | In           | Out | In          | Out | Total | %       | Total | In                   | Out | Total |
| Commercial                   | 820 | Shopping Center | 1,000-sf gfa | 125.235 | 0.94      | 62%          | 38% | 73          | 45  | 118   | 0%      | 0     | 73                   | 45  | 118   |

| Daily                 |     |                 |              |         |           |              |     |             |       |       |         |       |                      |       |       |
|-----------------------|-----|-----------------|--------------|---------|-----------|--------------|-----|-------------|-------|-------|---------|-------|----------------------|-------|-------|
| Site Plan Description | LUC | ITE Description | Variable     | Value   | Trip Rate | Distribution |     | Total Trips |       |       | Pass-By |       | New-to-Network Trips |       |       |
|                       |     |                 |              |         |           | In           | Out | In          | Out   | Total | %       | Total | In                   | Out   | Total |
| Commercial            | 820 | Shopping Center | 1,000-sf gfa | 125.235 | 55.94     | 50%          | 50% | 3,503       | 3,503 | 7,006 | 20%     | 1401  | 2,802                | 2,803 | 5,605 |

Fitted Curve Equation for LU 820: 55.94

### Proposed Zoning

| PM Peak Hour Trip Generation |     |                                |                |        |           |              |     |             |            |            |         |       |                      |            |            |
|------------------------------|-----|--------------------------------|----------------|--------|-----------|--------------|-----|-------------|------------|------------|---------|-------|----------------------|------------|------------|
| Site Plan Description        | LUC | ITE Description                | Variable       | Value  | Trip Rate | Distribution |     | Total Trips |            |            | Pass-By |       | New-to-Network Trips |            |            |
|                              |     |                                |                |        |           | In           | Out | In          | Out        | Total      | %       | Total | In                   | Out        | Total      |
| Residential                  | 221 | Multifamily Housing (Mid Rise) | Dwelling units | 288    | 0.44      | 61%          | 39% | 77          | 50         | 127        | 0%      | 0     | 77                   | 50         | 127        |
| Commercial                   | 820 | Shopping Center                | 1,000-sf gfa   | 21.780 | 8.08      | 48%          | 52% | 84          | 92         | 176        | 34%     | 60    | 56                   | 60         | 116        |
| <b>Total</b>                 |     |                                |                |        |           |              |     | <b>161</b>  | <b>142</b> | <b>303</b> |         |       | <b>133</b>           | <b>110</b> | <b>243</b> |

Fitted Curve Equation for LU 820: 8.08

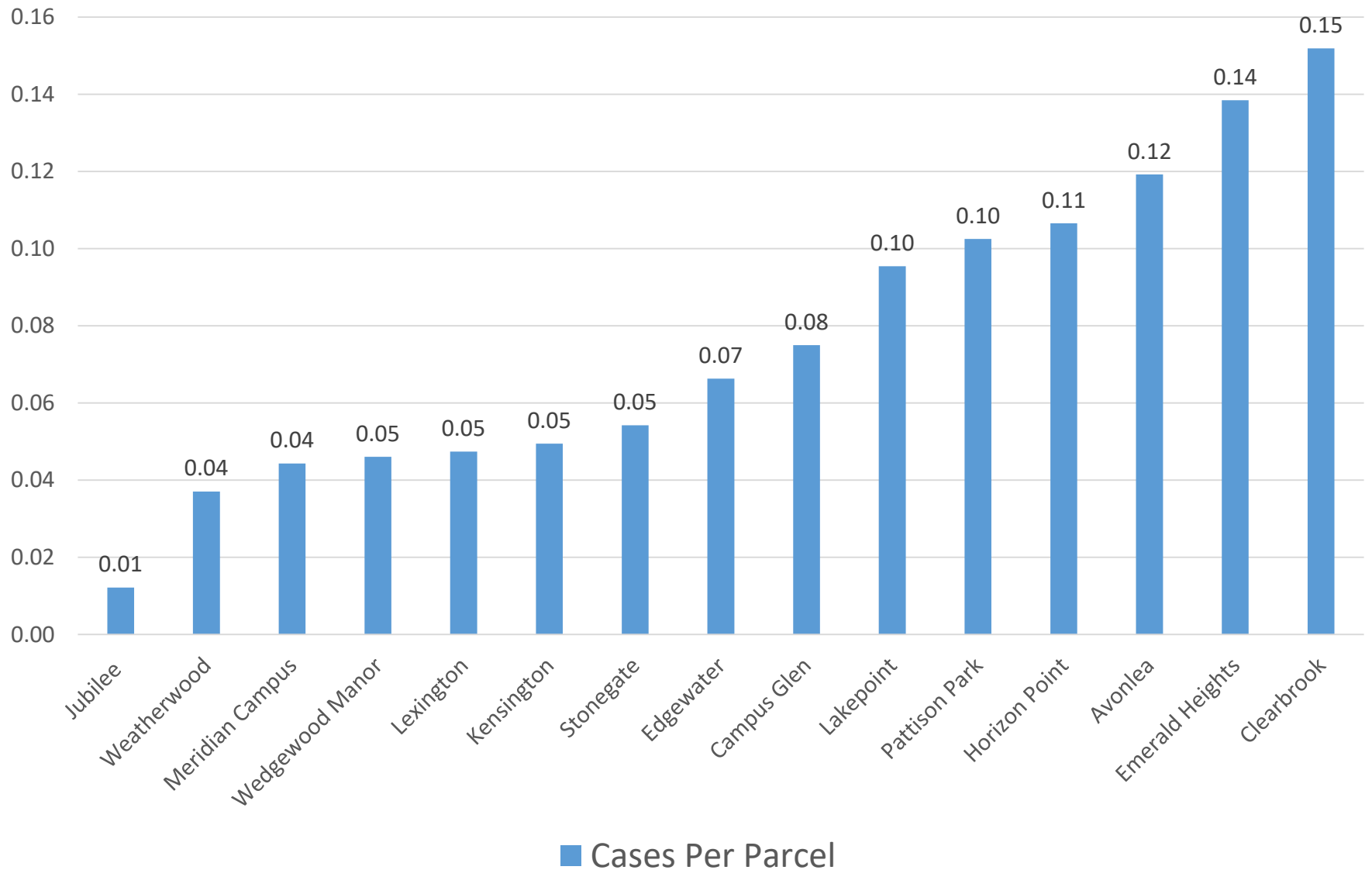
| AM Peak Hour Trip Generation |     |                                |                |        |           |              |     |             |           |            |         |       |                      |           |            |
|------------------------------|-----|--------------------------------|----------------|--------|-----------|--------------|-----|-------------|-----------|------------|---------|-------|----------------------|-----------|------------|
| Site Plan Description        | LUC | ITE Description                | Variable       | Value  | Trip Rate | Distribution |     | Total Trips |           |            | Pass-By |       | New-to-Network Trips |           |            |
|                              |     |                                |                |        |           | In           | Out | In          | Out       | Total      | %       | Total | In                   | Out       | Total      |
| Residential                  | 221 | Multifamily Housing (Mid Rise) | Dwelling units | 288    | 0.36      | 26%          | 74% | 27          | 77        | 104        | 0%      | 0     | 27                   | 77        | 104        |
| Commercial                   | 820 | Shopping Center                | 1,000-sf gfa   | 21.780 | 0.94      | 62%          | 38% | 12          | 8         | 20         | 0%      | 0     | 12                   | 8         | 20         |
| <b>Total</b>                 |     |                                |                |        |           |              |     | <b>39</b>   | <b>85</b> | <b>124</b> |         |       | <b>39</b>            | <b>85</b> | <b>124</b> |

| Daily                 |     |                                |                |        |           |              |     |              |              |              |         |       |                      |              |              |
|-----------------------|-----|--------------------------------|----------------|--------|-----------|--------------|-----|--------------|--------------|--------------|---------|-------|----------------------|--------------|--------------|
| Site Plan Description | LUC | ITE Description                | Variable       | Value  | Trip Rate | Distribution |     | Total Trips  |              |              | Pass-By |       | New-to-Network Trips |              |              |
|                       |     |                                |                |        |           | In           | Out | In           | Out          | Total        | %       | Total | In                   | Out          | Total        |
| Residential           | 221 | Multifamily Housing (Mid Rise) | Dwelling units | 288    | 5.44      | 50%          | 50% | 783          | 784          | 1,567        | 0%      | 0     | 783                  | 784          | 1,567        |
| Commercial            | 820 | Shopping Center                | 1,000-sf gfa   | 21.780 | 97.91     | 50%          | 50% | 1,066        | 1,066        | 2,132        | 20%     | 426   | 853                  | 853          | 1,706        |
| <b>Total</b>          |     |                                |                |        |           |              |     | <b>1,849</b> | <b>1,850</b> | <b>3,699</b> |         |       | <b>1,636</b>         | <b>1,637</b> | <b>3,273</b> |

Fitted Curve Equation for LU 820: 97.91

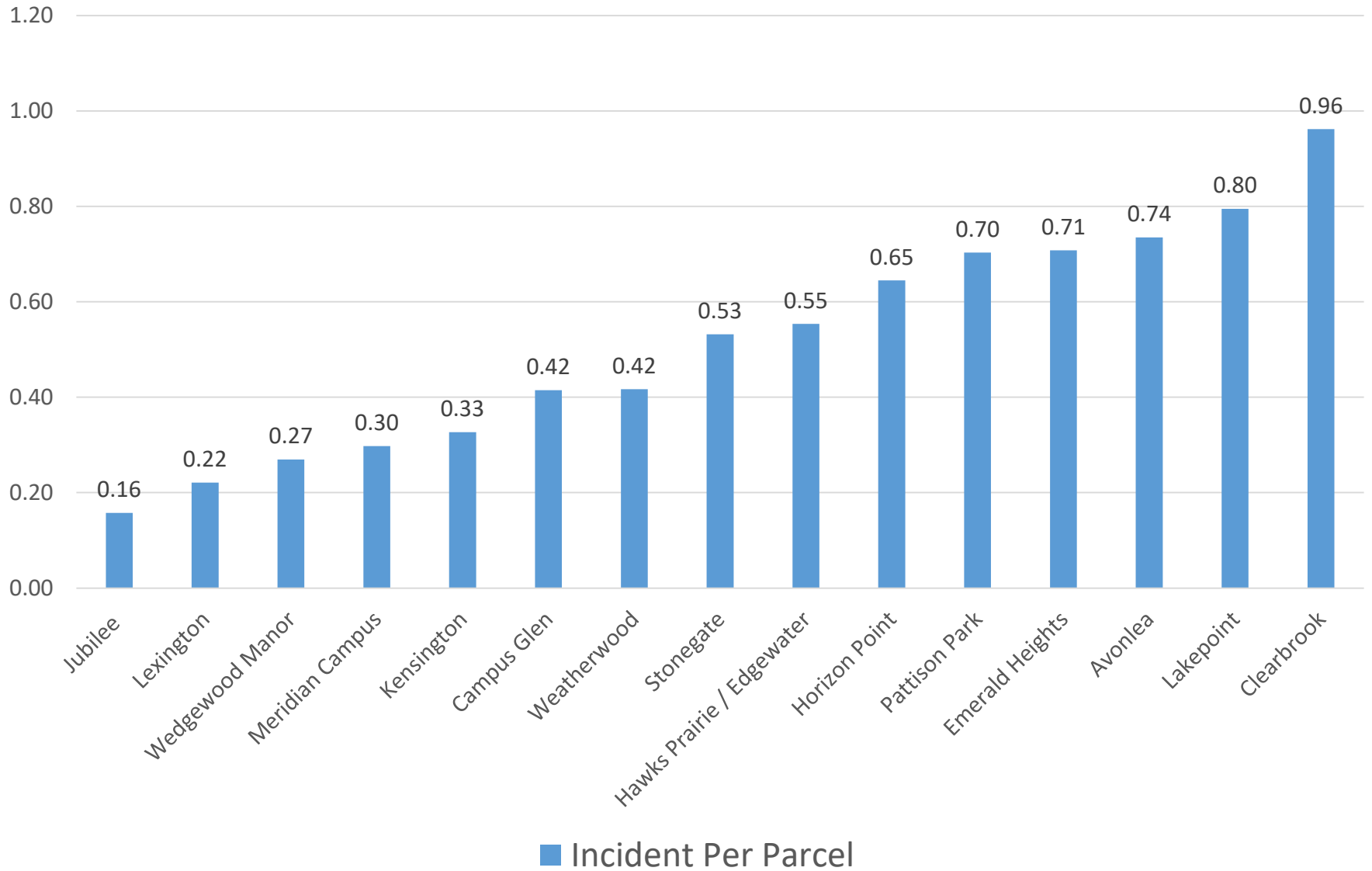
Fitted Curve Equation for LU 221: 5.44

# 2018 HOA CASES



Cases per parcel was calculated by total number of parcels including non dwelling.

# 2018 HOA INCIDENTS



Incidents per parcel was calculated by total number of parcels including non dwelling.

Incidents include calls to dispatch and officer initiated.



## Lacey Police Department citizen initiated calls for service and cases from 01/01/2020 to 09/10/2020



\*Calls - A citizen calls dispatch then an officer is assigned and responds to the call.

\*Cases - A call that subsequently turns into a report.



**From:** [Betty.Bee@comcast.net](mailto:Betty.Bee@comcast.net)  
**To:** [Jessica Brandt](#)  
**Subject:** Project #20-54  
**Date:** Wednesday, September 30, 2020 9:22:03 PM

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Do not amend the zoning for this project. Many of our forests and green belts in this residential area recently have been replaced with warehouses, a hospital, and storage yards. It's enough. I do not agree to having high density and commercial zoning adjacent to our neighborhood.

Betty Bradshaw  
3257 Jeri De NE  
Lacey, Washington 98516

Sent from Xfinity Connect App



## PLANNING COMMISSION STAFF REPORT

October 6, 2020

SUBJECT: OSG Properties, LLC Comprehensive Plan Amendment and Rezone Application. Project no. 19-370.

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RECOMMENDATION: Conduct a public hearing and make a formal recommendation to the City Council on the OSG Properties, LLC Rezone and Comprehensive Plan Amendment request. Staff recommends approval of the request.

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TO: Lacey Planning Commission

STAFF CONTACTS: Rick Walk, Director of Community and Economic Development  
Ryan Andrews, Planning Manager *RA*

ATTACHMENT(S): 1. OSG Properties, LLC CPA and Rezone Application  
2. Map of Existing Zoning and Aerial Photo

PRIOR COUNCIL/  
COMMISSION/

COMMITTEE REVIEW: Planning Commission Briefing June 16, 2020  
City Council/Planning Commission Joint Worksession January 23, 2020

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### I. GENERAL INFORMATION

#### **A. Applicant/Owner:**

OSG Properties, LLC; Lakeside Industries, Inc.; High Rimrock, LLC  
c/o Brandy Willie  
2514 South Bay Road NE  
Olympia, WA 98506

#### **B. Action:**

Designation of ten parcels from Hawks Prairie Business District-Business Commercial (HPBD-BC), Mineral Extraction, and Low Density Residential 3-6 to Light Industrial/Commercial (LI/C) on the Comprehensive Land Use Plan and Zoning map.

#### **C. Proposal Description:**

This is a non-project action to designate ten parcels totaling approximately 60 acres that are currently a mixture of undeveloped properties and small warehouses located along Carpenter Road NE between Interstate 5 and Britton Parkway NE. The eastern side of Carpenter Road NE is currently zoned Hawks Prairie Business District-Business Commercial

and the parcels west of Carpenter Road are zoned both Mineral Extraction and Low Density Residential 3-6. The application is to rezone these parcels to Light Industrial/Commercial.

Please see attached application for amendment to the Comprehensive Land Use Plan and Zoning map.

**D. Legal Description**

See attached application packet for legal description.

**E. Location:**

The location of the proposal is generally both sides of Carpenter Road NE between Interstate 5 and Britton Parkway NE. The proposal contains various addresses including but not limited to 1180, 1525, 1543, 1601, 1755 Carpenter Road NE; and 1387 and 1311 Sandy Lane NE.

**F. Site Information**

Project size: approximately 60 acres

Site Access: Carpenter Road NE and Britton Parkway NE

Water: City of Lacey

Sewer: City of Lacey

Power/Natural Gas: Puget Sound Energy

Fire Protection: Lacey Fire District # 3

**G. Reason for Request:**

The purpose of the request is to consider rezoning the property to Light Industrial Commercial to provide more flexibility for future development of the property as the Light Industrial/Commercial zone allows for a broader variety of uses than the Hawks Prairie Business District zone. The existing Mineral Extraction zone is limited to uses only related to mining. Since the mining operations have ceased in this area, this would be an opportunity to establish a more appropriate zone for the area. A rezone of the property would also provide a transition between the existing Hawks Prairie Business District and the residential areas to the west and north. Additionally, the request would also meet the City's goals for economic development related to developing more properties to accommodate smaller-footprint light industrial users in the Hawks Prairie Planning Area.

**H. Existing Zoning**

Hawks Prairie Business District Commercial and Business Commercial (HPBD-C/BC): This designation implements goals of the Northeast Area Plan with opportunity for mixed use development in a planned approach, promoting retail commercial and business commercial uses.

Mineral Extraction: The Mineral Extraction zone allows previously existing mineral extraction (mining) activities. The focus of this zone is to provide for the orderly planning for future use of mineral extraction sites at such time as the mineral resources are exhausted or their extraction ceases to be economically justified.

Low Density Residential 3-6: This zone permits single-family structures on individual lots with a density between three and six units per acre.

### **I. Proposed Zoning**

Light Industrial Commercial (LI/C): This designation implements the policies of the Land Use Element for light industrial/commercial areas in the Hawks Prairie Planning Area and promotes job generation consistent with the City's Economic Development Element. The designation permits compatible commercial and light industrial activities within the same area.

## **II. LAND USE OF THE SUBJECT SITE AND SURROUNDING AREA**

### **Existing Land Use and Ownership Patterns:**

#### **Subject Site:**

The subject property is currently a mixture of undeveloped properties and small warehouses that are located along both sides of Carpenter Road NE. The area to the west of Carpenter Road is a former mine site owned by Lakeside Industries and is zoned both Mineral Extraction and Low Density 3-6. The mineral resources have been extracted and the property would support more economically beneficial uses. The area zoned Low Density 3-6 contains mostly steep slopes that have remained after mining has ceased and would be unlikely to develop for residential uses because of the slopes and limited access.

The property to the east of Carpenter Road have developed with small warehouses that contain a number of small businesses. Most of the small businesses have a focus on supporting land development and utilities and provides support to the Miles Sand and Gravel site further to the east.

#### **Surrounding Properties:**

The surrounding properties have a mixture of zoning with properties to the south of Interstate 5 are zoned Central Business District 6, properties to the west (owned by Miles Sand and Gravel) are zoned Hawks Prairie Business District Business Commercial, and the properties to the north and east are zoned residential. The proposed rezone request will be complementary and consistent with these surrounding zones and land uses and would serve as a transition between the residential areas to the west and the Hawks Prairie Business District to the east.

## **III. ENVIRONMENTAL DETERMINATION:**

A Determination of Nonsignificance (DNS) was issued on March 19, 2020. Based upon information contained in the environmental checklist, the sites expected designation, and development of the site in any capacity would not have significant impacts to the environment. The DNS had a 14-day comment period, which ended on April 2, 2020. The City did not receive

any comments from the public and received one comment from the Washington State Department of Ecology related to potential soil/ground water contaminants present on the subject property; therefore, the DNS became final on April 2, 2020. A determination of environmental non significance granted by the responsible official fulfills the City's requirements for environmental review under RCW 43.21.C.

#### **IV. APPLICABLE COMPREHENSIVE GOALS AND POLICIES/LONG RANGE PLANNING ISSUES:**

The Comprehensive Plan has three elements that can be used as a guide for consideration of this application. The three Elements are the Land Use Element, Northeast Area Plan, and the Economic Development Element.

##### **A. Land Use Element**

Goal 1: Designate an adequate supply of land for high quality commercial uses based on appropriate site characteristics, community needs, and adequacy of facilities and services.

Policy E: Review existing land use designations and standards and revise as necessary to provide for projected and desired job opportunities and uses.

Goal 3: Encourage and promote the development of high quality industrial development

Policy A: Designate an adequate supply of land for high quality industrial uses based on appropriate site characteristics, anticipated need, and adequacy of facilities and services.

Policy F: Industrial uses should be located, designed, built, landscaped, operated, and maintained to ensure compatibility with nearby land uses.

The Hawks Prairie Planning Area section of the Land Use Element also addresses the request by stating:

Goal 3: Support the Hawks Prairie Area as a local hub for light industrial development and employment center.

Policy A: Support building square footages that encourage a broad range of users provided that appropriate requirements for multiple building complexes, design review, and compatibility with adjacent residential areas are addressed.

##### **B. Northeast Area Plan**

The Northeast Area Planning Element, a sub-area plan completed in the early 1990's for the Hawks Prairie Area, contains several policies that address this request that support a mix of commercial and industrial uses:

Northeast Area Planning Element, Commercial Goals and Policies:

Goal: To encourage commercial uses which meet the everyday service and convenience needs of the study area and of the service area in eastern Thurston and southern Pierce Counties.

Policies:

4. Retail/commercial centers should incorporate and include a wide range of activities.

Northeast Area Planning Element, Industrial Goals and Policies:

Goal: To encourage industrial development and a diversified economic base by the location of industrial uses in areas where they can be adequately and efficiently served by circulation and utilities, and where they will create no significant adverse environmental impact.

Policies:

2. Traffic access should be designed to contain heavy traffic within the industrial and commercial areas and away from the residential areas.
3. Industrial areas should be located where they can be adequately and most efficiently served by necessary utilities.

### **C. Economic Development Element**

The proposal is consistent with the policies of the Economic Development Element which sets forth policies for diversification of sales tax base and employment opportunities to support this area of Lacey:

Goal 1: Lacey Values a Thriving and Sustainable Business Environment—Lacey believes that land uses, environmental stewardship, job creation, and a thriving economy are inextricably linked. By maintaining a high quality of life for citizens, Lacey attracts a skilled workforce, which attracts the quality job-creating businesses needed for a thriving economy.

Goal 2: Lacey is Business Ready—The economic needs of Lacey’s citizens are met because Lacey is prepared to meet the needs of all of its business customers.

Policy A: Ensure an adequate supply of developable, appropriately-zoned land is available to meet the various uses needed by Lacey businesses now and in the future.

## **V. STAFF ANALYSIS**

The Land Use Element, Northeast Area Plan and the Economic Development Elements of the Comprehensive Plan contain goals and policies that support the request. A major emphasis of the Plan is job creation and economic diversification, especially in the Hawks Prairie Planning Area. The proposal is aligned with both of these objectives. Additionally, the request would



also meet the City's goals for economic development related to developing more properties to accommodate smaller-footprint light industrial users in the Hawks Prairie Planning Area.

Rezoning the area west of Carpenter Road would address the lack of flexibility of the existing Mineral Extraction zone. This area, the only Mineral Extraction zone in the city limits, only allows for uses related to mining. Since the mining resources have been exhausted, the zoning should reflect a higher use. The existing Low Density 3-6 zone on the western edge of the Mineral Extraction zone is not feasible due to slopes and the lack of access to this area. Approximately 12 of the 60 acres along the western edge of the area proposed for rezone has limited development capacity because of slope and access issues.

Rezoning the area east of Carpenter Road from Hawks Prairie Business District-Business Commercial to Light Industrial/Commercial would support the continuation and potential expansion of existing small businesses located within the existing small warehouse buildings. These businesses are located in buildings that would not comply with the design standards currently required within the Hawks Prairie Business District zone and are limited in their ability to expand.

The primary difference between the Hawks Prairie Business District and Light Industrial/Commercial zones is that the Light Industrial/Commercial zones is intended as a primarily industrial zone that allows commercial uses compatible with the industrial activities. Therefore, the permitted uses within the Light Industrial/Commercial zone include activities such as the assembly of manufactured products and the processing of materials, warehousing and storage, as well as a full array of general commercial uses. Residential uses are not allowed within the Light Industrial/Commercial zone. The Hawks Prairie Business District zone does not allow for industrial uses but does allow for an array of commercial and service-related uses as well as allowing residential uses.

The Hawks Prairie Business District also has distinct design review standards. The Light Industrial/Commercial district does not contain specific standards, however, any project is required to adhere to the design review provisions contained in Lacey Municipal Code 14.23. While rezoning this acreage will not preclude some retail uses, it would remove it from the types of retail uses, with the high design standards that were originally envisioned for this area.

An analysis of current market demand and absorption have been provided by the applicant in the application materials and has been verified by city staff. Several times over the last number of years, staff has worked with businesses and business owners seeking to purchase small commercial properties or land, and have been unable to find any with suitable zoning for sale. Several users and potential users that fall within the Light Industrial/Commercial allowed uses have been unable to find space of appropriate size for lease. There is a documented need for more available sites with this zoning. This rezone will still leave more than 400 acres of HPBD-BC and HPBD-C vacant land available for development, most of which is already assembled into large contiguous parcels under the ownership of two major owner/developers.

Rezoning these parcels to Light Industrial/Commercial will afford the property owner with flexibility of uses and will allow a full range of development options including both commercial and industrial uses. The 2016 Land Use Element focuses on the need for an adequate supply of land uses to support opportunities for economic development.

Both Carpenter Road NE and Britton Parkway NE are designated as arterials by the “Functional Classification Map” within the *2030 Transportation Plan*. Carpenter Road NE is currently a two-lane road with very little improvement other than a two-lane paved section. As properties develop, they will be required to dedicate right-of-way and ultimately develop the improvements necessary for an arterial including additional travel lanes, bike lanes, planter strips, and sidewalk improvements. A City project to install these improvements are identified in the 2020 Six Year Transportation Improvement Program (TIP). Britton Parkway NE west of Carpenter Road has limited improvements outside of the two travel lanes. East of Carpenter Road, the street frontage includes travel lanes, bike lanes, grassy swale, and sidewalks. The ultimate improvement to this section of Britton Parkway will include an additional travel lanes and planter strips. A future roundabout is currently in design phase at the intersection of Britton Parkway and Carpenter Road.

The *Northeast Area Planning Element*, a sub-area plan completed in the early 1990’s for the Hawks Prairie Area, identifies a future interchange for Interstate 5 at Carpenter Road. The success of the existing Hawks Prairie Business District designation would depend largely on the construction of an interchange to support the types of commercial uses envisioned in the Plan. Because of the lack of an interchange, allowing a more flexible zoning designation would allow the properties to develop for more small scale industrial and commercial uses that would not depend on the regional traffic an interchange would provide. The transportation system in the area supports the proposed Light Industrial/Commercial designation.

City utilities are adjacent to the site and will be extended to be served at the time of the development. Water lines are available within the right-of-way for both Carpenter Road and Britton Parkway and range from 12 to 16 inches in diameter. A sewer main ranging from 10 to 18 inches is located in Carpenter Road and the portion of Britton Parkway east of Carpenter. These utilities were installed as part of the utility local improvement district (ULID) that installed the infrastructure to service the future development of northeast Lacey in the mid-1990’s. The proposed rezone would be adequately served by the existing utilities.

## **VI. PLANNING COMMISSION AUTHORITY AND RESPONSIBILITY**

The Planning Commission has the responsibility and authority to recommend action to the Lacey City Council on the proposed Comprehensive Land Use Plan amendment and rezone application. The Planning Commission must hold at least one public hearing on the proposal. Based upon public comments, staff analysis, review of the Comprehensive Land Use Plan, and other applicable information, the Commission must make a recommendation to the Lacey City Council as to the merits of the application and the designation the Planning Commission believes is in the public's best interest.

## **VII. STAFF FINDINGS AND CONCLUSIONS:**

- A. The Land Use Element and Economic Development Element identify the need for land resources to support job creation and employment diversification within the Hawks Prairie Planning Area.
- B. The Light Industrial/Commercial zoning designation will be consistent with the surrounding properties and will act as a logical transition between the Hawks Prairie Business District zone to the east and the residential areas to the north and west.
- C. The Light Industrial/Commercial zone provides a wide range of uses and flexibility that support future development opportunities to support the Hawks Prairie Planning Area.
- D. The property's location could support commercial and small light industrial employers to serve the growing residential areas in this portion of the Hawks Prairie Planning Area.
- E. The property is adequately served with City utilities and will extend utilities throughout the property as a condition of development.
- F. The location is well-served with transportation connections to Carpenter Road NE and Britton Parkway NE. Even though the properties are located close to Interstate 5, access to the interstate will be unlikely for some time. Without connection to the interstate, it is likely that the properties will develop for local small business and warehouse users that the Light Industrial/Commercial zone would support.

## **VIII. STAFF RECOMMENDATION CONCERNING ACTION ON THE PROPOSED COMPREHENSIVE PLAN AMENDMENT APPLICATION**

Based upon the analysis provided in this report, and the conclusions and findings identified in section VII of this report, staff recommends approval of the change from Hawks Prairie Business District-Business Commercial, Mineral Extraction, and Low Density Residential 3-6 to Light Industrial/Commercial.

## **IX. STAFF RECOMMENDATION CONCERNING ACTION ON THE PROPOSED ZONING AMENDMENT APPLICATION**

Based upon the analysis provided in this report and the conclusions and findings identified in section VII of this report, staff recommends the change from Hawks Prairie Business District-Business Commercial, Mineral Extraction, and Low Density Residential 3-6 to Light Industrial/Commercial for the subject properties. An additional finding is proposed for the zoning designation that designation of the zone as Light Industrial/Commercial is consistent with the change to the Comprehensive Land Use Plan map.



**CITY OF LACEY**  
Community & Economic Development Department  
420 College Street SE  
Lacey, WA 98503  
(360) 491-5642

**OFFICIAL USE ONLY**

Case Number: \_\_\_\_\_

Date Received: \_\_\_\_\_

By: \_\_\_\_\_

Related Case Numbers:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## **COMPREHENSIVE PLAN AMENDMENT GENERAL APPLICATION**

**OWNER NAME:** OSG Properties, LLC.; Lakeside Industries, Inc.; High Rimrock LLC

**MAILING ADDRESS:** c/o OSG Properties LLC; 2514 South Bay Rd. NE

**CITY, STATE, ZIP:** Olympia, WA 98506

**TELEPHONE:** 360-789-9314

**APPLICANT NAME: \*** Brandy Willie

**MAILING ADDRESS:** 2514 South Bay Rd. NE

**CITY, STATE, ZIP:** Olympia, WA 98506

**TELEPHONE:** 360-789-9314

**ADDRESS OF PROPOSAL:** 1180, 1525, 1543, 1601, 1755 Carpenter Road, NE // 1387, 1311 Sandy Ln. NE,  
and 6298 Gravel Lane NE

\* The applicant is the person whom staff will contact regarding the application, and to whom all notices, and reports shall be sent, unless otherwise stipulated by the applicant.

### **GENERAL DESCRIPTION OF PROPOSAL**

This proposal seeks an amendment to the Lacey Comprehensive Plan and Zoning Code to rezone multiple parcels totaling approximately 57.22 acres. The proposal seeks for the parcels (currently zoned as HPBDBC, ME, and LD 3-6) to be zoned as light industrial/commercial.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**GENERAL LOCATION OF PROJECT** (Give street address or, if vacant, indicate lot(s), block and subdivision; or tax lot number, access street, and nearest intersection.) Carpenter Road NE and Britton Parkway NE

**SECTION:** 9 / 10 **TOWNSHIP:** 18 **RANGE:** 1W

**ASSESSOR'S TAX PARCEL NUMBER:** 11809140300; 11810230101; 11810230103; 11810230102; 11810320200; 11810320104; 11810320103; 11810320102; 11810320100; 11810230100; 11810230105

**FULL LEGAL DESCRIPTION OF SUBJECT PROPERTY** (attach additional sheet if necessary): See attached sheet

#### COMPREHENSIVE PLAN, ZONING, AND LAND USE ISSUES

**CURRENT ZONE CLASSIFICATION:** HPBDBC, ME, and LD 3-6

**COMPREHENSIVE DESIGNATION:** HPBDBC, ME, and LD 3-6 in Hawks Prairie & Pleasant Glade Planning Areas

**CURRENT LAND USE AND IMPROVEMENTS:** Warehouses, mining, and gravel storage

**PAST LAND USE OR HISTORY:** Warehouses, mining, and gravel storage

**CURRENT COMPREHENSIVE PLAN LANGUAGE** (if applicable): See pages 5-1 to 5-9 of the Lacey Comprehensive Plan.

**REQUESTED NEW COMPREHENSIVE PLAN LANGUAGE** (if applicable): In the Acreage section on page 5-2 of the comprehensive plan, the acreage amounts for each zone will need to be amended to reflect this zoning amendment.

**DOES THE PROPOSED AMENDMENT AFFECT BOTH THE CITY AND THURSTON COUNTY?**

**(PLEASE EXPLAIN):** All of the applicable land has been annexed into the City of Lacey and is within the Thurston County Urban Growth Area. No specific project is proposed for these parcels. Therefore, this proposed amendment is not anticipated to affect Thurston County.

**WAS THIS ISSUE, OR PROPERTY AND ITS DESIGNATION, DISCUSSED DURING THE COMPREHENSIVE PLAN DEVELOPMENT, REVIEW, AND ADOPTION PROCESS? IF SO, PLEASE EXPLAIN:**

Unknown. No other comprehensive plan proposals have been identified for this property.

**IS THE PRESENT COMPREHENSIVE PLAN LANGUAGE, OR DESIGNATION AND ITS RELATED ZONING, THE RESULT OF A MISTAKE? WHAT KIND OF MISTAKE (i.e., mapping, typographic)? PLEASE EXPLAIN:**

To our knowledge, the present comprehensive plan language was not the result of a mistake.

**IF THE AMENDMENT IS A MAP AMENDMENT, HOW MANY ACRES OF DEVELOPED AND UNDEVELOPED PROPERTY IN THE LACEY GROWTH AREA ALREADY EXIST IN THIS DESIGNATION?**

**DEVELOPED:** approx 54-55 acres      **UNDEVELOPED:** approx 2-3 acres

**HOW WILL THE AMENDMENT CHANGE THIS?** The amendment will not change this because it does not propose any development

**IS THERE A DEMONSTRATED NEED FOR THIS CHANGE AND IS IT A WISE ALLOCATION OF LAND RESOURCES? PLEASE EXPLAIN:**

The City of Lacey has demonstrated a need for additional light industrial-commercial areas. This change is proposed to create more flexibility for this land to allow for further development consistent with the adjacent land.

**EXPLAIN THE NEED FOR CHANGE AND HOW THE AMENDMENT IS CONSISTENT WITH THE FOLLOWING:**

- **State Growth Management Act (GMA):**
- **County-Wide Planning Policies (CWPP):**
- **Lacey Comprehensive Plan:**
- **Regional Transportation Plan:**
- **Other Applicable City Plans or Documents:**
- **Neighboring Jurisdictions' Comprehensive Plan (where your proposal affects multiple jurisdictions, for example; Olympia or Tumwater).**

See attachment for responses to this question.

### UTILITIES AND ROADS

WATER SUPPLY (name of utility if applicable): City of Lacey

☒ EXISTING     ☐ PROPOSED

SEWAGE DISPOSAL (name of utility if applicable): Septic

☒ EXISTING     ☐ PROPOSED

ACCESS (name of street(s) from which access will be gained): Carpenter Road

### SUPPLEMENTAL INFORMATION

THIS APPLICATION MUST BE ACCOMPANIED BY THE FOLLOWING INFORMATION:

- 1- A complete list of all property owners and addresses as listed of the Thurston County Assessor within a 300-foot radius of the external boundaries of the subject property.
- 2- A site plan drawing or drawings at a scale of not less than one inch for each two hundred feet which shall include or show:
  - a. The boundaries of the property;
  - b. Size of property impacted by amendment;
  - c. Location of existing natural features, such as trees, streams, or lake frontages.
- 3- Environmental checklist.
- 4- Supplemental information and/or special reports may be required including:
  - a. Environmental sensitive areas and issues;
  - b. Traffic impacts;
  - c. Other.

### INITIATED BY:

☐ Planning Commission. Date of Initiation: \_\_\_\_\_

☐ City Council. Date of Initiation: \_\_\_\_\_

☒ Property owners as follows:

I (We) understand and agree with the above explained need for the map change and are current owners of the property within the City of Lacey.



Brandy Willie

Signature

Printed Name

ADDRESS: 6282 Gravel Lane NE



Michael Lee

Signature

Printed Name

ADDRESS: 1525, 1601, & 1755 Carpenter Road NE (Parcels 11810320200, 11810230103, 11810230101, 11809140300)



Roy Slaybaugh

Signature

Printed Name

ADDRESS: 1547 Carpenter Road NE

Signature

Printed Name

ADDRESS: \_\_\_\_\_



# ADJACENT PROPERTY OWNERS LIST

**PROJECT:** Carpenter Road Rezone

**PLEASE SUBMIT AN ADJACENT PROPERTY OWNERS MAILING LIST**

**Include all property owners within 300 feet of exterior boundary  
of the property involved.**

**Addresses are to be obtained from:**

**Office of County Assessor, Bldg #1, First Floor. Phone: 786-5410**

**\* \* \* Please be sure to also include the mailing information for the:  
OWNER, APPLICANT, ENGINEER/ARCHITECT & REPRESENTATIVE.**

**SEE EXAMPLE BELOW**

|                                                        |
|--------------------------------------------------------|
| SAMPLE<br>Joe Jones<br>PO Box 1900<br>Lacev. WA. 98503 |
|--------------------------------------------------------|

**EXPLAIN THE NEED FOR CHANGE AND HOW THE AMENDMENT IS CONSISTENT WITH THE FOLLOWING:**

- **State Growth Management Act (GMA):**

- Under the Growth Management Act (GMA), any amendment or revision to a comprehensive land use plan (such as this non-project action) must conform to the GMA. See RCW 36.70A.040. Additionally, comprehensive plans of cities and counties must be consistent with the plans of other cities and counties. RCW 36.70A.100.

As explained below, this non-project proposal is in conformance with the Lacey Comprehensive Plan and the Countywide Planning Policies. This comprehensive plan amendment would ensure continued consistency with County plans. Additionally, by following the proper procedure in applying for this non-project action, this proposal is advancing in conformance with the GMA.

- Regarding natural resource lands, the GMA states: "...Such regulations shall assure that the use of lands adjacent to agricultural, forest, or mineral resource lands shall not interfere with the continued use, in the accustomed manner and in accordance with best management practices, of these designated lands for the production of food, agricultural products, or timber, or for the extraction of minerals." RCW 36.70A.060. The light industrial/commercial zone will allow the continued mining activity at the site, and ensure that adjacent activities will not interfere with the continued use. The Light Industrial/Commercial zone will also allow flexibility of uses in the area, while maintaining consistency with the current and future uses proposed for the site.
- The GMA states at RCW 36.70A.110(2): "(2) Based upon the growth management population projection made for the county by the office of financial management, the county and each city within the county shall include areas and densities sufficient to permit the urban growth that is projected to occur in the county or city for the succeeding twenty-year period, except for those urban growth areas contained totally within a national historical reserve. As part of this planning process, each city within the county must include areas sufficient to accommodate the broad range of needs and uses that will accompany the projected urban growth including, as appropriate, medical, governmental, institutional, commercial, service, retail, and other nonresidential uses."

This non-project proposal will support the City's efforts to include areas that permit projected urban growth but that is also sufficient to accommodate the broad range of needs and uses that will accompany the projected growth. The Light Industrial/Commercial zone will allow flexibility in uses, which will provide property owners with greater opportunities to accommodate the local needs now and into the future.

The City of Lacey has a current need for limited light industrial and commercial uses to address existing and anticipated demand.

- **County-Wide Planning Policies (CWPP):**

Thurston County developed its County-Wide Planning Policies in coordination with seven cities and towns within Thurston County. This non-project proposal is particularly consistent with the CPPs because:

- General Policy 1.1 is to "Balance our needs today with those of future residents, protect and enhance quality of life and in recognition that each generation is a trustee of the environment for succeeding generations."

This non-project proposal allows for some continued similar uses at the site (mining and light industrial use), with the recognition that future needs in the area will require additional commercial uses. The Light Industrial/Commercial zone is the perfect example of allowing continued uses while also preparing for the future.

- Economic Development and Employment Policy 7.1 "Encourage an economy that is diverse, can adapt to changing conditions, and takes advantage of new opportunities."

As mentioned above, the Light Industrial/Commercial zone would provide more flexibility for the current property owners to adapt their sites to changing conditions in the area.

- Lacey Comprehensive Plan:
  - Page 5-1 of the Lacey Comprehensive Plan states: “Currently, [Hawks Prairies’] primary function could be characterized as a mix of residential and light industrial uses. Now that these areas have been largely constructed, the future land use trends will be for commercial services to serve these new residential areas and job centers.”
  - This proposal would change the zoning of properties to Light Industrial-Commercial, which will allow for some continuation of light industrial uses but also allow for commercial services which were anticipated to meet future trends.
- Regional Transportation Plan:
  - This non-project proposal is not seeking any changes to the uses of property at this time.
- Other Applicable City Plans or Documents:
  - No other applicable city plans or documents are relevant to this non-project review at this time.
- Neighboring Jurisdictions’ Comprehensive Plan (where your proposal affects multiple jurisdictions, for example; Olympia or Tumwater).
  - This proposal should not affect multiple jurisdictions. It is located wholly within the City of Lacey boundaries.



**CITY OF LACEY**  
Community & Economic Development Department  
420 College Street SE  
Lacey, WA 98503  
(360) 491-5642

## REZONE APPLICATION

### OFFICIAL USE ONLY

Case Number: \_\_\_\_\_

Date Received: \_\_\_\_\_

By: \_\_\_\_\_

Related Case Numbers: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

OWNER NAME: OSG Properties, LLC.; Lakeside Industries, Inc.; High Rimrock LLC

MAILING ADDRESS: c/o OSG Properties LLC; 2514 South Bay Rd, NE

CITY, STATE, ZIP: Olympia, WA 98506

TELEPHONE: 360-789-9314

|                       |                       |
|-----------------------|-----------------------|
| _____                 | DATE: _____           |
| <u>Michael J. Lee</u> | DATE: <u>3/5/2020</u> |
| <u>Don Hartman</u>    | DATE: <u>3/6/2020</u> |
| <u>Brandy Willie</u>  | DATE: <u>3/6/2020</u> |

### SIGNATURE(S)

I (We), the above-signed, do hereby affirm and certify, under penalty of perjury, that I/we am/are one (or more) of the owner(s) under contract of the below described property and that the following statements and answers are in all respects, true and correct on my information and belief as to those matters.

APPLICANT NAME: Brandy Willie

MAILING ADDRESS: 2514 South Bay Rd, NE

CITY, STATE, ZIP: Olympia, WA 98506

TELEPHONE: 360-789-9314

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

ENGINEER/ARCHITECT NAME: None

MAILING ADDRESS: \_\_\_\_\_

CITY, STATE, ZIP: \_\_\_\_\_

TELEPHONE: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

**AUTHORIZED REPRESENTATIVE:** Brandy Willie

**MAILING ADDRESS:** See above

**CITY, STATE, ZIP:** See above

**TELEPHONE:** See above

**SIGNATURE:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**NAME OF PROJECT:** Carpenter Road Re-Zone

**SUMMARY OF REQUEST (List Type of Uses):** This proposal seeks an amendment to the Lacey Comprehensive Plan and Zoning Code to rezone multiple parcels totaling approximately 57.22 acres. The proposal seeks for the parcels (currently zoned as HPBDBC, ME, and LD 3-6) to be zoned as light industrial/commercial.

### PROPERTY LOCATION

☐ North ☐ South ☒ East ☒ West Side of Carpenter Road NE between Interstate 5  
(ROAD NAME)  
and Britton Parkway NE  
(ROAD NAME)

**Property Address:** 1180, 1525, 1543, 1601, 1755 Carpenter Road, NE // 1387, 1311 Sandy Ln, NE, and 6298 Gravel Lane NE

**Section:** 9 & 10 **Township:** 18 **Range:** 1W **Assessor's Parcel Number:** 11809140300; 11810230101; 11810230103; 11810230102; 11810320200; 11810320104; 11810320103; 11810320102; 11810320100; 11810230100; 11810230105

**Full legal description of subject property:** See Attached  
(ATTACH SEPARATE SHEET IF NECESSARY)

**TOTAL SQUARE FOOTAGE OF THE REZONE AREA:** Approx. 57.22 acres or 2,492,503 sq. ft

### How does the rezone request conform to the Comprehensive Plan?

According to the Lacey Comprehensive Plan, the Hawk's Prairie Planning Area's "primary function could be characterized as a mix of residential and light industrial uses. Now that these areas have been largely constructed, the future land use trends will be for commercial services to serve these new residential areas and job centers." (Lacey Comp. Plan, 5-1). This zoning amendment to light industrial/commercial would allow for existing uses to continue as light industrial (which is appropriate for the area), but it would also allow for those facilities to transition to commercial services when the opportunity presents itself.

Also, the comprehensive plan states: "There are gravel mining and processing activities in this planning area along Carpenter Road. As these pits are mined out, they will be converted to other uses." (Comp. Plan, 5-4). This zoning amendment to light industrial/commercial would allow for the gravel mining and processing activities in the Mineral Extraction zone to continue. However, it would also provide path forward for the site to transition to light industrial or commercial uses in the future, which is consistent with the comprehensive plan.

Finally, Goal 3 for the Hawks Prairie Planning Area is to support the Hawks Prairie Area as a local hub for light industrial development and employment center. The light industrial/commercial zone supports local light industrial and employment opportunities. (Comp Plan, 5-7)

ACCURATE SITE PLAN DRAWN IN INK TO SCALE WITH DIMENSIONS MUST BE SUBMITTED ALONG WITH THE APPLICATION. PLEASE SHOW THE FOLLOWING:

1. Location of proposed uses, buildings, parking areas, landscaping areas, ingress, egress, etc.
2. Location of all existing uses and structures on the property, with distances from property lines.
3. Major physical features of the property to be rezoned.
4. Barscale and north arrow.

**PLEASE ANSWER THE FOLLOWING QUESTIONS**

**What is the relationship between the proposed use of the land to be rezoned and the surrounding land use? (i.e., Is your proposed use of land significantly different than existing land uses surrounding your property?) Please Explain:**

Currently the area's zoning does not have an effective transition between residential uses, mineral extraction, and the Hawks Prairie Business District. This rezone will create an area of light industrial/commercial which will allow for light industrial activity to continue but also open opportunities for commercial uses as they present themselves. Additionally, the proposed use is similar to existing uses in the area.

**Why is the property not usable as presently zoned, including the events that led you to this conclusion?**

It is a challenge to develop retail businesses in this area because it does not have an accessible on/off ramp to the freeway. For this reason, it is difficult to develop consistent to the current Hawk's Prairie Business District zone.

Additionally, the mineral extraction zone does not allow for any other uses besides mineral extraction. The light industrial/commercial zone would provide more flexibility for uses that are appropriate for the area.

**How would the proposed zone change be in the interests of not only the applicant but also the surrounding properties and the public as a whole?**

The proposed zone change would provide more flexibility to allow for new development in the area. Future development will increase the opportunities for local employment. Public tax revenue and jobs could increase if the properties are put to greater, more appropriate use.

# **ADJACENT PROPERTY OWNERS LIST**

**PROJECT:** Carpenter Road Rezone

## **PLEASE SUBMIT AN ADJACENT PROPERTY OWNERS MAILING LIST**

**Include all property owners within 300 feet of exterior boundary  
of the property involved.**

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**Office of County Assessor, Bldg #1, First Floor. Phone: 786-5410**

**\* \* \* Please be sure to also include the mailing information for the:  
OWNER, APPLICANT, ENGINEER/ARCHITECT & REPRESENTATIVE.**

## **SEE EXAMPLE BELOW**

|                                                                  |
|------------------------------------------------------------------|
| <p>SAMPLE<br/>Joe Jones<br/>PO Box 1900<br/>Lacev. WA. 98503</p> |
|------------------------------------------------------------------|

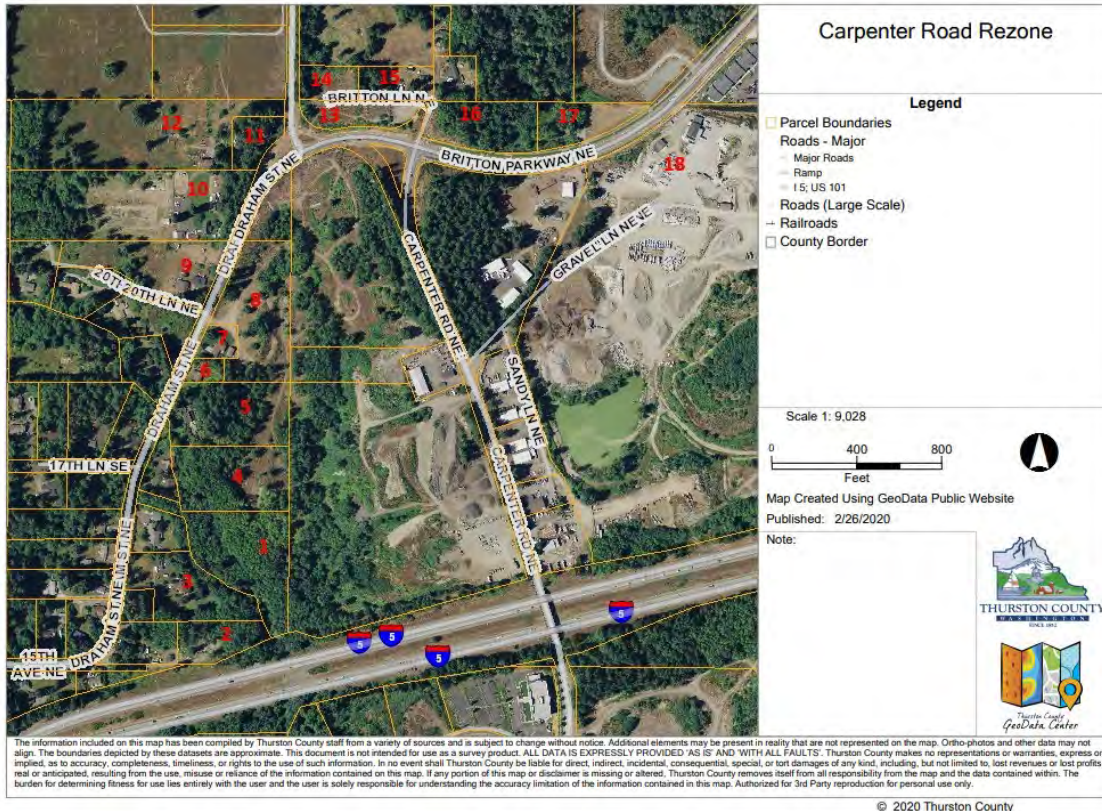
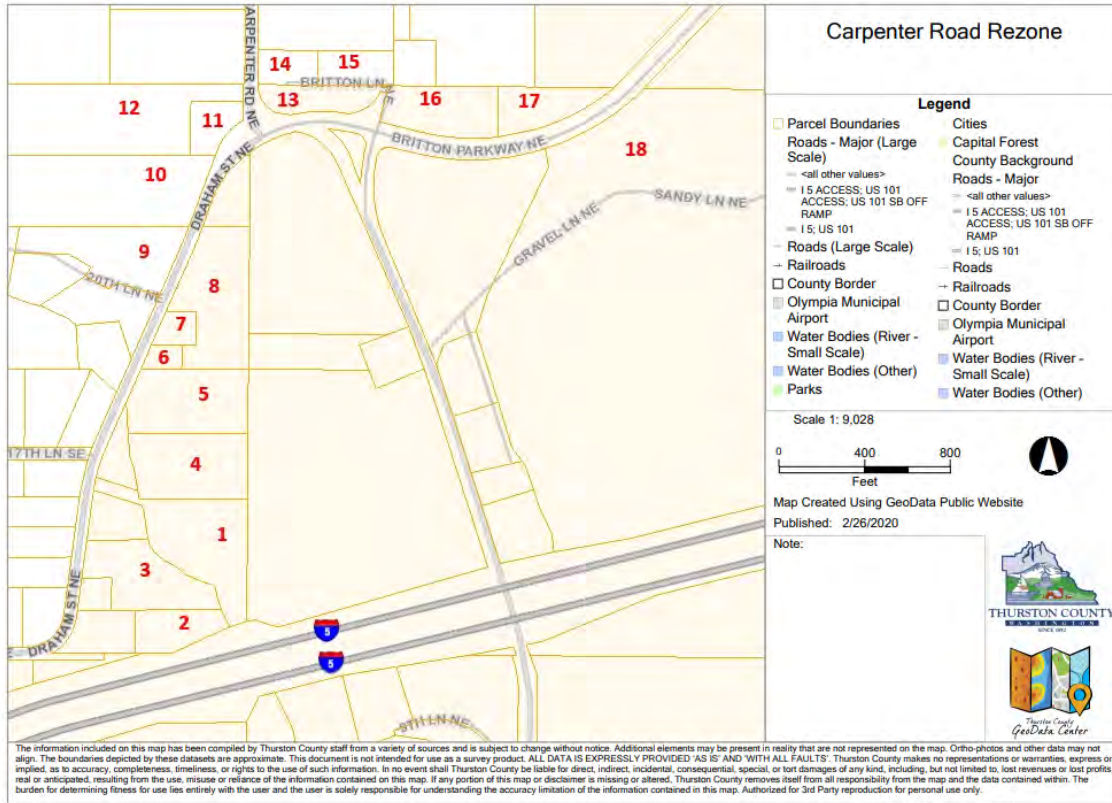


# ADJACENT PROPERTY OWNERS LIST

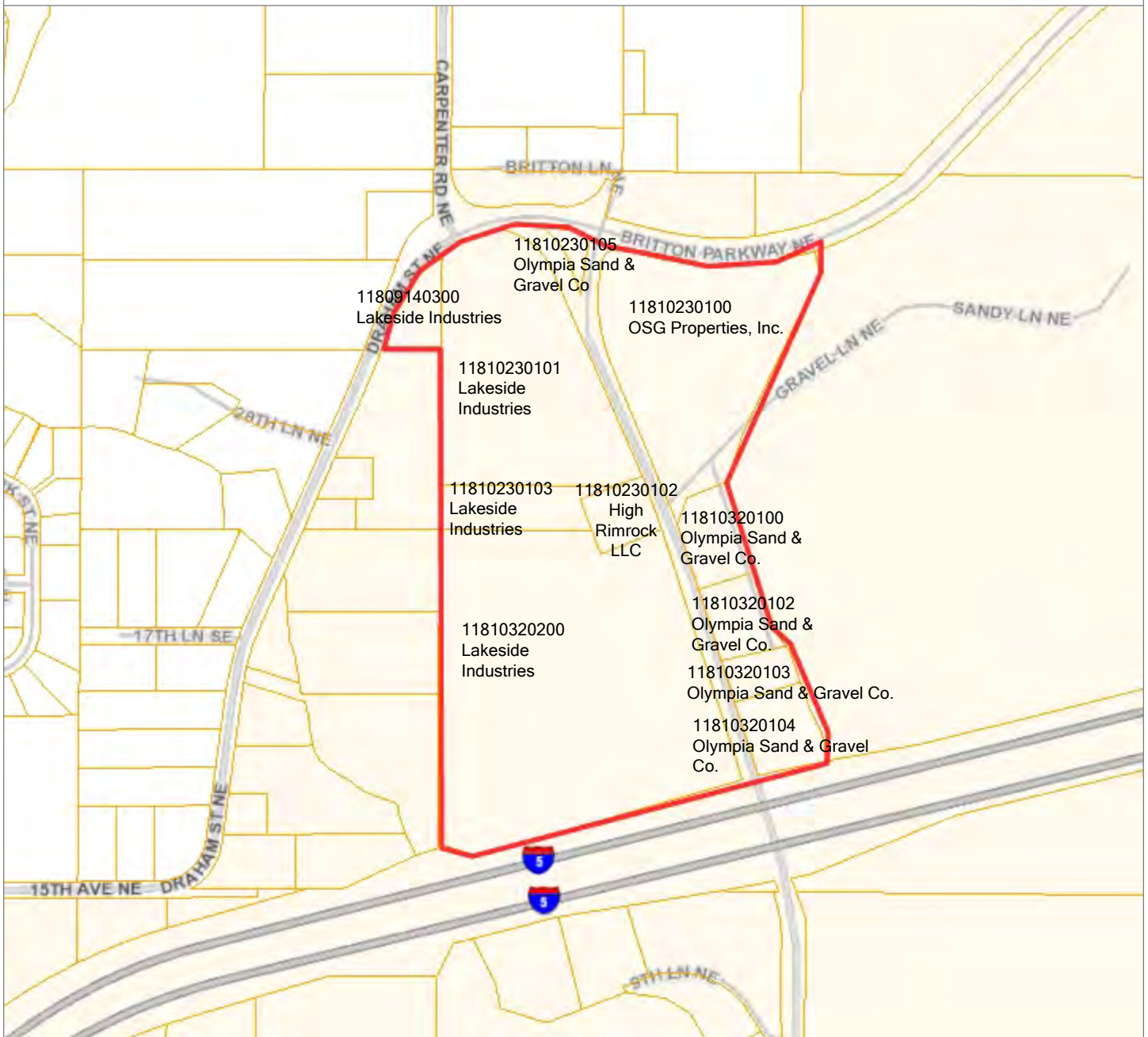
## PLEASE SUBMIT AN ADJACENT PROPERTY OWNERS MAILING LIST

**Include all property owners within 300 feet of exterior boundary  
of the property involved.**

| # on Map | Owner                                 | Parcel      | Mailing Address                             |
|----------|---------------------------------------|-------------|---------------------------------------------|
| 1        | City of Lacey                         | 11809410301 | 420 College St. SE;<br>Lacey, WA 98503      |
| 2        | Thomas Campbell                       | 11809410600 | 1550 Draham Rd. NE;<br>Lacey, WA 98516      |
| 3        | Thomas Campbell                       | 11809410800 | 1550 Draham Rd. NE;<br>Lacey, WA 98516      |
| 4        | Hiep Tran &<br>Phuong Anh Bui         | 11809410300 | 7149 Radius Loop SE;<br>Olympia, WA 98513   |
| 5        | Dennis R. Ellison                     | 11809410200 | 1824 Draham Rd. NE;<br>Lacey, WA 98516      |
| 6        | Gregory Boulet                        | 11809140700 | 1834 Draham St. NE;<br>Lacey, WA 98506      |
| 7        | Aron & Teresa Wallace                 | 11809140800 | 1910 Draham Rd. NE;<br>Lacey, WA 98516      |
| 8        | Tommy Martin Exempt Trust             | 11809140600 | P.O. Box 275;<br>Onalaska, WA 98570         |
| 9        | Mark R & Mary Ann<br>Silversten       | 11809140404 | P.O. Box 28;<br>Olympia, WA 98507           |
| 10       | Frank & Andrea May                    | 11809140200 | 2033 Draham St. NE;<br>Lacey, WA 98506      |
| 11       | Eldon & Joyce Standon<br>Living Trust | 11809140101 | 2201 Carpenter Rd. NE;<br>Olympia, WA 98516 |
| 12       | Eldon & Joyce Standon<br>Living Trust | 11809140101 | 2201 Carpenter Rd. NE;<br>Olympia, WA 98516 |
| 13       | Puget Sound Energy                    | 11810230202 | P.O. Box 97034;<br>Bellevue, WA 98009-9734  |
| 14       | Puget Sound Energy                    | 11810220500 | P.O. Box 97034;<br>Bellevue, WA 98009-9734  |
| 15       | Leo C. Roberts Trustees               | 11810220400 | 7626 Titan Dr. SE;<br>Olympia, WA 98503     |
| 16       | FM Lacey, LLC                         | 11810230203 | 400 Valley Ave NE;<br>Puyallup, WA 98372    |
| 17       | FM Lacey, LLC                         | 11810230204 | 400 Valley Ave NE;<br>Puyallup, WA 98372    |
| 18       | FM Lacey, LLC                         | 11810230200 | 400 Valley Ave NE;<br>Puyallup, WA 98372    |



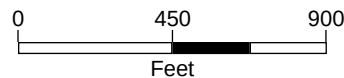
# Site Plan



## Legend

- Parcel Boundaries
- Parks
- Roads - Major (Large Scale)
- Cities
- = <all other values>
- = I 5 ACCESS; US 101 ACCESS; US 101 SB OFF RAMP
- = I 5; US 101
- Roads (Large Scale)
- Railroads
- County Border
- Olympia Municipal

Scale 1: 9,843



Map Created Using GeoData Public Website

Published: 3/6/2020

Note:



The information included on this map has been compiled by Thurston County staff from a variety of sources and is subject to change without notice. Additional elements may be present in reality that are not represented on the map. Ortho-photos and other data may not align. The boundaries depicted by these datasets are approximate. This document is not intended for use as a survey product. ALL DATA IS EXPRESSLY PROVIDED 'AS IS' AND 'WITH ALL FAULTS'. Thurston County makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. In no event shall Thurston County be liable for direct, indirect, incidental, consequential, special, or tort damages of any kind, including, but not limited to, lost revenues or lost profits, real or anticipated, resulting from the use, misuse or reliance of the information contained on this map. If any portion of this map or disclaimer is missing or altered, Thurston County removes itself from all responsibility from the map and the data contained within. The burden for determining fitness for use lies entirely with the user and the user is solely responsible for understanding the accuracy limitation of the information contained in this map. Authorized for 3rd Party reproduction for personal use only.



# Carpenter Road Rezone

## Property Information and Signature Page

Comprehensive Plan Amendment and Rezone Application  
City of Lacey, WA

### Property Information:

| Owner Name                  | Parcel No.  | Zone   | Site Address          | Legal Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------|-------------|--------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Olympia Sand and Gravel Co. | 11810320104 | HPBD   | 1180 Carpenter Rd. SE | TRACT D OF BOUNDARY LINE ADJUSTMENT NO. BLA010013LA, AS RECORDED SEPTEMBER 11, 2001 UNDER AUDITOR'S FILE NO. 3378046;<br>IN THURSTON COUNTY, WASHINGTON.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Olympia Sand and Gravel Co. | 11810320103 | HPBD   | 1311 Sandy Ln. NE     | TRACT C OF BOUNDARY LINE ADJUSTMENT NO. BLA010013LA, AS RECORDED SEPTEMBER 11, 2001 UNDER AUDITOR'S FILE NO. 3378046;<br>IN THURSTON COUNTY, WASHINGTON.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Olympia Sand & Gravel Co.   | 11810320102 | HPBD   | 1387 Sandy Ln. NE     | PARCEL B OF BLA-010013LA AS RECORDED SEPTEMBER 11, 2001, UNDER FILE NOS. 3378045 AND 3378046.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Olympia Sand & Gravel Co.   | 11810320100 | HPBD   | 1451 Sandy Ln. NE     | TRACT A OF BOUNDARY LINE ADJUSTMENT NO. BLA 010013LA AS RECORDED UNDER THURSTON COUNTY AUDITOR'S FILE NO. 3378046.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Olympia Sand & Gravel Co.   | 11810230100 | HPBD   | 6282 Gravel Ln. NE    | LOT E OF BLA 010013LA, AS RECORDED SEPTEMBER 11, 2001 UNDER AUDITOR'S FILE NO. 3378046.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Olympia Sand & Gravel Co.   | 11810230105 | HPBD   | N/A                   | Unknown at this time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| High Rimrock LLC            | 11810230102 | ME     | 1543 Carpenter Rd NE  | Tract C of BLA 030015LA recorded June 3, 2004, under Thurston County Auditor's File No. 3646681.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Lakeside Industries, Inc.   | 11809140300 | LD 3-6 | No address listed     | <p>THAT PART OF THE SOUTH HALF OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER (S ½ N ½ SE ¼ NE ¼ ) OF SECTION 9, TOWNSHIP 18 NORTH, RANGE 1 WEST, W.M., LYING EASTERLY OF COUNTRY ROAD KNOWN AS DRAHAM ROAD</p> <p>LESS THAT PORTION DESCRIBED AS FOLLOWS: BEGINNING ON THE NORTH LINE OF SAID SOUTH HALF AT A POINT WHICH BEARS NORTH 88°18'02" WEST 22.62 FEET FROM THE NORTHEAST CORNER OF SAID SOUTH HALF; THENCE, ALONG SAID NORTH LINE, NORTH 88°WEST 80.09 FEET TO THE EASTERLY RIGHT OF WAY MARGIN OF DRAHAM ROAD; THENCE, ALONG SAID MARGIN, SOUTH 22°59'29" WEST 252.87 FEET TO A NON-TANGENT CURVE TO THE RIGHT THE RADIUS POINT OF WHICH BEARS SOUTH 67°00'31" EAST 570.00 FEET; THENCE NORTHEASTERLY, ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 29°AN ARC DISTANCE OF 294.94 FEET TO THE POINT OF BEGINNING.</p> <p>SUBJECT TO AN EASEMENT FOR PURPOSES OF SLOPES AND FILLS GRANTED TO THE CITY OF LACEY RECORDED 9/13/99 UNDER RECORDING NUMBER 3254414 BY THURSTON COUNTY.</p> <p>SUBJECT TO AN EASEMENT FOR PURPOSES OF OVERHEAD/UNDERGROUND GAS AND ELECTRIC GRANTED TO PUGET SOUND ENERGY, INC. RECORDED 8/11/00 UNDER RECORDING NUMBER 3307689 BY THURSTON COUNTY.</p> |

|                           |             |           |                      |                                                                                                                                                 |
|---------------------------|-------------|-----------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Lakeside Industries, Inc. | 11810230101 | ME LD 3-6 | 1755 Carpenter Rd NE | TRACT A OF BOUNDARY LINE ADJUSTMENT NO. BLA030015LA, AS RECORDED JUNE 3, 2004 UNDER AUDITOR'S FILE NO. 3646681; IN THURSTON COUNTY, WASHINGTON. |
| Lakeside Industries, Inc. | 11810230103 | ME LD 3-6 | 1601 Carpenter Rd NE | TRACT B OF BOUNDARY LINE ADJUSTMENT NO. BLA030015LA AS RECORDED JUNE 3, 2004 UNDER AUDITOR'S FILE NO. 3646681; IN THURSTON COUNTY, WASHINGTON.  |
| Lakeside Industries, Inc. | 11810320200 | ME LD 3-6 | 1525 Carpenter Rd NE | TRACT D OF BOUNDARY LINE ADJUSTMENT NO. BLA030015LA, AS RECORDED JUNE 3, 2004 UNDER AUDITOR'S FILE NO. 3646681; IN THURSTON COUNTY, WASHINGTON. |

Signature Pages:

Olympia Sand & Gravel

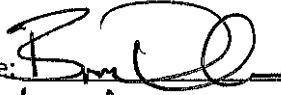
c/o: Brandy Willie

360-789-9314 | brandy@osgdozing.com

2514 South Bay Rd. NE

Olympia, WA 98506

Parcel Nos. 11810320104, 11810320103, 11810320102, 11810320100, 11810230100, 11810230105

Owner Signature:  Date: 3/6/2020  
Name: Brandy WILLIE

Lakeside Industries, Inc.

c/o Kyler Danielson, Land Use Project Manager (Kyler.danielson@lakesideind.com)  
P.O. Box 7016 (425-313-2602)

Issaquah, WA 98027

Parcel Nos. 11809140300, 11810230101, 11810230103, 11810320200

Owner Signature: Michael Lee Date: 3/5/2020  
Name: Michael Lee



High Rimrock LLC

c/o Roy E. Slaybaugh

360-789-5953 | Roys@eversonasphalt.com

11238 Emily Lane SW

Olympia, WA 98512

Parcel No. 11810230102

Owner Signature: Roy Slaybaugh Date: 3/6/20  
Name: Roy Slaybaugh

# OSG Properties Rezone

PREPARED FOR:

City of Lacey Planning Commission



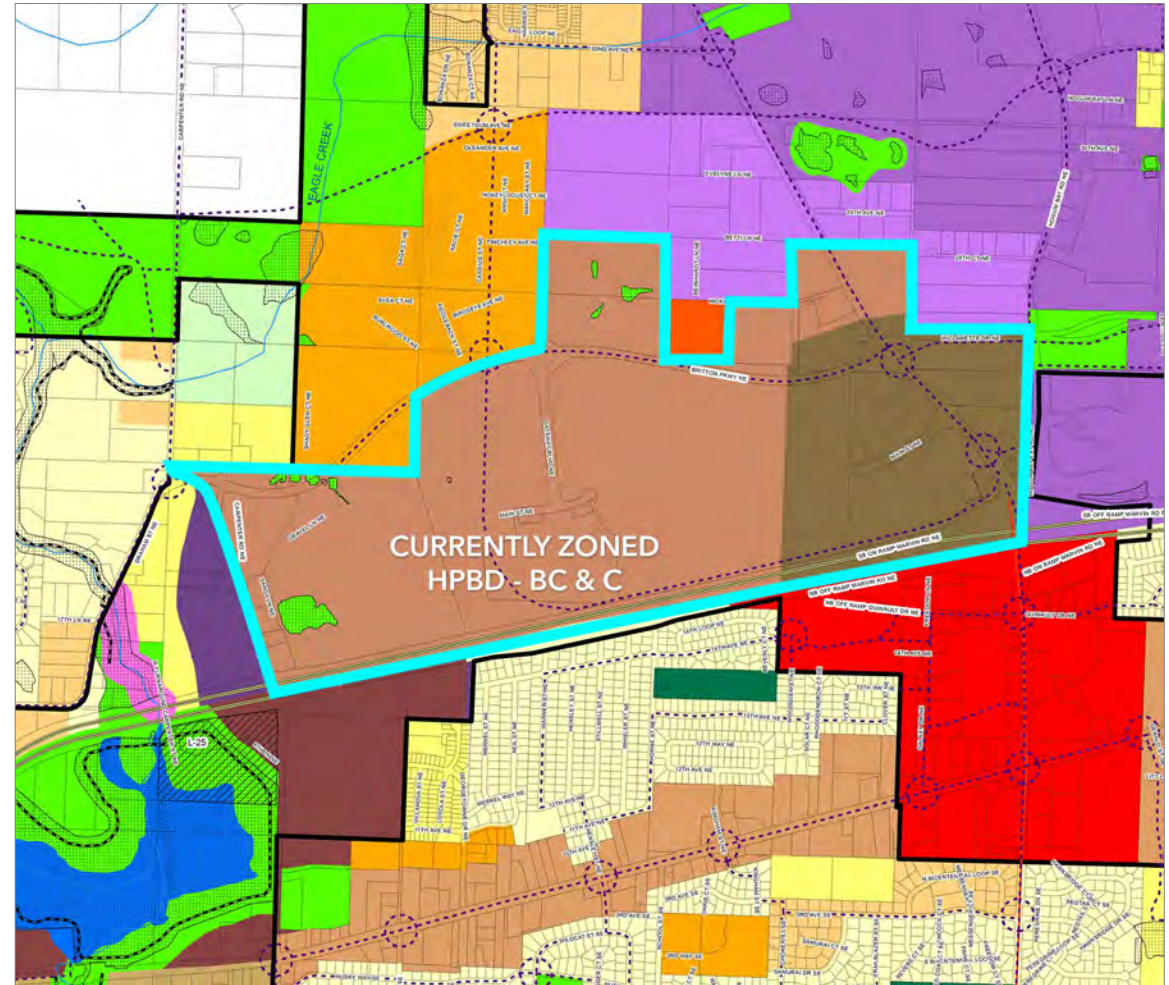
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# CURRENTLY ZONED HPBD – BUSINESS COMMERCIAL AND COMMERCIAL PROPERTIES

| Ownership                                       | Vacant Land   | Total Land    |
|-------------------------------------------------|---------------|---------------|
| OSG Properties                                  | 6.42          | 11.08         |
| Olympia Sand & Gravel                           | 1.5           | 5.61          |
| FM Lacey (Miles)                                | 76.49         | 76.49         |
| Wig Properties, LLC – Nisqually (Lacey Gateway) | 110.75        | 110.75        |
| Vereit Cab Portfolio, LLC (Cabela's)            |               | 27.72         |
| Wig Properties LLC (Lacey Gateway)              | 150.06        | 150.06        |
| TEC                                             | 13.73         | 13.73         |
| HBBC, LLC                                       | 6.5           | 6.5           |
| Econet                                          | 40.00         | 40.00         |
| Kaufman                                         | 10.00         | 10.00         |
| 919, LLP                                        | 8.89          | 8.89          |
| Thurston Commercial                             | 9.00          | 9.00          |
| Golden Nugget Investment Group                  | 4.18          | 4.18          |
| Britton Plaza                                   | 4.00          | 11.00         |
| <b>Total Acreage</b>                            | <b>441.52</b> | <b>484.56</b> |

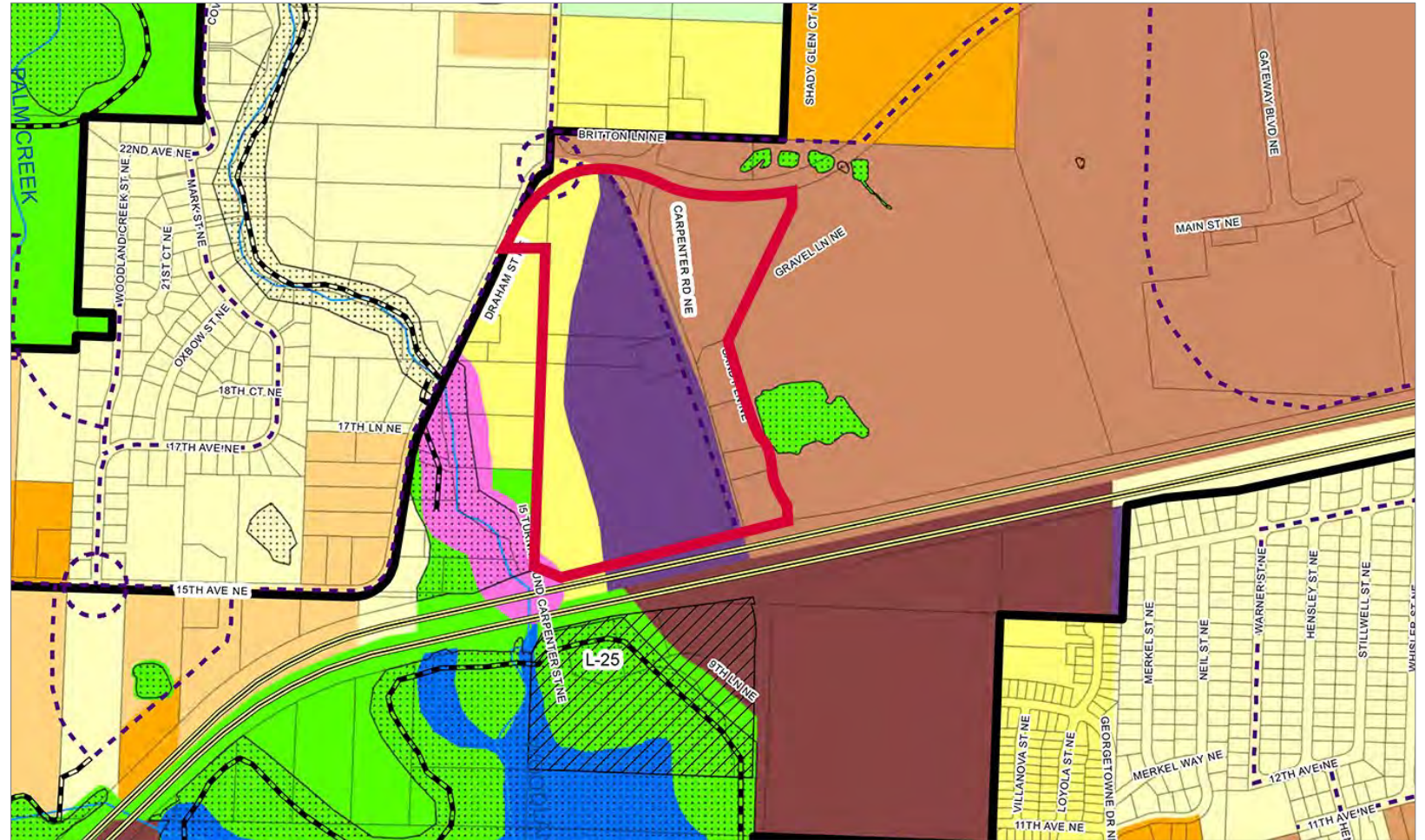


# PROPOSED REZONE ACREAGE

## Ownership

OSG Properties, LLC  
Olympia Sand and Gravel  
Lakeside Industries  
High Rim Rock, LLC

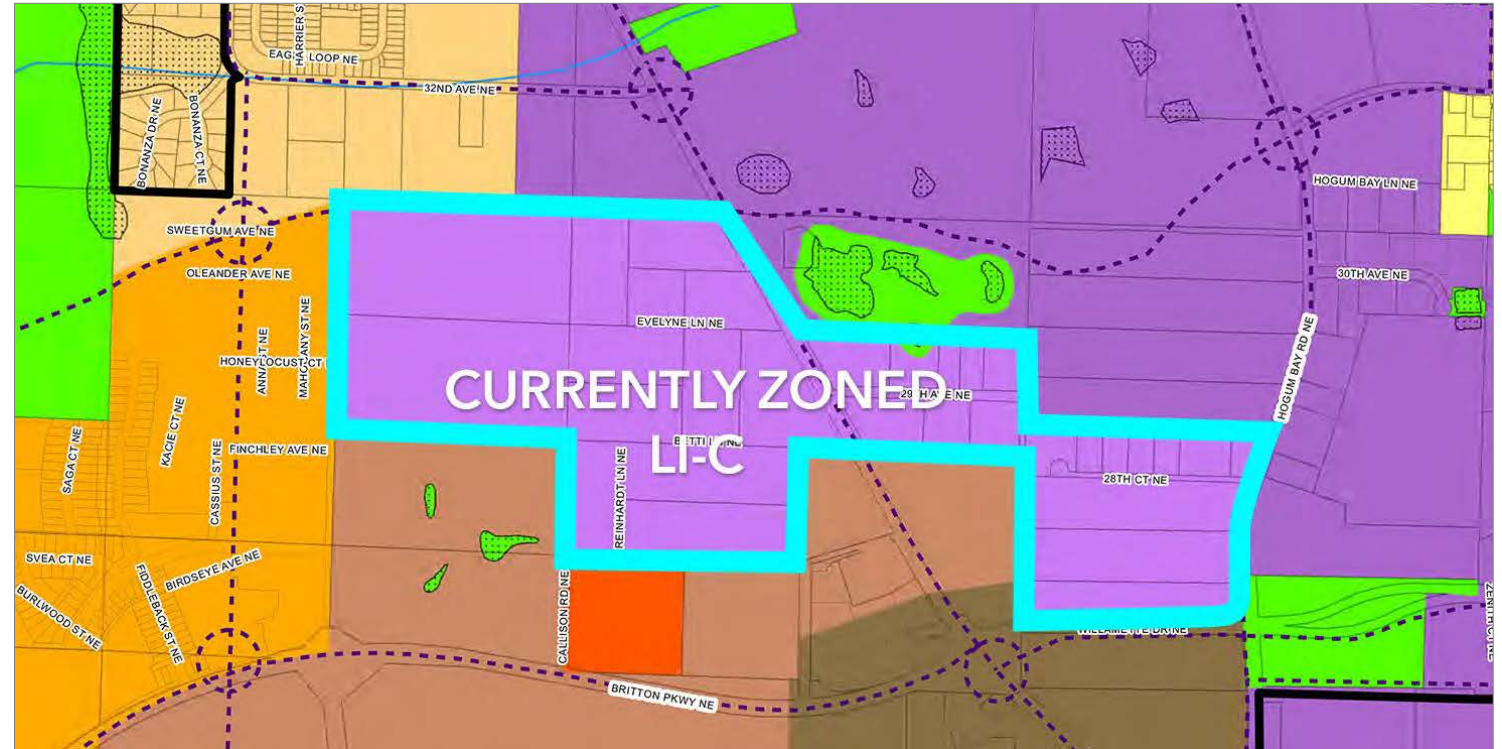
**Total Acreage 57.22**





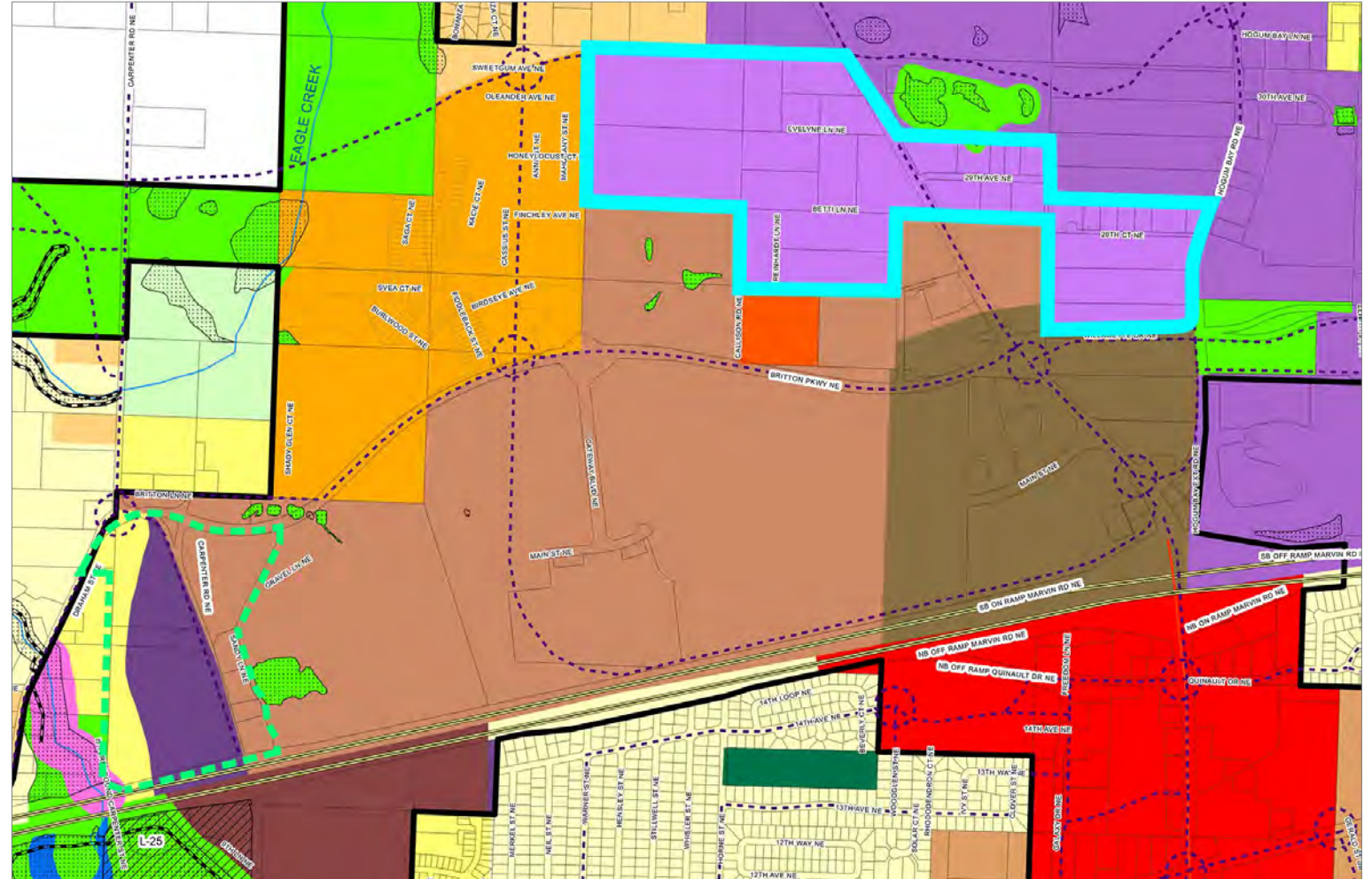
# CURRENTLY ZONED LI-C ACREAGE

| Ownership                | Vacant Land | Total Land    |
|--------------------------|-------------|---------------|
| WSDOT                    |             | 20.00         |
| LBA Development          |             | 12.76         |
| PSP                      |             | 9.82          |
| Hill Betti Business Park | 47.00       | 67.28         |
| DE Legacy LLC            |             | 7.50          |
| Kaufman Properties       | 3.35        | 10.01         |
| Hogum Bay Business Park  |             | 10.00         |
| O'Rear Family            |             | 4.43          |
| Marvin Road mini-storage |             | 3.63          |
| <b>Total Acreage</b>     |             | <b>145.52</b> |
| <b>Vacant Acreage</b>    |             | <b>50.35</b>  |



# TOTAL AMOUNT OF LI-C ZONED ACREAGE AFTER REZONE

|                                                                                               | Total Acreage |
|-----------------------------------------------------------------------------------------------|---------------|
|  Pre-Rezone  | 145.52        |
|  Post Rezone | 202.74        |





# LIGHT INDUSTRIAL / COMMERCIAL DISTRICT

---

## Permitted Uses from Zoning Code LMC 16.39.020

- Mechanical, automotive, marine and contractors' or builders' equipment and supplies;
- Electrical and electronic equipment or products;
- Sheet metal, cans, cable;
- Cloth, paper;
- Commercial bakery goods;
- Cosmetics;
- Dairy products, and other agricultural commodity and processing, except slaughtering, and except where such activities generate nuisance characteristics likely to impact surrounding property;
- Scientific, medical and precision instruments and equipment;
- Laundry and dry cleaning plants;
- Warehousing and distribution facilities and storage of equipment, commodities and products;
- Mineral extraction subject to Chapter 16.45 LMC;
- Accessory uses clearly subordinate to, and an integral part of, the primary use of the property (e.g., plant cafeteria, recreation area);
- Mail carrier services that predominantly utilize smaller trucks, such as U.S. Mail facilities, United Parcel Service, Federal Express and other similar services;
- Urban agricultural uses as provided for and limited under Chapter 16.21 LMC;
- Medical cannabis collective gardens pursuant to the terms of LMC 9.44.140 through 9.44.180;
- Building material sales, lumber yards, hardware and garden materials;
- Auto supply stores;
- Car washes and gas and service stations;
- Automotive repair;
- Used good retail stores;
- Wholesale sales;
- General retail sales;
- Automobile sales;
- Servicing of equipment;
- Campers, trailers and manufactured home sales;
- Boat and marine equipment sales;
- Building contractors and staging for contracting business provided all equipment stored outside is effectively screened from adjacent properties and road right-of-way;
- Farm equipment supplies;
- Eating and drinking establishments;
- Commercial recreation;
- Recycling;
- Business, professional and personal services (e.g., banks, accounting services, barber shops);
- Motels;
- Taxidermy;
- Veterinary clinics (limited to small animals);
- General retail activity;
- Living or residential quarters as an accessory use such as guards' quarters in large establishments where such quarters are customarily provided for security and/or insurability of the premises;
- Firefighters' sleeping quarters in fire houses.

# CURRENT DEMAND / VACANCY RATE

---

The purpose of this section is to support the OSG Rezone request by describing for the Planning Commission the acreage in NE Lacey zoned both Light Industrial and Light Industrial Commercial.

The majority of the industrial property in NE Lacey is zoned Light Industrial (allows for 200,000+ SF Buildings) with the minority in Light Industrial Commercial (under 200,000 SF Buildings). Today, there is zero acreage available in the Light Industrial zone (all acreage either developed, under construction or under control of a development entity). There will be demand for more of both Light Industrial and Light Industrial Commercial in the future.

# CURRENT DEMAND / VACANCY RATE

---

As of today, NE Lacey has approximately 11,750,000 SF of existing industrial buildings in both LI & LI-C, including buildings currently under construction and in the SEPA/Building permit process. This total includes buildings from 1,000 SF to 1,300,000+ SF. Of this total, 37% is attributed to owner/user facilities with the remaining 63% in investment properties.

The vacancy rate is currently 18.24%, unusually high for the area. This current vacancy rate is attributed to 6 new buildings – 1,939,229 SF – all located in the Light Industrial zone, all targeting the larger user (100,000 SF +). Leasing activity is strong and it is expected that these buildings will lease before the end of the Second Quarter 2020.

# CURRENT DEMAND / VACANCY RATE

---

Removing these large buildings from the calculation leaves this area with a 1.83% vacancy rate, focusing directly on the smaller building size range, available spaces less than 20,000 SF.

In the smaller tenant size buildings – available spaces less than 20,000 SF – there are 4 available spaces at this time, and 1 of those spaces is only available for dead storage (no employees). Demand is strong in the market, and we expect these spaces to lease quickly. Having additional land to meet the small tenant demand would assist this land towards development and assist Lacey in attracting more a diverse base of employers to this area.

The OSG Rezone properties are well located to meet this need.

# POTENTIAL USERS

---

**The following are the categories of companies that have been searching for properties in the Thurston County market:**

- Fabrication and other light industrial uses
- Service Industrial (warehouse space with retail storefront servicing retail activity)
- General Contractor
- Brewery, with tasting room
- Pharmacy
- Dental Office
- Gas Station with C-Store
- Commercial Fueling Station
- Commercial vehicle rentals
- Recreational (indoor physical exercise facilities)
- Outdoor sales and storage

# PRESENTER



**VANESSA HERZOG, SIOR, CCIM**  
Principal

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## CAREER SUMMARY

Vanessa has over thirty-one years of commercial real estate experience in the Seattle/Tacoma region. She holds the coveted SIOR and CCIM designations, representing the highest achievements of knowledge, production, and ethics in the real estate industry. Vanessa's expertise includes commercial land dispositions, commercial sales and acquisitions, site selection, leasing, and investment sales of commercial real estate. Her regional expertise includes South King, Pierce, Thurston, and Lewis counties.

Prior to joining Lee & Associates Commercial Real Estate Services, Vanessa was with Kidder Mathews where she had successfully leased and sold commercial facilities totaling 3,776,288 million square feet, totaling \$310,000,000 million in lease and sale value in 180 transactions. Of that, her land sales are in excess of 1,210 acres with a sales value of \$150,751,371. Because of her strong land experience, Vanessa has represented several land owners in sales to national and international developers, including developed, undeveloped, and land positioned for redevelopment. Most notable is the Meridian Campus Master Planned Community. Vanessa was retained in 1993 by Weyerhaeuser Real Estate to represent the 325 acre business and industrial park portion of the community. She was responsible for bringing 53 new companies to Lacey, who occupy 2.4 million square feet of space inside the Meridian Campus community.



*Specializing in Development, Industrial & Office*  
**Tacoma, WA**

## Notable Mixed-Use Site Transactions Include:

- 2018 Pending: Port of Centralia - Centralia Station - Retail/Commercial/Industrial Land Sale
- 2012: Home Street Bank - Lacey Gateway - Retail/Residential/Institutional/Commercial/Medical Site
- 2018: Hill Betti Business Park - 169,750 SF, 31 Tenants, 47 acres vacant land. Listing broker for Trust/Seller. Repositioned property for sale, from long term family hold.
- 2016: LogistiCenter @ 167 - 225,972 SF - New Construction
- 2016 - 2017: Hogum Bay Logistics Center - 97 acres - Multi-Building Project
- 2016 - 2017: Lakewood Tacoma Gateway - 22.68 acres

## Professional Affiliations:

- Society of Industrial & Office Realtors (SIOR) - Past Chapter President
- SIOR National Committees: Professional Standards, Chair, Regional Director
- Certified Commercial Investment Member (CCIM)
- Commercial Brokers Association (CBA)
- Washington State Commercial Association of Realtors (WSCAR), Board Member
- Washington Associates of Realtors (WAR) - 2014 Executive & 2017 Finance Committees

## EXPERIENCE

- 2017 to present: Lee & Associates Commercial Real Estate Services
- 2001 to 2017: Kidder Mathews
- 1997 to 2001: Colliers International
- 1995 to 1997: Schuler Properties
- 1993 to 1995: NW Corporate Real Estate
- 1989 to 1993: Heartland; Acquisitions Agent; Pre-Development Land





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**VANESSA HERZOG, SIOR, CCIM**

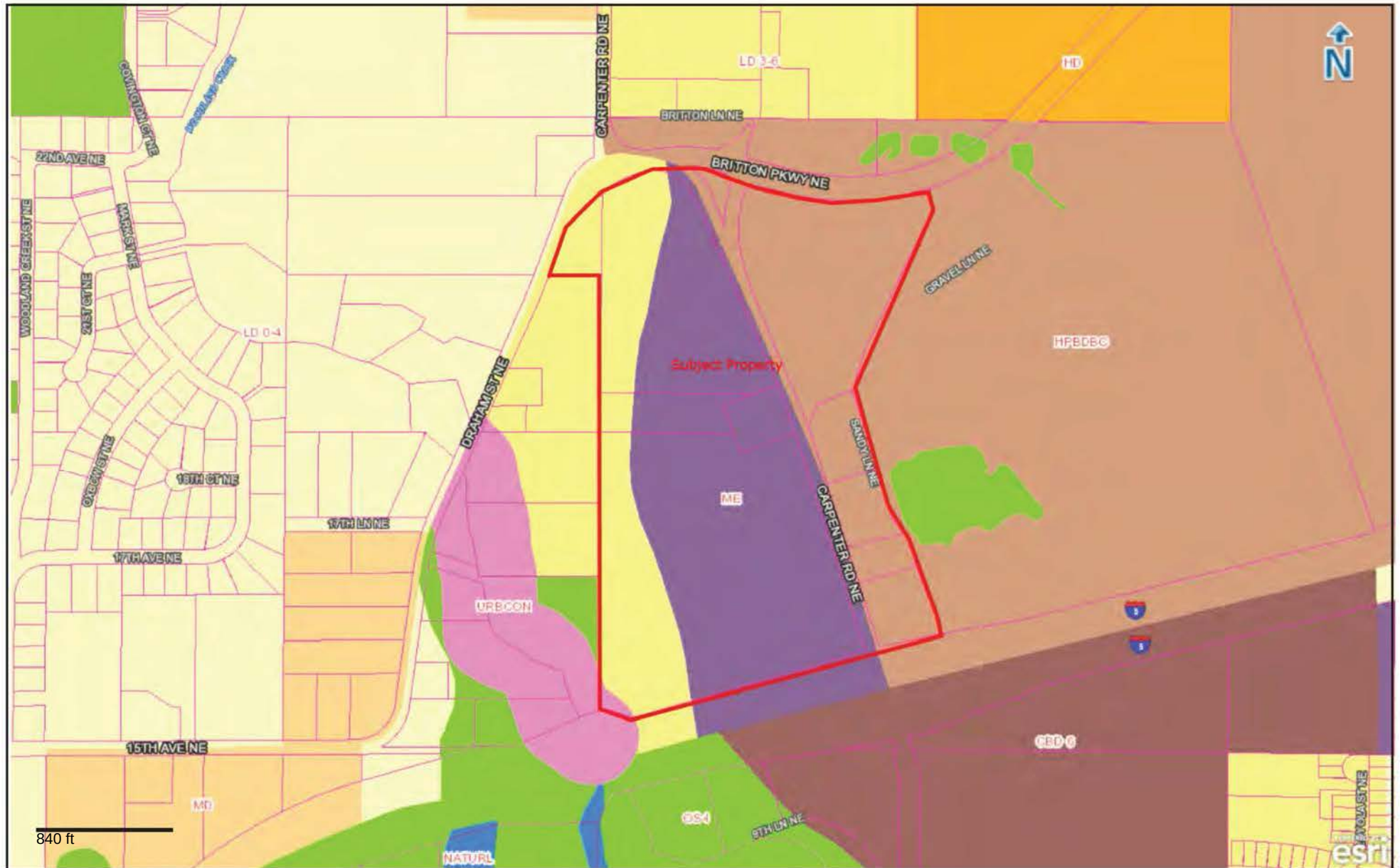
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# OSG Properties Existing Zoning



The City of Lacey uses the most current and complete data available. However, GIS data and product accuracy may vary. GIS data and products may be developed from sources of differing accuracy, accurate only at certain scales, based on modeling or interpretation, incomplete while being created or revised, etc. The City of Lacey reserves the right to correct, update, modify, or replace, GIS products without notification. The City of Lacey cannot assure the accuracy, completeness, reliability, or suitability of this information for any particular purpose. Using GIS data for purposes other than those for which they were created may yield inaccurate or misleading results. The recipient may neither assert any proprietary rights to this information nor represent it to anyone as other than City Government-produced information. The City of Lacey shall not be liable for any activity involving this information with respect to lost profits, lost savings or any other consequential damages.





# OSG Properties Aerial Photo



The City of Lacey uses the most current and complete data available. However, GIS data and product accuracy may vary. GIS data and products may be developed from sources of differing accuracy, accurate only at certain scales, based on modeling or interpretation, incomplete while being created or revised, etc. The City of Lacey reserves the right to correct, update, modify, or replace, GIS products without notification. The City of Lacey cannot assure the accuracy, completeness, reliability, or suitability of this information for any particular purpose. Using GIS data for purposes other than those for which they were created may yield inaccurate or misleading results. The recipient may neither assert any proprietary rights to this information nor represent it to anyone as other than City Government-produced information. The City of Lacey shall not be liable for any activity involving this information with respect to lost profits, lost savings or any other consequential damages.





CITY OF **LACEY**

# STORMWATER COMPREHENSIVE PLAN 2020

# ABBREVIATIONS & ACRONYMS

|                        |                                                               |
|------------------------|---------------------------------------------------------------|
| <b>BMP</b>             | Best management practice                                      |
| <b>CBSM</b>            | Community-based social marketing                              |
| <b>CIP</b>             | Capital improvement program                                   |
| <b>COVID-19</b>        | Coronavirus disease 2019                                      |
| <b>ECOLOGY</b>         | Washington State Department of Ecology                        |
| <b>ESA</b>             | Federal Endangered Species Act                                |
| <b>FTE</b>             | Full Time Equivalent                                          |
| <b>GMA</b>             | Washington State Growth Management Act                        |
| <b>GREEN</b>           | Global Rivers Environmental Education Network                 |
| <b>IDDE</b>            | Illicit discharge detection and elimination                   |
| <b>LID</b>             | Low Impact Development                                        |
| <b>LMC</b>             | Lacey Municipal Code                                          |
| <b>MS4</b>             | Municipal separate storm sewer system                         |
| <b>NPDES</b>           | National Pollutant Discharge Elimination System               |
| <b>O&amp;M</b>         | Operations and Maintenance                                    |
| <b>PHASE II PERMIT</b> | Western Washington NPDES Phase II Municipal Stormwater Permit |





|              |                                                       |
|--------------|-------------------------------------------------------|
| <b>PSP</b>   | Puget Sound Partnership                               |
| <b>REEP</b>  | Regional Environmental Education Program              |
| <b>SCP</b>   | Stormwater Comprehensive Plan                         |
| <b>SDM</b>   | Stormwater Design Manual                              |
| <b>SMAP</b>  | Stormwater Management Action Planning                 |
| <b>SOP</b>   | Standard operating procedure                          |
| <b>STORM</b> | Stormwater Outreach for Regional Municipalities Group |
| <b>SWMP</b>  | Stormwater Management Program                         |
| <b>SWPPP</b> | Stormwater Pollution Prevention Plan                  |
| <b>TMDL</b>  | Total maximum daily load                              |
| <b>UGA</b>   | Urban growth area                                     |
| <b>UIC</b>   | Underground Injection Control                         |
| <b>WSDOT</b> | Washington State Department of Transportation         |
|              |                                                       |
|              |                                                       |
|              |                                                       |

# ACKNOWLEDGEMENTS

This update to the City's Stormwater Comprehensive Plan was produced through the combined efforts, ideas, contributions, and cooperation of the following City of Lacey staff, appointed and elected officials, and consultants. Unless otherwise specified, photos in this plan are courtesy of City of Lacey and Herrera staff.

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# 1

## INTRODUCTION

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- 1.2 Long-Term Goals
- 1.3 Stormwater Comprehensive Plan Development
- 1.4 Stormwater Management Program Accomplishments
- 1.5 Public Involvement and Participation Conducted for This Plan
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- C Lacey Stormwater Facilities
- D Capital Improvement Program
- E Gap Analysis and Needs Assessment
- F Financial Analysis

# 1 INTRODUCTION



COLLEGE STORM FACILITY AERIAL

This update of the City of Lacey's Stormwater Comprehensive Plan (SCP) is intended to guide the City's Stormwater Utility programs and projects for the next 6 years. This plan is the first major revision of the City's Stormwater Comprehensive Plan since the original 2013 plan (Lacey 2013). In addition to detailing Stormwater Management Program (SWMP) activities and projects for the 6-year planning horizon (2020 through 2025), this plan describes SWMP goals and accomplishments; the development and organization of this plan; background information including descriptions of water bodies, stormwater infrastructure, climate change considerations, and regulatory environment; and proposed programs, policies, and activities to meet the SWMP goals.

# 1.1

## PURPOSE OF THIS PLAN

The purpose of this plan is to guide the City's SWMP in a manner consistent with applicable local, state, and federal regulations while charging consumers an equitable stormwater utility rate and supporting the goals and policies expressed in The City of Lacey and Thurston County Land Use Plan for the Lacey Urban Growth Area. This plan includes:

- Long-term goals of the SWMP
- Summary of background information relevant to the SWMP
- Identification of and proposed solutions to flooding and water quality issues
- Actions necessary to ensure compliance with applicable federal, state, and local requirements, especially the Western Washington National Pollutant Discharge Elimination System (NPDES) Phase II Municipal Stormwater Permit (Phase II Permit) issued by the Washington State Department of Ecology (Ecology)
- A financial plan to address the two items above

Since most land within Lacey is developed, most of the identified issues are a result of:

- Uncontrolled runoff from development that occurred prior to the implementation of modern stormwater requirements
- Aging infrastructure
- Regulatory mandates







# 1.2

## LONG-TERM GOALS

All functions performed or influenced by the SWMP can be divided into nine major program elements, which are listed in bold below. City staff developed long-term goals for each program element of the SWMP, which are listed under the applicable program element. Policies related to these long-term goals are provided in Appendix A.



### **Flood Reduction:**

There is no flooding of the public stormwater system due to large storm events.



### **Surface Water Quality Improvement (retrofitting):**

All surface water bodies in Lacey meet water quality criteria for designated recreation and fish uses.



### **Groundwater Quality Protection:**

Groundwater quality is not negatively affected (quantity or quality) by stormwater practices.



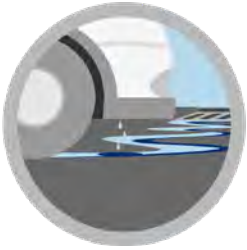
### **Habitat Improvement:**

Aquatic species thrive in surface water bodies in Lacey.



### **Public Participation (education, outreach, and involvement):**

City residents understand how their actions and choices affect stormwater, and they act in ways that reduce stormwater flow rates and improve water quality and aquatic habitat.



### **Pollutant Source Control:**

Pollutants do not enter stormwater.



### **Infrastructure Operations and Maintenance:**

All stormwater infrastructure functions as intended.



### **Development Practices:**

Runoff from developed areas mimics forested hydrology and water quality. Prompt service is provided to applicants for development projects.



### **Stormwater Planning, Administration, and Funding:**

Revenue is wisely invested and produces measurable positive outcomes, including regulatory compliance. Utility rates are fair and equitable.

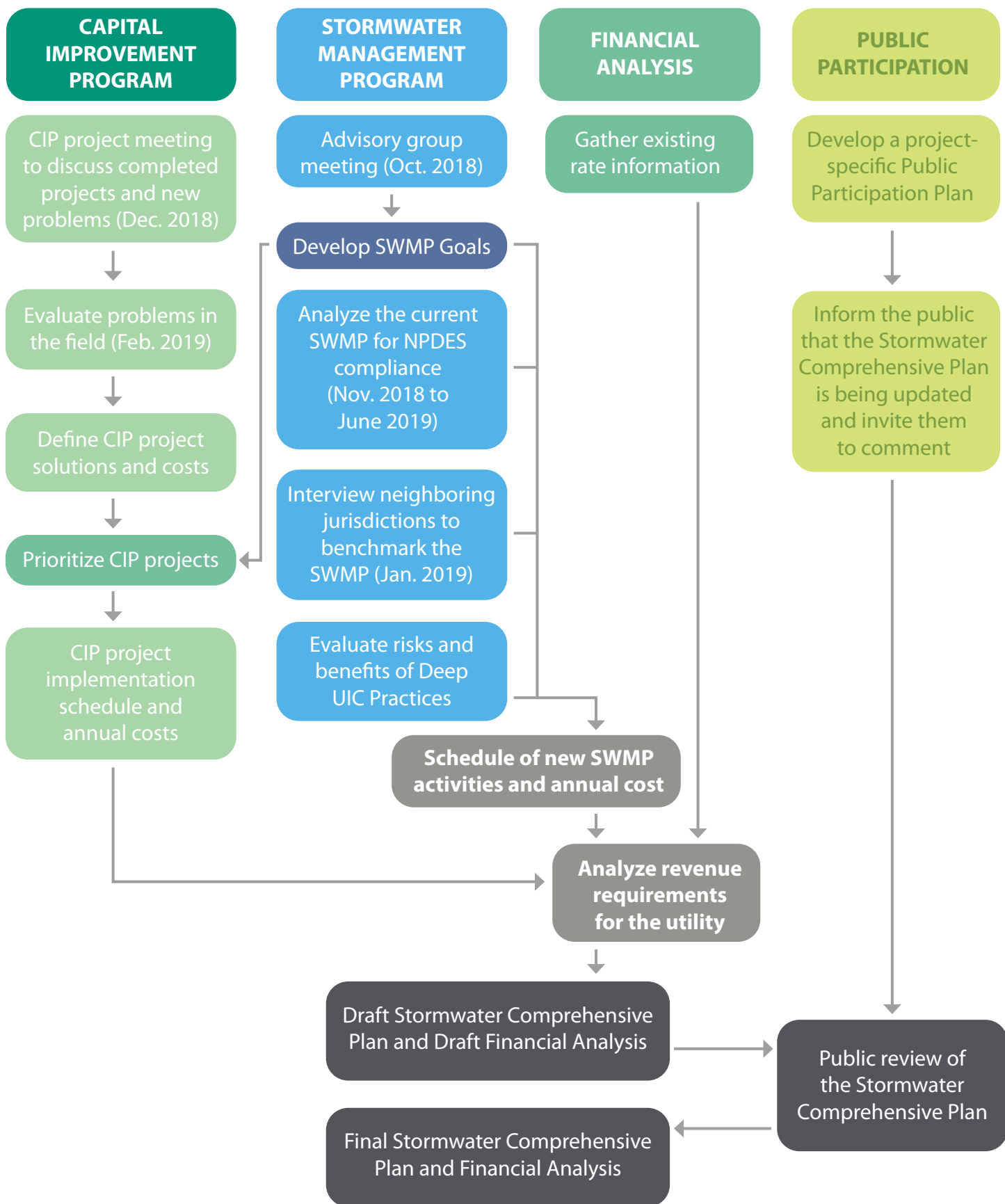
# 1.3

## **STORMWATER COMPREHENSIVE PLAN DEVELOPMENT**

City staff and consultants conducted detailed analyses to support the conclusions and recommendations in later chapters of this plan. The analyses included interviews with City staff, a staffing needs evaluation, field review of problem sites, hydrologic modeling, development of construction projects to solve stormwater programs (i.e. Capital Improvement Program {CIP} projects), and calculation of funding needs to implement this plan.

Past studies and plans were reviewed to gather information on drainage and water quality issues and to evaluate the existing SWMP. To supplement existing drainage and water quality information and recent documentation of the status of the City's SWMP, City staff participated in an advisory group meeting and workshop and provided input throughout the development of this plan.

The figure below illustrates the process that was used to develop this plan.



# 1.4

## STORMWATER MANAGEMENT PROGRAM ACCOMPLISHMENTS

Since the Stormwater Utility was founded in 1985, the City of Lacey has made significant progress in reducing detrimental effects of stormwater runoff on receiving waters in and around Lacey. The City has built many capital projects to alleviate drainage problems and has analyzed other problems to identify future activities. The City has also adopted ordinances, provided public education, and implemented monitoring programs to address water quality concerns. Since the creation of the City's original Stormwater Comprehensive Plan in 2013, the City has implemented the following significant projects, programs, and policies:

### 2016



In 2016, the newly constructed Chambers Lake Stormwater Treatment Wetlands project won a Silver Award from the American Council of Engineering Companies for social and economic sustainability. The Chambers Lake Stormwater Treatment Wetlands treat 187 acres of previously untreated stormwater entering Chambers Lake and was partly funded by a \$1M grant from Ecology.

The City completed construction of the Vector Waste Decant Facility for efficient handling and disposal of debris removed from the storm drainage system.

The City updated its Stormwater Design Manual (SDM) to assist developers in identifying, selecting, and designing best management practices (BMPs) for controlling stormwater flows and for preparing drainage plans, reports, and related documents for submittal to the City and compliance with regulations.

### 2017



In 2017, the City completed a Low Impact Development (LID) Code Review of documents that guide development in Lacey to ensure that LID principles are allowed and encouraged. The City was awarded a Green Star by Puget Soundkeeper and the Washington Environmental Council in 2017 for this effort.

The City completed the Brentwood Stormwater Installation project to relieve chronic flooding by adding runoff collection and conveyance infrastructure.

The City created LMC 14.27 – Stormwater Management, and LMC 14.29 – Illicit Discharges

The City conducted predesign work and soils analysis to replace the failing stormwater system in 25th Loop SE.





In 2018, the City completed the design for the 22nd Avenue SE System project. The project will convey stormwater to the College Street stormwater system while preserving existing parking.

The City began work on the 33rd and Stikes Conveyance Improvements project. The project, located at Stikes Drive and the eastern portion of 32nd Avenue SE, includes revision and expansion of the storm drainage system to improve stormwater conveyance and reduce local flooding.

The City completed the Ulery Drainage System Improvements project. The project included installing new catch basins and connecting drainage to the existing stormwater system.

The City acquired parcels in the Woodland Creek corridor to protect buffers and to improve water quality and aquatic habitat in the stream.

In addition to providing educational materials and outreach events, the City offered many public participation opportunities for the community. Specific programs from 2018 included:

- Puget Sound Starts Here campaign through participation in the Stormwater Outreach for Regional Municipalities (STORM) Group Stream Team Program

1,006 HOURS VOLUNTEERED

442 TREES AND SHRUBS PLANTED

- South Sound GREEN (Global Rivers Environmental Education Network): place-based learning program to engage students through field and classroom studies focused on stormwater and non-point source pollution

2,229 STUDENTS REACHED

378.25 VOLUNTEER HOURS

- Pet Waste Awareness program

8 NEW STATIONS INSTALLED

3,000 EDUCATIONAL PET WASTE BROCHURES DISTRIBUTED



Photo Courtesy of The Inn at Mallard Cove



- “No Dumping, Flows to Waterways” markers

210 MARKERS INSTALLED

- Clean Cars, Clean Streams program

344 CHARITY CAR WASH TICKETS SOLD

- 3-Day Stormwater Lesson taught by City of Lacey staff at multiple Lacey schools

RECEIVED BY 1,526 STUDENTS

- Facilitate Lacey school fieldtrips to Billy Frank Jr. Nisqually National Wildlife Refuge

WORKSHOPS FOR 30 STUDENTS

- Hosting and facilitating volunteer opportunities within the riparian buffer at Woodland Creek Community Park including:

MARTIN LUTHER KING, JR. DAY MEMORIAL TREE PLANTING, PLANT MAINTENANCE, AND INVASIVE SPECIES REMOVAL

ARBOR DAY TREE PLANTING WITH CITY OF LACEY PARKS AND RECREATION CAMPERS

CHINOOK DAY OF CARING WITH CHINOOK MIDDLE SCHOOL STUDENTS TO PERFORM PLANT MAINTENANCE

KOMACHIN DAY OF CARING WITH KOMACHIN MIDDLE SCHOOL STUDENTS TO PERFORM PLANT MAINTENANCE

JBLM\* DAY OF SERVICE WITH ENLISTED AIR FORCE MEMBERS TO REMOVE INVASIVE SPECIES

THANKSGIVING WEEKEND PLANTING EVENT

\*JOINT BASE LEWIS MCCORD



- Share hands-on stormwater education at large community events including:

CITY OF LACEY FUN FAIR

CITY OF LACEY STEM FAIR

THURSTON CONSERVATION DISTRICT NATIVE PLANT FESTIVAL

CITY OF LACEY ARBOR DAY SEEDLING GIVEAWAY

SOUTH SOUND GREEN STUDENT GREEN CONGRESS

Each year, the City's Stormwater Operations and Maintenance (O&M) team works to maintain and improve the stormwater system. Accomplishments from 2018 are listed below:



REPLACED A FAILING INFILTRATION GALLERY THAT WAS CAUSING FLOODING AT 1502 HOMANN DRIVE.

UPGRADED THE STORM SYSTEM AT 5518 34TH AVENUE SE BY INSTALLING A CATCH BASIN AND 100 FEET OF PIPE TO INTERCEPT RUNOFF.

FIXED A FLOODING PROBLEM AT 2610 GREENLAWN BY INSTALLING 250 FEET OF PIPE, TWO CATCH BASINS, AND CONNECTION TO THE RUDELL ROAD STORMWATER MAIN.

REMOVED 74.5 CUBIC YARDS OF DEBRIS FROM CATCH BASINS.

COMPLETED 340 PRIVATE STORMWATER FACILITY INSPECTIONS.

MORE THAN DOUBLED THE PRIVATE FACILITIES MAINTENANCE AND ANNUAL REPORTING PROGRAM COMPLIANCE.

AWARDED A GRANT FROM ECOLOGY FOR PURCHASE OF A SECOND HIGH-EFFICIENCY RECIRCULATING-AIR STREET SWEEPER.





# 1.5 PUBLIC INVOLVEMENT AND PARTICIPATION CONDUCTED FOR THIS PLAN

The City encourages the public to contribute to the Stormwater Comprehensive Plan Update. The City has developed and is implementing a Public Participation Plan to create multiple opportunities for the public to get involved. The first few steps in the public involvement process included briefing the planning commission on June 18, 2019 and the City Council Utilities Committee on August 5, 2019. Multiple opportunities are being provided for public input prior to plan adoption, including:

- Draft SCP posted for public review (March-June 2020)
- Utilities Committee briefing (March 2, 2020)
- “Virtual Open House” Webinar (May 20, 2020)
- Planning Commission briefing (July 21, 2020)
- Planning Commission public hearing (October 6, 2020)
- City Council meeting - adoption of updated SCP with annual City Comprehensive Plan amendments (Nov-Dec 2020)

The final Stormwater Comprehensive Plan will be provided on the City’s website following approval by City Council.



A CITY OF LACEY STORMWATER WORKSHOP

# 1.6

## PLAN ORGANIZATION

This plan is organized into five chapters:

- 1 AN INTRODUCTION TO THIS PLAN AND THE SWMP
- 2 A DISCUSSION OF BACKGROUND MATERIAL THAT IS RELEVANT TO THE SWMP
- 3 A DESCRIPTION OF THE SWMP AND ACTIVITIES REQUIRED TO COMPLY WITH REGULATIONS AND MAKE PROGRESS TOWARDS DEFINED PROGRAM GOALS
- 4 A DESCRIPTION OF STORMWATER CIP PROJECTS DEVELOPED TO ADDRESS CITYWIDE AND SITE-SPECIFIC STORMWATER PROBLEMS
- 5 INSTRUCTIONS FOR IMPLEMENTING THIS PLAN AND SWMP ACTIVITIES AND PROJECTS, INCLUDING ADJUSTMENTS TO THE STORMWATER UTILITY RATES

Appendices to this plan provide more detailed background information, calculations, and data related to this plan's recommendations.



This chapter describes the environment in Lacey that affects stormwater management, water bodies within the city limits and the urban growth area (UGA) that receive surface water or stormwater from within the city limits, climate change considerations, applicable regulations, and a brief history of the stormwater utility fund.

Lacey is located at the southern tip of Puget Sound and is bordered to the west by the city of Olympia. Unincorporated areas of Thurston County border the city limits to the north, east, and south. The city limits encompass approximately 17 square miles, and the current population is 50,170 (Lacey 2019a). Since the 1960s, Lacey has experienced one of the highest growth rates in the county (Lacey and Thurston County 2008). Population growth is accompanied by increased land development and stormwater runoff, resulting in a greater burden on the City's stormwater infrastructure and SWMP. The relationship between land use and stormwater is discussed further in Section 2.1 below.





CENTRAL LACEY CIRCA 1963, PRIOR TO INCORPORATION AS A CITY

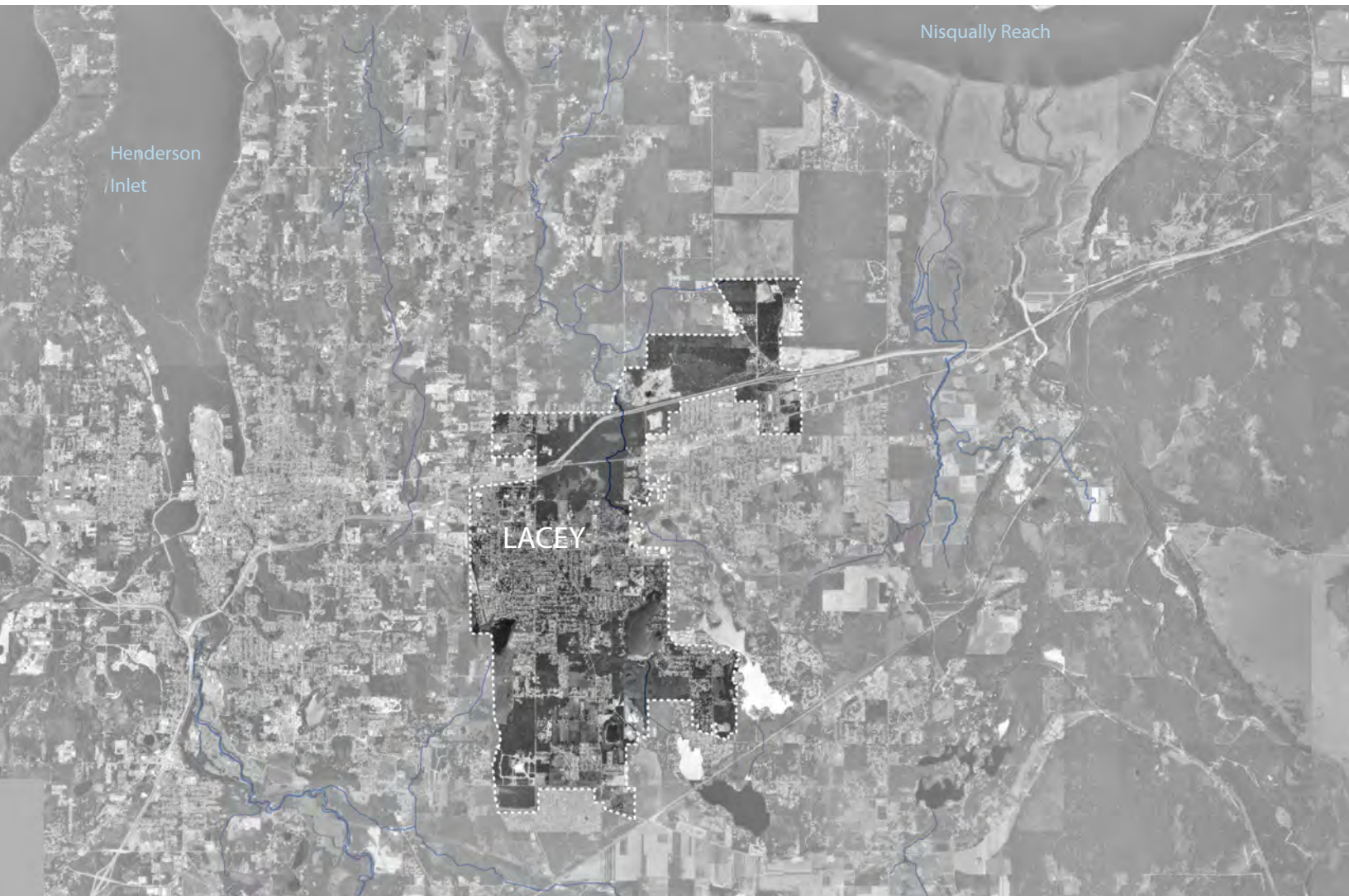


# 2.1

## LAND USE IN LACEY

Land uses in Lacey reflect a small-town heritage modified by more recent residential and commercial development. City growth and changes in land use are guided by the City of Lacey Comprehensive Plan (Lacey 2016), which was developed to comply with the requirements of the Growth Management Act (GMA), though Lacey has been doing non-mandated planning since 1983. One of the goals of the GMA is to promote development inside the municipal Urban Growth Area (UGA), which was designated as part of the City's land use plan that was adopted in 1994, to eliminate costly and environmentally damaging urban sprawl. This means that within the city limits the focus will be on redevelopment and infill. Prime areas for redevelopment include the Woodland District (west of city hall), the Depot District (south of Saint Martin's University), and the area south of Pacific Avenue and west of College Street.

AERIAL SHOWING LACEY CITY LIMITS,  
CIRCA 1990

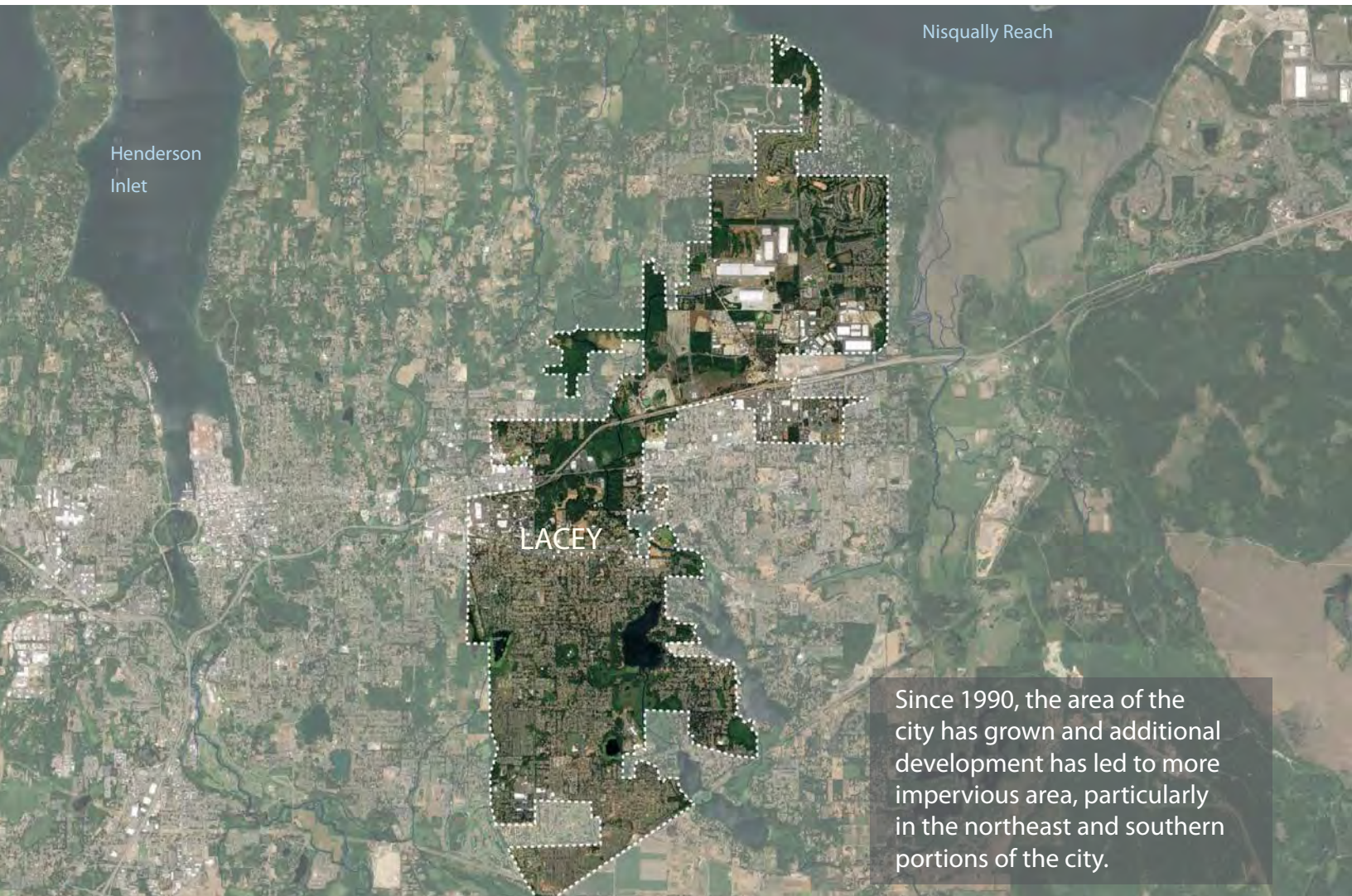




As these development and redevelopment projects occur, they will be required to comply with the Lacey Municipal Code and Stormwater Design Manual (SDM), which include increasingly stringent standards for low impact development (LID) practices, on-site infiltration, stormwater treatment, and flow control. Therefore, it is expected that, over time, these new projects are likely to have a net benefit on stormwater management as more of the city is brought under the umbrella of contemporary stormwater management strategies.

Likewise, as the City annexes area inside the UGA, stormwater management services will need to be expanded to the new area to remain in compliance with the NPDES Phase II Permit. This, too, will result in more stormwater control, but will also increase the need for maintenance staff and equipment. Within the unincorporated UGA, development of undeveloped land will continue because the UGA still has large areas of undeveloped land (Lacey 2016). These greenfield developments will also be required to manage stormwater in accordance with City Code and the SDM. Since 2016, many of these greenfield properties have been developed, and the greenfield areas remaining typically have poor drainage which requires more technical expertise in hydrology during development review.

AERIAL SHOWING LACEY CITY LIMITS,  
CIRCA 2019



# 2.2

## SOILS AND GROUNDWATER

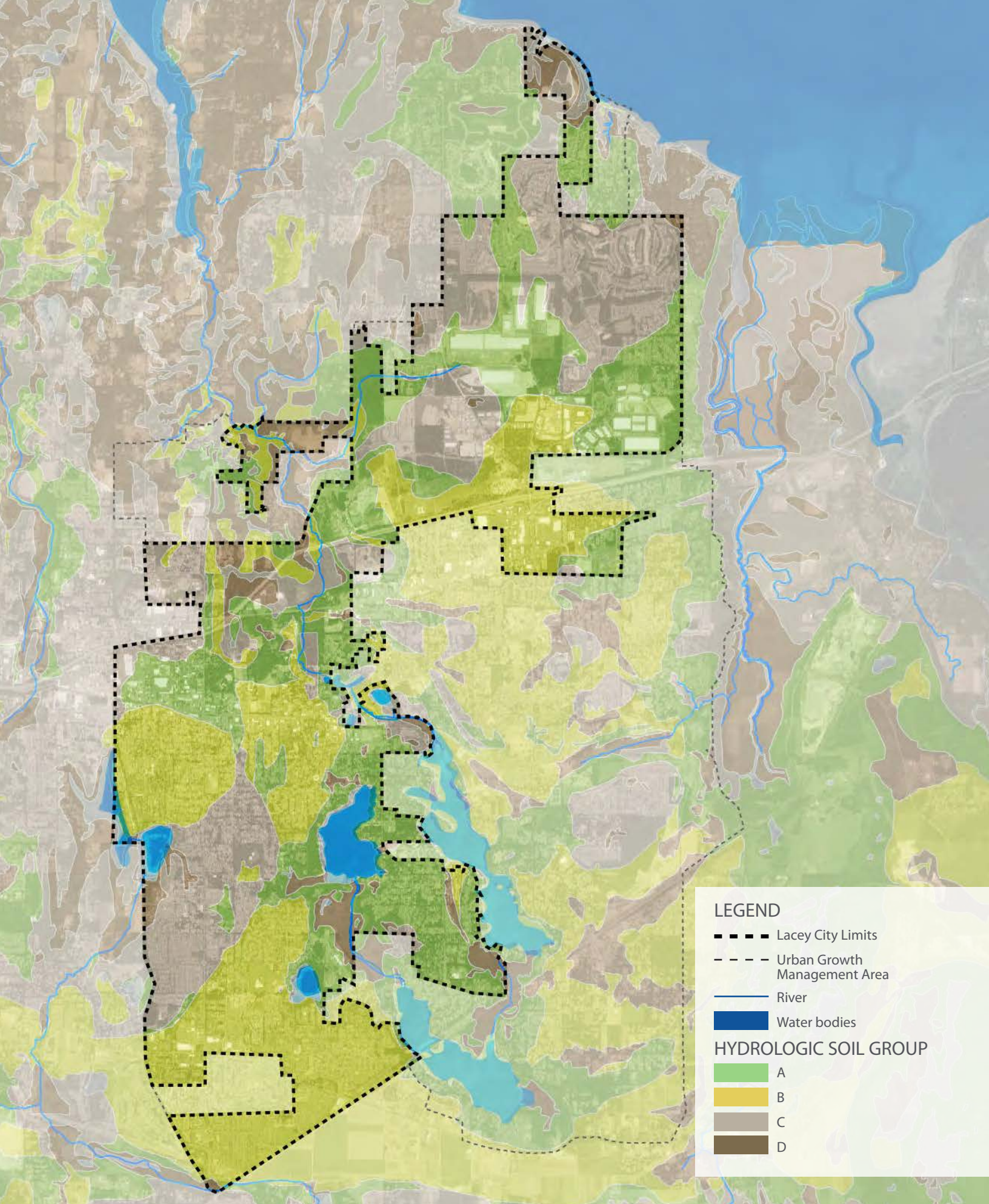
Soils within Lacey are typical for the south Puget Sound Region, consisting of well-drained glacial outwash, intermixed with zones of glacial till and wetland peat bogs. The majority of the city is dominated by Hydrologic Soil Groups A and B, soils that generally have high infiltration capacities. These soils are generally most suitable for stormwater infiltration applications and constitute the following percentage of area in the city:

- Group A soils – 30 percent
- Group B soils – 37 percent

Hydrologic Soil Groups C and D are sandy or silty soils characterized by low permeability and relatively high runoff potential, making them less suitable for stormwater infiltration applications. A portion of the city is also occupied by wetlands and lakes. These soil groups constitute the following percentage of area in the city:

- Group C soils – 12 percent
- Group D soils – 15 percent
- Wetlands and lakes – 6 percent





### LEGEND

- Lacey City Limits
- - - Urban Growth Management Area
- River
- Water bodies

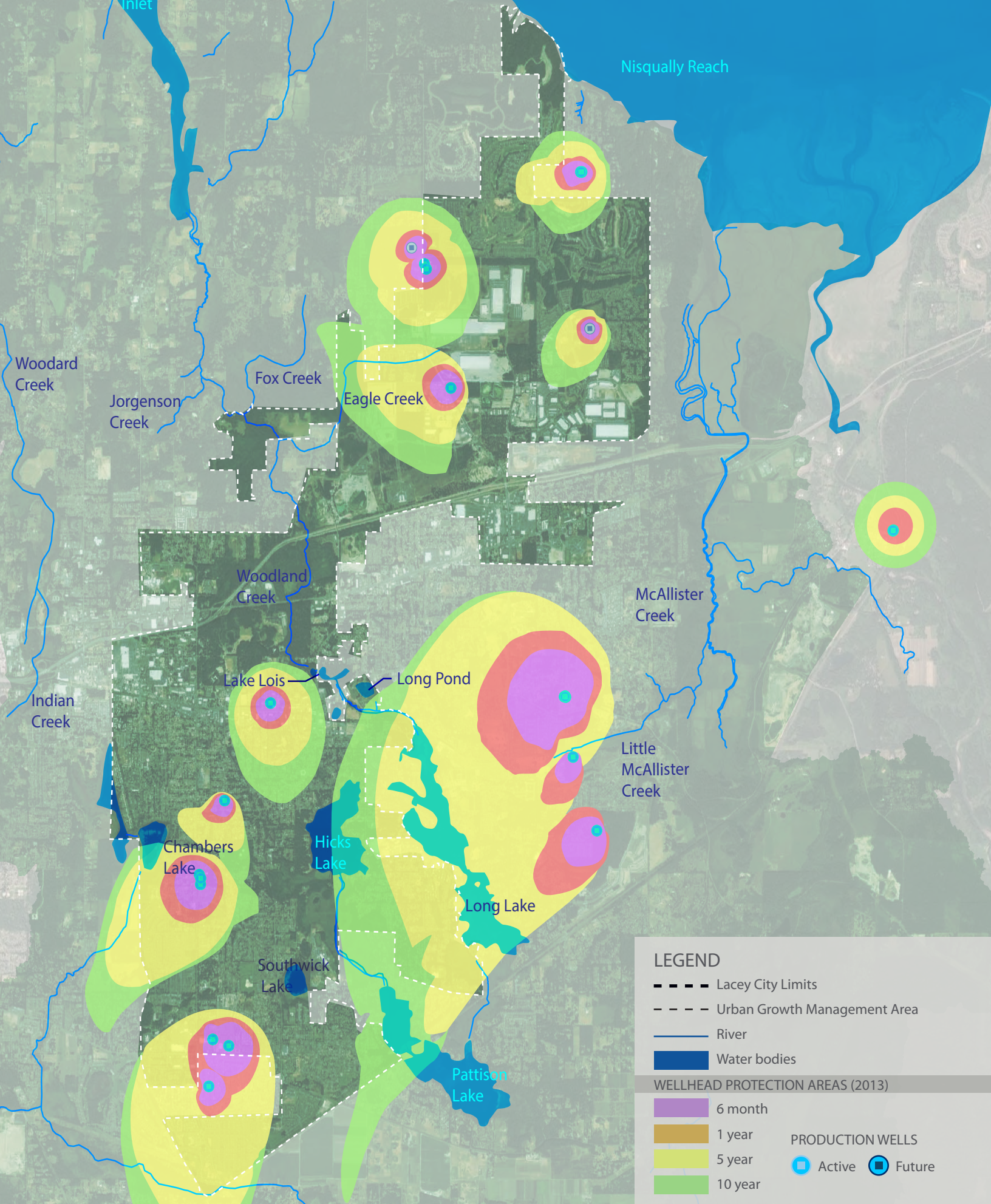
### HYDROLOGIC SOIL GROUP

- A
- B
- C
- D

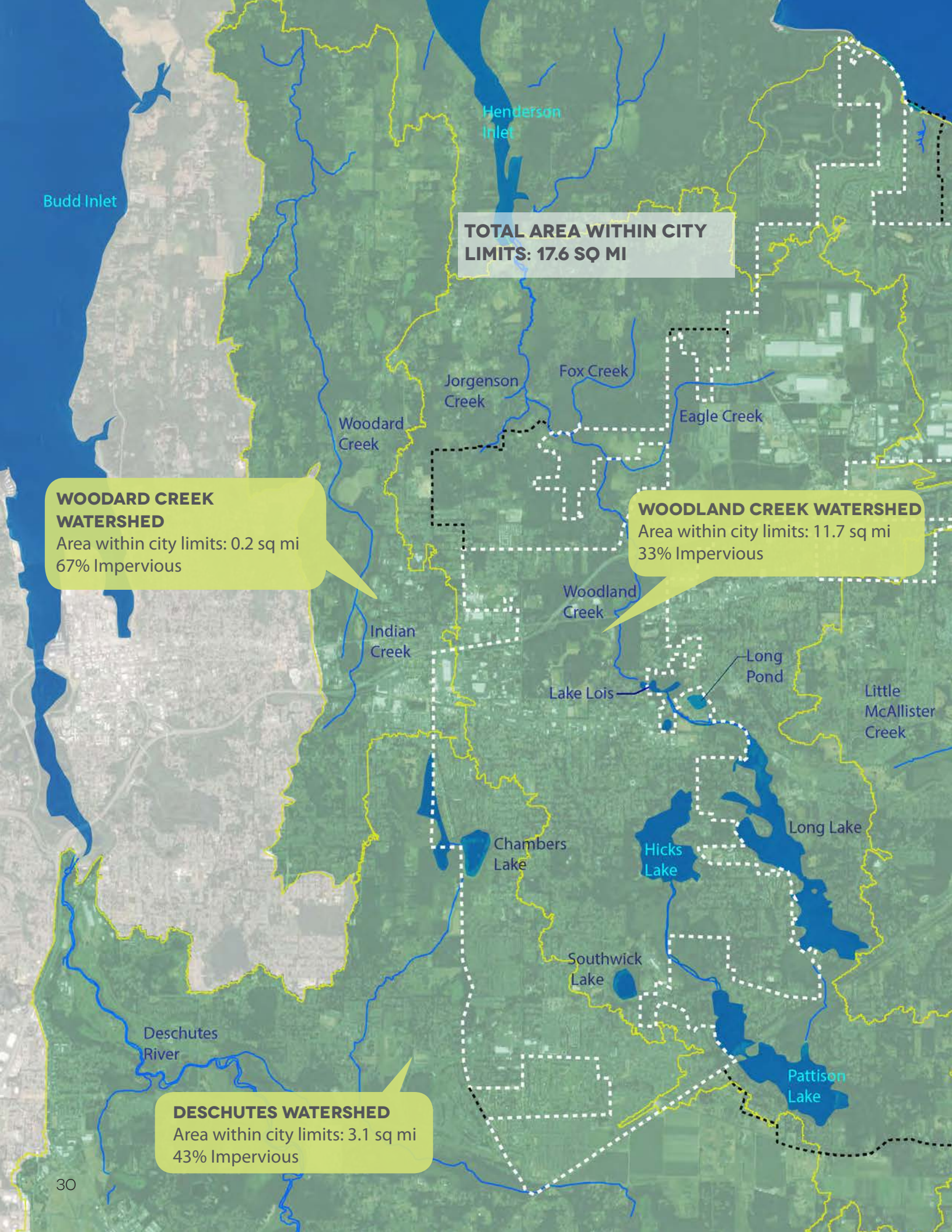
Sensitive groundwater areas in the city include Wellhead Protection Areas (WHPAs) and Critical Aquifer Recharge Areas (CARAs). WHPAs consist of a sanitary control area and time-based capture zones that are used to identify the area of influence around each drinking water well, and where land use management can help to reduce the risk of contamination (Lacey 2013). CARAs are defined as “areas with a critical recharging effect on aquifers used for potable water, including areas where an aquifer that is a source of drinking water is vulnerable to contamination that would affect the potability of the water, or is susceptible to reduced recharge” (WAC 365190030). Because WHPAs identify areas where land use is carefully regulated to avoid contamination of drinking water, groundwater in these areas should be protected. Heightened land use and infiltration regulations in these areas are governed through the City’s wellhead protection program (Environmental Element of the City of Lacey Water Comprehensive Plan) and the SDM to prevent contamination of drinking water. Future development in wellhead protection areas through land use and activity regulation is defined and enforced through the Lacey Municipal Code (LMC 14.36). These protected areas constitute the following percentage of the city:

- Wellhead Protection Areas (WHPAs) – 38 percent
- Critical Aquifer Recharge Areas (CARAs) – 100 percent

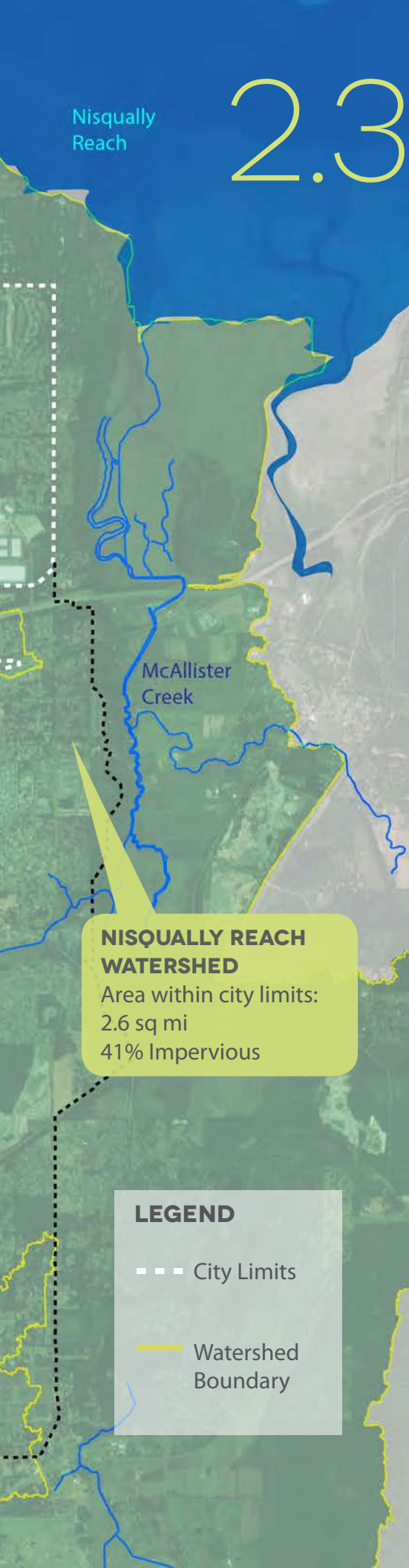












## WATER BODIES AND INFRASTRUCTURE

Stormwater runoff within the city limits and the UGA drains to three watersheds along the Puget Sound: Henderson Inlet, the Deschutes River to Budd Inlet, and McAllister Creek to the Nisqually Reach. The Department of Ecology assesses the quality of all water bodies in the state to determine whether they are impaired by pollutants and require a water improvement project, or Total Maximum Daily Load (TMDL).

### HENDERSON INLET

Tributaries to Henderson Inlet include Woodard Creek and Woodland Creek, which flows out of a chain of connected lakes: Hicks Lake, Pattison Lake, Long Lake, and Lake Lois. Other tributaries to Woodland Creek within the UGA include College Creek, Palm Creek, Eagle Creek, Fox Creek, and Jorgenson Creek. Henderson Inlet and its tributaries are subject to a TMDL for impairment due to fecal coliform bacteria and dissolved oxygen. Other concerns include high temperature and high peak flows in Woodland Creek and phosphorus and invasive vegetation in the four lakes.

### NISQUALLY REACH

Runoff from the city flows east to the Nisqually Reach from Little McAllister Creek, which is a tributary of McAllister Creek. The Nisqually Reach and its tributaries are subject to a TMDL to address fecal coliform bacterial and dissolved oxygen impairment, though Little McAllister Creek and the City of Lacey are not specifically identified in this plan.

### BUDD INLET

Runoff from the city flows northwest to Budd Inlet from Chambers Lake through the Deschutes River. Budd Inlet and its tributaries are subject to a TMDL for temperature impairment. In 2015, the City constructed the Chambers Lake Stormwater Treatment Facility to provide stormwater treatment for 187 acres that drain into Little Chambers Lake, and ultimately to the Deschutes River and Budd Inlet.

Additional information related to water bodies in the city and the specific activities required by the TMDLs can be found in Appendix B.

The City's Stormwater Utility manages a large and complex storm drainage system in the public right-of-way (Table 2-1). This storm drainage system is important to protecting public and private property, ensuring public safety, and providing flow control and water quality treatment to stormwater runoff before it discharges to receiving waters. A list of the City's stormwater facilities including information related to drainage area, function, and discharge waterbody is available in Appendix C.

**TABLE 2-1. SUMMARY OF THE CITY OF LACEY STORMWATER SYSTEM.**

| ITEM                                                                      | QUANTITY | UNITS      |
|---------------------------------------------------------------------------|----------|------------|
| Catch basins and storm drains <sup>a</sup>                                | 6,150    | each       |
| City Storm System pipe <sup>a</sup>                                       | 135      | miles      |
| Outfalls (discharging to surface water) <sup>a</sup>                      | 83       | each       |
| Drywells (discharge via infiltration to groundwater) <sup>a</sup>         | 144      | each       |
| Water quality treatment facilities: Constructed Wetlands <sup>a,b</sup>   | 4        | each       |
| Water quality treatment facilities: Wet Ponds <sup>a,b</sup>              | 14       | each       |
| Water quality treatment facilities: Biofiltration Swales <sup>a</sup>     | 10       | each       |
| Retention/Detention Ponds and Infiltration Basins <sup>a,c,d</sup>        | 35       | each       |
| Regional Facilities primarily discharging to Groundwater <sup>a,e</sup>   | 44       | each       |
| Regional Facilities primarily discharging to Surface Water <sup>a,e</sup> | 10       | each       |
| Municipal streets, centerline miles <sup>a</sup>                          | 166.2    | CL miles   |
| Municipal streets, lane miles <sup>a</sup>                                | 384      | lane miles |
| Impervious surface area coverage in the City <sup>f</sup>                 | 35       | percent    |

<sup>a</sup>Based on input from City staff and review of GIS data and files provided by the City.

<sup>b</sup>Water quality treatment facilities include wet ponds and constructed wetlands that are designed to remove pollutants from stormwater runoff.

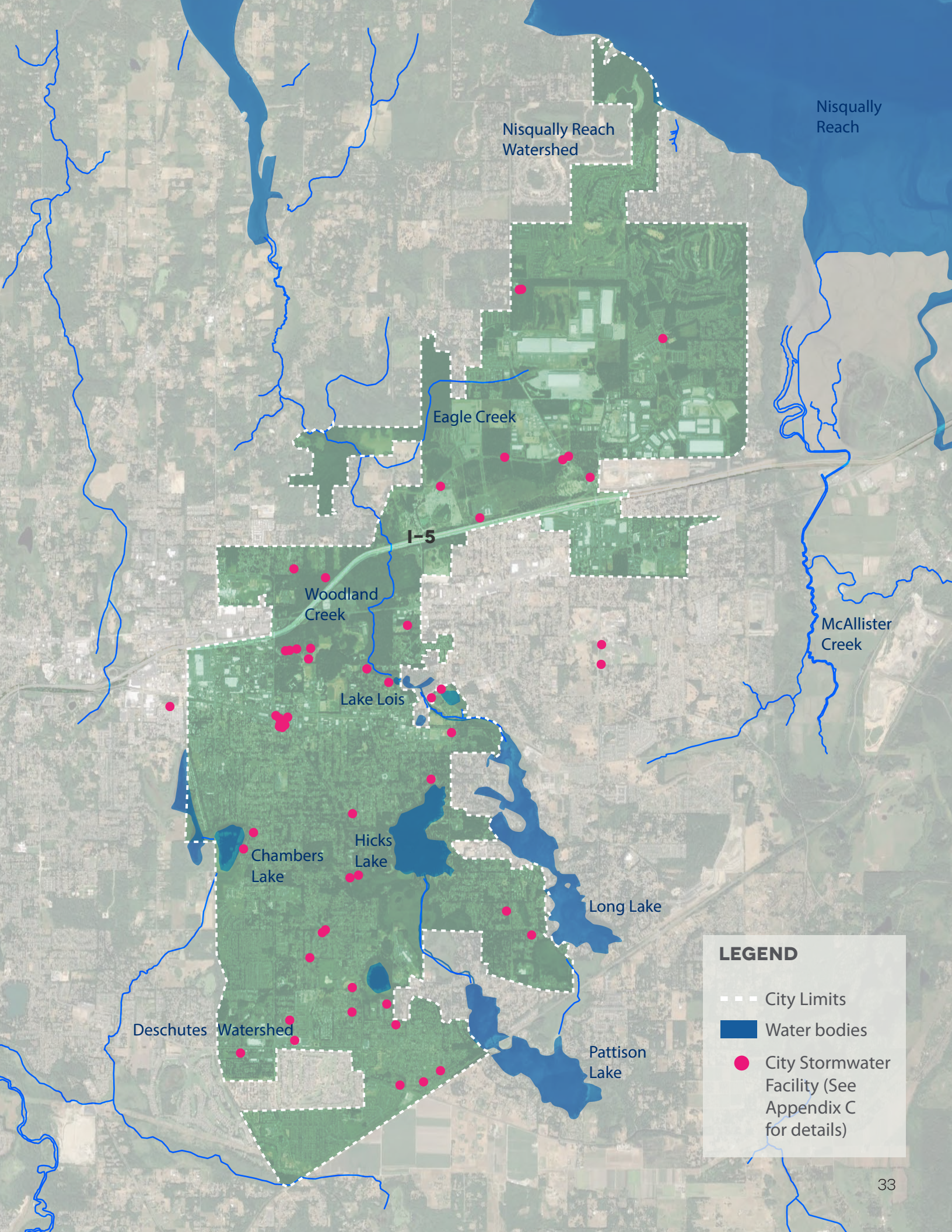
<sup>c</sup>Detention facilities include detention ponds that temporarily store stormwater runoff, reducing peak flows but eventually discharging the same volume. Detention facilities provide little or no infiltration of stored stormwater.

<sup>d</sup>Retention facilities include retention ponds, swales and infiltration basins that are designed to hold stormwater runoff and release it by evaporation, plant transpiration, and/or infiltration into the ground, reducing peak flows and the volume discharged.

<sup>e</sup>Regional facilities are large stormwater facilities (typically detention or retention ponds) that are designed to detain stormwater runoff from a number of new developments or areas within a drainage basin.

<sup>f</sup>Impervious area calculated in 2020 using 2018 aerial imagery





Nisqually Reach Watershed

Nisqually Reach

Eagle Creek

I-5

Woodland Creek

McAllister Creek

Lake Lois

Chambers Lake

Hicks Lake

Long Lake

Deschutes Watershed

Pattison Lake

**LEGEND**

--- City Limits

Water bodies

City Stormwater Facility (See Appendix C for details)



# 2.4

## CLIMATE CHANGE

Potential hydrologic changes associated with climate change increase the importance of stormwater management practices that control flows, promote infiltration, and preserve and enhance water quality. Table 2-2 illustrates how climate change is expected to affect stream flows, flood risk, water quality, and habitat. Increased winter precipitation will increase flood risk. The summertime increases in air temperature will result in an increase in evaporation and transpiration, exacerbating summer water deficits. Cold water fish using streams may be threatened by increased temperatures and reduced dissolved oxygen and flow. Coastal habitats are likely to be affected by sea level rise, increased eroding effects of waves and surge, and harmful algal blooms caused by warmer water temperatures. Specific climate change adaptation activities are discussed in Section 3.3.

**TABLE 2-2. EXPECTED RESPONSES TO STORMWATER MANAGEMENT COMPONENTS FROM PREDICTED CLIMATE CHANGE EFFECTS. <sup>a</sup>**

| STORMWATER MANAGEMENT COMPONENT | PREDICTED RESPONSE TO CLIMATE CHANGE IN THE PUGET SOUND BASIN                                                                                                                                                                 |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stream Flows                    | Increased winter flows<br>Decreased summer flows<br>Likely increased magnitude and frequency of peak events                                                                                                                   |
| Groundwater Supply              | Decreased recharge during summer months<br>Increased use during summer months                                                                                                                                                 |
| Flood Risk                      | Increased flood risk from rivers, streams, and stormwater conveyance system<br>Possible increase in groundwater-induced flooding<br>Increased flood risk along coastal areas due to sea level rise and increased surge height |
| Water Quality                   | Increased average and summer water temperature<br>Increased erosion and suspended materials<br>Lower dissolved oxygen<br>Increased algal blooms                                                                               |
| Habitat                         | Wetland conversion from perennial to seasonal<br>Possible loss of streamside vegetation<br>Decrease in cooler/oxygenated aquatic habitat<br>Increased forest fire intensity                                                   |

<sup>a</sup>Mauger 2017 and TRPC 2018.



# 2.5

## STORMWATER UTILITY FUND

To meet the growing needs for stormwater management, the City created its Stormwater Utility Fund on January 24, 1985 under Ordinance No. 712. This new fund was established as an enterprise fund, similar to the City's sewer and water enterprise funds, with dedicated revenues and expenditures which made the stormwater utility self-supporting. The following year, Ordinance No. 794 established interim stormwater utility fees, which became effective on January 1, 1987. These were flat fees assessed to property owners on a per-parcel basis, which enabled the City to collect storm and surface water utility charges to provide services to residents, including operation of the stormwater utility, drainage basin analysis, and construction of facilities.

On April 26, 1990, LMC Chapter 13.70 was amended under Ordinance No. 886 to establish a more permanent rate structure, with a flat rate for single-family and two-family residential parcels and a seven-step sliding rate for commercial parcels. The new rate structure became effective on July 1, 1990, and is still in use today.

Funds received by the stormwater utility are used in the management and control of stormwater, operation and maintenance of the drainage system, and construction of stormwater facilities. Over the years, stormwater utility fees collected by the City have been used for an increasing number of purposes as stormwater issues and regulatory requirements have grown.



# 2.6

## APPLICABLE REGULATIONS

The City's SWMP supports efforts to comply with the following local, state, and federal regulations and other requirements:



UIC in Seattle, WA



### UNDERGROUND INJECTION CONTROL PROGRAM

The UIC program is a federal program intended to ensure that underground sources of drinking water are protected from surface discharges to the ground. In Washington, the UIC program is administered by Ecology through Chapter 173-218 of the Washington Administrative Code. The Guidance for UIC Wells that Manage Stormwater (Ecology 2006) lays out the requirements for UIC wells, and Ecology has included additional guidance in the latest update of the Stormwater Management Manual for Western Washington, released in 2019.

### ECOLOGYS TMDL IMPLEMENTATION PLANS

TMDL cleanup action is required for water bodies that have been identified as impaired on Ecology's Section 303(d) list due to poor water quality.



Photo Credit John Marshall

### ACTION AGENDA FOR THE PUGET SOUND

The Puget Sound Partnership (PSP) is the regional organization that the Washington State Legislature established to coordinate and lead the effort to recover the Puget Sound (PSP 2018). The current action agenda implementation plan does not list any specific actions for Lacey at this time.



Photo Credit AP Images

### FEDERAL ENDANGERED SPECIES ACT

The Federal Endangered Species Act (ESA) prohibits the take of all listed species, including a take that could result from the City's stormwater facility operations or private development stormwater management activities that are permitted by the City.



## WASHINGTON STATE GROWTH MANAGEMENT ACT

The GMA requires the City to inventory and protect environmentally critical areas (such as steep slopes, wetlands, and streams) (Chapter 36.70A of the Revised Code of Washington). The GMA also requires the City to develop comprehensive plans in order to ensure environmentally responsible and economically sustainable development, including planning for stormwater-related capital facilities.



## LACEY MUNICIPAL CODE

Several sections of the Lacey Municipal Code (LMC), including LMC 14.27 – Stormwater Management, govern aspects of stormwater management on new development and redevelopment project sites, as well as inspection and maintenance requirements for private stormwater facilities.



## NPDES PHASE II MUNICIPAL STORMWATER PERMIT

The Phase II Permit (Ecology 2019b) has broad requirements associated with stormwater runoff and requires the City to develop several distinct SWMP components. The first Phase II Permit was issued by Ecology in 2007, reissued in 2012, and again in 2019. The requirements for the City's stormwater program have become more stringent with each new permit issuance. The permit requires that the City's SWMP meet requirements in 11 primary areas:

- Stormwater planning
- Public education and outreach
- Public involvement and participation
- Municipal separate storm sewer system (MS4) mapping and documentation
- Illicit discharge detection and elimination (IDDE)
- Controlling runoff from new development, redevelopment, and construction sites
- Operations and maintenance
- Source control program for existing development
- Compliance with TMDL requirements
- Monitoring and assessment
- Reporting requirements

See the [Permit](#) online for a complete list of requirements.



## NPDES PHASE II MUNICIPAL STORMWATER PERMIT NEW REQUIREMENTS

The latest Phase II Permit requires the City to take on several new activities between 2020 and 2024 in addition to the many ongoing requirements that carry over from the 2013-2019 Permit. The new activities listed below will have the greatest demand on staff time. Chapter 3 provides more detail on changes that will be needed to keep the City's SWMP in compliance with the evolving Phase II Permit requirements.

### PUBLIC EDUCATION AND OUTREACH

Create a behavior change program that targets a local water quality issue using Community-Based Social Marketing (CBSM) by February 2021.



### STORMWATER PLANNING

Convene an interdisciplinary team by August 2020.

Describe how stormwater management and protection of receiving waters are informing the planning process and influencing policies and strategies.

- Describe past actions in the Annual Report due March 2021
- Describe future actions by January 2023

Continue requiring LID principles and practices and assess and address barriers to LID implementation.

Complete Stormwater Management Action Planning (SMAP).

- Inventory and assess receiving waters by March 2022
- Prioritize watersheds in the city by June 2022
- Plan retrofits and actions for the highest-priority watershed by March 2023.





## MUNICIPAL SEPARATE STORM SEWER SYSTEM MAPPING AND DOCUMENTATION

Document size and material of storm system outfalls starting January 2020.

Complete mapping of all connections to privately-owned storm systems by August 2023.

Ensure that all stormwater mapping data is stored electronically with fully described mapping standards by August 2021.

Make storm system mapping available to Ecology, tribes, municipalities, and other permittees upon request.

## SOURCE CONTROL PROGRAM FOR EXISTING DEVELOPMENT

Develop and implement a business inspection program with the following components:

- Adopt an ordinance requiring application of source control BMPs for pollutant-generating sources at existing land uses by August 2022.
- Develop an inventory of sites with the potential to generate pollutants by August 2022.
- Implement a business inspection program by January 2023.
- Implement a progressive enforcement policy by January 2023.
- Provide a training program for staff involved in these activities by January 2023.

## CONTROLLING RUNOFF FROM NEW DEVELOPMENT, REDEVELOPMENT, AND CONSTRUCTION SITES

- Update local regulations and permitting processes to meet criteria specified in the Permit by June 2022.
- Update Lacey's 2016 Stormwater Design Manual

# 3 STORMWATER MANAGEMENT PROGRAM EVALUATION AND RECOMMENDATIONS

Chapter 3 of this plan summarizes the key SWMP recommendations for 2019–2024 Phase II Permit requirements. The recommendations were developed based on a gap analysis (comparison of the City's present SWMP to the 2019–2024 Phase II Permit requirements) and a needs assessment conducted in 2018 and 2019 to evaluate specific components of the City's SWMP with respect to Phase II Permit requirements. In addition to meeting permit requirements, Section 3.3 identifies climate change adaptation strategies and ways that the existing stormwater program builds climate change resiliency.



MAINTENANCE AT COLLEGE REGIONAL STORM FACILITY



# 3.1

## LEVEL OF SERVICE

The City has identified activities to meet NPDES requirements and make cost-effective improvements in line with SWMP goals.



Recommended activities that address gaps between the existing program and the 2019 - 2024 Phase II Permit requirements are indicated with a blue and green circle and include due dates.

Other recommended activities will improve protection of critical groundwater resources, create a more effective stormwater submittal review process, and enable more proactive maintenance of the growing stormwater system.



PLANTING EVENT FOR MARTIN LUTHER KING JR. DAY, JANUARY 2020

# 3.2

## RECOMMENDATIONS

This section is generally organized by Phase II Permit components and includes summarized recommendations for the City's 2021 budget. A detailed list of recommendations with associated funding and staffing requirements, support for those requirements, and a proposed implementation schedule is provided in Appendix E.



### SURFACE WATER QUALITY IMPROVEMENT: (SEE TABLE E-2)

Develop a Regional Water Quality Facility Program:

This purpose of this program will be to locate, design, and construct stormwater treatment facilities for existing untreated discharges. The first step will be conducting a study to map and prioritize areas without stormwater treatment so that water quality treatment facilities can be designed and constructed at the highest priority locations first.



### GROUNDWATER QUALITY PROTECTION: (SEE TABLE E-3)

Develop stormwater infiltration policies.

These policies and regulations will aim to protect groundwater and specifically address UIC wells as part of the 2020 Stormwater Comprehensive Plan (SCP) update and 2022 SDM update.

Allocate 2 weeks of staff time each year to implement the Water Quality and Infiltration Retrofit Program of the CIP and hiring 1 Full Time Equivalent (FTE) staff person to enhance the regional groundwater monitoring program and an additional \$40,000 per year and 2 staff days per month to monitor groundwater in areas where deep UIC wells are proposed or existing.



### PUBLIC PARTICIPATION: (SEE TABLE E-5)



Develop the following programs to satisfy Permit requirements in 2020 and 2021:

- Evaluate a behavior change resulting from an education program (July 2020)
- Community-based social marketing (CBSM) (February 2021)



## POLLUTANT SOURCE CONTROL: (SEE TABLE E-6)



Increase staffing by 0.9 additional FTE to improve the commercial and residential facility inspection program and to satisfy permit requirements, starting in 2020:

Add auto accident tracking to the spill response plan (Expedite Implementation).

Map all MS4 outfalls (January 2020) and connections to the MS4 (August 2023).

Implement a source control program for existing development.

- Source control ordinance (August 2022)
- Enforcement policy (August 2022)
- Training program (January 2023)
- Inspection program (January 2023)

Increase staffing by 0.25 FTE to enhance the Stormwater Outfall Illicit Discharge screening program



## INFRASTRUCTURE OPERATIONS AND MAINTENANCE: (SEE TABLE E-7)



Contract approximately 200 hours of one-time outside support and add about 3 weeks of staff time each year to update Stormwater Pollution Prevention Plans (SWPPPs) to reflect changes at multiple City-owned facilities and record monitoring and inspections at these facilities.

Increase staffing by 200 hours per year to develop SOPs for facility operations and maintenance and other activities, as well as additional staff to account for the growing needs of the expanding system.





## DEVELOPMENT PRACTICES: (SEE TABLE E-8)



Hire one FTE to develop a framework and annually review new policies for LID principles, contribute to the SDM update in 2022 (included in the CIP), and improve site plan review, site inspections, and plan review checklists.

Contract approximately 430 hours of one-time outside support and add about 0.5 additional FTE to develop and implement policies for self-reporting from contractors and tenant improvements at non-residential sites, enhance inspector training and developer tools, and decrease stormwater submittal review time to 10 business days.



## STORMWATER PLANNING, ADMINISTRATION, AND FUNDING: (SEE TABLE E-9)



Contract approximately 1,100 hours of one-time outside support and staff support to update the Stormwater Comprehensive Plan 2026 and satisfy permit requirements, starting in 2020:

- Summarize past coordination with long-range planning efforts.
- Summarize planned coordination with long-range planning efforts.
- Implement Stormwater Management Action Planning (SMAP) (March 2022 - March 2023).
- Form an inter-disciplinary team to inform and assist with the development of the SWMP (starting by August 2020).

Contract approximately 80 hours of one-time outside support and add about 20 staff hours per year to update the stormwater rate structure to an impervious-area based structure and more efficiently integrate multiple types of software used by SWMP staff.



STORMWATER POND IN LACEY

# 3.3

## BUILDING CLIMATE CHANGE RESILIENCE THROUGH STORMWATER MANAGEMENT

Climate change is anticipated to have broad impacts on water resources in the City of Lacey (see Section 2.4). This section identifies which stormwater program activities have the greatest influence on building climate change resiliency. Many of these activities are part of the existing stormwater program. Activities that are not part of the program are identified with an asterisk.

| STORMWATER MANAGEMENT ACTIVITIES ADDRESSING CLIMATE CHANGE IMPACTS                                                                                                                                                                                                          |                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CLIMATE CHANGE IMPACT                                                                                                                                                                                                                                                       | RESILIENCY-BUILDING ACTIVITY                                                                                                                                          |
| PROGRAM ELEMENT: SURFACE WATER QUALITY IMPROVEMENT                                                                                                                                                                                                                          |                                                                                                                                                                       |
| <ul style="list-style-type: none"> <li>Increased erosion and suspended materials in water bodies</li> <li>Lower dissolved oxygen in receiving waters</li> <li>Increased algal blooms in receiving waters</li> <li>Increased average and summer water temperature</li> </ul> | Constructing stormwater quality retrofit projects and protecting and restoring riparian areas                                                                         |
| PROGRAM ELEMENT: PUBLIC PARTICIPATION                                                                                                                                                                                                                                       |                                                                                                                                                                       |
| <ul style="list-style-type: none"> <li>Lower dissolved oxygen in receiving waters</li> <li>Increased algal blooms in receiving waters</li> </ul>                                                                                                                            | Educational campaigns to encourage the public to decrease pollutant generation, such as by decreasing fertilizer use, particularly in lake watersheds                 |
| <ul style="list-style-type: none"> <li>Wetland conversion from perennial to seasonal</li> <li>Possible loss of streamside vegetation</li> <li>Decrease in cooler/oxygenated aquatic habitat</li> </ul>                                                                      | Public involvement in the stream team and other stewardship programs                                                                                                  |
| PROGRAM ELEMENT: INFRASTRUCTURE OPERATIONS AND MAINTENANCE                                                                                                                                                                                                                  |                                                                                                                                                                       |
| <ul style="list-style-type: none"> <li>Increased flood risk from rivers, streams, and stormwater conveyance system</li> </ul>                                                                                                                                               | Operations and maintenance activities including street sweeping and spot checks of inlets and other critical points in the stormwater conveyance system before storms |



| CLIMATE CHANGE IMPACT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | RESILIENCY-BUILDING ACTIVITY                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PROGRAM ELEMENT: DEVELOPMENT PRACTICES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>Increased winter stream flows</li> <li>Decreased summer stream flows</li> <li>Likely increased magnitude and frequency of peak events in streams</li> <li>Decreased groundwater recharge during summer months</li> <li>Increased groundwater use during summer months</li> <li>Increased flood risk from rivers, streams, and the stormwater conveyance system</li> <li>Increased average and summer water temperature</li> <li>Increased erosion and suspended materials in water bodies</li> <li>Lower dissolved oxygen in receiving waters</li> <li>Increased algal blooms in receiving waters</li> </ul> | Continuing to require flow control on redevelopment projects and prioritizing infiltrating stormwater facilities; LID was the preferred approach.           |
| PROGRAM ELEMENT: STORMWATER PLANNING, ADMINISTRATION, AND FUNDING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>Lower dissolved oxygen in receiving waters</li> <li>Increased algal blooms in receiving waters</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Reducing the amount of nutrients in stormwater through public education or regulations aimed at decreasing fertilizer use, particularly in lake watersheds. |
| <ul style="list-style-type: none"> <li>Increased flood risk from rivers, streams, and stormwater conveyance system</li> <li>Possible increase in groundwater-induced flooding</li> <li>Increased flood risk along coastal areas due to sea level rise and increased surge height</li> <li>Possible loss of streamside vegetation</li> </ul>                                                                                                                                                                                                                                                                                                         | Purchasing land for conservation purposes may offset loss of streamside vegetation and reduce flooding impacts by acquiring frequently-flooded properties * |
| <ul style="list-style-type: none"> <li>Increased forest fire intensity</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Developing a forest management plan with fire management strategies for vegetation in the City by coordinating with the Fire Department *                   |
| <ul style="list-style-type: none"> <li>Increased flood risk from rivers, streams, and stormwater conveyance system</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Revisiting flood reduction policies, design standards for new development, and priorities for retrofit projects                                             |

In addition to adaptation measures listed on the prior pages, the City is taking planning actions that will mitigate climate change by reducing emissions and increasing sequestration of greenhouse gases. The Lacey City Council signed an interlocal agreement with Thurston County, Olympia, and Tumwater in April 2018 to complete Phase 1 of a Regional Climate Mitigation Plan. Phase 1 focused on assessing existing policies and targets of each jurisdiction for gaps and consistencies, recommending a regional emissions target, identifying each jurisdiction's implemented mitigation actions to date, and recommending a regional emissions reduction target. In addition, Phase 1 produced a recommended scope of work for Phase 2, with the ultimate deliverable being a Regional Climate Mitigation Plan and Implementation Strategy. The goal is to avoid significant human disruptions to the climate system to stabilize greenhouse gas levels in a timeframe sufficient to allow ecosystems to adapt naturally to climate change.





**The Regional Climate Mitigation Plan will include actions that:**

- Reduce the sources of greenhouse gases
- Reduce the demand for burning fossil fuels that produce greenhouse gases
- Enhance the sinks or sequestration that store these gases

**The actions will be organized into five categories:**

- Buildings and Energy
- Transportation and Land Use
- Water and Waste
- Agriculture and Forests
- Cross Cutting Actions



# 4 CAPITAL IMPROVEMENT PROGRAM

This chapter summarizes the stormwater CIP. The purpose of the CIP is to define capital projects that make progress towards the City's long-term goals related to the following elements of the SWMP:



HOGUM BAY POND EXCAVATION



Flood Reduction



Surface Water Quality Improvement (retrofitting)



Ground Water Quality Protection



Public Participation



Habitat Improvement



Development Practices



Infrastructure Operations and Maintenance



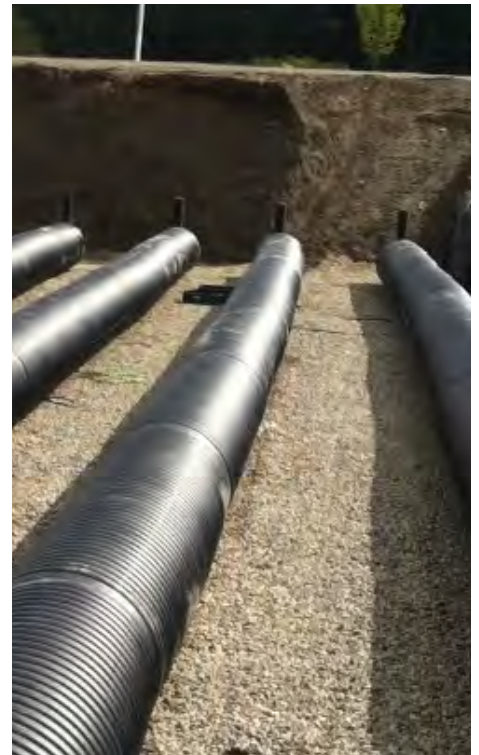
Stormwater Planning, Administration, and Funding

The City maintains and regularly updates a list of needed projects. The following section describes the process used to identify problems and develop and prioritize solutions. A map of stormwater CIP projects is included.

# 4.1

## PROBLEM IDENTIFICATION AND SOLUTION DEVELOPMENT

The stormwater CIP from the 2013 SCP (Lacey 2013) was updated using input from City staff on completed projects and new problems. Problems were evaluated using desktop methods and field evaluation to assess site-specific opportunities and constraints. New project concepts were developed using desktop methods and an estimated cost was defined for each project. See Appendix D for more detailed information on CIP project design development.



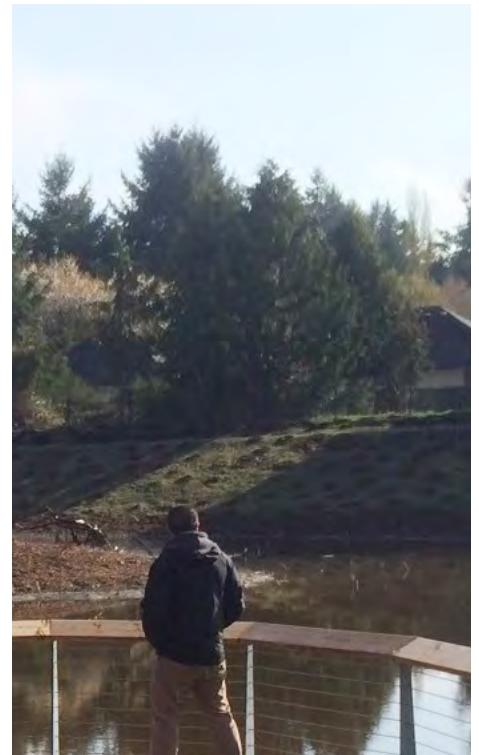
INFILTRATION GALLERY



# 4.2

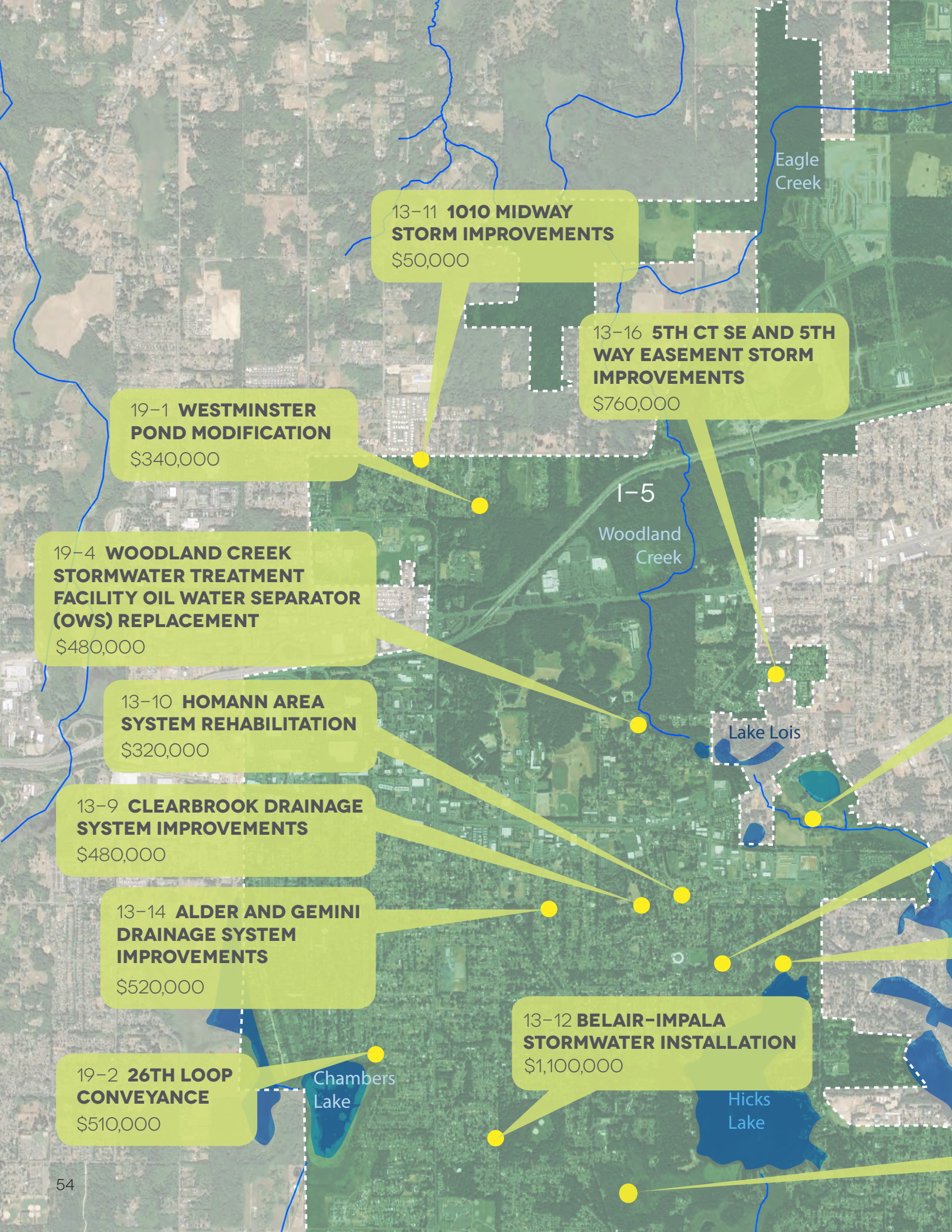
## CIP PROJECT PRIORITIZATION

Stormwater problems and solutions were evaluated using a qualitative process, which considered input from City staff, review of background documents, and field reconnaissance of existing problems to prioritize a subset of CIP projects. This prioritization was then used to develop an implementation schedule that emphasized early completion of the projects providing the greatest benefit. Detailed prioritization results and project summary sheets are provided in Appendix D. The project implementation schedule is included in Chapter 5, Plan Implementation.



CHAMBERS LAKE STORMWATER TREATMENT WETLANDS





13-11 **1010 MIDWAY  
STORM IMPROVEMENTS**  
\$50,000

13-16 **5TH CT SE AND 5TH  
WAY EASEMENT STORM  
IMPROVEMENTS**  
\$760,000

19-1 **WESTMINSTER  
POND MODIFICATION**  
\$340,000

19-4 **WOODLAND CREEK  
STORMWATER TREATMENT  
FACILITY OIL WATER SEPARATOR  
(OWS) REPLACEMENT**  
\$480,000

13-10 **HOMANN AREA  
SYSTEM REHABILITATION**  
\$320,000

13-9 **CLEARBROOK DRAINAGE  
SYSTEM IMPROVEMENTS**  
\$480,000

13-14 **ALDER AND GEMINI  
DRAINAGE SYSTEM  
IMPROVEMENTS**  
\$520,000

19-2 **26TH LOOP  
CONVEYANCE**  
\$510,000

13-12 **BELAIR-IMPALA  
STORMWATER INSTALLATION**  
\$1,100,000

Eagle  
Creek

I-5

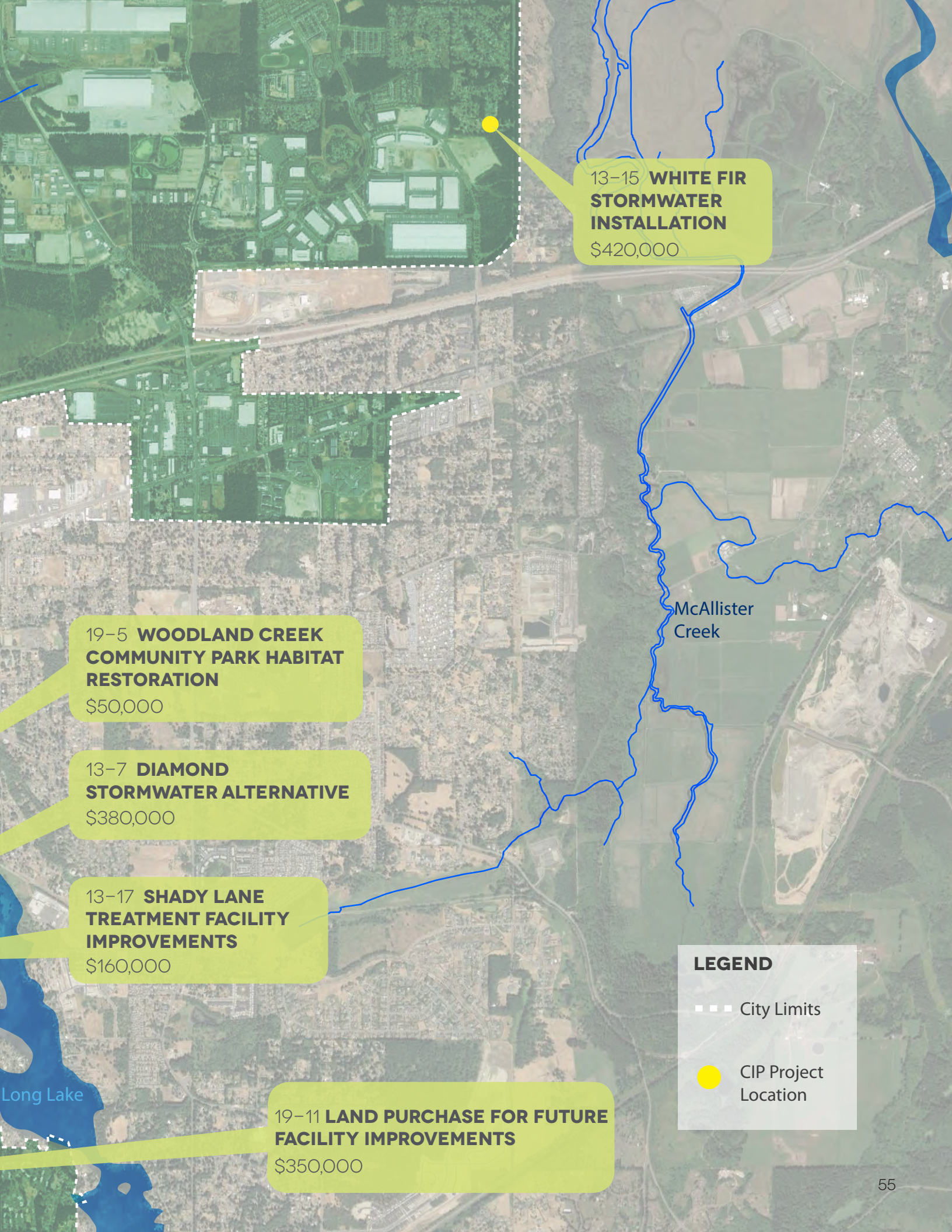
Woodland  
Creek

Lake Lois

Chambers  
Lake

Hicks  
Lake





**13-15 WHITE FIR  
STORMWATER  
INSTALLATION**  
\$420,000

**19-5 WOODLAND CREEK  
COMMUNITY PARK HABITAT  
RESTORATION**  
\$50,000

**13-7 DIAMOND  
STORMWATER ALTERNATIVE**  
\$380,000

**13-17 SHADY LANE  
TREATMENT FACILITY  
IMPROVEMENTS**  
\$160,000

**19-11 LAND PURCHASE FOR FUTURE  
FACILITY IMPROVEMENTS**  
\$350,000

**LEGEND**

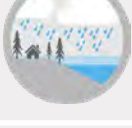
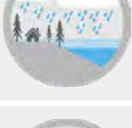
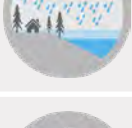
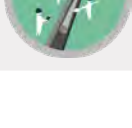
- City Limits
- CIP Project Location



**TABLE 4-1. CIP PROJECT TABLE.**

| #      | ITEM                                                                         | COST      | GOALS ADDRESSED (BY PRIORITY)                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------|------------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 19-1   | Westminster Pond Modification                                                | \$340,000 |                                                                                                                                                                                      |
| 19-2   | 26th Loop Conveyance                                                         | \$510,000 |                                                                                                                                                                                      |
| 19-3*  | Stormwater Design Manual Update (Mandated by NPDES Permit)                   | \$180,000 |                                                                                                                                                                                                                                                                         |
| 19-4   | Woodland Creek Stormwater Treatment Facility Oil Water Separator Replacement | \$480,000 |                                                                                                                                                                                                                                                                         |
| 19-5   | Woodland Creek Community Park Habitat Restoration                            | \$50,000  |                                                                                                                                                                                                                                                                       |
| 19-6*  | Stormwater Management Action Planning (Mandated by NPDES Permit)             | \$100,000 |      |
| 19-7*  | Regional Water Quality Facility Program                                      | \$200,000 |                                                                                                                                                                                |
| 19-8*  | Infiltration Retrofit Program                                                | \$200,000 |                                                                                                                                                                                |
| 19-9*  | Miscellaneous Storm System Improvements                                      | \$900,000 |                                                                                                                                                                                                                                                                     |
| 19-10* | Stormwater Comprehensive Plan Update                                         | \$250,000 |                                                                                                                                                                                                                                                                                                                                                          |
| 19-11  | Land Purchase for Future Facility Improvements                               | \$350,000 |                                                                                                                                                                                                                                                                     |



| #     | ITEM                                                | COST        | GOALS ADDRESSED (BY PRIORITY)                                                                                                                                                                                                                              |
|-------|-----------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13-7  | Diamond Stormwater Alternative                      | \$380,000   |                                                                                                                                                                          |
| 13-9  | Clearbrook Drainage System Improvements             | \$480,000   |    |
| 13-10 | Homann Area System Rehabilitation (Analysis/Design) | \$320,000   |                                                                                       |
| 13-11 | 1010 Midway Storm Improvements                      | \$50,000    |                                                                                                                                                                          |
| 13-12 | Belair-Impala Stormwater Installation               | \$1,100,000 |                                                                                                                                                                         |
| 13-14 | Alder and Gemini Drainage System Improvements       | \$520,000   |                                                                                   |
| 13-15 | White Fir Stormwater Installation                   | \$420,000   |                                                                                   |
| 13-16 | 5th Ct SE and 5th Way Easement Storm Improvements   | \$760,000   |                                                                                                                                                                        |
| 13-17 | Shady Lane Treatment Facility Improvements          | \$160,000   |                                                                                   |

#### ICON KEY

-  PUBLIC PARTICIPATION
-  INFRASTRUCTURE OPERATIONS AND MAINTENANCE
-  SURFACE WATER QUALITY IMPROVEMENT (RETROFITTING)
-  STORMWATER PLANNING, ADMINISTRATION, AND FUNDING
-  DEVELOPMENT PRACTICES
-  GROUNDWATER QUALITY PROTECTION
-  HABITAT IMPROVEMENT
-  FLOOD REDUCTION

Notes.

\* = Projects are not location-specific and therefore not shown on the map.

19-x = New CIP Projects for 2019 SCP.

13-x ("Carryover" status) = Unaddressed Projects from 2013 CIP List.



# 5 PLAN IMPLEMENTATION

This chapter presents detailed information on implementing the recommended stormwater program activities presented in Chapter 3 and the capital projects described in Chapter 4. The major components of plan implementation include staffing needs, additional resource needs, completion of CIP projects that address existing stormwater issues, interdepartmental collaboration, interagency collaboration, and utility finances.



CIP PROJECT MANAGEMENT COLLABORATION

# 5.1

## STORMWATER MANAGEMENT PROGRAM

### ADDRESSING STAFFING NEEDS

Under the current level of staffing, City stormwater management personnel are able to address stormwater problems that arise on a daily basis and troubleshoot specific issues that arise with development project reviews, but they are not fully able to perform activities that would enable continual improvement of the City's stormwater system. Current staffing levels will not be adequate to meet the requirements of the 2019–2024 Phase II Permit and defined SWMP goals during future years. The activities listed in the table opposite will require additional staffing shown on page 62. Refer to Appendix E for a detailed estimate of staffing needs.



## ACTIVITIES THAT WILL REQUIRE ADDITIONAL STAFF TIME



### Development Practices

Review new policies for LID principles  
Update the SDM  
Improve site plan review and site inspections  
Develop policies for self-reporting from contractors and tenant improvements



### Pollution Source Control

Improve the commercial and residential facility inspection program  
Map all MS4 outfalls (due January 2020) and connections (due August 2023) to the MS4  
Implement the Source Control Program for existing Development to begin by January 2023  
Enhance the Stormwater Outfall Illicit Discharge Screening Program



### Infrastructure Operations and Maintenance

Update SWPPPs  
Develop SOPs for facility operations and maintenance and other activities  
Expand the O&M program to account for the growing needs of the program



### Groundwater Quality Protection

Develop stormwater infiltration policies  
Implement the Enhanced Regional Groundwater Monitoring Program  
Monitor groundwater in areas where UICs are proposed or existing



### Surface Water Quality Improvement (retrofitting)

Implement the Regional Water Quality Facility Program



### Public Participation

Evaluate behavior change resulting from an education program  
Conduct CBSM by February 2021

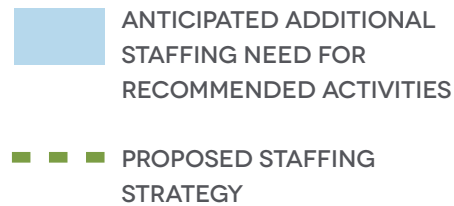


### Stormwater Planning, Administration, and Funding

Summarize past and planned coordination with long-range planning efforts by January 2023  
Implement SMAP starting in March 2022  
Form an inter-disciplinary team to inform and assist with the development of the SWMP  
Update the stormwater rate structure  
Integrate multiple types of software used by SWMP staff

In addition to the staffing requirements discussed in Chapter 3, the City will need staff to manage the construction management and project management aspects of proposed CIP projects. These costs are included in Appendix D. Additional staffing needs for the CIP will not be determined until the Water Utility has developed their CIP implementation schedule.

Given this list of new activities that staff will have to take on during the planning period (see page 61), the City's stormwater program would benefit from the following additional staff positions:



FULL-TIME EQUIVALENT STAFF



#### [A] 2021

- Hire 1 full-time Engineering Technician III to support private facility inspections, illicit discharge response, and site plan review while resolving field issues and assisting with new permit requirements
- Replace one of the half-time O&M staff with a full-time Journeyman to account for growing O&M needs of the City's stormwater system
- Hire one full-time hydrogeologist to implement the Groundwater Monitoring Program, the UIC monitoring program, and the Regional Water Quality Facility Program. Funding for this position will be shared with the Water Utility.

#### [B] 2022

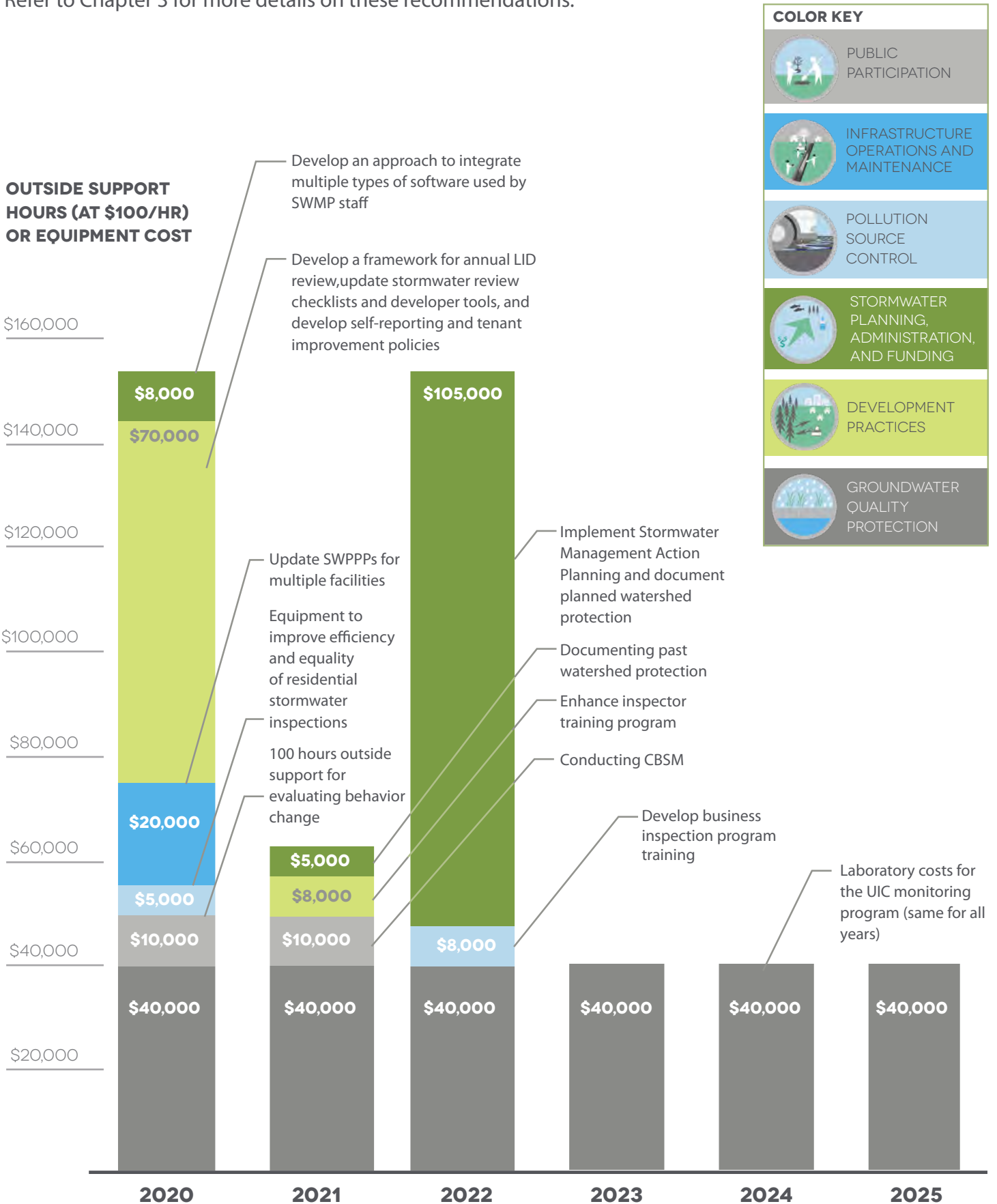
- Hire 1 full-time Stormwater Planner to implement the source control program for existing development and support coordinating and planning city-wide permit-compliance activities and regional collaboration.

#### [C] 2023

- Hire 1 half-time journeyman to support the growing O&M needs of the City's stormwater system

## OUTSIDE SUPPORT

Refer to Chapter 3 for more details on these recommendations.



# 5.2

## CAPITAL IMPROVEMENT PROGRAM

**TABLE 5-1. CAPITAL IMPROVEMENT PROGRAM IMPLEMENTATION SCHEDULE.**

| #                                        | PROJECT NAME                                                                 | 2020      | 2021        | 2022      | 2023      | 2024        | 2025        | OUT YEARS** |
|------------------------------------------|------------------------------------------------------------------------------|-----------|-------------|-----------|-----------|-------------|-------------|-------------|
| 19-1                                     | Westminster Pond Modification                                                |           |             | \$60,000  | \$280,000 |             |             |             |
| 19-2                                     | 26th Loop Conveyance                                                         |           |             |           | \$100,000 | \$410,000   |             |             |
| 19-3                                     | Stormwater Design Manual Update (Mandated by NPDES Permit)                   | \$50,000  | \$60,000    | \$70,000  |           |             |             |             |
| 19-4                                     | Woodland Creek Stormwater Treatment Facility Oil-Water Separator Replacement |           | \$50,000    | \$430,000 |           |             |             |             |
| 19-5                                     | Woodland Creek Community Park Habitat Restoration                            |           | \$50,000    |           |           |             |             |             |
| 19-6                                     | Stormwater Management Action Planning (Mandated by NPDES Permit)             |           |             | \$100,000 |           |             |             |             |
| 19-7                                     | Regional Water Quality Facility Program                                      |           |             |           | \$100,000 | \$100,000   |             |             |
| 19-8                                     | Infiltration Retrofit Program                                                |           |             |           |           | \$100,000   | \$100,000   |             |
| 19-9                                     | Miscellaneous Storm System Improvements                                      | \$150,000 | \$150,000   | \$150,000 | \$150,000 | \$150,000   | \$150,000   |             |
| 19-10                                    | Stormwater Comprehensive Plan Update                                         |           |             |           |           | \$80,000    | \$170,000   |             |
| 19-11                                    | Land Purchase for Future Facility Improvements                               |           | \$350,000   |           |           |             |             |             |
| CARRYOVER CAPITAL PROJECTS FROM 2013 CIP |                                                                              |           |             |           |           |             |             |             |
| 13-7                                     | Diamond Stormwater Alternative                                               |           |             |           |           |             | \$80,000    | \$300,000   |
| 13-9                                     | Clearbrook Drainage System Improvements                                      |           |             |           |           |             | \$80,000    | \$400,000   |
| 13-10                                    | Homann Area System Rehabilitation (analysis/design)                          |           |             |           |           | \$120,000   | \$200,000   |             |
| 13-11                                    | 1010 Midway Storm Improvements                                               |           |             |           |           |             |             | \$50,000    |
| 13-12                                    | Belair-Impala Stormwater Installation                                        | \$100,000 | \$1,000,000 |           |           |             |             |             |
| 13-14                                    | Alder and Gemini Drainage System Improvements                                |           |             |           |           | \$70,000    | \$450,000   |             |
| 13-15                                    | White Fir Stormwater Installation                                            |           |             |           |           |             |             | \$420,000   |
| 13-16                                    | 5th Ct SE and 5th Way Easement Storm Improvements                            |           |             |           |           |             |             | \$760,000   |
| 13-17                                    | Shady Lane Treatment Facility Improvements                                   |           |             |           |           | \$160,000   |             |             |
| TOTAL                                    |                                                                              | \$300,000 | \$1,660,000 | \$810,000 | \$630,000 | \$1,190,000 | \$1,230,000 | \$1,930,000 |

\*\*The projects listed in the 'out years' column have not been scheduled during the planning period and are not accounted for in the financial analysis

19-x = New CIP Projects for 2019 SCP. 13-x ("Carryover" status) = Unaddressed Projects from 2013 CIP List; cost estimate from 2013 projected at +4% per annum. All costs in 2019 dollars.





CIP projects were developed for known problems that include issues like neighborhood-scale flooding, poor water quality, failing infrastructure, and projects that address NPDES permit requirements.

The City will implement stormwater CIP projects in the order shown in Table 5-1. In addition to implementation of the CIP projects listed in Table 5-1, the City should take the following steps to ensure an effective stormwater CIP:

- Annually meet with all Public Works Operations staff to evaluate the risk of known problems and identify new problems
- Annually review the data contained in CIP and Non-CIP related tables contained in this plan and add any new information that is collected regarding each problem and solution
- Annually add new potential projects to the CIP and Non-CIP project lists during the development of the SWMP Annual Report in March
- Maintain a stormwater problem and CIP project file with all information that will be useful for updating the CIP
- Review the CIP chapter when the City's Stormwater Comprehensive Plan is updated

There are some known issues that are not being addressed by the CIP due to lack of public support, political barriers, or coordination with other projects with uncertain timing; however, these problems are expected to persist and potentially worsen during the planning period. As the City revisits its CIP priorities, several such issues should be considered:

- Nuisance flooding caused by ditches that have been filled in by adjacent property owners
- Corrosion of the Hicks-Pattison culvert just outside the city limits
- Corrosion of pipes along Martin Way and untreated discharge to Woodland Creek near the city limits
- Future need to upsize the College Regional Storm Facility outfall pipe under I-5

# 5.3

## INTERDEPARTMENTAL COLLABORATION

The stormwater management program is led by stormwater staff in the Water Resources Division of the Public Works Department. The Water Resources Division works closely with other City departments and divisions, including the Public Works Operations Division, Parks and Recreation, and Community and Economic Development. The list below indicates Departments in the City which work closely with Water Resources on various program elements.



### Flood Reduction

- ENGINEERING DIVISION (PUBLIC WORKS DEPARTMENT)



### Habitat Improvement

- PARKS MAINTENANCE DIVISION (PUBLIC WORKS DEPARTMENT)



### Public Participation

- PUBLIC AFFAIRS DEPARTMENT
- PARKS MAINTENANCE DIVISION (PUBLIC WORKS DEPARTMENT)



### Development Practices

- ENGINEERING DIVISION (PUBLIC WORKS DEPARTMENT)
- COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT



### Infrastructure Operations and Maintenance

- PARKS MAINTENANCE DIVISION (PUBLIC WORKS DEPARTMENT)
- OPERATIONS DIVISION (PUBLIC WORKS DEPARTMENT)



### Stormwater Planning, Administration, and Funding

- COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
- FINANCE DEPARTMENT
- PUBLIC WORKS DEPARTMENT

# 5.4

## INTERAGENCY COLLABORATION

To address ongoing regional coordination needs, the City should continue to work with regional stakeholder groups and other local governments in shared drainage basins to protect groundwater and surface water quality and to manage and treat stormwater effectively. The list below indicates agencies and regional programs related to Lacey's stormwater program elements.



### Flood Reduction

- THE FUTURE HICKS LAKE TO PATTISON LAKE CONVEYANCE REPLACEMENT PROJECT AND THE FUTURE MARTIN WAY PIPE REPLACEMENT PROJECT WILL REQUIRE COORDINATION WITH THURSTON COUNTY



### Surface Water Quality Improvement (Retrofitting)

- THE FUTURE COLLEGE REGIONAL STORM FACILITY OUTFLOW SYSTEM PROJECT WILL REQUIRE COORDINATION WITH WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT)
- THE FUTURE WOODLAND CREEK/MARTIN WAY WQ RETROFIT MAY REQUIRE COORDINATION WITH THURSTON COUNTY



### Ground Water Quality Protection

- THURSTON COUNTY PUBLIC HEALTH AND SOCIAL SERVICES DEPARTMENT
- THURSTON REGIONAL PLANNING COUNCIL



### Public Participation

- REGIONAL ENVIRONMENTAL EDUCATION PROGRAM (REEP)
- NORTH THURSTON PUBLIC SCHOOLS



### Stormwater Planning, Administration, and Funding

- HENDERSON INLET TMDL – COORDINATION WITH THE CITY OF OLYMPIA
- SMAP – POSSIBLE COORDINATION WITH NEIGHBORING JURISDICTIONS INCLUDING THE CITY OF TUMWATER, THE CITY OF OLYMPIA, AND THURSTON COUNTY, THOUGH THIS IS NOT REQUIRED

# 5.5

## STORMWATER UTILITY FINANCES

The activities and projects listed in this plan are funded by revenue from the stormwater utility. A financial analysis was conducted to define utility rate adjustments that would be necessary to fully fund the capital project needs, operating and maintenance expenditures, fiscal policies, and staffing increases identified in the recommended level of service (See Appendix F). The original analysis was conducted before the corona virus disease 2019 (COVID-19) pandemic and is presented in Appendix F-1. To account for the expected financial hardships created by the COVID-19 pandemic, the City also considered options for funding the utility without increasing rates in 2021. The alternative scenario analysis is presented in Appendix F-2. Like the original analysis, the alternative scenario meets minimum operating and capital reserve targets through the planning period and results in a similar monthly rate at the end of the planning period (2025). The annual rate increases for the alternative scenario (Appendix F-2) are slightly higher from 2022 through 2025, relative to the rate increases originally recommended (Appendix F-1), to compensate for not increasing stormwater utility rates in 2021. The financial analysis and rate plans presented in Appendix F demonstrate options that are available to fund the CIP. The final rate plan will be determined and approved by the City Council. The approval process for setting rates requires a Revenue Hearing which is typically held by the City Council in November.





DRAINAGE SWALE AND FALL COLOR





# 6 REFERENCES

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**Ecology. 2019a.** Washington State Water Quality Assessment, 303(d)/305(b) List. Approved WQA Version 1.0.7. Accessed July 16, 2019.  
<[https://apps.ecology.wa.gov/approvedwqa/ApprovedSearch.aspx?LISTING\\_ID=70236](https://apps.ecology.wa.gov/approvedwqa/ApprovedSearch.aspx?LISTING_ID=70236)>.

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**PSP. 2018.** 2018 – 2022 Action Agenda for Puget Sound. December.

**TRPC. 2018.** Thurston Climate Adaptation Plan: Climate Resilience Actions for Thurston County and South Puget Sound: Thurston Regional Planning Council.

## **APPENDIX A**

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### **Detailed Stormwater Goals and Policies**



# DETAILED STORMWATER GOALS AND POLICIES

City staff developed long-term goals for each SWMP program element below. Program elements are a comprehensive list of functions performed or influenced by the SWMP. This Appendix lists policies from the previous Stormwater Comprehensive Plan developed in 2013 (SCP 2013) related to each long-term goal. Policies that apply to multiple program elements are indicated with an asterisk.

- **Flood Reduction:** There is no flooding of the public stormwater system due to large storm events.
  - FC1. Comply with all applicable requirements from federal, state, Thurston County, and City of Lacey related to flood protection
  - FC2. Develop new drainage projects for the CIP plan to address flooding problems when these problems cannot be addressed through maintenance of the existing infrastructure
  - FC3. Continue to encourage and allow the use of LID stormwater Best Management Practices for flow control for new development and redevelopment in accordance with current regulations \*
  - FC4. Provide adequate stormwater conveyance in the public storm drain system as follows:
    - Accommodate the 10-year 24-hour event from existing development within the public storm drain system, except as noted in the three bullets below
    - Accommodate the 25-year 24-hour event from existing development for storm drains and culverts that pass under public roads
    - Accommodate the 25-year 24-hour event from existing development within the long term UGA boundary public right-of-way without having water over more than 50 percent of the driving lane
    - Accommodate the 100-year 24-hour event from existing development for culverts and bridges that convey natural channels
- **Surface Water Quality Improvement:** All surface water bodies in Lacey meet water quality criteria for designated recreation and fish uses.

WQ1. Comply with all applicable requirements from federal, state, and local governments related to water quality \*

WQ2. Develop new stormwater treatment projects for the CIP plan when these problems cannot be addressed through source control or maintenance of the existing infrastructure \*

WQ3. When practicable, add or improve water quality treatment whenever constructing new stormwater infrastructure or conducting maintenance, repair, rehabilitation, or replacement of aging City stormwater infrastructure \*

WQ4. Protect surface water quality by addressing potential nutrient loading from stormwater \*

- **Ground Water Quality Protection:** Groundwater quality is not negatively affected (quantity or quality) by stormwater practices.

WQ5. Protect groundwater resources by regulating land use activities, such as requiring a higher level of stormwater treatment within wellhead protection areas, and encouraging practices that minimize impacts to groundwater, such as preserving native vegetation or planting low-input vegetation

- **Habitat Improvement:** Aquatic species thrive in surface water bodies in Lacey.

G2. Improve public knowledge of stormwater runoff issues, encourage public involvement in stewardship activities, and encourage public support for the City's stormwater management program \*

G3. Ensure that new development, redevelopment, and City projects are in conformance with the City's adopted stormwater requirements \*

G4. Analyze proposed new development and redevelopment for potential impacts on the downstream storm drainage system and water quality as part of the stormwater plan review process \*

G10. Oversee construction and maintenance of privately owned stormwater facilities to ensure that they function as designed to protect private property, public property, and the environment \*

FC3. Continue to encourage and allow the use of LID stormwater Best Management Practices for flow control for new development and redevelopment in accordance with current regulations \*

WQ1. Comply with all applicable requirements from federal, state, and local governments related to water quality \*

WQ2. Develop new stormwater treatment projects for the CIP plan when these problems cannot be addressed through source control or maintenance of the existing infrastructure \*

WQ3. When practicable, add or improve water quality treatment whenever constructing new stormwater facilities or conducting maintenance, repair, rehabilitation, or replacement of aging City stormwater facilities \*

WQ4. Protect surface water quality by addressing potential nutrient loading from stormwater \*

- **Public Participation (education, outreach, and involvement):** The public understands how their actions and choices affect stormwater and acts in ways that reduce stormwater flow rates and improve water quality and aquatic habitat.

G2. Improve public knowledge of stormwater runoff issues, encourage public involvement in stewardship activities, and encourage public support for the City's stormwater management program \*

- **Pollutant Source Control:** Pollutants do not enter stormwater.

G2. Improve public knowledge of stormwater runoff issues, encourage public involvement in stewardship activities, and encourage public support for the City's stormwater management program \*

G3. Ensure that new development, redevelopment, and City projects are in conformance with the City's adopted stormwater requirements \*

G4. Analyze proposed new development and redevelopment for potential impacts on the downstream storm drainage system and water quality as part of the stormwater plan review process \*

G10. Oversee construction and maintenance of privately owned stormwater facilities to ensure that they function as designed to protect private property, public property, and the environment \*

FC4. Continue to encourage and allow the use of LID stormwater Best Management Practices for flow control for new development and redevelopment in accordance with current regulations \*

- **Infrastructure Operations and Maintenance:** All stormwater infrastructure operates as intended.

G6. Construct new or improved stormwater facilities in accordance with the current CIP plan

G11. Proactively maintain, repair, rehabilitate, and replace aging City stormwater facilities and minimize the need for costly and disruptive emergency repairs

- **Development Practices:** Runoff from developed areas mimics forested hydrology and water quality.

G3. Ensure that new development, redevelopment, and City projects are in conformance with the City's adopted stormwater requirements \*

G4. Analyze proposed new development and redevelopment for potential impacts on the downstream storm drainage system and water quality as part of the stormwater plan review process \*

G10. Oversee construction and maintenance of privately owned stormwater facilities to ensure that they function as designed to protect private property, public property, and the environment \*

FC5. Continue to encourage and allow the use of LID stormwater Best Management Practices for flow control for new development and redevelopment in accordance with current regulations \*

- **Comprehensive Planning, Administration, and Funding:** Revenue is wisely invested and produces measurable positive outcomes, including regulatory compliance. Utility rates are fair and equitable.

G1. Continue to develop and implement a comprehensive stormwater management program consistent with requirements of the federal Clean Water Act, the Phase II Permit issued by the Washington State Department of Ecology, the state Growth Management Act, and the Puget Sound Action Agenda

G5. Coordinate with other departments throughout the stormwater plan review, permitting, and project approval process to ensure that the process results in a functional stormwater system

G7. Review the CIP list annually to identify new projects, remove completed projects, refine planned projects, and reevaluate project prioritization

G8. Participate in the development and implementation of regional water quality management plans, groundwater management plans, stormwater management plans, lake management plans, drainage basin plans, watershed action plans, and wellhead protection plans to ensure that Lacey's water resources are protected

G9. Continue to work cooperatively with other local governments through joint basin planning in shared drainage basins to provide regionally coordinated planning, construction, and maintenance for regional stormwater facilities.



- G12. Revise this Stormwater Comprehensive Plan every 6 years, or sooner if needed, to ensure that it provides for effective long-term stormwater project planning, system maintenance, response to mandates, and program funding
- M1. Prioritize the most beneficial and cost-effective projects and programs to ensure that available resources are used efficiently
- M2. Implement an equitable and logical stormwater utility rate structure
- M3. Review the rate structure and projected future rates and expenses on a regular basis to ensure that utility rates will adequately fund implementation of this plan
- M4. Actively seek outside funding to leverage or complement utility funds in order to implement this plan

## **APPENDIX B**

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# **Surface Water Bodies that Receive Stormwater Runoff**

## SURFACE WATER BODIES THAT RECEIVE STORMWATER RUNOFF

The City has an abundance of natural water resources that includes a chain of connected lakes that flow from one to another through wetlands, culminating in Woodland Creek, which drains to Henderson Inlet on Puget Sound. This chain begins with Hicks Lake, which flows into Pattison Lake, which in turn flows into Long Lake. The outflow from Long Lake forms Woodland Creek which then flows through Lake Lois, turns north, flows out of Lacey and enters the southern end of Henderson Inlet.

During the development of the 2013 SCP, all drainage basin boundaries within the City limits and the UGA were delineated using digital elevation data (PSLC 2002) and the City's storm drain system GIS data (City of Lacey 2011). In addition, the City developed a comprehensive GIS-based dataset of all impervious surfaces inside the City limits that delineates five surface types within the City limits based on aerial photography (Lacey 2018):

- Building footprints
- Roadways
- Parking lots
- Sidewalks
- Driveways

Finally, drainage basins were delineated for 53 stormwater facilities. The regional stormwater pond drainage basins include all area that is immediately tributary to the pond, excluding upstream areas that are managed by other stormwater facilities.

Figure B-1 displays the water bodies and major drainage basins within the city limits and the UGA. Figure B-2 displays the impervious surface distribution within the City limits and Table B-1 displays the percent of impervious surface within each basin. A stormwater system atlas was developed in 2013 that displays the storm drain system, the impervious surface data set, and the regional stormwater pond drainage basins.

| Table B-1. Drainage Basin Impervious Area. |                                            |                       |                                        |                                             |                                                        |
|--------------------------------------------|--------------------------------------------|-----------------------|----------------------------------------|---------------------------------------------|--------------------------------------------------------|
| Receiving Waterbody                        | Drainage Basin                             | Total Basin Area (ac) | Basin Area within the City Limits (ac) | Percent of Basin within the City Limits (%) | Percent Impervious within the City Limits <sup>a</sup> |
| Woodard Creek to Henderson Inlet           | Indian Creek                               | 893                   | 128                                    | 14                                          | 65                                                     |
|                                            | Woodard Creek Outlet                       | 4,966                 | 20                                     | 0.4                                         | 85                                                     |
| Deschutes River                            | Chambers Lake                              | 947                   | 601                                    | 63                                          | 35                                                     |
|                                            | Deschutes River                            | 18,565                | 1,387                                  | 7                                           | 46                                                     |
| Woodland Creek to Henderson Inlet          | College Regional Stormwater Facility       | 424                   | 424                                    | 100                                         | 54                                                     |
|                                            | Eagle Creek                                | 1,919                 | 1,348                                  | 70                                          | 28                                                     |
|                                            | Fox Creek                                  | 1,097                 | 3                                      | 0.3                                         | 16                                                     |
|                                            | Long's Pond                                | 50                    | 27                                     | 54                                          | 10                                                     |
|                                            | Hicks Lake                                 | 1012                  | 951                                    | 94                                          | 39                                                     |
|                                            | Lake Lois                                  | 572                   | 215                                    | 38                                          | 44                                                     |
|                                            | Long Lake                                  | 2,160                 | 432                                    | 20                                          | 27                                                     |
|                                            | Pattison Lake                              | 2,187                 | 393                                    | 18                                          | 25                                                     |
|                                            | Ruddell Road Stormwater Treatment Facility | 114                   | 113                                    | 99                                          | 41                                                     |
|                                            | Southwick Lake                             | 236                   | 216                                    | 92                                          | 32                                                     |
|                                            | Woodland Creek Outlet                      | 5,878                 | 2,321                                  | 39                                          | 38                                                     |
| Henderson Inlet                            | Henderson Inlet                            | 15,423                | 989                                    | 6                                           | 28                                                     |
| McAllister Creek to Nisqually Reach        | Little McAllister Creek                    | 2,169                 | 42                                     | 2                                           | 41                                                     |
|                                            | McAllister Creek                           | 16,574                | 627                                    | 4                                           | 31                                                     |

Notes:

<sup>a</sup> Percent impervious calculations are based on drainage basin areas within the City limits only

This section is divided into three subsections summarizing background information on the following groups of waterbodies:

- Waterbodies within the City limits
- Waterbodies within the UGA
- Waterbodies outside of the City limits and the UGA that receive drainage from tributaries or stormwater facilities within the City limits

Each section includes a description of the larger watershed (Henderson Inlet, Deschutes, or Nisqually) that the waterbody is located in, the size and land use in the drainage basin, a



summary of basic waterbody information, a brief description of the results of prior studies, and water quality issues (as determined by Ecology's water quality assessment).

Ecology groups waterbodies into five categories as part of the state water quality assessment. Category 1 (meets tested standards for clean waters), Category 2 (waters of concern), and Category 3 (insufficient data) are not described in this section since the available data does not demonstrate that there is water quality impairment. Category 4 includes three subcategories: Category 4a (has a TMDL), Category 4b (has a pollution control program), and Category 4c (is impaired by a non-pollutant). These subcategories are highlighted in the waterbody descriptions if applicable since waterbodies in this category either have water quality issues that the City is aware of and taking steps to address (Category 4a and 4b) or the impairment is due to a non-pollutant (Category 4c), such as instream flow, that is not regulated by a TMDL process. Category 5 is also known as the 303(d) list and identifies impaired waterbodies that have exceeded water quality standards for one or more pollutants. The most recent 303(d) list is the 2012 list developed by Ecology in 2015 and approved by the U.S. Environmental Protection Agency in 2016. The EPA approved the list as the 2012 303(d) list rather than the 2014 list Ecology originally designated because the assessment includes freshwater data collected through May 1, 2011. While in the past, Ecology assessed either fresh water or marine water, future biennial 303(d) list reviews aim to address all waters of the state, including fresh water and marine water. TMDLs, or water cleanup plans, are established for parameters identified on the 303(d) list. The status of the TMDL implementation plans for each waterbody is also summarized below.

## **1 Water Bodies Within the City Limits**

Four lakes and one major stream system are located within the City limits. With one exception, these waterbodies are all part of the Henderson Inlet Watershed; Chambers Lake is part of the Deschutes Watershed. The following waterbodies are summarized below:

### **Henderson Inlet Watershed**

- Woodland Creek
- Hicks Lake
- Southwick Lake
- Long's Pond

### **Deschutes Watershed**

- Chambers Lake

## **1.1 Woodland Creek**

Woodland Creek originates in a horseshoe-shaped chain of lakes connected by extensive wetlands in southeast Lacey. Hicks Lake flows into Pattison Lake, which then flows into Long Lake. From the north end of Long Lake, Woodland Creek flows through Woodland Creek Community Park, past Long's Pond to Lake Lois. From Lake Lois, the creek carves a narrow ravine through forest land, crosses Martin Way and Interstate 5, and then flows through rolling hills and wetlands before ultimately discharging to the southern tip of Henderson Inlet. A total of 2.4 miles of the creek lies within the City limits, and a total of 1.9 miles of the creek lies within City-owned parcels (within the UGA). The contributing basin area is 16,560 acres, 79 percent of which is within the Lacey city limits and UGA. The basin consists primarily of urban and rural residential areas as well as commercial areas, and suburban residential development is rapidly increasing in the headwater areas near the mouth of the basin. The stream portion between lake Lois and the springs north of Martin Way usually dries up during the summer months, significantly reducing fish habitat and productivity in the upper reach of the stream.

Pollutants from urban stormwater runoff have contributed to declining water quality in Woodland Creek. Pet wastes and failing septic systems were identified as common sources of bacteria in stormwater runoff in residential settings and rural settings in the previous water quality assessment (Thurston County 2007). Despite continued efforts to improve water quality, Woodland Creek has consistently failed to meet water quality standards for fecal coliform bacteria and currently has a TMDL (Category 4A) for fecal coliform bacteria along with several tributaries located in the UGA (described in the following section) (Ecology 2019). Bacterial pollution, largely from Woodland Creek, affects shellfish harvests in Henderson Inlet. Much of the pollution in the rural area was historically caused by failing on-site sewer systems and agricultural practices (Thurston County 2010). In 2001, Thurston County responded by establishing the Henderson Shellfish Protection District (Thurston County 2010). In 2005, the Thurston County Board of Health created the Henderson Watershed Protection Area, which requires inspection of all on-site sewage systems in the Henderson Watershed area. Additional measures to reduce pollutant loads in the stream include implementation of agricultural BMPs, new stormwater treatment facilities and improved farm planning and public education. These pollution reduction efforts have shown positive results, and in 2010, commercial shellfish harvest area increased by 240 acres due to improving water quality (Thurston County 2010). In June 2012, the Washington State Department of Health announced that 100 acres of commercial shellfish harvest area have also reopened to harvest (WADOH 2012), though 26 acres were classified as 'restricted' in 2018 (WADOH 2018).

Woodland Creek is included on Ecology's 303(d) list as part of the Henderson Inlet Total Maximum Daily Load (TMDL) for fecal coliform bacteria, dissolved oxygen, and pH impairment (Ecology 2019). Under the Henderson Inlet TMDL, the Cities of Lacey and Olympia have a coordinated plan to monitor and reduce fecal coliform bacteria discharged from the Fones Road Stormwater Treatment facility which drains to Woodland Creek via the Taylor wetland. The construction of the facility led to a reduction in fecal coliform bacteria loading to Woodland

Creek. Lacey also implements a wet weather sampling program for fecal coliform bacteria discharging from the College Regional Stormwater Facility and conducts re-vegetation and nuisance vegetation management along woodland creek and its tributaries.

The stream also exhibits high concentrations of total phosphorus and nitrate (Thurston County 2010) and high temperatures (Ecology 2019). The lower reach of Woodland Creek is also listed as Category 4C for instream flow ("intensified peak flows" from stormwater runoff), though recent flow control improvements in the basin are expected to reduce these peak flows. Other projects to improve water quality in Woodland Creek include the septic to sewer conversions in Woodland Creek Estates and the raingarden improvements done by Thurston County in the Tanglewilde Neighborhood (City of Lacey staff, personal communication).

### **1.1.1 College Creek**

College Creek is a 1-mile long tributary to Woodland Creek and enters the stream from the west just downstream of I-5. College Creek is part of the Henderson Inlet TMDL (Category 4A) for fecal coliform bacteria, dissolved oxygen, and pH (Ecology 2019).

## **1.2 Hicks Lake**

Hicks Lake is the first in a series of four lakes (Hicks, Pattison, and Long lakes, and Lake Lois) that comprise the Woodland Creek subbasin and flow to Henderson Inlet. Hicks Lake is the only one of the four lakes that is located inside the City limits; the other three lakes are located within the UGA. Hicks Lake has a drainage area of 1,010 acres, comprised primarily of urban and suburban residential areas with a small portion of undeveloped forest. Discharge from Hicks Lake flows to Pattison Lake through an outlet channel located on private property.

The mean depth of Hicks Lake is 18 feet, and the deepest portion of the lake extends to 35 feet (Ecology 1997). Flooding has been observed in the past during extreme storm events (Thurston County 2010).

The average 2018 trophic state index (TSI) is within the mesotrophic range (Thurston County 2018a). Based on the concentration of chlorophyll-a, Hicks Lake was classified as eutrophic in 17 out of 23 sample seasons since 1995 (Thurston County 2018a). In 2008, the nutrient (i.e., phosphorus) concentration in the lake was in the eutrophic range and the water clarity was lower than it was in the previous years (Thurston County 2010). This may in part be due to runoff from a high-density urban area that has become increasingly developed. Despite this, the total phosphorus concentration remains below state water quality standards (Thurston County 2018). The lake continues to be listed by Ecology as Category 4C due to the presence of swollen bladderwort (*Utricularia inflata*), an invasive exotic species (Ecology 2019).

Land use around the lake is primarily urban and suburban residential with a small percentage in undeveloped forest cover. Hicks Lake is a popular recreational lake, accessed through Wanschers Community Park on the lake's western shore and the adjacent boat launch.

### **1.3 Southwick Lake**

Southwick Lake is a 36-acre lake, located to the west of Pattison Lake and south of Hicks Lake in the Henderson Inlet Watershed. The lake has no apparent inlets or outlets, and collects runoff from a drainage area of 260 acres. Most of the shoreline is under private ownership. Land use along the lake's shoreline is a combination of low to moderate density urban residential areas and open spaces. Lacustrine wetlands are located along the vegetated northern shoreline of Southwick Lake. Southwick Lake does not have any known water quality issues. Southwick Lake is located within the 100-year floodplain, thus the water level in the lake has the potential to rise significantly during large storm events (ESA Adolfson 2008).

### **1.4 Long's Pond**

Long's Pond, also referred to as Goose Lake, is a 12-acre lake located in the Henderson Inlet Watershed that receives flow from Long Lake through Woodland Creek and a series of wetlands (ESA Adolfson 2008). Himes Creek flows in or out of Long's Pond to Woodland Creek depending on water elevations. Long's Pond, which has a drainage area of 50 acres, does not have any known water quality issues. Woodland Creek Community Park comprises much of the lake's shoreline. Long's Pond is most popular for its youth fishing program (Lacey 2012a).

### **1.5 Chambers Lake**

Chambers Lake is part of the Chambers Basin in the Deschutes Watershed. Little and Big Chambers Lake, previously one large lake, were separated into two lakes after the construction of the Chehalis Western Railroad in 1927, and are now connected with a 500-foot long channel (Thurston County 1995). The boundary that separates the City of Lacey from the City of Olympia lies between the two lakes therefore, Big Chambers Lake is primarily within the City of Olympia while Little Chambers is located in the City of Lacey. The Chambers Basin also includes Chambers Ditch, South Tributary and Chambers Creek.

Lacey and Olympia share jurisdiction of Big Chambers Lake, while the City of Lacey alone has jurisdiction of Little Chambers Lake. The drainage basin contributing to both lakes is 950 acres. Discharge from Big Chambers Lake flows through Little Chambers Lake, which discharges to the Deschutes River via Chambers Ditch and Chambers Creek. The shoreline of both lakes includes a variety of wetland habitats (ESA Adolfson 2008).

Big Chambers and Little Chambers Lakes are similar in size and depth, with areas of 68 and 58 acres and maximum depths of 5 and 7 feet, respectively. Big Chambers Lake has no inlets and is fed only by groundwater and stormwater runoff. The water level tends to fluctuate with the seasons (Thurston County 1995). The areas to the south and southwest of the lake have experienced flooding related to groundwater and surface water that has deemed it unsuitable for development (ESA Adolfson 2008).



Both Little and Big Chambers Lakes are classified as eutrophic and have dense populations of aquatic plants, despite efforts to reduce plant growth with the introduction of grass carp in 1990 (Thurston County 1995). Historically, many species of fish inhabit this lake, including cutthroat trout, bass, perch, catfish, crappie and spiny ray; however, over the years, cutthroat trout population has greatly declined (Thurston County 1995). In 2015, the City constructed the Chambers Lake Stormwater Treatment Facility to provide stormwater treatment for 187 acres that drain into Little Chambers Lake.

## **2 Water Bodies Within the Urban Growth Area**

Five streams are located within the UGA; four of these streams are part of the Henderson Inlet Basin and one is part of the Nisqually Basin. The following waterbodies are summarized below:

### **Henderson Inlet Watershed**

- Eagle Creek
- Fox Creek
- Jorgenson Creek
- Palm Creek

### **Nisqually Watershed**

- Little McAllister Creek

### **2.1 Eagle Creek**

Eagle Creek is a 2-mile long tributary to Woodland Creek, entering the stream along its eastern bank near river mile 2.25 (Thurston County 2004a). Eagle Creek has a drainage area of 1,920 acres and is currently included in the Henderson Inlet TMDL (Category 4A) for fecal coliform bacteria (Ecology 2019). Recommendations for managing sources of bacteria in the watershed TMDL include controlling domestic animal access to Eagle Creek and continuing monthly water quality monitoring.

### **2.2 Fox Creek**

Fox Creek is a 1.2-mile long tributary to Woodland Creek and enters the stream along its northern bank near river mile 1.9 (Thurston County 2004a). Fox Creek has a drainage area of 1,100 acres and is currently included in the Henderson Inlet TMDL (Category 4A) for fecal coliform bacteria and dissolved oxygen (Ecology 2019).

## **2.3 Jorgenson Creek**

Jorgenson Creek is a 1.0-mile long tributary of Woodland Creek, and flows into the stream along its southwest bank around river mile 1.2 (Thurston County 2004a). Jorgenson Creek has a drainage area of 510 acres and is currently included in the Henderson Inlet TMDL (Category 4A) for fecal coliform bacteria (Ecology 2019).

## **2.4 Palm Creek**

Palm Creek is a 1-mile long tributary to Woodland Creek and enters the stream from the west between Hawks Prairie Rd NW and I-5. Palm Creek is part of the Henderson Inlet TMDL (Category 4A) for fecal coliform bacteria and dissolved oxygen (Ecology 2019).

## **2.5 Little McAllister Creek**

Little McAllister Creek, located within the McAllister/Eaton Creek Basin and the Nisqually Watershed, originates in the spring-fed wetlands. The stream loses a total of 180 feet in elevation over 2 miles as it flows through a steep ravine, and ultimately discharges into agricultural ditches. The stream forks into two branches that flow to the south and to the west (Thurston County 2004b). The Little McAllister sub-basin is 2,170 acres and accounts for seven percent of the total McAllister/Eaton Creek Basin. A TMDL study of dissolved oxygen and bacteria in McAllister Creek and the Nisqually Watershed was conducted in 2005 and determined that a 74 percent reduction in fecal coliform bacteria in Little McAllister Creek was needed to meet water quality standards (Ecology 2005), though Lacey is not part of the current TMDL implementation plan.

# **3 Water Bodies Receiving Surface Water or Stormwater from Within the City Limits**

The following waterbodies receiving surface water or stormwater discharges from within the City limits are summarized below:

### **Henderson Inlet Watershed**

- Henderson Inlet
- Lake Lois
- Long Lake
- Pattison Lake
- Woodard Creek

## **Deschutes Watershed**

- Deschutes River

## **Nisqually Watershed**

- Puget Sound (Nisqually Reach)

### **3.1 Henderson Inlet**

Bound on the east and west by the Nisqually Reach of Puget Sound and Budd Inlet, respectively, Henderson Inlet is one of five inlets that contribute to South Puget Sound. The drainage basin area of Henderson Inlet is approximately 1,190 acres within the city limits and UGA. Woodland and Woodard Creek drain 80 percent of the inlet; while Dobbs Creek (East Creek), Meyer Creek (Snug Creek), and Sleepy Creek (Libby Creek), and several other small streams account for the remaining 20 percent.

High levels of fecal coliform bacteria in the lower portion of Henderson Inlet have prohibited commercial shellfish harvesting since the 1980s. In 2001, the Thurston County Commissioners created the Henderson Inlet shellfish protection district. The district is composed of an appointed local stakeholder group, who develop water quality restoration recommendations. The district stakeholders currently meet every other month to discuss water clean-up plans for the area (Thurston County 2012).

Henderson Inlet is on Ecology's 303(d) list (Category 5) for dissolved oxygen and has a TMDL (Category 4A) for fecal coliform bacteria, dissolved oxygen, temperature, and pH (Ecology 2019). Several of its tributaries, including Dobbs Creek, Sleepy Creek, Woodland Creek, Woodard Creek, College Creek, Jorgenson Creek, Eagle Creek, Fox Creek, and Palm Creek are also on Ecology's 303(d) list (Category A4 or 5) for one or more violations of fecal coliform bacteria, temperature, dissolved oxygen, or pH.

### **3.2 Lake Lois**

Lake Lois is last in the series of four lakes (Hicks, Pattison, and Long lakes, and Lake Lois) that make up Woodland Creek drainage system, which is part of the Henderson Inlet Watershed. The lake, which has a maximum depth of 10.5 feet, is separated into three lobes and spans a total area of just under 13 acres with a drainage area of 570 acres. The lower two lobes are bisected by the berm of Carpenter Road, but remain connected with culverts. Recent construction of Carpenter Road has increased the size of the culverts connecting the lower two lobes. A narrow, shallow channel connects the upper two lobes. The southern lobe of Lake Lois receives flow from Long Lake via Woodland Creek.

Located in the center of Lacey and partially inside the City Limits, Lake Lois is the main attraction of Lake Lois Park and Habitat Reserve, which is comprised of land purchased by the City of Lacey over a period of 30 years (Lacey 2012b). Lake Lois Park and Habitat Reserve (located to the west and east of Carpenter Road, respectively) were included in the Woodland Creek/Lake Lois Enhancement Project conducted by the City of Lacey in 1994 (Skillings-Connolly and FishPro 1995). This project was initiated in 1992 with the goal of improving the water quality over a 3-mile stretch of Woodland Creek, extending from the outlet of Long Lake to Draham Road. A major water quality concern leading to the development of the Enhancement Project was the presence of Eurasian watermilfoil (*Myriophyllum spicatum*), an invasive exotic species that has persisted in both Long Lake and Lake Lois since the late 1980s (Lacey and Ecology 1995) and has resulted in a Category 4A listing for Lake Lois for Eurasian water-milfoil (Ecology 2019). In 1978, Lake Lois was described as extremely eutrophic. As Lake Lois is very shallow, its water quality is largely influenced by the high nutrient loading from Long Lake.

A number of field surveys conducted between 1970 and 1992 suggest that the majority of fish activity in Lake Lois occurs in December and January, and that the coho salmon population greatly outnumbers the chum salmon population. City staff have noted that anadromous fish have not been seen in Lake Lois in recent years (Lacey City Staff, personal communication). The Enhancement Project suggested that reducing nutrients and dissolved pollutants in Lake Lois could be achieved by treating stormwater runoff in a stormwater treatment facility and bioswales prior to entering the southern lobe of the lake. The installation of a control structure at the outlet of Lake Lois was also suggested, which would regulate flow downstream and reduce peak flows during large storm events (Lacey and Ecology 1995).

### **3.3 Long Lake**

Long Lake, located along the east boundary of Lacey in Thurston County, is comprised of two basins connected by a narrow channel. A small part of the south basin is located within the City Limits. The south basin is fed by Pattison Lake and a small stream, and the north basin flows to the north to the Henderson Inlet via Woodland Creek and Lake Lois. This 320-acre lake has a maximum depth of 21 feet and drainage area of 2,160 acres. It collects runoff from urban and suburban residential areas as well as a small percentage of agricultural and forested areas (Thurston County 2010). Most of the shoreline is surrounded by dense residential development and Long Lake Park, one of the most used parks in the City, lies on the West bank of the Northern basin (Lacey 2012b).

The lake experiences nuisance blue-green algae blooms and emergent aquatic plants that frequently interfere with recreational activities. The lake is on the Ecology's 303(d) list (Category 5) for total phosphorus, PCB (tissue), Dieldrin (tissue), and 2,3,7,8-TCDD (tissue) (Ecology 2019). In 2008, the south basin was treated with aluminum sulfate (alum) to reduce total phosphorus concentrations and decrease blue-green algae blooms. Though total phosphorus concentrations are lower in the south basin due to the alum treatment, phosphorus concentrations have been increasing since 2016 (Thurston County 2018b). Long Lake is also



listed under Category 4C for Eurasian watermilfoil (*Myriophyllum spicatum*), an invasive aquatic species (Ecology 2019), which has been controlled by the Long Lake Management District (LLMD) since the late 1980s. The LLMD has been actively controlling nuisance invasive and native plants in the lake using approved control methods, including aquatic herbicide treatments, bottom barriers, mechanical harvesting, and diver surveys.

### **3.4 Pattison Lake**

Pattison Lake, also referred to as Patterson Lake, is part of the Henderson Inlet Watershed. This 271-acre lake, with a maximum depth of 22 feet, was separated decades ago into two basins to the north (81 acres) and south (190 acres) through placement of excavated railroad fill (Thurston County 2010). The edge of the northern basin borders the City Limits to the east. Pattison Lake is the second in the series of four lakes beginning with Hicks Lake that ultimately drain north to Henderson Inlet. Hicks Lake flows directly to Pattison Lake, which in turn flows into the south basin of Long Lake. The lake's drainage area is 2,190 acres and is comprised primarily of suburban residential areas and some undeveloped forested wetland areas (Thurston County 2010).

Both basins of Pattison Lake experience harmful algae blooms that decrease water clarity and have adverse effects on water quality. The south basin in particular experiences severe algae blooms and filamentous algae that cause problems with recreational activities such as boating and fishing. The south basin of Pattison Lake is categorized as a highly productive eutrophic lake, and is on Ecology's 303(d) list (Category 5) for total phosphorus (Ecology 2019). A series of treatments and water quality improvement efforts were conducted on Pattison Lake from the late 1970s to the early 1990s, including alum treatment and aquatic plant harvesting. The water level in the lake has slowly risen due to unintentional blockage of the outlet channel to Long Lake (Thurston County 2010).

Fishing, swimming and boating are popular recreational activities on Pattison Lake.

### **3.5 Woodard Creek**

Woodard Creek, part of the Henderson Inlet Watershed, flows 7.5 miles along the outskirts of the City. Woodard Creek drains a basin of 4,910 acres, comprised of urban and rural residential as well as commercial areas (Thurston County 2010). Wetlands are located along the depressions and hills following the length of the stream, and collect runoff from high-density commercial areas in Lacey and Olympia. The wetland at the headwaters of the stream is surrounded by industrial and commercial development, and the estuarine wetland located at the stream's mouth is currently protected from development by the Washington State Department of Natural Resources.

The water quality of Woodard Creek has been impaired over the years due to harmful pollutants in urban runoff and rural activities (Thurston County 2010). The inlet of Woodard Creek, located

in the center of the City, is polluted mainly by stormwater runoff. The middle section of the stream is surrounded by more urban areas, and has a higher potential for pollution from agriculture, livestock, and septic systems. Woodard Creek has a TMDL for fecal coliform bacteria and dissolved oxygen (Category 4A) (Ecology 2019). The TMDL study conducted in 2006 determined that reduction of fecal coliform bacteria is necessary to meet water quality standards. Efforts to improve the water quality of the stream and reduce pollution have been made over the years by targeting these point sources and implementing agricultural BMPs in the surrounding area (Thurston County 2010).

### **3.6 Deschutes River**

The Deschutes River is home to many fish species including Coho, Chinook, and chum salmon and flows 57 miles from the Gifford Pinchot National Forest in Lewis County to Budd Inlet in Olympia. The Deschutes River has a total basin area of 162 square miles. The upper and mid-watershed is comprised of forested, rural residential and agricultural areas; the lower watershed consists of primarily urban areas from the surrounding cities of Tumwater, Olympia, and Lacey (Thurston County 2010). Discharge from Big Chambers Lake flows through Little Chambers Lake (located in the City of Lacey), which discharges to the Deschutes River via Chambers Ditch and Chambers Creek. The lower reach of the Deschutes River discharges to South Puget Sound through Capitol Lake and Budd Inlet.

The Deschutes River enters Capitol Lake from the south. Capitol Lake was created in 1951 as a reflecting pool for the Capitol Building in Olympia and is separated into three basins. These basins are bound by Interstate 5 and railroad bridges, with depths varying from an average of 9 feet to maximum of 20 feet (Thurston County 2010). Capitol Lake has a drainage basin of 185 square miles, collecting runoff from commercial forestry, agriculture, and rural residential areas. Urban land uses from areas of the City of Olympia and Tumwater contribute to the lower portion of the watershed. Several public parks and walking trails run along the shore of the lake, making it a popular destination for boating, jogging, and bird watching (Thurston County 2010).

In 1998, the Deschutes River was placed on Ecology's 303(d) list for temperature, fecal coliform bacteria, dissolved oxygen, and fine sediment. Since then, efforts have been made to identify pollution sources, and in 2008, Ecology conducted a TMDL study of the river. Low dissolved oxygen levels in the river have been caused by excess nutrients and algae growth (Roberts and Pelletier 2007). One study by Ecology suggests that increasing riparian shade along the river could potentially decrease river temperatures and increase dissolved oxygen levels however, a decrease in nutrient levels in the river would be required for any observable increase in dissolved oxygen levels (Roberts and Pelletier 2007). The Deschutes River is currently listed on Ecology's 303(d) list for fine sediment, temperature, pH, bacteria, and dissolved oxygen (Ecology 2019).

The nutrient concentrations decrease as water flows from the Lower Deschutes River to Capitol Lake, indicating that during certain times of year the lake may buffer nutrient loading from the

Deschutes River to Budd Inlet (Roberts and Pelletier 2007). Capitol Lake experiences blue-green algae blooms in the summer, contributing to high loading of organic matter, and further decreasing dissolved oxygen into Budd Inlet. Capitol Lake is on Ecology's 303(d) list (Category 5) for total phosphorus and fecal coliform bacteria (Ecology 2019). The lake is also listed under Category 4C for Eurasian watermilfoil (*Myriophyllum spicatum*), an invasive exotic species (Ecology 2019). Capitol Lake is also infested by New Zealand mudsnails (*Potamopyrgus antipodarum*) (Deixis 2010).

The Deschutes River, Capitol Lake, and Budd Inlet TMDL Technical Report (Ecology 2012) published in June 2012 presents the loading capacity for fecal coliform, temperature, DO, pH, and fine sediment in portions of the watershed, and recommends loading reductions to meet water quality standards. This report recommends "zero" waste load targets (or allowable pollutant load) for fine sediment for any NPDES permitted entities (including Phase II Permittees) within the Deschutes watershed. The report recommends actions for decreasing concentrations of fecal coliform bacteria and improving levels of temperature, dissolved oxygen, and pH. Load allocations for each pollutant will be identified in the Water Quality Improvement Report that is being developed by Ecology. Ecology will work with the Deschutes Advisory Group to establish specific details for implementation actions that will be compiled into a Water Quality Implementation Plan.

### **3.7 Puget Sound (Nisqually Reach)**

Puget Sound is the largest fjord-like estuary in the continental United States. Located between the Cascade and Olympic mountain ranges in Washington State, the Puget Sound basin covers more than 16,800 square miles of land and water (Hart Crowser et al. 2007). The basin is made up of a series of interconnected underwater basins, separated by shallow ridges or sills. The drainage basins in the City primarily discharge to Henderson Inlet; however, some surface water discharges to Budd Inlet and directly to Puget Sound (in the Nisqually Reach). The Nisqually Reach section of Puget Sound is fed by the Nisqually River. The City's contribution to water quality in the Nisqually Reach is primarily due to stormwater and surface water flows from Little McAllister Creek.

Over the past 150 years, human activity has introduced a wide range of toxic chemicals in the Puget Sound ecosystem at levels that are harmful to aquatic life (Puget Sound Partnership 2006). Despite a ban on some harmful chemicals in the 1970s and numerous cleanup efforts, toxic chemicals continue to persist and circulate throughout the Puget Sound ecosystem and are still being introduced via stormwater runoff, municipal sewage treatment plants, and atmospheric deposition. These toxic chemicals can have acute and chronic effects on nearshore organisms. Once in the food web, certain toxic chemicals can also be concentrated in larger predatory animals, ultimately affecting marine fish and mammals. These contaminants are also a significant concern for human health, especially for those who frequently consume fish with high contaminant levels.

Budd Inlet, one of the five inlets that comprise South Puget Sound, is on Ecology's 303(d) list (Category 5) for dissolved oxygen and various toxic compounds. While dissolved oxygen

levels are low in several South Puget Sound inlets, Budd Inlet consistently experiences the lowest levels each year (Roberts and Pelletier 2007). Excess nutrients (such as nitrogen and phosphorus) from point or non-point sources cause low dissolved oxygen levels in waterbodies, inhibiting the growth and survival of many aquatic species. The largest sources of nutrients to South Puget Sound include the effluent from the Lacey Olympia Tumwater Thurston County (LOTT) Clean Water Alliance wastewater treatment plant, and discharge from the Deschutes River and Capitol Lake, which both contain high levels of dissolved inorganic nitrogen. In 1994, the LOTT Clean Water Alliance began including denitrification in the wastewater treatment process in attempts to reduce nutrient loading into the Puget Sound (Roberts and Pelletier 2007). In 2001, The Thurston County Commissioners created the Nisqually Reach shellfish protection district. The district is composed of a local stakeholder group who develop water quality restoration recommendations. The district stakeholders currently meet every other month to discuss water clean-up plans for the area (Thurston County 2012). The Nisqually Reach section of Puget Sound is on Ecology's 303(d) list (Category 5) for fecal coliform bacteria.

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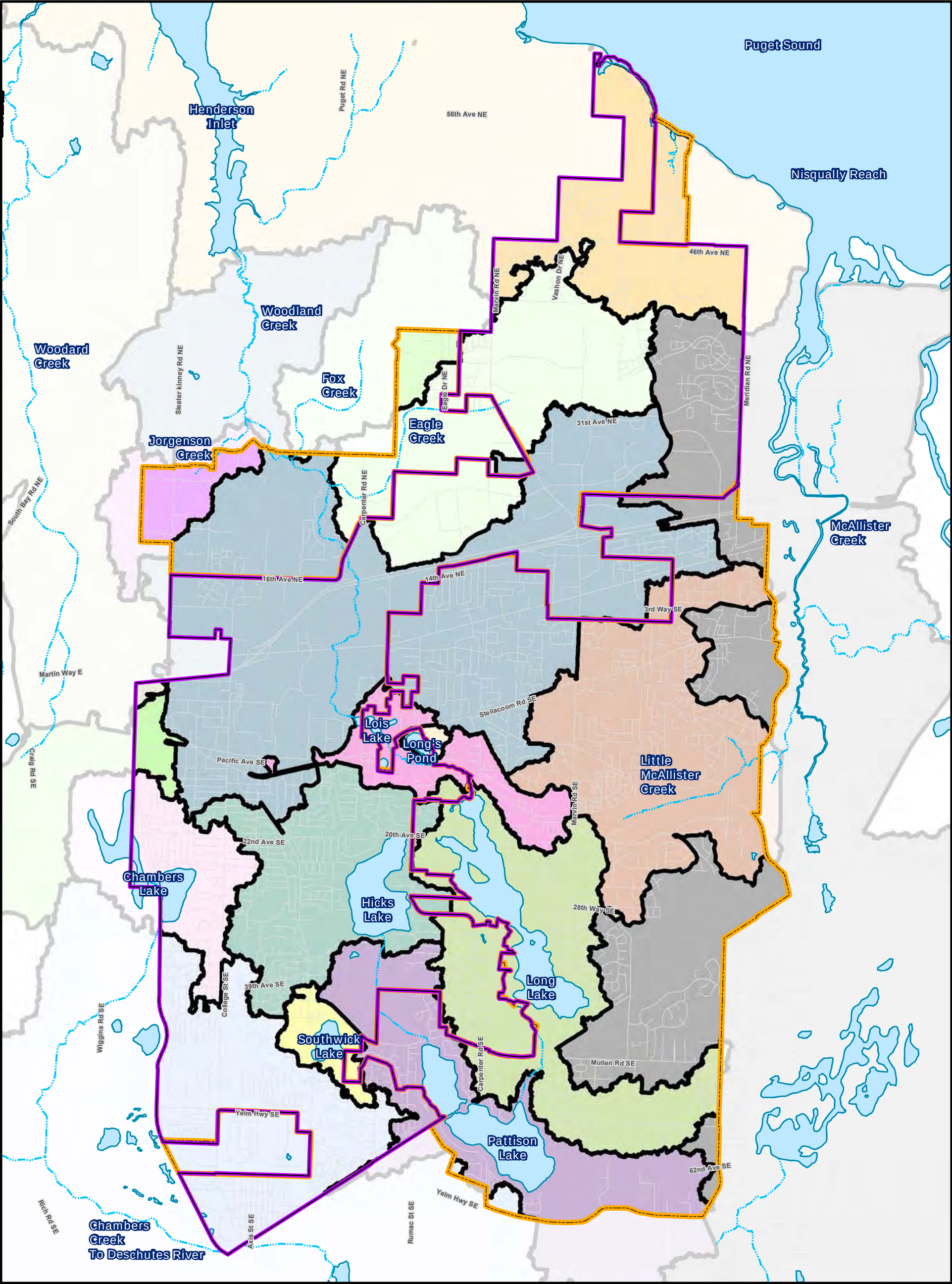
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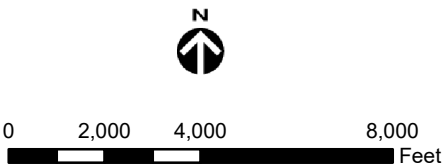
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**Legend**

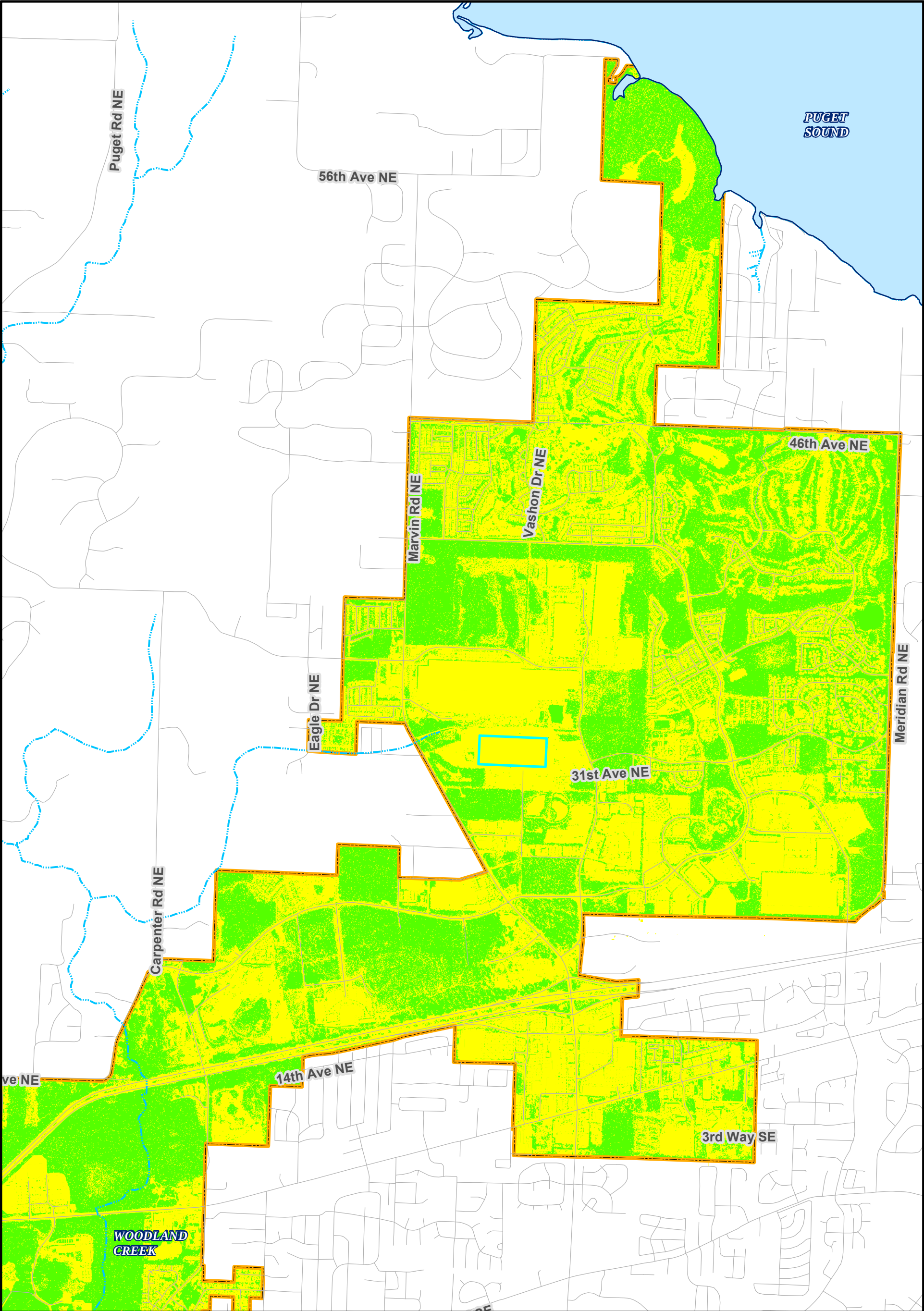
- |                                                                                                           |                                                                                                             |                                                                                                           |
|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
|  City of Lacey         |  Fox Creek               |  Long Lake             |
|  Urban growth boundary |  Long's Pond             |  McAllister Creek      |
|  Waterbody             |  Henderson Inlet         |  Pattison Lake         |
|  Stream                |  Hicks Lake              |  Southwick Lake        |
| <b>Basins</b>                                                                                             |  Indian Creek            |  Woodard Creek Outlet  |
|  Chambers Lake         |  Jorgenson Creek         |  Woodland Creek Outlet |
|  Deschutes River       |  Lake Lois               |                                                                                                           |
|  Eagle Creek           |  Little McAllister Creek |                                                                                                           |

**Figure 2-4. Drainage Basins Within the City of Lacey.**



City of Lacey, Waterbody, Stream, UGB (City of Lacey)

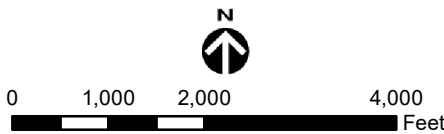




Legend

-  Waterbody
-  Stream
-  City of Lacey
-  Pervious area
-  Impervious area

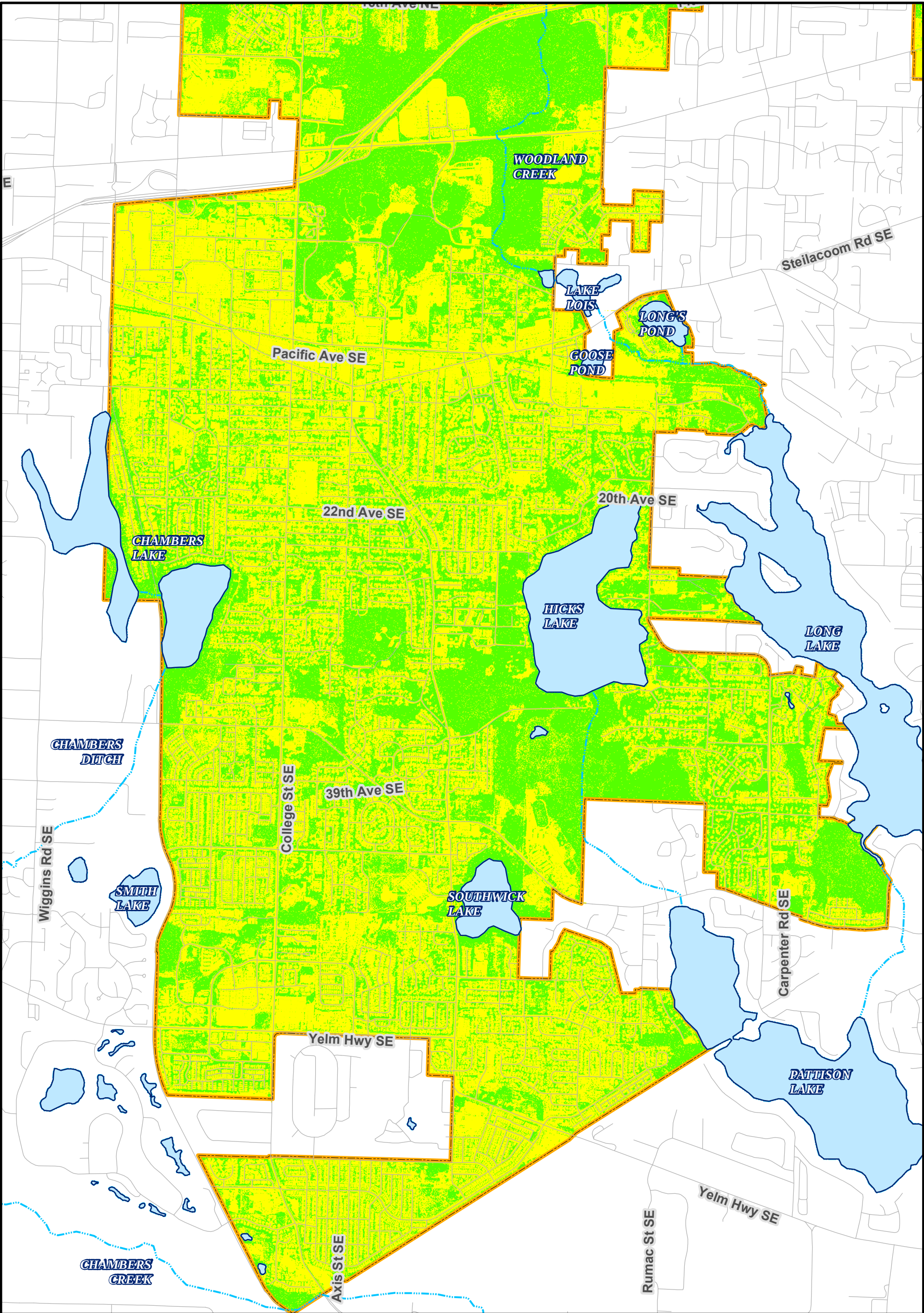
Figure 2-5.  
Impervious Area in the City of Lacey  
(Sheet 1 of 2).



Aerial: City of Lacey (2018)

K:\Projects\Y2010\10-04 793-000\Project\Impervious\_area\_report\_figure.mxd (7/24/2020)

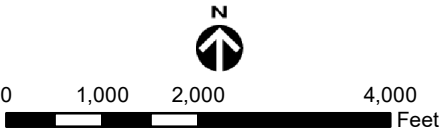




**Legend**

-  Waterbody
-  Stream
-  City of Lacey
-  Pervious area
-  Impervious area

Figure 2-5.  
Impervious Area in the City of Lacey  
(Sheet 2 of 2).



Aerial: City of Lacey (2018)

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## **APPENDIX C**

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### **Lacey Stormwater Facilities**

# City of Lacey Stormwater Treatment Facilities

Regional Public Facilities Maintained by Lacey Public Works - Operations Division

| No. | Facility ID | Facility Name                          | Facility Type                                | Address                    | Location                                             | Built | Facility Acres | Basin Acres | Primary Discharge to | Downstream Surface Water (watershed) |
|-----|-------------|----------------------------------------|----------------------------------------------|----------------------------|------------------------------------------------------|-------|----------------|-------------|----------------------|--------------------------------------|
| 1   | PD0001      | Yelm Highway Pond                      | Constructed Wetland & Infiltration Basin     | 4500 Yelm Highway SE       | Bush Park, Yelm Hwy & Rainier Loop                   | 1991  | 3.40           | 110.0       | GW                   | Deschutes River                      |
| 2   | PD0002      | Ruddell Road SE Stormwater Facility    | Wet Pond & Infiltration Basin                | 4701 Ruddell Road SE       | SE corner of Rainier Vista Park                      | 1991  | 4.50           | 114.0       | GW                   | Southwick Lake                       |
| 3   | PD0003      | Lakehills Pond                         | Retention Pond                               | 5280 Lakehills Street SE   | S. of Southwick Lake, N. end Lakehills off 54th      | 1991  | 0.28           | 6.0         | GW                   | Southwick Lake                       |
| 4   | PD0004      | City Hall Ponds                        | Retention Ponds & Infiltration Basin/Gallery | 420 College Street SE      | Within Parking Area of City Hall                     | 1994  | 0.36           | 7.2         | GW                   | Woodland Cr                          |
| 5   | PD0005      | Westminster Pond                       | Retention/Detention Pond                     | 4711 8th Ave NE            | E. of College Street, S. side of 8th Avenue NE       | 2000  | 0.27           | 34.0        | wetlands             | College Creek                        |
| 6   | PD0008      | Lakecrest Pond                         | Retention/Detention Pond                     | 2900 Lakeview Dr SE        | E. side of Chambers Lake at 29th Ave SE              | 1978  | 1.76           | 18.0        | Chambers Lk          | Deschutes River                      |
| 7   | PD0010      | Mt. Tahoma Pond                        | Retention Pond                               | 5600 54th Ave SE           | N. of 54th, W. of Ruddell, E. of Mt. Tahoma Dr.      | 1979  | 2.59           | 27.0        | GW                   | Deschutes River                      |
| 8   | PD0011      | College Street SE                      | Wet Pond & Infiltration Basin                | 5300 53rd Ave SE           | E. of College St. on S. side of 53rd Ave SE          | 1991  | 3.41           | 51.0        | GW                   | Deschutes River                      |
| 9   | PD0012      | Lacey Shop Ponds                       | Retention/Detention Pond, wet pond, swales   | 1200 College St SE         | City Maintenance Shop                                | 2004  | 1.00           | 2.0         | GW                   | Woodland Cr                          |
| 10  | PD0014      | Woodland Creek Stormwater Facility     | Constructed Wetland & Infiltration Basin     | 5736 7th Ave SE            | N. end of Lacey Street SE                            | 1992  | 2.10           | 299.0       | GW                   | Woodland Cr                          |
| 11  | PD0020      | Shady Lane Pond                        | Wet Pond                                     | 6401 Shady Lane SE         | Shady Lane at Sierra Dr, N. end of Hicks Lake        | 2000  | 0.55           | 12.0        | Hicks Lake           | Woodland Cr                          |
| 12  | PD0022      | Hogum Bay Pond                         | Wet Pond, to Perforated Pipe                 | 2140 Marvin Rd NE          | NE corner of Hogum Bay Rd & Marvin Rd NE             | 1998  | 1.10           | 34.0        | GW                   | Woodland Cr                          |
| 13  | PD0023      | Willamette Pond                        | Wet Pond                                     | 2500 Marvin Rd NE          | SE cor. Marvin & Willamette, at roundabout           | 1998  | 1.00           | 8.0         | GW                   | Woodland Cr                          |
| 14  | PD0024      | Britton Parkway #4 Pond                | Wet Ponds                                    | 2425 Marvin Rd NE          | S. side Britton (within proposed Lacey Town Center)  | 1998  | 1.00           | 41.0        | GW                   | Woodland Cr                          |
| 15  | PD0029      | Callison Pond                          | Infiltration Pond with Infiltration Trenches | 7505 Britton Parkway NE    | N. side of Britton Pkwy, W. of Callison Rd           | 1999  | 0.50           | 27.0        | GW                   | Eagle Creek                          |
| 16  | PD0032      | Britton Parkway #9 Pond                | Infiltration Pond with Infiltration Trenches | 6300 Britton Parkway NE    | Just E. of Carpenter Road                            | 1999  | 1.91           | 14.0        | GW                   | Eagle Creek                          |
| 17  | PD0034      | 7th Avenue Stormwater Facility         | Retention Pond                               | 6022 7th Avenue SE         | W. of Carpenter Rd near Lake Lois outlet             | 2001  | 0.55           | 36.0        | GW                   | Woodland Cr                          |
| 18  | PD0035      | Stockton Pond                          | Wet Pond & Retention Pond                    | 6100 Stockton St SE        | SW corner of Lakepoint Park, Stockton & Compton      | 1991  | 0.78           | 37.0        | GW                   | Deschutes River                      |
| 19  | PD0036      | Compton Pond                           | Wet Pond & Retention Pond                    | 6600 Compton Blvd. SE      | E. end of Lakepoint Park , Compton & 60th Ave SE     | 1991  | 1.00           | 37.0        | GW                   | Pattison Lake                        |
| 20  | PD0037      | 25th Avenue Swales                     | Series of 6-7 Biofilter Swales               | 5400-5900 25th Avenue SE   | N. side of 25th Ave. from Ruddell Road to Lilac St.  | 1995  | 0.33           | 41.0        | GW                   | Hicks Lake                           |
| 21  | PD0038      | Eastwood Estates Ponds                 | 3 Infiltration ponds                         | 7407 38th Dr. SE           | Eastwood Estates, W. side Carpenter at 38th Loop     | 1978  | 0.01           | 5.0         | GW                   | Long Lake                            |
| 22  | PD0041      | Ruddell & 32nd Facility                | Pre-treatment & Wetland Pond enhancement     | 3411 Ruddell Road SE       | E. side of Ruddell to Hicks Lake                     | 1999  | 4.77           | 436.0       | wetlands             | Hicks Lake                           |
| 23  | HICKWTLD    | Hicks Lake Wetland (PD0041 Outfall)    | Wetlands                                     | 3411 Ruddell Road SE       | E. side of Ruddell to Hicks Lake                     | 1999  | 22.52          |             | wetlands             | Hicks Lake                           |
| 24  | PD0042      | Quail Pond                             | Wet Pond                                     | 4708 Quail Dr. SE          | N. side of 45th Avenue SE, E. of Quail Drive         | 1993  | 0.71           | 14.0        | GW                   | Hicks Lake                           |
| 25  | PD0050      | Century Court                          | Retention/Detention Pond                     | 701 Century Court NE       | S. end of Century Court, off 15th Ave. NE            | 1978  | 2.00           | 4.0         | wetlands             | College Creek                        |
| 26  | PD0051      | Fones Rd Ditch SW Facility (upper)     | Wet Pond & Infiltration Basin                | 3700 14th Ave SE           | E. of Fones Road at 12th Ave SE                      | 2004  | 2.16           | 97.0        | GW                   | Woodard Creek                        |
| 27  | PD0052      | College Regional Stormwater Facility   | Primary Wetpond & Retention Ponds            | 5100 Abbey Way SE          | Saint Martin's University, N. side of Abbey Way      | 2008  | 20.00          | 424.0       | GW                   | College Creek                        |
| 28  | PD0054      | Mills Landing                          | Swale                                        | 1330 Carpenter Road SE     | E. of NTPS bus lot, N. side Mills Landing Ct. SE     | 2009  | 0.64           | 4.0         | wetlands             | Woodland Cr                          |
| 29  | PD0055      | RAC (Regional Athletic Complex)        | Retention Ponds                              | 8245 Steilacoom Road SE    | E. side Marvin Rd, NW & SW cor. of baseball fields   | 2007  | 1.87           | 20.0        | GW                   | Little McAllister Cr                 |
| 30  | PD0058      | Arbors Pond                            | Retention Pond                               | 7644 41st Avenue SE        | NW corner of 41st Avenue SE & Arbor Drive            | 1992  | 0.50           | 59.0        | wetlands             | Long Lake                            |
| 31  | ARBWTLAND   | Arbors Wetland (PD0058 Outfall)        | Wetlands                                     | 7616 39th Ave. SE          | Arbors Housing Development                           | 1992  | 12.58          |             | wetlands             | Long Lake                            |
| 32  | PD0059      | Thornbury Pond                         | Retention Pond, Oil-Water Separator          | 5400 Thornbury Drive       | SE cor. 54th Ave & Thornbury Dr, E. of Ruddell       | 1990  | 0.70           | 29.0        | GW                   | Southwick Lake                       |
| 33  | PD0060      | Lacey Community Center                 | Pond                                         | 6729 Pacific Avenue SE     | behind Community & Senior Ctrs, along Goose Lk       | 2002  | 0.61           | 2.2         | Long's Pond          | Woodland Cr                          |
| 34  | PD0061      | Lacey Senior Center                    | Pond                                         | 6757 Pacific Avenue SE     | NE end of parking lot                                | 2002  | 0.01           | 1.2         | GW                   | Woodland Cr                          |
| 35  | PD0062      | Meridian Park                          | Retention Pond                               | 8855 Campus Glen Dr NE     | SE corner of Willamette Dr. & Campus Glen Dr. NE     | 2006  | 0.31           | 1.0         | GW                   | McAllister Creek                     |
| 36  | PD0063      | Summerwalk Pond                        | Retention Pond                               | 4900 Yelm Highway SE       | E. of Little Prairie Ctr, in SW part of Summerwalk   | 2005  | 0.80           | 9.0         | GW                   | Deschutes River                      |
| 37  | PD0064      | Hawks Prairie Water Treatment Facility | Bioswale and Detention Pond                  | 4040 Marvin Road NE        | SE of booster pump station                           | 2009  | 1.60           | 2.0         | GW/wetlands          | Eagle Creek                          |
| 38  | PD0065      | Mullen Road Extension                  | Wet Pond & Infiltration Basin                | 5400 Mullen Road SE        | on both sides of Mullen, near Park Place Loop        | 2010  | 0.92           | 15.0        | GW                   | Hicks Lake                           |
| 39  | PD0067      | Yelm Highway East                      | Retention & Infiltration Basins              | 6130 Yelm Highway SE       | N. side Yelm Hwy, W. of Compton/Balustrade Blvd.     | 2010  | 0.36           | 1.0         | GW                   | Deschutes River                      |
| 40  | PD0068      | City Pit (Decant Facility, etc.)       | Retention & Infiltration Basin               | 6245 Martin Way E.         | On the left as you enter the gate                    | 2010  | 0.08           | 11.0        | GW                   | Woodland Cr                          |
| 41  | PD0069      | Chambers Lake Stormwater Facility      | Constructed Wetlands                         | 2750 Lakeview Dr. SE       | On both sides of walking trail                       | 2015  | 6.24           | 187.0       | Chambers Lk          | Deschutes River                      |
| 42  | PD0070      | Rainier Road Swale                     | Swale                                        | 7400 Rainier Rd. SE        | East side of Rainier Rd just North of RR Trestle     | 2009  | 0.01           |             | Chambers Cr          | Deschutes River                      |
| 43  | PD0071      | Northridge                             | Retention Pond                               | 5500 Mullen Rd. SE         | S. side of Mullen Rd. between Park Pl. Lp. & Ruddell | 1991  | 0.51           | 4.4         | GW                   | Southwick Lake                       |
| 44  | PD0072      | 28th Court NE                          | Wet Pond                                     | 2801 Hogum Bay Rd. NE      | On the NW corner of Hogum Bay & 28th Ct. NE          | 1994  | 1.00           | 14.6        | GW                   | Eagle Creek                          |
| 45  | PD0073      | Carpenter Road SE                      | Retention Pond                               | 201 Carpenter Rd. SE       | W. side of Carpenter Rd. across from Husky Way       | 2010  | 0.27           | 4.4         | GW                   | Woodland Cr                          |
| 46  | PD0076      | Martin Way/Woodland Creek Swale        | Wetvaults, Infiltration Swale and Trench     | Behind the guard rail      | S. side Martin btw. Desmond Dr. & Woodland Cr        | 1993  | 0.25           | 16.7        | GW                   | Woodland Cr                          |
| 47  | PD0077      | Wonderwood Park                        | Retention Pond                               | Park entance off Brentwood | On the E. side of the parking lot                    | 1978  | 0.19           | 54.0        | GW                   | Hicks Lake                           |
|     |             |                                        |                                              |                            |                                                      |       | <b>Total</b>   | 110.01      | 2370.7               |                                      |

Notes: 1. Facility ID Number and Facility Description are per PW Operations' records in HTE.

2. Facility ID numbers have gaps due to some facilities having been retired/eliminated, with no renumbering.

3. List is not allinclusive; these are the main, larger storm facilities listed in HTE as "Storm Ponds" and maintained by Public Works - Operations Stormwater Department.

4. Basin Area excludes areas upstream that are managed by other ponds.

5. Basin Area data per GIS mapping compiled by Herrera for 2013 SCP.

6. GW = Groundwater (infiltration)

## **APPENDIX D**

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### **Capital Improvement Program Appendix**



# CAPITAL IMPROVEMENT PROGRAM

## APPENDIX

### Solution Development

The stormwater CIP from the 2013 Stormwater Comprehensive Plan (2013 Plan) was updated using input from City staff on completed projects and new problems. Problems were evaluated using desktop methods and field evaluation to assess site-specific opportunities and constraints. New project concepts were developed using desktop methods and an estimated cost was defined for each project using a combination of parametric and analogous cost estimating techniques.

### *Conceptual Designs*

Sites associated with stormwater problems were visited by Herrera staff to determine the potential cause(s) of the problems. Engineering judgment was then used to identify appropriate capital projects to address each stormwater problem, factoring in constraints and opportunities at each site. For some projects, multiple alternatives were considered.

Conceptual designs were developed for each project, using sound engineering judgement and desktop and field assessment. Each conceptual design includes a project summary sheet (problem description, and a list of the primary project components), a plan view figure of the stormwater facilities with dimensions (when applicable), and an itemized planning-level cost estimate (when applicable). Summary sheets and cost estimates are available at the end of this appendix.

### *Conceptual Cost Estimates*

Costs for capital projects were estimated in different ways, depending on the type of project and project development history.

- Five projects were carried forward from the 2013 plan without major modification. Costs were converted to June 2019 dollars.
- Four projects from the 2013 plan received major updates and new cost estimates were developed using the methodology described below.
- Three new location-specific (i.e. construction) project concepts were developed and new cost estimates were developed using the methodology described below.

- Seven new projects were defined that are not location specific (i.e. not construction projects). These projects include annual programs and stormwater planning projects. Costs for these projects were developed based on City experience with the programs in the past and Herrera's experience with similar stormwater planning projects.

Cost estimates were prepared for location-specific (i.e. construction) projects based upon Herrera's experience in designing projects of a similar scale and in similar settings. Unless otherwise noted in the cost estimates, the following assumptions were applied:

- Construction bid items were based on WSDOT standard specifications where applicable, including material, construction requirements, measurement, and payment.
- Line item unit prices used in the construction cost estimates were derived from a combination of applicable sources, including contractor bid tabs from similar past projects, prices compiled by WSDOT, quotes from vendors, a cost estimating guide (The Guide 2018), site-specific understanding of probable contractor staging, access, and other project-specific requirements and constraints that would affect contractor bids for the project.
- Allied costs (project management, survey, geotechnical analyses, design, permitting, and construction management) were included for each project, as appropriate.
- The City would hire a consultant to perform the geotechnical analysis, design, and permitting.
- The City would perform the survey in-hours
- The City would manage the project for a cost equal to 20 percent of the construction cost and would perform construction management for a cost equal to 15 percent of the construction cost.
- Costs for survey, geotechnical analyses, design, and permitting were based on experience with design and permitting for similar projects and knowledge of site-specific job complexities and challenges. In some cases, professional judgment was used to estimate allied costs as a percentage of construction costs.
- A design contingency was applied to the cost to reflect the level of uncertainty associated with the project scope and potential risks. Contingency values are in line with recommendations by the Association for the Advancement of Cost Engineering (AACE 2005; Rothwell 2005).
- Property acquisition costs were not considered and may affect actual costs for some projects.
- An additional local cost adjustment factor of 10 percent was applied to construction costs to account for higher-than-expected costs for recent projects in the City.

## Project Prioritization

The stormwater CIP problems and solutions were prioritized using a qualitative process and considering input from City staff, review of background documents, and field reconnaissance of existing problems. Each project was evaluated against the following primary and secondary prioritization criteria to assign project priority.

### *Primary Prioritization Criteria*

The primary prioritization criteria are related to the risk associated with the problem that is being solved: likelihood of the problem occurring (i.e., probability) and the potential losses resulting from the problem (i.e. severity). Projects that address frequent problems with major potential losses have higher risk reduction benefit, and thus are typically assigned a higher priority. Projects that address less frequent problems with minor potential losses have lower risk, and thus are typically assigned a lower priority.

**Probability:** Probability of the problem occurring was evaluated qualitatively, based on the perceptions of City staff. Problems that occur more frequently were assigned a higher priority.

**Severity:** Consideration of severity involved qualitatively assessing the potential losses associated with the problem. Problems with greater potential losses were assigned a higher priority.

**Relating Project Benefits to Program Elements and Goals.** Probability and severity were considered in the context of the following program elements:

- **Flood Reduction:** How much does the project reduce flooding? (e.g., reduce frequency, extents, hazards, health risks, property damage)
- **Surface Water Quality Improvement:** How much does the project improve surface water quality? (e.g., decrease pollutant loading, provide source control)
- **Ground Water Quality Protection:** Does the project contribute to the protection of ground water quality? (e.g., improve groundwater recharge, remove pollutants from surface water prior to infiltration)
- **Habitat Improvement:** How much does the project improve habitat? (e.g., improve the function of existing natural areas, create new habitat)
- **Infrastructure Operations and Maintenance:** Is the project necessary for existing stormwater infrastructure to operate as intended? (e.g., rehabilitate existing infrastructure, increase service life of infrastructure)

Each project was assigned a score of high, medium, or low based on the primary prioritization criteria.

## Secondary Prioritization Criteria

Secondary prioritization criteria were used to refine project prioritization and develop the implementation schedule through qualitative examination of the program elements of Public Participation and Comprehensive Planning, Administration, and Funding:

- **Public Participation:**
  - Will the project educate public about storm water?
  - Will the project provide an opportunity for stewardship activities?
- **Comprehensive Planning, Administration, and Funding:**
  - Are there other project benefits to the community? (e.g., enhance open space, connect greenways, improve walkability, provide wildlife corridors)
  - Will the project enhance social equity?
  - Can the project be scheduled to coincide with other City projects such that the total cost of both projects is reduced? (e.g., scheduling a drainage improvement project before an overlay project)
  - Is the project a candidate for outside grant funding that will magnify the benefits of utility funds?
  - Do we understand the problem well enough to design and implement an effective solution?

## Results

The results of the prioritization process are shown in the Prioritization Matrix below. Projects that are required by regulations, such as updating the Stormwater Design Manual, were considered exempt from the prioritization process and assigned a priority of "Required".

## REFERENCES

AACE. 2005. Cost Estimate Classification System – As Applied in Engineering, Procurement, and Construction for the Process Industries, AACE International Recommended Practice No. 18R-97, TCM Framework: 7.3 – Cost Estimating and Budgeting. Association for the Advancement of Cost Engineering (AACE) International. February 2, 2005.

Rothwell, G. 2005. Contingency in Levelized Capital Cost Estimation. 2005 Association for the Advancement of Cost Engineering (AACE) International Transactions.

The Guide. Building Construction Material Prices for use in Alaska, Oregon and Washington since 1984. January 2018.



| Prioritization Matrix |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                        |                                                                                                                                                                                                                                                                                                                                                                                           |                                 |               |
|-----------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|---------------|
| Proj. No.             | Project Name                               | Primary Criteria Notes                                                                                                                                                                                                                                                                                                                                                                                                                           | Primary Criteria Score | Secondary Criteria Notes                                                                                                                                                                                                                                                                                                                                                                  | Influence of Secondary Criteria | Overall Score |
| 19-1                  | Westminster Pond Modification              | <b>Surface Water Quality</b><br>The current pond is clogged with sediment, so flow from the pond is discharging to College Creek without treatment. Rehabilitating the pond will improve water quality treatment function.                                                                                                                                                                                                                       | High                   | <b>Public Participation</b><br>Some opportunity for public education through educational signage at the site.<br><b>Comprehensive Planning, Administration, and Funding</b><br>This project may be eligible for a water quality grant to support the addition of a pretreatment BMP, but may not be a strong candidate because much of the work could be considered required maintenance. | No change                       | High          |
| 19-2                  | 26th Loop Conveyance                       | <b>Flood Reduction</b><br>Minor nuisance flooding is impacting several yards.<br><b>Surface Water Quality</b><br>Runoff from Golf Club Rd. SE is entering Chambers Lake without treatment, potentially impairing water quality in the lake.                                                                                                                                                                                                      | High                   | <b>Public Participation</b><br>Limited opportunity for education and stewardship<br><b>Comprehensive Planning, Administration, and Funding</b><br>No cost sharing opportunities.                                                                                                                                                                                                          | No change                       | High          |
| 19-3                  | 2021 Stormwater Design Manual (SDM) Update | This project is required by regulations and is exempt from the prioritization process.<br><br>This project provides guidance for developers to more effectively and efficiently improve the following program elements:<br><ul style="list-style-type: none"> <li>• <b>Flood Reduction</b></li> <li>• <b>Surface Water Quality</b></li> <li>• <b>Ground Water Quality</b></li> <li>• <b>Infrastructure Operations and Maintenance</b></li> </ul> | Required               | <b>Public Participation</b><br>Opportunities for stakeholder involvement during development of the updated manual.<br><b>Comprehensive Planning, Administration, and Funding</b><br>Opportunities for coordination with other development documents to align the SDM with City-wide development goals.                                                                                    | No change                       | Required      |

| Prioritization Matrix |                                                                                    |                                                                                                                                                                                                                                                                                                                           |                        |                                                                                                                                                                                                                                                                                                                                  |                                                 |               |
|-----------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|---------------|
| Proj. No.             | Project Name                                                                       | Primary Criteria Notes                                                                                                                                                                                                                                                                                                    | Primary Criteria Score | Secondary Criteria Notes                                                                                                                                                                                                                                                                                                         | Influence of Secondary Criteria                 | Overall Score |
| 19-4                  | Woodland Creek Stormwater Treatment Facility Oil Water Separator (OWS) Replacement | <b>Surface Water Quality</b><br>The current OWS at this location is frequently clogged by sediment and is providing little water quality treatment.<br><b>Infrastructure Operations and Maintenance</b><br>The current OWS contains plates which frequency break during replacement. Maintenance is costly and difficult. | High                   | <b>Public Participation</b><br>Limited opportunity for education and stewardship<br><b>Comprehensive Planning, Administration, and Funding</b><br>No cost sharing opportunities.                                                                                                                                                 | No change                                       | High          |
| 19-5                  | Woodland Creek Community Park Habitat Restoration                                  | <b>Habitat Improvement</b><br>Invasive species are out-competing native species and degrading habitat quality in Woodland Creek.                                                                                                                                                                                          | Low                    | <b>Public Participation</b><br>Excellent opportunity for stewardship by engaging volunteers to replant native species<br><b>Comprehensive Planning, Administration, and Funding</b><br>No cost sharing opportunities.                                                                                                            | Increase (opportunity for community engagement) | High          |
| 19-6                  | Stormwater Management Action Planning (SMAP)                                       | This project is required by regulations and is exempt from the prioritization process.                                                                                                                                                                                                                                    | Required               | <b>Public Participation</b><br>Opportunities for stakeholder involvement during SMAP process.<br><b>Comprehensive Planning, Administration, and Funding</b><br>Opportunity to direct stormwater funds towards the most impactful program activities and projects.                                                                | No change                                       | Required      |
| 19-7                  | Regional Water Quality Facility Program                                            | <b>Surface Water Quality</b><br>Untreated and partially-treated runoff decreases the quality of surface water                                                                                                                                                                                                             | Medium                 | <b>Public Participation</b><br>Opportunity for education and stewardship<br><b>Comprehensive Planning, Administration, and Funding</b><br>Excellent opportunity for grant funding. A portion of the funding for this project is to apply for grant funding and the rest is intended as matching funds for a surface water grant. | No change                                       | Medium        |

| Prioritization Matrix |                                         |                                                                                                                                                                                                                                                                                                                                                      |                        |                                                                                                                                                                                                                                                                                                                                                                                                                           |                                 |               |
|-----------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|---------------|
| Proj. No.             | Project Name                            | Primary Criteria Notes                                                                                                                                                                                                                                                                                                                               | Primary Criteria Score | Secondary Criteria Notes                                                                                                                                                                                                                                                                                                                                                                                                  | Influence of Secondary Criteria | Overall Score |
| 19-8                  | Infiltration Retrofit Program           | <b>Groundwater Quality</b><br>Untreated infiltration can degrade groundwater quality                                                                                                                                                                                                                                                                 | Medium                 | <b>Public Participation</b><br>Limited opportunity for education and stewardship<br><b>Comprehensive Planning, Administration, and Funding</b><br>No cost sharing opportunities.                                                                                                                                                                                                                                          | No change                       | Medium        |
| 19-9                  | Miscellaneous Storm System Improvements | This annual program will improve the following program elements:<br><ul style="list-style-type: none"> <li>• <b>Flood Reduction</b></li> <li>• <b>Surface Water Quality</b></li> <li>• <b>Ground Water Quality</b></li> <li>• <b>Infrastructure Operations and Maintenance</b></li> </ul>                                                            | Medium                 | <b>Public Participation</b><br>Limited opportunity for education and stewardship<br><b>Comprehensive Planning, Administration, and Funding</b><br>This program will increase efficiency and reduce costs by identifying opportunities for cost sharing with projects led by other utilities and jurisdictions and addressing infrastructure repair and replacement needs before they become an emergency repair situation | No change                       | Medium        |
| 19-10                 | Stormwater Comprehensive Plan Update    | This project will provide guidance for the City to more effectively and efficiently improve the following program elements:<br><ul style="list-style-type: none"> <li>• <b>Flood Reduction</b></li> <li>• <b>Surface Water Quality</b></li> <li>• <b>Ground Water Quality</b></li> <li>• <b>Infrastructure Operations and Maintenance</b></li> </ul> | Required               | <b>Public Participation</b><br>Opportunities for stakeholder involvement during development of the updated comprehensive plan<br><b>Comprehensive Planning, Administration, and Funding</b><br>Provides comprehensive planning for the stormwater program                                                                                                                                                                 | Increase                        | Required      |
| 13-7                  | Diamond Stormwater Alternative          | <b>Flood Reduction</b><br>Low frequency flooding with the potential to affect private properties. This project would reduce flood severity and frequency.                                                                                                                                                                                            | Medium                 | <b>Public Participation</b><br>Limited opportunity for education and stewardship.<br><b>Comprehensive Planning, Administration, and Funding</b><br>No opportunity for cost sharing.                                                                                                                                                                                                                                       | No change                       | Medium        |

| Prioritization Matrix |                                              |                                                                                                                                                                                                                                  |                        |                                                                                                                                                                                                                                                                                                                                                                                                           |                                 |                                                             |
|-----------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------|
| Proj. No.             | Project Name                                 | Primary Criteria Notes                                                                                                                                                                                                           | Primary Criteria Score | Secondary Criteria Notes                                                                                                                                                                                                                                                                                                                                                                                  | Influence of Secondary Criteria | Overall Score                                               |
| 13-9                  | Clearbrook Drainage System Improvements      | <b>Flood Reduction</b><br>Surface ponding threatens one home. Flooding in multiple streets. This project would reduce flood severity and frequency.                                                                              | Medium                 | <b>Public Participation</b><br>Opportunity for public involvement with Parks project; project will be visible<br><b>Comprehensive Planning, Administration, and Funding</b><br>Potential integration and cost sharing with parks project and coordination with Homann Area System Rehabilitation. The facility is currently privately owned; the City could assume responsibility for the private system. | No change                       | Medium                                                      |
| 13-10                 | Homann Area System Rehabilitation (Option 1) | <b>Flood Reduction</b><br>The current system of gutters and infiltration galleries still results in high frequency, minor nuisance flooding. The proposed conveyance system will provide more effective flood control.           | Medium                 | <b>Public Participation</b><br>Limited opportunity for education and stewardship<br><b>Comprehensive Planning, Administration, and Funding</b><br>Feasibility and effectiveness is not well known. May coordinate with future sewer expansion and the Clearbrook Project.                                                                                                                                 | Reduce                          | Low<br>(Conduct infiltration study during planning period.) |
| 13-10                 | Homann Area System Rehabilitation (Option 2) | <b>Flood Reduction</b><br>The proposed solution will reduce minor nuisance flooding.<br><b>Surface Water Quality and Ground Water Quality</b><br>The proposed solution will treat stormwater prior to infiltration or discharge. | Medium                 | <b>Public Participation</b><br>Visibility of bioretention facilities in the neighborhood provides an opportunity for education about stormwater.<br><b>Comprehensive Planning, Administration, and Funding</b><br>Feasibility and effectiveness is not well known.                                                                                                                                        | Reduce                          | Low<br>(Conduct infiltration study during planning period.) |



| Prioritization Matrix |                                               |                                                                                                                                                                                                                      |                        |                                                                                                                                                                                                                                                     |                                 |                                                    |
|-----------------------|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------------------------------------------------|
| Proj. No.             | Project Name                                  | Primary Criteria Notes                                                                                                                                                                                               | Primary Criteria Score | Secondary Criteria Notes                                                                                                                                                                                                                            | Influence of Secondary Criteria | Overall Score                                      |
| 13-11                 | 1010 Midway Storm Improvements                | <b>Flood Reduction</b><br>Flooding impacts a multifamily residential development.                                                                                                                                    | Medium                 | <b>Public Participation</b><br>Limited opportunity for education and stewardship<br><b>Comprehensive Planning, Administration, and Funding</b><br>Interjurisdictional cooperation is needed with Thurston County to schedule and fund this project. | No change                       | Medium                                             |
| 13-12                 | Belair-Impala Stormwater Installation         | <b>Flood Reduction</b><br>Significant nuisance flooding affecting a large geographic area with at least one private property. Frequency of flooding is high. This project would reduce flood severity and frequency. | Medium                 | <b>Public Participation</b><br>Limited opportunity for education and stewardship.<br><b>Comprehensive Planning, Administration, and Funding</b><br>Schedule to occur with the next overlay in this area. No outside funding potential.              | No change                       | Medium                                             |
| 13-14                 | Alder and Gemini Drainage System Improvements | <b>Flood Reduction</b><br>Minor nuisance flooding.                                                                                                                                                                   | Low                    | <b>Public Participation</b><br>Limited opportunity for education and stewardship<br><b>Comprehensive Planning, Administration, and Funding</b><br>No cost sharing opportunities.                                                                    | No change                       | Low<br>(Coordinate with Homann Infiltration Study) |
| 13-15                 | White Fir Stormwater Installation             | <b>Flood Reduction</b><br>High frequency, minor nuisance flooding. The City has received drainage complaints from the community. This project would reduce flood severity and frequency.                             | Low                    | <b>Public Participation</b><br>Limited opportunity for education and stewardship.<br><b>Comprehensive Planning, Administration, and Funding</b><br>Potential to coordinate with future sewer expansion project.                                     | No change                       | Low                                                |

| Prioritization Matrix |                                                   |                                                                                                                                                                                                                                                                                                       |                        |                                                                                                                                                                                                                |                                 |               |
|-----------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|---------------|
| Proj. No.             | Project Name                                      | Primary Criteria Notes                                                                                                                                                                                                                                                                                | Primary Criteria Score | Secondary Criteria Notes                                                                                                                                                                                       | Influence of Secondary Criteria | Overall Score |
| 13-16                 | 5th Ct SE and 5th Way Easement Storm Improvements | <b>Flood Reduction</b><br>Potential minor impacts if structures are not maintained.<br><b>Infrastructure Operations and Maintenance</b><br>Maintenance is currently difficult due to the location of the conveyance system in a narrow easement between houses. Equipment does not fit in this space. | Low                    | <b>Public Participation</b><br>Limited opportunity for education and stewardship<br><b>Comprehensive Planning, Administration, and Funding</b><br>No cost sharing opportunities.                               | No change                       | Low           |
| 13-17                 | Shady Lane Treatment Facility Improvements        | <b>Surface Water Quality</b><br>The facilities water quality treatment performance is limited by the unmaintained state. Improving the facility will enhance water quality.                                                                                                                           | Medium                 | <b>Public Participation</b><br>Limited opportunity for education and stewardship due to low-visibility site.<br><b>Comprehensive Planning, Administration, and Funding</b><br>No opportunity for cost sharing. | No change                       | Medium        |



## Capital Improvement Program Project Summary Sheet

### Westminster Pond Modification

Location: South side 8th Ave. NE  
just east of Westminster  
Drive NE

Number: 19-1 Priority: High

Estimated Cost: \$340,000

ENR CCI 11,268.48 (June 2019)

#### Problem Description:

Existing facility needs rehabilitation as the pond has become laden with sediment. Project may include a retrofit to improve performance / expand drainage area. Potentially manage flow from 6th Ave and College Street system. Existing wetlands may limit ability to expand facility.

#### Project Solution:

Rehabilitate the existing facility. Restore pond bottom to design elevation and establish new wet pond vegetation around the perimeter. Relocate existing south inlet location closer to north inlet via pipe extension. Intercept north inlet pipe upstream of pond inlet with pre-treatment device sized adequately for flows.

#### Cost Estimate Assumptions:

A 40% contingency has been added to the project cost to account for the uncertainty related to outlet relocation regarding required piping and berming, and to account for unknown inverts for the pretreatment device.

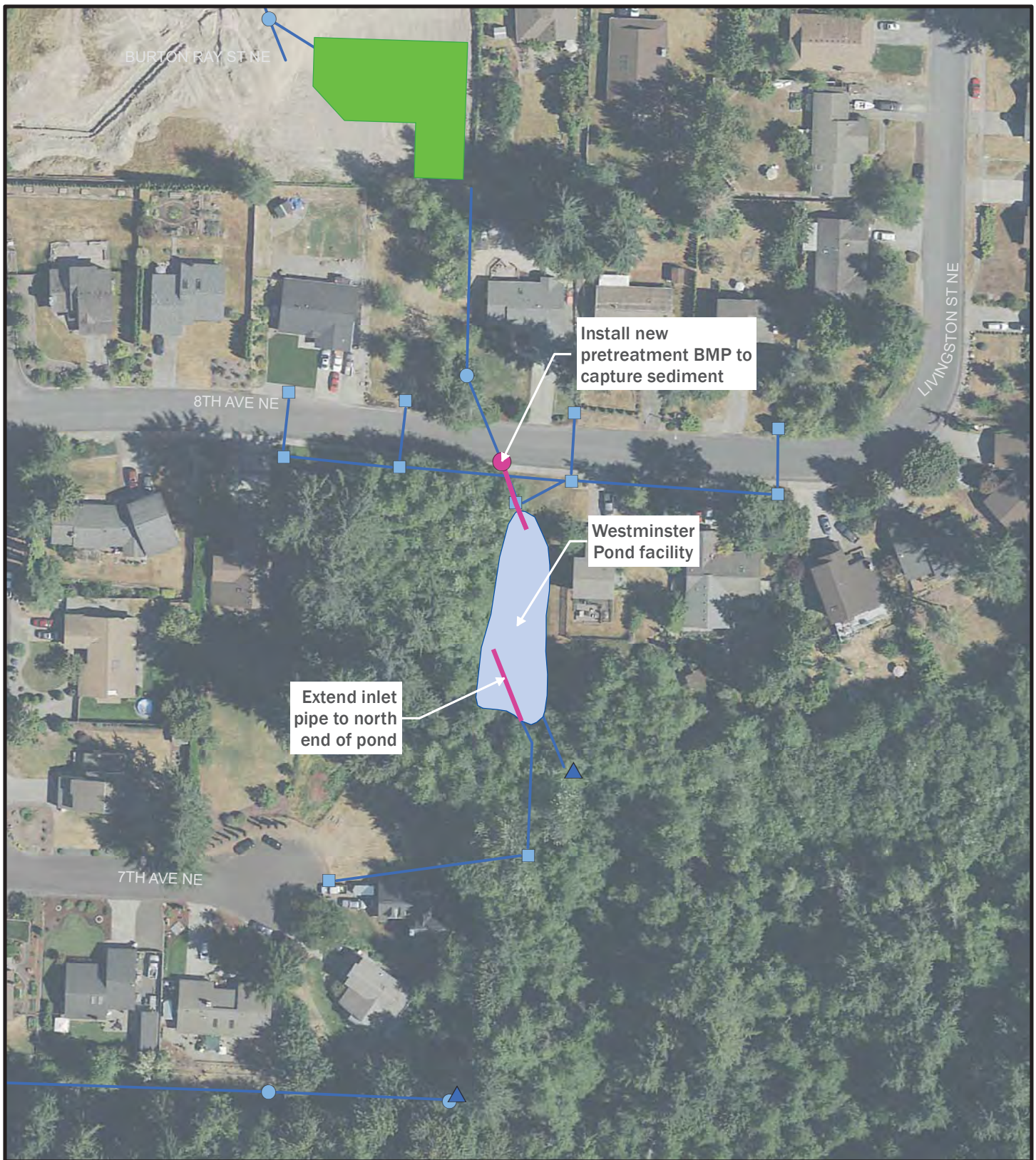


Existing stormwater pond, looking north



Existing stormwater pond, looking south





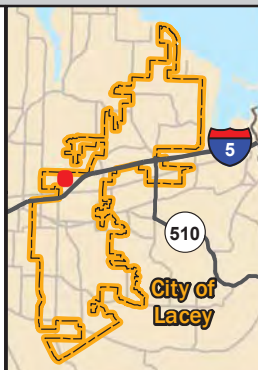
#### Legend

##### Existing

- Catch Basin
- ▲ Outfall
- Manhole
- Conveyance
- Pond
- Filter Strip

##### Proposed

- Structure
- Pipe or Culvert



**Figure 5. City of Lacey Stormwater CIP 19-1: Westminster Pond Modification.**



0 50 100 200 Feet



City of Lacey Aerial, 2015

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**Engineering Construction Cost Estimate for Conceptual Design - DRAFT**

**Project Name:** Westminster Pond Modification  
**Project Number:** 17-06745-000  
**Client:** City of Lacey Stormwater Comprehensive Plan Update


**QA Review**

Completed/Updated By: Meghan Mullen and Trae Yang  
 Last Updated On: 6/11/2019  
 Reviewed By: Matt Fontaine  
 Reviewed On: 6/11/2019  
 Approved By: Matt Fontaine  
 Approved On: 6/11/2019

| Item No. | Spec Division | Item Description                                                                     | Qty  | Unit | Unit Cost | Total Cost          |
|----------|---------------|--------------------------------------------------------------------------------------|------|------|-----------|---------------------|
|          | <b>Div 1</b>  | <b>General Requirements</b>                                                          |      |      |           |                     |
| 1        |               | Mobilization                                                                         | 1    | L.S. | 10%       | \$ 9,467            |
| 2        |               | Erosion/Water Pollution Control                                                      | 1    | L.S. | 5%        | \$ 4,734            |
| 3        |               | Temporary Dewatering                                                                 | 1    | L.S. | 10%       | \$ 9,467            |
| 4        |               | Utility Protection and Relocation                                                    | 1    | L.S. | 0%        | \$ -                |
| 5        |               | Project Temporary Traffic Control                                                    | 1    | L.S. | 0%        | \$ -                |
|          | <b>Div 2</b>  | <b>Earthwork</b>                                                                     |      |      |           |                     |
| 6        |               | Pond Excavation, Incl. Haul                                                          | 580  | C.Y. | \$ 25     | \$ 14,500           |
| 7        |               | Clearing and Grubbing                                                                | 0.17 | Acre | \$ 8,800  | \$ 1,454            |
|          | <b>Div 7</b>  | <b>Drainage Structures, Storm Sewers, Sanitary Sewers, Water Mains, and Conduits</b> |      |      |           |                     |
| 8        |               | GULD pretreatment device with installation                                           | 1    | L.S. | \$ 63,000 | \$ 63,000           |
| 9        |               | Schedule A Storm Sewer Pipe 12 In. Diameter                                          | 100  | L.F. | \$ 50     | \$ 5,000            |
|          | <b>Div 8</b>  | <b>Miscellaneous Construction</b>                                                    |      |      |           |                     |
| 10       |               | Planting -- Shrubs and Seeding Mix                                                   | 0.1  | Acre | \$ 5,200  | \$ 716              |
| 11       |               | Maintenance access                                                                   | 1    | L.S. | \$ 10,000 | \$ 10,000           |
|          |               |                                                                                      |      |      |           |                     |
|          |               | <b>Construction Subtotal</b>                                                         |      |      |           | <b>\$ 118,338</b>   |
|          |               | Contingency                                                                          | 40%  |      |           | <b>\$ 47,335.08</b> |
|          |               | Lacey Cost Adjustment Factor                                                         | 10%  |      |           | <b>\$ 11,833.77</b> |
|          |               | Subtotal (with Contingency and Lacey Cost Adj. Factor)                               |      |      |           | <b>\$ 177,507</b>   |
|          |               | Tax                                                                                  | 9.3% |      |           | <b>\$ 16,508</b>    |
|          |               | <b>Construction Total (with Contingency and Tax)</b>                                 |      |      |           | <b>\$ 194,015</b>   |
|          |               | Survey                                                                               |      | L.S. |           | <b>\$ 10,000</b>    |
|          |               | Geotechnical / Infiltration Evaluation                                               |      | L.S. |           | <b>\$ -</b>         |
|          |               | Predesign                                                                            |      | L.S. |           | <b>\$ 10,000</b>    |
|          |               | Design                                                                               | 15%  |      |           | <b>\$ 29,000</b>    |
|          |               | Permitting                                                                           |      | L.S. |           | <b>\$ 30,000</b>    |
|          |               | Construction Management                                                              | 15%  |      |           | <b>\$ 29,102.20</b> |
|          |               | City of Lacey Project Management                                                     | 20%  |      |           | <b>\$ 38,802.93</b> |
|          |               | <b>Estimated Project Total (rounded to 2 significant figures)</b>                    |      |      |           | <b>\$ 340,000</b>   |



## Capital Improvement Program Project Summary Sheet

### 26th Loop Conveyance

Location: 26th Loop SE and 26th Ave  
SE from Golf Club Road  
SE to Lakeside Dr SE

Number: 19-2 Priority: High

Estimated Cost: \$510,000

ENR CCI 11,268.48 (June 2019)

#### Problem Description:

Inadequate conveyance between College St. & Golf Club Rd. causes flooding of crawl spaces. Conveyance is hindered by sediment in ditches and a water main thrust block that limits ability to make the ditch deeper.

#### Project Solution:

Tightline all flows from Chambers Lake Drive, Golf Club Road, and 26th Ave SE to the connection with Chambers Lake SDMH at the intersection of Lakeside and 26th Loop. New storm roadway crossings will be low to avoid existing water main and will continuously hold water. New piping along south and west side of roadways may impact existing mature trees and must be considered as a potential challenge. Additionally, existing connection elevation constraints require minimal (0.5%) slope throughout the system.

#### Cost Estimate Assumptions:

Assumes 50% contingency due to higher uncertainty of design. Assumes existing 12" pipes are adequate for flows.

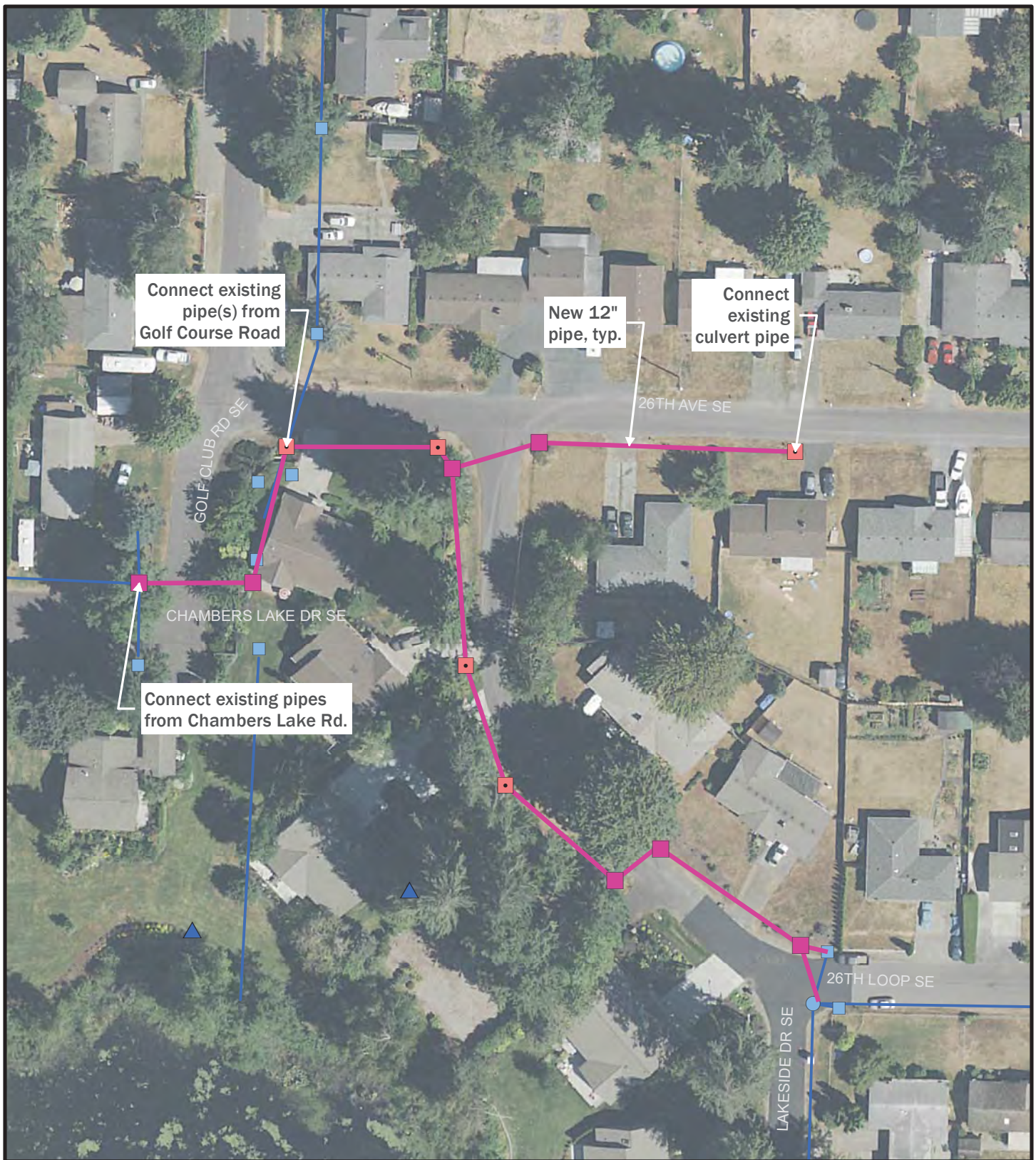


Corner with thrust block preventing conveyance through existing ditch



Outlet of proposed conveyance extends to the Chambers Treatment Facility





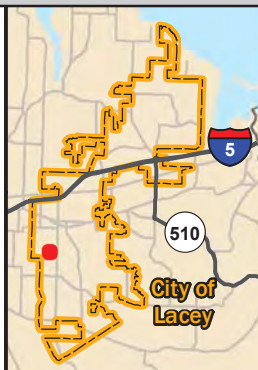
#### Legend

##### Existing

- Catch Basin
- ▲ Outfall
- Junction Box
- Manhole
- Conveyance

##### Proposed

- Type 1 CB
- Type 2 CB
- Pipe or Culvert



**Figure 2. City of Lacey Stormwater CIP 19-2: 26th Loop Conveyance.**



0 40 80 160 Feet



City of Lacey Aerial, 2015

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**Engineering Construction Cost Estimate for Conceptual Design - DRAFT**

**Project Name:** 26th Loop  
**Project Number:** 17-06745-000  
**Client:** City of Lacey Stormwater Comprehensive Plan Update


**QA Review**

Completed/Updated By: Trae Yang  
 Last Updated On: 6/12/2019  
 Reviewed By: Matt Fontaine  
 Reviewed On: 6/12/2019  
 Approved By: Matt Fontaine  
 Approved On: 6/12/2019

| Item No. | Spec Division | Item Description                                                                     | Qty  | Unit | Unit Cost   | Total Cost          |
|----------|---------------|--------------------------------------------------------------------------------------|------|------|-------------|---------------------|
|          | <b>Div 1</b>  | <b>General Requirements</b>                                                          |      |      |             |                     |
| 1        |               | Mobilization                                                                         | 1    | L.S. | 10%         | \$ 13,425.49        |
| 2        |               | Erosion/Water Pollution Control                                                      | 1    | L.S. | 5%          | \$ 6,712.75         |
| 3        |               | Temporary Dewatering                                                                 | 1    | L.S. | 2%          | \$ 2,685.10         |
| 4        |               | Utility Protection and Relocation                                                    | 1    | L.S. | 20%         | \$ 26,850.99        |
| 5        |               | Project Temporary Traffic Control                                                    | 1    | L.S. | 10%         | \$ 13,425.49        |
|          | <b>Div 2</b>  | <b>Earthwork</b>                                                                     |      |      |             |                     |
| 6        |               | Clearing and Grubbing                                                                | 1    | L.S. | \$ 2,000    | \$ 2,000            |
| 7        |               | Structure Excavation, Incl. Haul                                                     | 161  | C.Y. | \$ 30       | \$ 4,832            |
| 8        |               | Removal of Structures and Obstructions                                               | 1    | L.S. | \$ 5,000    | \$ 5,000            |
| 9        |               | CDF                                                                                  | 111  | C.Y. | \$ 185      | \$ 20,444           |
| 10       |               | Ditch excavation, incl haul                                                          | 33   | C.Y. | \$ 30       | \$ 993              |
| 11       |               | Ditch fill                                                                           | 116  | C.Y. | \$ 40       | \$ 4,634            |
|          | <b>Div 5</b>  | <b>Surface Treatments and Pavements</b>                                              |      |      |             |                     |
| 12       |               | HMA for pavement Repair                                                              | 19   | Ton  | \$ 300      | \$ 5,576            |
| 13       |               | CSBC                                                                                 | 20   | Ton  | \$ 75       | \$ 1,526            |
|          | <b>Div 7</b>  | <b>Drainage Structures, Storm Sewers, Sanitary Sewers, Water Mains, and Conduits</b> |      |      |             |                     |
| 14       |               | Schedule A Storm Sewer Pipe, 12 In. Diameter                                         | 745  | L.F. | \$ 50       | \$ 37,250           |
| 15       |               | Type 1 Catch Basin                                                                   | 5    | Each | \$ 2,600    | \$ 13,000           |
| 16       |               | Type 2 Catch Basin                                                                   | 7    | Each | \$ 5,000    | \$ 35,000           |
|          | <b>Div 8</b>  | <b>Miscellaneous Construction</b>                                                    |      |      |             |                     |
| 17       |               | Planting and seeding                                                                 | 1    | Acre | \$ 4,000.00 | \$ 4,000.00         |
|          |               | <b>Construction Subtotal</b>                                                         |      |      |             | <b>\$ 197,355</b>   |
|          |               | Contingency                                                                          | 50%  |      |             | <b>\$ 98,677.39</b> |
|          |               | Lacey Cost Adjustment Factor                                                         | 10%  |      |             | <b>\$ 19,735.48</b> |
|          |               | Subtotal (with Contingency and Lacey Cost Adj. Factor)                               |      |      |             | <b>\$ 315,768</b>   |
|          |               | Tax                                                                                  | 9.3% |      |             | <b>\$ 29,366</b>    |
|          |               | <b>Construction Total (with Contingency and Tax)</b>                                 |      |      |             | <b>\$ 345,134</b>   |
|          |               | Survey                                                                               |      | L.S. |             | <b>\$ 5,000</b>     |
|          |               | Geotechnical / Infiltration Evaluation                                               |      | L.S. |             | <b>\$ -</b>         |
|          |               | Pre-design                                                                           |      | L.S. |             | <b>\$ -</b>         |
|          |               | Design                                                                               | 10%  |      |             | <b>\$ 35,000</b>    |
|          |               | Permitting                                                                           |      | L.S. |             | <b>\$ 5,000</b>     |
|          |               | Construction Management                                                              | 15%  |      |             | <b>\$ 51,770.10</b> |
|          |               | City of Lacey Project Management                                                     | 20%  |      |             | <b>\$ 69,026.81</b> |
|          |               | <b>Estimated Project Total (rounded to 2 significant figures)</b>                    |      |      |             | <b>\$ 510,000</b>   |





## Capital Improvement Program Project Summary Sheet

# Stormwater Design Manual (SDM) Update

Location: Citywide

Number: 19-3 Priority: High

Estimated Cost: \$180,000

ENR CCI 11,268.48 (June 2019)

### Problem Description:

The Stormwater Design Manual (SDM) will need to be updated for consistency with Ecology's 2019 Stormwater Management Manual for Western Washington, to better address the groundwater threat posed by deep underground infiltration (UIC) wells, and to create additional tools for SDM implementation.

### Project Solution:

Create 2021 edition of Lacey's SDM for equivalency with Ecology's 2019 SWMMWW and include policies for deep UIC wells. Create additional tools that are needed for manual implementation, such as drainage control plan templates.

### Cost Estimate Assumptions:

Experience with stormwater manual updates that are currently underway for other jurisdictions.



Construction site



Workshop and training opportunities



## Capital Improvement Program Project Summary Sheet

# Woodland Creek Stormwater Treatment Facility Oil Water Separator Replacement

Location: Bowker St SE at Woodland  
Creek Stormwater  
Treatment Facility

Number: 19-4 Priority: High

Estimated Cost: \$480,000

ENR CCI 11,268.48 (June 2019)

### Problem Description:

The current oil-water separator (OWS) is not functioning. The plates clog quickly, are difficult to maintain, and break during maintenance.

### Project Solution:

Hydrologic analysis of the basin determined a much higher flow rate than is feasible to manage using an API style OWS. Replace the existing OWS with a new GULD pretreatment device that is sized to manage 2- to 3-cfs, which is approximately 25 percent of the offline water quality treatment flow rate. This configuration will improve sediment removal upstream of the WCSTF and reduce the maintenance burden.

### Cost Estimate Assumptions:

Assumes total replacement of existing OWS and addition of a new flow splitter and bypass pipes within footprint that is similar to the existing facility. Assumes 6" HMA over 6" CSTC for surface restoration. If flow splitter and bypass piping can be reused there would be a cost savings relative to this estimate.



Existing facility location



Existing OWS





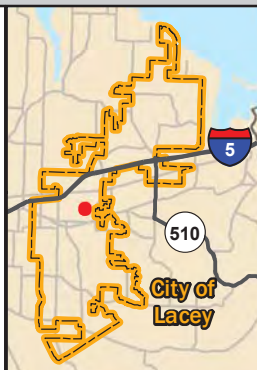
#### Legend

##### Existing

- Manhole
- Conveyance

##### Proposed

- Manhole
- Pipe or Culvert
- Facility



**Figure 8. City of Lacey Stormwater CIP : OWS Retrofit for WCSTF.**



0 25 50 100 Feet



City of Lacey Aerial, 2015

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**Engineering Construction Cost Estimate for Conceptual Design - DRAFT**

**Project Name:** Woodland Creek Oil Water Separator Replacement  
**Project Number:** 17-06745-000  
**Client:** City of Lacey Stormwater Comprehensive Plan Update


**QA Review**

Completed/Updated By: Trae Yang  
 Last Updated On: 6/12/2019  
 Reviewed By: Matt Fontaine  
 Reviewed On: 6/12/2019  
 Approved By: Matt Fontaine  
 Approved On: 6/12/2019

| Item No. | Spec Division | Item Description                                                                     | Qty  | Unit | Unit Cost  | Total Cost          |
|----------|---------------|--------------------------------------------------------------------------------------|------|------|------------|---------------------|
|          | <b>Div 1</b>  | <b>General Requirements</b>                                                          |      |      |            |                     |
| 1        |               | Mobilization                                                                         | 1    | L.S. | 10%        | \$ 19,177.51        |
| 2        |               | Erosion/Water Pollution Control                                                      | 1    | L.S. | 5%         | \$ 9,588.75         |
| 3        |               | Temporary Dewatering                                                                 | 1    | L.S. | 2%         | \$ 3,835.50         |
| 4        |               | Utility Protection and Relocation                                                    | 1    | L.S. | 1%         | \$ 1,917.75         |
| 5        |               | Project Temporary Traffic Control                                                    | 1    | L.S. | 0%         | \$ -                |
|          | <b>Div 2</b>  | <b>Earthwork</b>                                                                     |      |      |            |                     |
| 6        |               | Clearing and Grubbing                                                                | 0.02 | Acre | \$ 8,800   | \$ 176              |
| 7        |               | Roadway Excavation, Incl. Haul                                                       | 67   | S.Y. | \$ 20      | \$ 1,333            |
| 8        |               | Structure Excavation Class B                                                         | 103  | C.Y. | \$ 10      | \$ 1,025            |
|          | <b>Div 5</b>  | <b>Surface Treatments and Pavements</b>                                              |      |      |            |                     |
| 9        |               | HMA for pavement Repair                                                              | 23   | Ton  | \$ 150     | \$ 3,375            |
| 10       |               | CSBC                                                                                 | 21   | Ton  | \$ 28      | \$ 576              |
|          | <b>Div 7</b>  | <b>Drainage Structures, Storm Sewers, Sanitary Sewers, Water Mains, and Conduits</b> |      |      |            |                     |
| 11       |               | Sediment vault, installation, and pipe connections                                   | 1    | L.S. | \$ 169,000 | \$ 169,000          |
| 12       |               | Schedule A Storm Sewer Pipe, 24 In. Diameter                                         | 54   | L.F. | \$ 85      | \$ 4,590            |
| 13       |               | Flow Splitter manhole                                                                | 1    | Each | \$ 6,500   | \$ 6,500            |
| 14       |               | Type 1 Catch Basin                                                                   | 2    | Each | \$ 2,600   | \$ 5,200            |
|          | <b>Div 8</b>  | <b>Miscellaneous Construction</b>                                                    |      |      |            |                     |
|          |               |                                                                                      |      |      |            |                     |
|          |               |                                                                                      |      |      |            |                     |
|          |               | <b>Construction Subtotal</b>                                                         |      |      |            | <b>\$ 226,295</b>   |
|          |               | Contingency                                                                          | 20%  |      |            | <b>\$ 45,258.92</b> |
|          |               | Lacey Cost Adjustment Factor                                                         | 10%  |      |            | <b>\$ 22,629.46</b> |
|          |               | Subtotal (with Contingency and Lacey Cost Adj. Factor)                               |      |      |            | <b>\$ 294,183</b>   |
|          |               | Tax                                                                                  | 9.3% |      |            | <b>\$ 27,359</b>    |
|          |               | <b>Construction Total (with Contingency and Tax)</b>                                 |      |      |            | <b>\$ 321,542</b>   |
|          |               |                                                                                      |      |      |            |                     |
|          |               | Survey                                                                               |      | L.S. |            | <b>\$ 5,000</b>     |
|          |               | Geotechnical / Infiltration Evaluation                                               |      | L.S. |            | <b>\$ -</b>         |
|          |               | Predesign                                                                            |      | L.S. |            | <b>\$ -</b>         |
|          |               | Design                                                                               | 10%  |      |            | <b>\$ 32,000</b>    |
|          |               | Permitting                                                                           |      | L.S. |            | <b>\$ 5,000</b>     |
|          |               | Construction Management                                                              | 15%  |      |            | <b>\$ 48,231</b>    |
|          |               | City of Lacey Project Management                                                     | 20%  |      |            | <b>\$ 64,308</b>    |
|          |               | <b>Estimated Project Total (rounded to 2 significant figures)</b>                    |      |      |            | <b>\$ 480,000</b>   |





Capital Improvement Program Project  
Summary Sheet

**Woodland Creek Community  
Park Habitat Restoration**

Location: Woodland Creek  
Community Park

Number: 19-5 Priority: High

Estimated Cost: \$50,000

ENR CCI 11,268.48 (June 2019)

**Problem Description:**

Invasive species are impairing habitat at Woodland Creek Community Park.

**Project Solution:**

Remove invasive species from the Woodland Creek Community Park so that volunteers can replant the area with native species to restore habitat.

**Cost Estimate Assumptions:**

Invasive species removal here and potentially at other priority locations would be packaged together to create a \$50,000 contract.



Woodland Creek bank



Park boundary



## Capital Improvement Program Project Summary Sheet

### Stormwater Management Action Planning (SMAP)

Location: Citywide

Number: 19-6 Priority: High

Estimated Cost: \$100,000

ENR CCI 11,268.48 (June 2019)

#### Problem Description:

The draft 2019 NPDES Phase II Permit requires permittees to identify, characterize, and prioritize basins for basin-specific Stormwater Management Action Planning (SMAP). SMAP will identify short-term and long-term actions for improving receiving water quality, including programs, policies, and projects. Initially, SMAP may outline data collection strategies to improve the City's understanding of hydrology, water quality, and associated problems and opportunities in each basin.

#### Project Solution:

Conduct Stormwater management action planning (SMAP) to meet NPDES requirements. The project will prioritize water bodies and basins within the City and develop a Stormwater Management Action Plan for at least 1 priority basin, which will include programmatic activities and stormwater facilities to improve stormwater management. The elements of the plan will be dictated by the goals of the City and stakeholders within the priority basin(s) and the work needs to be complete by the end of 2022.

#### Cost Estimate Assumptions:

Assumes \$100,000 planning effort with consultant support and one-time City staff time estimated at 0.25 FTE.



"No dumping" educational campaign



Stormwater treatment facility



**Capital Improvement Program Project  
Summary Sheet**

**Regional Water Quality  
Facility Program**

**Location:** Citywide

**Number:** 19-7      **Priority:** Medium

**Estimated Cost:** \$200,000

**ENR CCI 11,268.48 (June 2019)**

**Problem Description:**

Many drainage basins in the city discharge to receiving waters without treatment.

**Project Solution:**

Conduct study in conjunction with SMAP to locate priority areas for construction of stormwater treatment facilities for existing untreated discharges.

**Cost Estimate Assumptions:**

The \$200,000 total cost includes funding to prepare grant application(s) to construct stormwater facilities and assumes that these facilities will be partially grant funded. The annual cost to the City will be \$100,000 for two years.



**Infiltration gallery construction**



**Facility under construction**





## Capital Improvement Program Project Summary Sheet

### Infiltration Retrofit Program

Location: Citywide

Number: 19-8 Priority: Medium

Estimated Cost: \$200,000

ENR CCI 11,268.48 (June 2019)

#### Problem Description:

The City is responsible for maintaining a number of corrugated metal pipe (CMP) or concrete galleries throughout the city. Over time, these galleries fail so that routine maintenance is no longer adequate to restore function. Many of these galleries do not provide water quality treatment, which endangers groundwater, and may be opportunities for improved infiltration to reduce flow to the stormwater conveyance system.

#### Project Solution:

Construct water quality facilities and infiltration improvement at CMP gallery locations. These facilities will improve groundwater protection and extend the functional life of infiltration facilities by removing sediment that would clog the facility.

#### Cost Estimate Assumptions:

The annual allotment of \$100,000 is based on City expertise. The program is expected to continue for two years, resulting in a total cost of \$200,000.



Infiltration gallery construction



Rain garden





## Capital Improvement Program Project Summary Sheet

### Miscellaneous Storm System Improvements

Location: Citywide

Number: 19-9 Priority: Medium

Estimated Cost: \$900,000

ENR CCI 11,268.48 (June 2019)

#### Problem Description:

Development within the City frequently provides time-sensitive opportunities to improve the stormwater management system without identified budgetary sources. Miscellaneous Storm System Improvements include funding for infrastructure investment such as property acquisition for future stormwater management projects or partnering opportunities that arise, often requiring relatively quick funding decisions to leverage the City's limited funds.

#### Project Solution:

Construct stormwater improvements in conjunction with street, water, and/or wastewater projects.

#### Cost Estimate Assumptions:

The annual allotment of \$150,000 is based on City expertise. The program is expected to continue for six years, resulting in a total cost of \$900,000.



Catch basin cleaning



Facility maintenance



Capital Improvement Program Project  
Summary Sheet

**Stormwater Comprehensive  
Plan Update**

Location: Citywide

Number: 19-10 Priority: Medium

Estimated Cost: \$250,000

ENR CCI 11,268.48 (June 2019)

**Problem Description:**

The City regularly updates their Stormwater Comprehensive Plan.

**Project Solution:**

2025 update to the SCP, including CIP and Stormwater Utility Financial Plan.

**Cost Estimate Assumptions:**

Cost estimate is based on City experience with past comprehensive plan updates.



Stormwater facility tour



Public involvement



## Capital Improvement Program Project Summary Sheet

### Land Purchase for Future Facility Improvements

Location: Southwest side of Hicks  
Lake

Number: 19-11 Priority: Medium

Estimated Cost: \$350,000

ENR CCI 11,268.48 (June 2019)

#### Problem Description:

The Ruddell Road Stormwater Treatment facility was constructed in 1999 as a flow-through wetland. Flows to this facility have increased due to drainage system improvements in the Brentwood area to expand the stormwater conveyance system. The facility should be enlarged and improved to meet current standards. Additionally, the facility is difficult to access and the inlet pipe is a safety concern.

#### Project Solution:

Water Resources and the Stormwater Utility see long-term value in the acquisition of three undeveloped parcels adjacent to City property containing the existing Ruddell Road Stormwater Treatment Facility and wetlands southwest of Hicks Lake. The three parcels are expected to be used to expand or improve the safety and performance of the existing facility, locate a new facility to provide treatment for existing untreated discharge, and provide habitat and wetland buffer preservation.

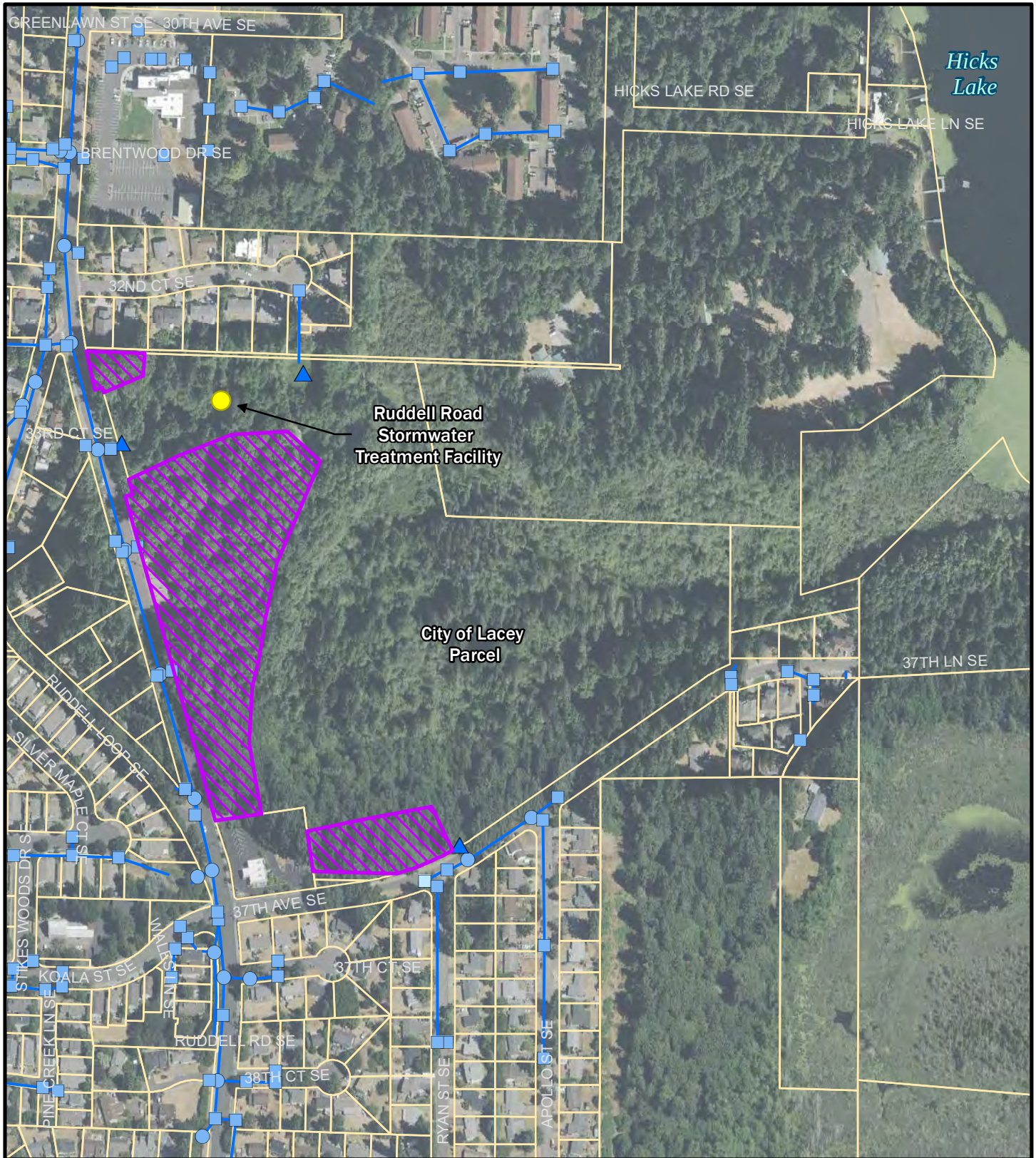
#### Cost Estimate Assumptions:

The cost for acquiring these parcels is based on an appraisal in June 2019.

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AVAILABLE**

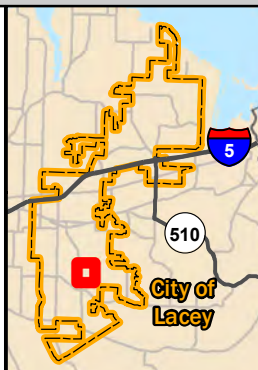
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#### Legend

- Ruddell Road Stormwater Treatment Facility
- Catch Basin
- ▲ Outfall
- Junction Box
- Manhole
- Conveyance
- Parcels for Acquisition



**Figure 20.**  
Land Purchase for Future Facility Improvements.



0 175 350 700 Feet



City of Lacey Aerial, 2015

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## Capital Improvement Program Project Summary Sheet

### Diamond Stormwater Alternative

Location: Diamond Road SE,  
between intersections with  
Diamond Loop SE

Number: 13-7 Priority: Medium

Estimated Cost: \$380,000

ENR CCI 11,268.48 (June 2019)

#### Problem Description:

Stormwater at this location is pumped away during extreme storm events (i.e. every couple years). An alternative solution is needed that would manage stormwater without pumping it away.

#### Project Solution:

Install backflow preventers on 2 existing storm drain outfalls to pond. Install a new storm pump station adjacent to the sanitary sewer pump station on Diamond Loop SE, a force main to convey flow to the stormwater outfalls, and a filtration system at the pump station inlet to provide water quality treatment.

#### Cost Estimate Assumptions:

24 In Tideflex valve, 18 In Tideflex valve, 350 gpm submersible pump station, 170LF 4 In Dia force main discharging adjacent to existing outfall pipe. The cost has been increased from the original 2013 estimate.



Stormwater pond



Existing inlet





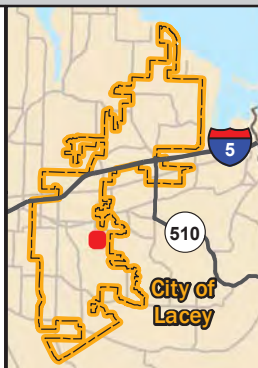
#### Legend

##### Existing

- Catch Basin
- Junction Box
- Manhole
- Conveyance

##### Proposed

- Structure
- Pipe or Culvert



**Figure 19. City of Lacey Stormwater CIP 13-7: Diamond Stormwater Alternative.**



0 62.5 125 250 Feet



City of Lacey Aerial, 2015

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CLIENT: City of Lacey

PROJECT: Stormwater Comprehensive Plan - CIP Cost Estimates

## PROJECT 7 - Diamond Stormwater Alternative

Prepared by: M. Fontaine

Checked by: M. Brennan

Revised by: M. Fontaine

Table 1. Conceptual Cost Estimate

| Item                                          | Quantity | Unit | Unit Cost | Amount           | Notes                                                                                                                                                                                                                                                                            |
|-----------------------------------------------|----------|------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Pump Station</b>                           |          |      |           |                  |                                                                                                                                                                                                                                                                                  |
|                                               |          |      |           |                  | WSDOT UBA and City of Lacey recent bids. High end for small qty. Pump station and force main outfall.                                                                                                                                                                            |
| Structure Excavation Class B, Incl. Haul      | 336      | CY   | \$20      | \$6,720          |                                                                                                                                                                                                                                                                                  |
| Bank Run Gravel for Trench Backfill           | 265      | CY   | \$5       | \$1,325          | City of Lacey recent bids.                                                                                                                                                                                                                                                       |
| Crushed Surfacing, Base Course                | 4        | TN   | \$100     | \$400            | Restore easement. City of Lacey recent bids. High end for small qty.                                                                                                                                                                                                             |
| Pump Station                                  | 1        | EA   | \$62,000  | \$62,000         | Assumes 350 gpm duplex pump station. 5' ID x 8' deep wetwell. Valves in H-20 rated wetwell. Control panel on post with autodialer telemetry. Includes wet well piping and appurtenance. Based on estimate from Romtec, Mark Sheldon, msheldon@romtecutilities.com, 541-496-9676. |
| Labor for Pump Station Installation           | 40       | HRS  | \$70      | \$2,800          | Based on Romtec estimate - see above. Labor rates based on The Guide Winter 2010.                                                                                                                                                                                                |
| 4 In. HDPE SDR 11 Force Main, Outfall Segment | 175      | LF   | \$10      | \$1,750          | Force main outfall segment from downstream-most manhole structure to outfall in wetland. Based on material cost from HD Fowler, includes 50% markup for provision and installation.                                                                                              |
| Phone Line to Site                            | 1        | LS   | \$2,000   | \$2,000          | Phone line for telemetry equipment. Engineers estimate.                                                                                                                                                                                                                          |
| Electric to Site                              | 1        | LS   | \$5,000   | \$5,000          | Provide 3-phase power. Engineers estimate.                                                                                                                                                                                                                                       |
| <b>Backflow Prevention Valves</b>             |          |      |           |                  |                                                                                                                                                                                                                                                                                  |
| Tideflex Valve - TF1 - 24" w/ Bands           | 1        | EA   | \$8,200   | \$8,200          | Based on price quote from ANTEC CORP - Matthew Davidson - 425-888-9090. Includes shipping and 30% markup for overhead and installation.                                                                                                                                          |
| Tideflex Valve - TF1 - 18" w/ Bands           | 1        | EA   | \$5,500   | \$5,500          | Based on price quote from ANTEC CORP - same assumptions as above.                                                                                                                                                                                                                |
| <b>TOTAL DIRECT COSTS:</b>                    |          |      |           | \$96,000         |                                                                                                                                                                                                                                                                                  |
| <b>MARKUPS</b>                                |          |      |           |                  |                                                                                                                                                                                                                                                                                  |
| Mobilization                                  |          |      | 8%        | \$7,680          | Not applied to force main in SSP.                                                                                                                                                                                                                                                |
| Temporary Erosion and Sediment Control        |          |      | 2%        | \$1,920          | Manage stockpiles and protect inlets.                                                                                                                                                                                                                                            |
| Temporary Dewatering                          |          |      | 5%        | \$4,800          | Dewatering and treatment likely required.                                                                                                                                                                                                                                        |
| Traffic Control                               |          |      | 3%        | \$2,880          | Signs and flaggers for a couple days.                                                                                                                                                                                                                                            |
| Contingency                                   |          |      | 60%       | \$57,600         |                                                                                                                                                                                                                                                                                  |
| Sales Tax                                     |          |      | 8.7%      | \$8,352          |                                                                                                                                                                                                                                                                                  |
| <b>Total Construction Cost:</b>               |          |      |           | <b>\$180,000</b> |                                                                                                                                                                                                                                                                                  |
| <b>PREDESIGN COSTS</b>                        |          |      |           |                  |                                                                                                                                                                                                                                                                                  |
| Survey                                        |          | LS   |           | \$5,000          | Base mapping.                                                                                                                                                                                                                                                                    |
| Geotechnical Evaluation                       |          | LS   |           | \$0              |                                                                                                                                                                                                                                                                                  |
| Predesign                                     |          | LS   |           | \$20,000         | Assumes additional alternatives assessment, basic wetland hydroperiod assessment, agency consultation, and brief memo.                                                                                                                                                           |
| <b>OTHER PROJECT COSTS</b>                    |          |      |           |                  |                                                                                                                                                                                                                                                                                  |
| Total Predesign (Survey, Geotech, Predesign)  |          |      |           | \$25,000         |                                                                                                                                                                                                                                                                                  |
| Design                                        |          | LS   |           | \$15,000         | Pump station design provided by vendor.                                                                                                                                                                                                                                          |
| Permitting                                    |          | LS   |           | \$50,000         | Assumes Clearing and Grading Permit, SEPA Checklist, JARPA, Critical Areas Report, and Biological Assessment.                                                                                                                                                                    |
| Construction Management                       |          |      | 15%       | \$27,000         |                                                                                                                                                                                                                                                                                  |
| City of Lacey Project Management              |          |      | 5%        | \$9,000          |                                                                                                                                                                                                                                                                                  |
| <b>Total Estimated Project Cost:</b>          |          |      |           | <b>\$306,000</b> |                                                                                                                                                                                                                                                                                  |





## Capital Improvement Program Project Summary Sheet

# Clearbrook Drainage System Improvements

Location: South of Lacey Blvd  
between Clearbrook Dr SE  
and Yonkers Dr SE

Number: 13-9 Priority: Medium

Estimated Cost: \$480,000

ENR CCI 11,268.48 (June 2019)

### Problem Description:

The aging storm drain in this area has limited slope and there is no fall between the storm drain outlets and Clearbrook Pond. The system frequently gets backwatered, causes street flooding, and threatens to flood one house during any significant rain event.

### Project Solution:

Lower invert of pond outlet and increase pipe size (larger pipe at reduced slope). Excavate a linear swale around the perimeter to provide adequate fall for the pipes and install two pedestrian bridges. Add an upstream infiltration facility in 19th Ct NE with stormwater treatment.

### Cost Estimate Assumptions:

850 LF grass lined swale, 520 LF 18 In Dia SD, 175 LF 48 In Dia infiltration gallery, stormwater filter system with high flow bypass. The cost has been increased from the original 2013 estimate.



Evidence of ponding in low spots



Site of proposed swale





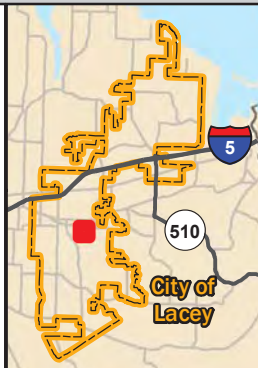
#### Legend

##### Existing

- Catch Basin
- ▲ Discharge
- Manhole
- Conveyance

##### Proposed

- Catch Basin
- Structure
- Bioretention
- Infiltration
- Pipe or Culvert
- ⋯ Ditch
- ||||| ped bridge



**Figure 18. City of Lacey Stormwater CIP 13-9: Clearbrook Drainage System Improvements.**



0 112.5 225 450 Feet



City of Lacey Aerial, 2015

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CLIENT: City of Lacey

PROJECT: Stormwater Comprehensive Plan - CIP Cost Estimates

**PROJECT 9 - Clearbrook Drainage System Improvements**

Prepared by: M. Fontaine

Checked by: N. Christensen

**Table 1. Conceptual Cost Estimate**

| Item                                                                                                                    | Quantity | Unit | Unit Cost | Amount           | Notes                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------|----------|------|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Outlet Pipe Replacement (cost would be similar for piping to proposed Holmann Park system assuming 0\$ easement)</b> |          |      |           |                  |                                                                                                                                                                                                                                                                               |
| Removing Asphalt Conc. Pvmnt., Incl. Haul                                                                               | 191      | SY   | \$15      | \$2,865          | SPU 2007 unit cost report.                                                                                                                                                                                                                                                    |
| Structure Excavation Class B, Incl. Haul                                                                                | 343      | CY   | \$20      | \$6,860          | Assumes 3' pipe cover. WSDOT UBA and City of Lacey recent bids.                                                                                                                                                                                                               |
| Bank Run Gravel for Trench Backfill                                                                                     | 108      | CY   | \$10      | \$1,080          | 6" btwn pipe bedding and base course. City of Lacey recent bids.                                                                                                                                                                                                              |
| Crushed Surfacing, Base Course                                                                                          | 54       | TN   | \$60      | \$3,240          | City of Lacey recent bids.                                                                                                                                                                                                                                                    |
| HMA for Pavement Repair                                                                                                 | 71       | TN   | \$110     | \$7,810          | WSDOT UBA and City of Lacey recent bids.                                                                                                                                                                                                                                      |
| Catch Basin Type 2                                                                                                      | 1        | EA   | \$1,000   | \$1,000          | City of Lacey recent bids.                                                                                                                                                                                                                                                    |
| Connect to Drainage Structure                                                                                           | 1        | EA   | \$750     | \$750            | WSDOT UBA and City of Lacey recent bids.                                                                                                                                                                                                                                      |
| Replace Outlet Structure                                                                                                | 1        | EA   | \$3,000   | \$3,000          | Engineers estimate.                                                                                                                                                                                                                                                           |
| Schedule A SSP, 18 In. Dia.                                                                                             | 520      | LF   | \$30      | \$15,600         | For new pond outlet. City of Lacey recent bids.                                                                                                                                                                                                                               |
| <b>Pond Rehabilitation</b>                                                                                              |          |      |           |                  |                                                                                                                                                                                                                                                                               |
| Pond Excavation, Incl. Haul                                                                                             | 787      | CY   | \$17      | \$13,379         | 1.5' deep swale around perimeter of pond.                                                                                                                                                                                                                                     |
| Construction Geotextile for Separation                                                                                  | 944      | SY   | \$3       | \$2,832          | Recent bids: Eastsound Wetland.                                                                                                                                                                                                                                               |
| Streambed Gravel                                                                                                        | 315      | CY   | \$75      | \$23,625         | Line Swale 1' deep with streambed gravel.                                                                                                                                                                                                                                     |
| Planting                                                                                                                | 0.2      | AC   | \$30,000  | \$6,000          | Based on recent bids: Eastsound Wetland. Higher end planting for high quality early aesthetic. Includes plant establishment.                                                                                                                                                  |
| Pedestrian Bridge                                                                                                       | 2        | EA   | \$10,000  | \$20,000         | Simple pedestrian bridges. Recent bids: Eastsound wetland.                                                                                                                                                                                                                    |
| Site Restoration                                                                                                        | 1        | LS   | \$5,000   | \$5,000          | Engineers Estimate                                                                                                                                                                                                                                                            |
| <b>Infiltration Gallery at 19th Ct NE</b>                                                                               |          |      |           |                  |                                                                                                                                                                                                                                                                               |
| Media Filtration Structure                                                                                              | 1        | EA   | \$26,000  | \$26,000         | Upstream of infiltration gallery. Basic treatment - assume Contech StormFilter™ 48" Dia with high flow and overflow bypassed downstream. Based on price quote from Contech (Katheryn Thomason 503-258-3176) 16,800 to 20,000 delivered. Includes 30% markup for installation. |
| Infiltration Gallery, 48 In. Dia. Perf Pipe                                                                             | 175      | LF   | \$150     | \$26,250         | Under existing open space. Engineer estimate and City of Lacey recent bids.                                                                                                                                                                                                   |
| Site Restoration                                                                                                        | 1        | LS   | \$2,000   | \$2,000          | Engineer estimate.                                                                                                                                                                                                                                                            |
| <b>TOTAL DIRECT COSTS:</b>                                                                                              |          |      |           | <b>\$167,000</b> |                                                                                                                                                                                                                                                                               |
| <b>MARKUPS</b>                                                                                                          |          |      |           |                  |                                                                                                                                                                                                                                                                               |
| Mobilization                                                                                                            |          |      | 8%        | \$13,360         |                                                                                                                                                                                                                                                                               |
| Temporary Erosion and Sediment Control                                                                                  |          |      | 2%        | \$3,340          | Manage soil stockpiles and sweeping.                                                                                                                                                                                                                                          |
| Temporary Dewatering                                                                                                    |          |      | 2%        | \$3,340          |                                                                                                                                                                                                                                                                               |
| Traffic Control                                                                                                         |          |      | 4%        | \$6,680          |                                                                                                                                                                                                                                                                               |
| Contingency                                                                                                             |          |      | 30%       | \$50,100         | Utility conflicts unknown.                                                                                                                                                                                                                                                    |
| Sales Tax                                                                                                               |          |      | 8.7%      | \$21,212         |                                                                                                                                                                                                                                                                               |
| <b>Total Construction Cost:</b>                                                                                         |          |      |           | <b>\$265,000</b> |                                                                                                                                                                                                                                                                               |
| <b>PREDESIGN COSTS</b>                                                                                                  |          |      |           |                  |                                                                                                                                                                                                                                                                               |
| Survey                                                                                                                  |          | LS   | \$5,000   | \$5,000          | Base mapping. Multiple locations.                                                                                                                                                                                                                                             |
| Geotechnical Evaluation                                                                                                 |          | LS   | \$15,000  | \$15,000         | Evaluate feasibility for deep infiltration at this site and recommend whether to revise concept to include treatment and deep infiltration rather than improved conveyance offsite.                                                                                           |
| Predesign                                                                                                               |          | LS   |           |                  | Included in geotech.                                                                                                                                                                                                                                                          |
| <b>OTHER PROJECT COSTS</b>                                                                                              |          |      |           |                  |                                                                                                                                                                                                                                                                               |
| Total Predesign (Survey, Geotech, Predesign)                                                                            |          |      |           | \$20,000         |                                                                                                                                                                                                                                                                               |
| Design                                                                                                                  |          | 10%  | \$35,000  | \$35,000         | 2 general sheets, 3 plan sheets, 2 detail sheet.                                                                                                                                                                                                                              |
| Permitting                                                                                                              |          | LS   | \$5,000   | \$5,000          | Grading permit and street use permit.                                                                                                                                                                                                                                         |
| Construction Management                                                                                                 |          | 15%  | \$40,000  | \$40,000         |                                                                                                                                                                                                                                                                               |
| City of Lacey Project Management                                                                                        |          | 5%   | \$13,000  | \$13,000         |                                                                                                                                                                                                                                                                               |
| <b>Total Estimated Project Cost:</b>                                                                                    |          |      |           | <b>\$378,000</b> |                                                                                                                                                                                                                                                                               |





## Capital Improvement Program Project Summary Sheet

### Homann Area System Rehabilitation

Location: Homann Dr SE and 17th  
Ave SE to Glen Mary Drive  
SE and Homann Park

Number: 13-10 Priority: Medium

Estimated Cost: \$1,800,000

ENR CCI 11,268.48 (June 2019)

#### Problem Description:

Infiltration galleries in this area are no longer functioning due to poor soils and are causing localized nuisance flooding. The City has been making minor improvements in this area since 1985, though a long-term solution has not been put into place.

#### Project Solution:

Conduct a cost benefit analysis including a geotechnical evaluation to either (Option 1) add stormwater conveyance and construct a regional infiltration facility located in the baseball field north of the site OR (Option 2) install bioretention facilities in the right of way to enhance local infiltration and take advantage of high infiltrating soils in the area.

#### Cost Estimate Assumptions:

Option 1: (\$1.8M) Install about 4,000 LF of conveyance and new structures, rehabilitate existing drywells, and install an infiltration gallery in the baseball field north of the neighborhood. A media filtration structure is included upstream of the infiltration gallery. Only the design and analysis components of this project are included in the current CIP implementation schedule for \$320,000.



Baseball field north of the site (to be used for regional infiltration in Option 1)



ROW in the neighborhood (to be used for bioretention in Option 2)





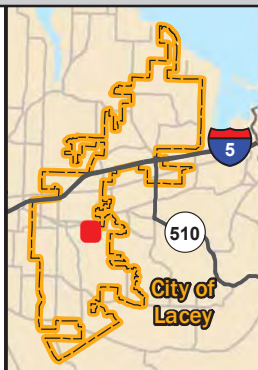
#### Legend

##### Existing

- Catch Basin
- ▲ Discharge
- Manhole
- Conveyance

##### Proposed

- Catch Basin
- Structure
- Infiltration
- Pipe or Culvert



**Figure 4. City of Lacey Stormwater CIP 13-10: Homann Area System Rehabilitation (Option 1).**



0 100 200 400 Feet



City of Lacey Aerial, 2015

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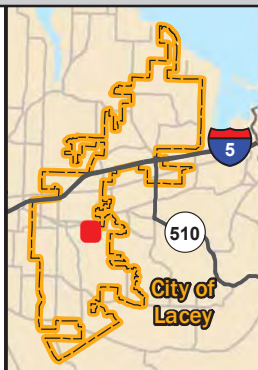
### Legend

#### Existing

- Catch Basin
- ▲ Discharge
- Manhole
- Conveyance

#### Proposed

- Bioretention
- Pipe or Culvert



**Figure 5. City of Lacey Stormwater CIP 13-10: Homann Area System Rehabilitation (Option 2).**



0 100 200 400 Feet



City of Lacey Aerial, 2015

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**Engineering Construction Cost Estimate for Conceptual Design - DRAFT**

**Project Name:** Homann Area System Rehabilitation -- Option 1 (Infiltration Gallery)  
**Project Number:** 17-06745-000  
**Client:** City of Lacey Stormwater Comprehensive Plan Update


**QA Review**

Completed/Updated By: Meghan Mullen  
 Last Updated On: 4/22/2019  
 Reviewed By: Matt Fontaine  
 Reviewed On: 6/14/2019  
 Approved By: Matt Fontaine  
 Approved On: 6/14/2019

| Item No. | Spec Division | Item Description                                                                     | Qty   | Unit | Unit Cost | Total Cost          |
|----------|---------------|--------------------------------------------------------------------------------------|-------|------|-----------|---------------------|
|          | <b>Div 1</b>  | <b>General Requirements</b>                                                          |       |      |           |                     |
| 1        |               | Mobilization                                                                         | 1     | L.S. | 10%       | \$ 44,204           |
| 2        |               | Erosion/Water Pollution Control                                                      | 1     | L.S. | 5%        | \$ 22,102           |
| 3        |               | Temporary Dewatering                                                                 | 1     | L.S. | 1%        | \$ 4,420            |
| 4        |               | Utility Protection and Relocation                                                    | 1     | L.S. | 40%       | \$ 176,817          |
| 5        |               | Project Temporary Traffic Control                                                    | 1     | L.S. | 2%        | \$ 8,841            |
|          | <b>Div 2</b>  | <b>Earthwork</b>                                                                     |       |      |           |                     |
| 6        |               | Removing Asphalt Conc. Pvm., Incl. Haul                                              | 1,214 | S.Y. | \$ 18     | \$ 21,850           |
| 7        |               | Structure Excavation Class B, Incl. Haul                                             | 1,747 | C.Y. | \$ 15     | \$ 26,201           |
|          | <b>Div 4</b>  | <b>Bases</b>                                                                         |       |      |           |                     |
| 8        |               | Bank Run Gravel for Trench Backfill                                                  | 252   | C.Y. | \$ 10     | \$ 2,523            |
| 9        |               | Crushed surfacing, base course                                                       | 374   | Ton  | \$ 50     | \$ 18,714           |
|          | <b>Div 5</b>  | <b>Surface Treatments and Pavements</b>                                              |       |      |           |                     |
| 10       |               | HMA for Pavement Repair                                                              | 396   | Ton  | \$ 150    | \$ 59,405           |
|          | <b>Div 7</b>  | <b>Drainage Structures, Storm Sewers, Sanitary Sewers, Water Mains, and Conduits</b> |       |      |           |                     |
| 11       |               | Catch Basin Type 1                                                                   | 7     | Each | \$ 3,000  | \$ 21,000           |
| 12       |               | Catch Basin Type 2                                                                   | 4     | Each | \$ 5,000  | \$ 20,000           |
| 13       |               | Connect to Drainage Structure                                                        | 13    | Each | \$ 800    | \$ 10,400           |
| 14       |               | Rehab Drywell                                                                        | 9     |      | \$ 500    | \$ 4,500            |
| 15       |               | Schedule A SSP, 12 In. Dia.                                                          | 3,070 | L.F. | \$ 50     | \$ 153,500          |
| 16       |               | Schedule A SSP, 24 In. Dia.                                                          | 640   | L.F. | \$ 80     | \$ 51,200           |
| 17       |               | Media Filtration Structure                                                           | 1     | Each | \$ 26,000 | \$ 26,000           |
| 18       |               | Infiltration Gallery, 60 in. dia.                                                    | 250   | L.F. | \$ 80     | \$ 20,000           |
|          | <b>Div 8</b>  | <b>Miscellaneous Construction</b>                                                    |       |      |           |                     |
| 19       |               | Topsoil Type A                                                                       | 0.1   | Acre | \$ 41,000 | \$ 5,647            |
| 20       |               | Seeding, Fertilizing, and Mulching                                                   | 0.1   | Acre | \$ 8,000  | \$ 1,102            |
|          |               |                                                                                      |       |      |           |                     |
|          |               | <b>Construction Subtotal</b>                                                         |       |      |           | <b>\$ 698,426</b>   |
|          |               | Contingency                                                                          | 30%   |      |           | <b>\$ 209,528</b>   |
|          |               | Lacey Cost Adjustment Factor                                                         | 10%   |      |           | <b>\$ 69,842.63</b> |
|          |               | Subtotal (with Contingency and Lacey Cost Adj. Factor)                               |       |      |           | <b>\$ 977,797</b>   |
|          |               | Tax                                                                                  | 9.3%  |      |           | <b>\$ 90,935</b>    |
|          |               | <b>Construction Total (with Contingency and Tax)</b>                                 |       |      |           | <b>\$ 1,068,732</b> |
|          |               |                                                                                      |       |      |           |                     |
|          |               | Survey                                                                               |       | L.S. |           | <b>\$ 40,000</b>    |
|          |               | Geotechnical / Infiltration Evaluation                                               |       | L.S. |           | <b>\$ 40,000</b>    |
|          |               | Predesign                                                                            |       | L.S. |           | <b>\$ 30,000</b>    |
|          |               | Design                                                                               | 20%   |      |           | <b>\$ 214,000</b>   |
|          |               | Permitting                                                                           |       | L.S. |           | <b>\$ 5,000</b>     |
|          |               | Construction Management                                                              | 15%   |      |           | <b>\$ 160,310</b>   |
|          |               | City of Lacey Project Management                                                     | 20%   |      |           | <b>\$ 213,746</b>   |
|          |               | <b>Estimated Project Total (rounded to 2 significant figures)</b>                    |       |      |           | <b>\$ 1,800,000</b> |



# Engineering Construction Cost Estimate for Conceptual Design - DRAFT

**Project Name:** Homann Area System Rehabilitation -- Option 2 (Bioretention facilities)  
**Project Number:** 17-06745-000  
**Client:** City of Lacey Stormwater Comprehensive Plan Update



## QA Review

Completed/Updated By: Meghan Mullen  
 Last Updated On: 4/23/2019  
 Reviewed By: Matt Fontaine  
 Reviewed On: 6/14/2019  
 Approved By: Matt Fontaine  
 Approved On: 6/14/2019

| Item No. | Spec Division | Item Description                                                                     | Qty   | Unit | Unit Cost | Total Cost          |
|----------|---------------|--------------------------------------------------------------------------------------|-------|------|-----------|---------------------|
|          | <b>Div 1</b>  | <b>General Requirements</b>                                                          |       |      |           |                     |
| 1        |               | Mobilization                                                                         | 1     | L.S. | 10%       | \$ 20,102           |
| 2        |               | Erosion/Water Pollution Control                                                      | 1     | L.S. | 10%       | \$ 20,102           |
| 3        |               | Temporary Dewatering                                                                 | 1     | L.S. | 0.5%      | \$ 1,005            |
| 4        |               | Utility Protection and Relocation                                                    | 1     | L.S. | 20%       | \$ 40,204           |
| 5        |               | Project Temporary Traffic Control                                                    | 1     | L.S. | 5%        | \$ 10,051           |
|          | <b>Div 2</b>  | <b>Earthwork</b>                                                                     |       |      |           |                     |
| 6        |               | Removing Asphalt Conc. Pvmnt., Incl. Haul                                            | 440   | S.Y. | \$ 18     | \$ 7,920            |
| 7        |               | Structure Excavation Class B, Incl. Haul                                             | 760   | C.Y. | \$ 15     | \$ 11,400           |
|          | <b>Div 7</b>  | <b>Drainage Structures, Storm Sewers, Sanitary Sewers, Water Mains, and Conduits</b> |       |      |           |                     |
| 8        |               | Connect to Drainage Structure                                                        | 10    | Each | \$ 800    | \$ 8,000            |
|          | <b>Div 8</b>  | <b>Miscellaneous Construction</b>                                                    |       |      |           |                     |
| 9        |               | Bioretention Soil                                                                    | 420   | C.Y. | \$ 150    | \$ 63,000           |
| 10       |               | Planting                                                                             | 4,000 | S.F. | \$ 10     | \$ 40,000           |
| 11       |               | Mulch                                                                                | 70    | C.Y. | \$ 10     | \$ 700              |
| 12       |               | Miscellaneous Restoration                                                            | 1     | L.S. | \$ 70,000 | \$ 70,000           |
|          |               |                                                                                      |       |      |           |                     |
|          |               |                                                                                      |       |      |           |                     |
|          |               | <b>Construction Subtotal</b>                                                         |       |      |           | <b>\$ 292,484</b>   |
|          |               | Contingency                                                                          | 30%   |      |           | <b>\$ 87,745.23</b> |
|          |               | Lacey Cost Adjustment Factor                                                         | 10%   |      |           | <b>\$ 29,248.41</b> |
|          |               | Subtotal (with Contingency and Lacey Cost Adj. Factor)                               |       |      |           | <b>\$ 409,478</b>   |
|          |               | Tax                                                                                  | 9.3%  |      |           | <b>\$ 38,081</b>    |
|          |               | <b>Construction Total (with Contingency and Tax)</b>                                 |       |      |           | <b>\$ 447,559</b>   |
|          |               |                                                                                      |       |      |           |                     |
|          |               | Survey                                                                               |       | L.S. |           | <b>\$ 20,000</b>    |
|          |               | Geotechnical / Infiltration Evaluation                                               |       | L.S. |           | <b>\$ 40,000</b>    |
|          |               | Predesign                                                                            |       | L.S. |           | <b>\$ 30,000</b>    |
|          |               | Design                                                                               | 20%   |      |           | <b>\$ 90,000</b>    |
|          |               | Permitting                                                                           |       | L.S. |           | <b>\$ 5,000</b>     |
|          |               | Construction Management                                                              | 15%   |      |           | <b>\$ 67,134</b>    |
|          |               | City of Lacey Project Management                                                     | 20%   |      |           | <b>\$ 89,512</b>    |
|          |               | <b>Estimated Project Total (rounded to 2 significant figures)</b>                    |       |      |           | <b>\$ 790,000</b>   |



**Capital Improvement Program Project  
Summary Sheet**

**1010 Midway Storm  
Improvements**

**Location:** Midway Dr NE and 15th  
Ave NE

**Number:** 13-11 **Priority:** Medium

**Estimated Cost:** \$50,000

**ENR CCI 11,268.48 (June 2019)**

**Problem Description:**

A clogged storm drain pipe and blind connection into the County storm drain is causing flooding. The County is responsible for maintenance, though flow comes from Olympia as well. Upstream, the system lacks capacity and is frequently clogged. The outfall to the lake has become partially obstructed with sediment and needs to be dredged out and modified to make it easy to maintain. Access to the outfall from the pond is difficult due to a narrow easement.

**Project Solution:**

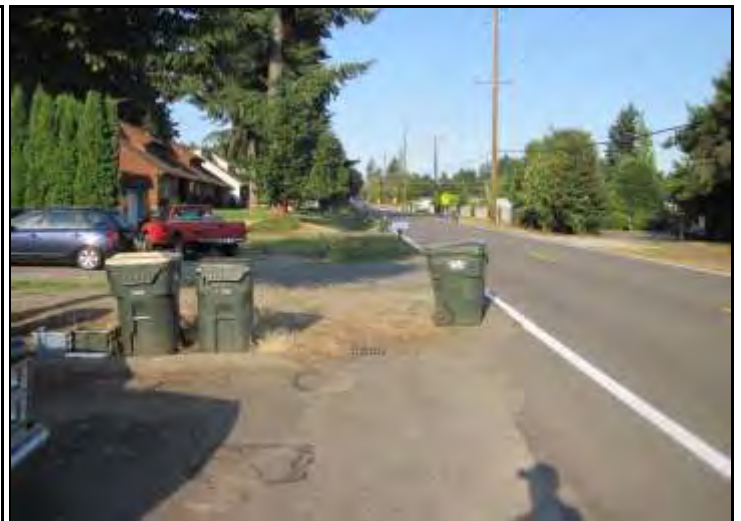
Replace a portion of the existing storm drain pipe and install new catch basins at both ends. Consider issues with high flow / inadequate conveyance capacity in the ditch and culvert system, in addition to the problem created by the blind tee.

**Cost Estimate Assumptions:**

100 LF of 12 In Dia SD, 1 CB Type 1, 1 CB Type 2. The cost has been increased from the original 2013 estimate.



**Existing location of Tee beneath pavement**



**Looking west along 15th Ave. NE**





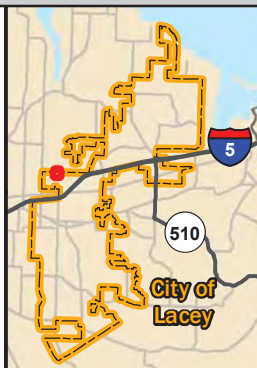
#### Legend

##### Existing

- Catch Basin
- Conveyance

##### Proposed

- Type 1 CB
- Type 2 CB
- Pipe or Culvert



**Figure 11. City of Lacey Stormwater CIP 13-11: 1010 Midway Storm Improvements.**



0 40 80 160 Feet



City of Lacey Aerial, 2015

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CLIENT: City of Lacey

PROJECT: Stormwater Comprehensive Plan - CIP Cost Estimates

**PROJECT 11 - 1010 Midway Storm Improvements**

Prepared by: M. Fontaine

Checked by: M. Brennan

Revised by: M. Fontaine

**Table 1. Conceptual Cost Estimate**

| Item                                         | Quantity | Unit | Unit Cost | Amount          | Notes                                                                           |
|----------------------------------------------|----------|------|-----------|-----------------|---------------------------------------------------------------------------------|
| Structure Excavation Class B, Incl. Haul     | 42       | CY   | \$20      | \$840           | WSDOT UBA and City of Lacey recent bids. High end for small qty.                |
| Bank Run Gravel for Trench Backfill          | 28       | TN   | \$10      | \$280           | City of Lacey recent bids.                                                      |
| Catch Basin Type 1                           | 1        | EA   | \$1,000   | \$1,000         | City of Lacey recent bids.                                                      |
| Catch Basin Type 2                           | 1        | EA   | \$3,000   | \$3,000         | City of Lacey recent bids.                                                      |
| Schedule A SSP, 12 In. Dia.                  | 100      | LF   | \$30      | \$3,000         | City of Lacey recent bids.                                                      |
| Topsoil Type A                               | 4        | CY   | \$20      | \$80            | 4 in. thickness on landscaped areas for restoration. City of Lacey recent bids. |
| Miscellaneous Restoration                    | 1        | LS   | \$5,000   | \$5,000         | Engineers estimate. Restore private property and right of way.                  |
| <b>TOTAL DIRECT COSTS:</b>                   |          |      |           | <b>\$13,000</b> |                                                                                 |
| <b>MARKUPS</b>                               |          |      |           |                 |                                                                                 |
| Mobilization                                 |          |      | 8%        | \$1,040         |                                                                                 |
| Temporary Erosion and Sediment Control       |          |      | 5%        | \$650           | Manage stockpiles.                                                              |
| Temporary Dewatering                         |          |      | 5%        | \$650           | Minor trench dewatering.                                                        |
| Traffic Control                              |          |      | 3%        | \$390           | Signs and flagger for 1 to 2 days.                                              |
| Contingency                                  |          |      | 30%       | \$3,900         | Uncertain utility conflicts.                                                    |
| Sales Tax                                    |          |      | 8.7%      | \$1,708         |                                                                                 |
| <b>Total Construction Cost:</b>              |          |      |           | <b>\$21,000</b> |                                                                                 |
| <b>PREDESIGN COSTS</b>                       |          |      |           |                 |                                                                                 |
| Survey                                       |          |      | LS        | \$2,000         | Base mapping.                                                                   |
| Geotechnical Evaluation                      |          |      | LS        | \$0             |                                                                                 |
| Predesign                                    |          |      | 5%        | \$1,050         | Oversee survey.                                                                 |
| <b>OTHER PROJECT COSTS</b>                   |          |      |           |                 |                                                                                 |
| Total Predesign (Survey, Geotech, Predesign) |          |      |           | \$3,000         |                                                                                 |
| Design                                       |          |      |           | LS              | 1 sheet with plan and profile. Use typical details.                             |
| Permitting                                   |          |      |           | LS              | \$0                                                                             |
| Construction Management                      |          |      |           | 15%             | \$3,000                                                                         |
| City of Lacey Project Management             |          |      |           | 5%              | \$1,000                                                                         |
| <b>Total Estimated Project Cost:</b>         |          |      |           | <b>\$38,000</b> |                                                                                 |





**Capital Improvement Program Project  
Summary Sheet**

**Belair-Impala Stormwater  
Installation**

**Location:** Impala Dr SE, 32nd Ave SE  
(west of Stikes Dr.)

**Number:** 13-12 **Priority:** Medium

**Estimated Cost:** \$1,100,000

**ENR CCI 11,268.48 (June 2019)**

**Problem Description:**

Lack of drainage infrastructure in this area is causing nuisance flooding. All stormwater runoff flows overland towards Wonderwood Park causing chronic flooding on residential streets and in some driveways. Flooding is most significant at the downstream end of the neighborhood. Drainage infrastructure on Stikes Dr. and the eastern portion of 32nd Ave is being completed as part of another project.

**Project Solution:**

Install storm drain along Impala Dr SE and 32nd Ave SE to convey stormwater to the new drainage system installed as part of the 33rd Ave and Stikes Dr. project.

**Cost Estimate Assumptions:**

2,780 LF of 12 In Dia SD, 17 CB Type 1, 1 connection to existing drainage structures at the 33rd Ave and Stikes Dr. project boundary.

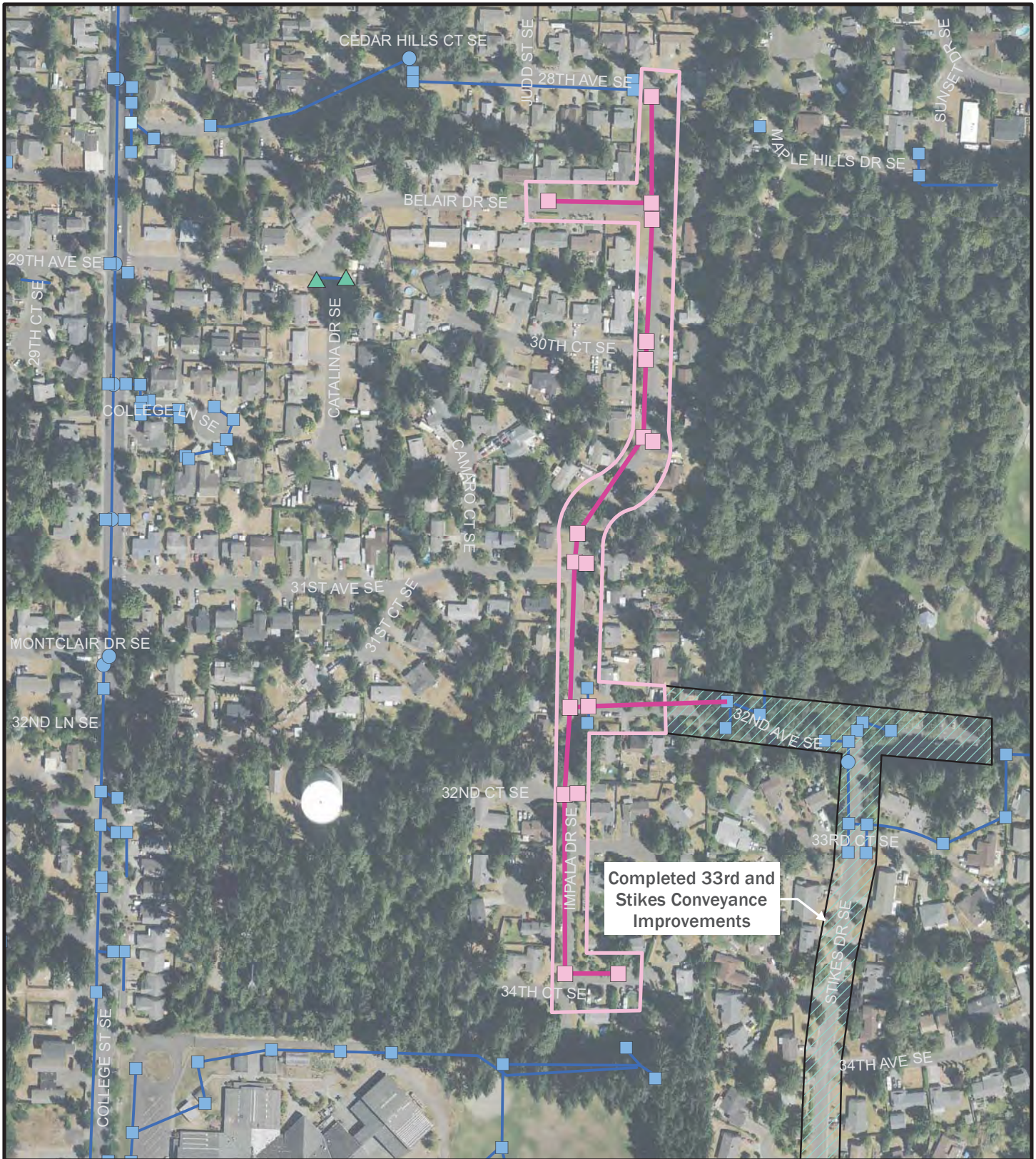


**Completed Brentwood project nearby**



**Road without drainage system**





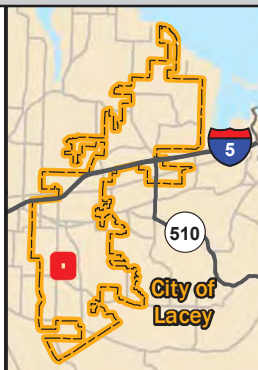
#### Legend

##### Existing

- Catch Basin
- ▲ Discharge
- Junction Box
- Manhole
- Conveyance
- ▨ Completed CIP

##### Proposed

- Catch Basin
- Pipe or Culvert
- Project Extent



**Figure 3. City of Lacey Stormwater CIP 13-12: Belair-Impala Stormwater Installation.**



0 150 300 600 Feet



City of Lacey Aerial, 2015

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**Engineering Construction Cost Estimate for Conceptual Design - DRAFT**

**Project Name:** Belair-Impala Stormwater Installation  
**Project Number:** 17-06745-000  
**Client:** City of Lacey Stormwater Comprehensive Plan Update


**QA Review**

Completed/Updated By: Meghan Mullen  
 Last Updated On: 4/15/2019  
 Reviewed By: Matt Fontaine  
 Reviewed On: 6/14/2019  
 Approved By: Matt Fontaine  
 Approved On: 6/14/2019

| Item No. | Spec Division | Item Description                                                                     | Qty   | Unit | Unit Cost | Total Cost           |
|----------|---------------|--------------------------------------------------------------------------------------|-------|------|-----------|----------------------|
|          | <b>Div 1</b>  | <b>General Requirements</b>                                                          |       |      |           |                      |
| 1        |               | Mobilization                                                                         | 1     | L.S. | 10%       | \$ 33,386            |
| 2        |               | Erosion/Water Pollution Control                                                      | 1     | L.S. | 5%        | \$ 16,693            |
| 3        |               | Temporary Dewatering                                                                 | 1     | L.S. | 2%        | \$ 6,677             |
| 4        |               | Utility Protection and Relocation                                                    | 1     | L.S. | 30%       | \$ 100,157           |
| 5        |               | Project Temporary Traffic Control                                                    | 1     | L.S. | 2%        | \$ 6,677             |
|          | <b>Div 2</b>  | <b>Earthwork</b>                                                                     |       |      |           |                      |
| 7        |               | Structure Excavation Class B, Incl. Haul                                             | 1,283 | C.Y. | \$ 20     | \$ 25,669            |
|          | <b>Div 4</b>  | <b>Bases</b>                                                                         |       |      |           |                      |
| 8        |               | Bank Run Gravel for Trench Backfill                                                  | 178   | C.Y. | \$ 10     | \$ 1,776             |
| 9        |               | Crushed surfacing, base course                                                       | 266   | Ton  | \$ 50     | \$ 13,319            |
|          | <b>Div 5</b>  | <b>Surface Treatments and Pavements</b>                                              |       |      |           |                      |
| 10       |               | HMA for Pavement Repair                                                              | 348   | Ton  | \$ 300    | \$ 104,291           |
|          | <b>Div 7</b>  | <b>Drainage Structures, Storm Sewers, Sanitary Sewers, Water Mains, and Conduits</b> |       |      |           |                      |
| 11       |               | Catch Basin Type 1                                                                   | 17    | Each | \$ 3,000  | \$ 51,000            |
| 12       |               | Connect to Drainage Structure                                                        | 1     | Each | \$ 800    | \$ 800               |
| 13       |               | Schedule A SSP, 12 In. Dia.                                                          | 2,740 | L.F. | \$ 50     | \$ 137,000           |
|          |               | <b>Construction Subtotal</b>                                                         |       |      |           | <b>\$ 497,445</b>    |
|          |               | Contingency                                                                          | 30%   |      |           | <b>\$ 149,233.41</b> |
|          |               | Lacey Cost Adjustment Factor                                                         | 10%   |      |           | <b>\$ 49,744.47</b>  |
|          |               | Subtotal (with Contingency and Lacey Cost Adj. Factor)                               |       |      |           | <b>\$ 696,423</b>    |
|          |               | Tax                                                                                  | 9.3%  |      |           | <b>\$ 64,767</b>     |
|          |               | <b>Construction Total (with Contingency and Tax)</b>                                 |       |      |           | <b>\$ 761,190</b>    |
|          |               | Survey                                                                               |       | L.S. |           | <b>\$ 20,000</b>     |
|          |               | Geotechnical / Infiltration Evaluation                                               |       | L.S. |           | <b>\$ 20,000</b>     |
|          |               | Predesign                                                                            |       | L.S. |           | <b>\$ 20,000</b>     |
|          |               | Design                                                                               | 20%   |      |           | <b>\$ 152,000</b>    |
|          |               | Permitting                                                                           |       | L.S. |           | <b>\$ 5,000</b>      |
|          |               | Construction Management                                                              | 15%   |      |           | <b>\$ 114,178.48</b> |
|          |               | City of Lacey Project Management                                                     | 20%   |      |           | <b>\$ 152,237.98</b> |
|          |               | <b>Estimated Project Total (rounded to 2 significant figures)</b>                    |       |      |           | <b>\$ 1,200,000</b>  |



## Capital Improvement Program Project Summary Sheet

### Alder and Gemini Drainage System Improvements

Location: Alder St SE and Gemini St  
SE, south of Lacey  
Boulevard SE

Number: 13-14 Priority: Medium

Estimated Cost: \$520,000

ENR CCI 11,268.48 (June 2019)

#### Problem Description:

Lack of drainage infrastructure along Alder St and Gemini St causing frequent nuisance flooding.

#### Project Solution:

Rehab existing drywells, install new storm drain to convey stormwater to new infiltration galleries in community open space, and an overflow from the infiltration facility to the storm drain in Lacey Blvd. More thorough geotechnical analysis will be needed before infiltration facilities can be designed. As an alternative to infiltration, consider piping flow to the Woodland Creek Facility (via Lacey Boulevard).

#### Cost Estimate Assumptions:

1,185 LF 12 In Dia SD, 5 con. to ex. drainage str., 4 drywell rehabs, 1 high flow bypass, 1 stormwater filter, 1 drywell retrofit with stormwater filter, 4 CB Type 1, 200 LF 48 In Dia infiltration gallery in open space. The cost has been increased from the original 2013 estimate.



Neighborhood lacks stormwater drainage



Neighborhood lacks stormwater drainage





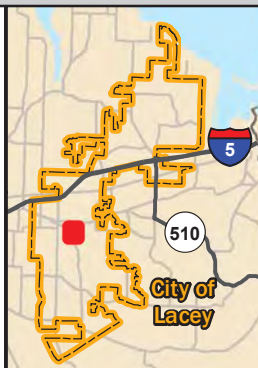
#### Legend

##### Existing

- Catch Basin
- ▲ Discharge
- Junction Box
- Manhole
- Conveyance

##### Proposed

- Catch Basin
- Structure
- Infiltration
- Pipe or Culvert



**Figure 13. City of Lacey Stormwater CIP 13-14: Alder and Gemini Drainage System Improvements.**



0 112.5 225 450 Feet



City of Lacey Aerial, 2015

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CLIENT: City of Lacey

PROJECT: Stormwater Comprehensive Plan - CIP Cost Estimates

## PROJECT14 - Alder and Gemini Drainage System Improvements

Prepared by: M. Fontaine

Checked by: M. Brennan

Revised by: M. Fontaine

Table 1. Conceptual Cost Estimate

| Item                                           | Quantity | Unit | Unit Cost | Amount           | Notes                                                                                                                                                                                                                        |
|------------------------------------------------|----------|------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Removing Asphalt Conc. Pvmnt., Incl. Haul      | 461      | SY   | \$20      | \$9,220          | SPU 2007 unit cost report.                                                                                                                                                                                                   |
| Structure Excavation Class B, Incl. Haul       | 800      | CY   | \$20      | \$16,000         | Excavation for pipe, infiltration gallery, and structures. WSDOT UBA and City of Lacey recent bids.                                                                                                                          |
| Bank Run Gravel for Trench Backfill            | 77       | CY   | \$10      | \$770            | City of Lacey recent bids.                                                                                                                                                                                                   |
| Crushed Surfacing, Base Course                 | 115      | TN   | \$60      | \$6,900          | City of Lacey recent bids.                                                                                                                                                                                                   |
| HMA for Pavement Repair                        | 150      | TN   | \$110     | \$16,500         | City of Lacey recent bids.                                                                                                                                                                                                   |
| Connect to Drainage Structure                  | 5        | EA   | \$750     | \$3,750          | City of Lacey recent bids.                                                                                                                                                                                                   |
| Catch Basin - Type 1                           | 4        | EA   | \$1,000   | \$4,000          | City of Lacey recent bids.                                                                                                                                                                                                   |
| Schedule A SSP, 12 In. Dia.                    | 1,185    | LF   | \$30      | \$35,550         | City of Lacey recent bids.                                                                                                                                                                                                   |
| Connect to Drainage Structure                  | 4        | EA   | \$750     | \$3,000          | WSDOT UBA and City of Lacey recent bids.                                                                                                                                                                                     |
| Rehab Drywell                                  | 4        | EA   | \$300     | \$1,200          | Engineers estimate. Jet out drywell pores and vector out sediment.                                                                                                                                                           |
| High Flow Bypass Structure                     | 1        | EA   | \$6,500   | \$6,500          | Bypass high flow around infiltration gallery. Based on price quote from CONTECH (Katheryn Thomason 503-258-3176). 48" barrel, steps, catch basin lid, adjustable weir, and delivery. Includes 30% markup.                    |
| Media Filtration Structure                     | 1        | EA   | \$26,000  | \$26,000         | Upstream of infiltration gallery. Basic treatment - assume contech stormfilter 48" Dia. Based on price quote from CONTECH (Katheryn Thomason 503-258-3176) 16,800 to 20,000 delivered. Includes 30% markup for installation. |
| Drywell Stormwater Filter, 48 In. Dia.         | 1        | EA   | \$26,000  | \$26,000         | Retrofit existing drywell. Based on price quote from CONTECH (Mike Scott 425-835-0440). Assumes new 3 cartridge drywell storm filter, 1 drywell riser segment, 30% markup on materials, and installation.                    |
| Infiltration Gallery, 48 In. Dia.              | 200      | LF   | \$150     | \$30,000         | Under existing open space. Engineer estimate and City of Lacey recent bids.                                                                                                                                                  |
| <b>TOTAL DIRECT COSTS:</b>                     |          |      |           | <b>\$185,000</b> |                                                                                                                                                                                                                              |
| <b>MARKUPS</b>                                 |          |      |           |                  |                                                                                                                                                                                                                              |
| Mobilization                                   |          |      | 8%        | \$14,800         |                                                                                                                                                                                                                              |
| Temporary Erosion and Sediment Control         |          |      | 3%        | \$5,550          | Manage stockpiles, protect inlets, street sweeping.                                                                                                                                                                          |
| Temporary Dewatering                           |          |      | 5%        | \$9,250          | May require minor trench dewatering.                                                                                                                                                                                         |
| Traffic Control                                |          |      | 2%        | \$3,700          | Residential street.                                                                                                                                                                                                          |
| Contingency                                    |          |      | 30%       | \$55,500         | Utility conflicts unknown and infiltration facility sizing incomplete.                                                                                                                                                       |
| Sales Tax                                      |          |      | 8.7%      | \$23,821         |                                                                                                                                                                                                                              |
| <b>Total Construction Cost:</b>                |          |      |           | <b>\$298,000</b> |                                                                                                                                                                                                                              |
| <b>PREDESIGN COSTS</b>                         |          |      |           |                  |                                                                                                                                                                                                                              |
| Survey                                         |          |      | LS        | \$5,000          | Base mapping. Large project area.                                                                                                                                                                                            |
| Geotechnical Evaluation                        |          |      | LS        | \$7,000          | PIT tests and memo for infiltration gallery.                                                                                                                                                                                 |
| Pre-design                                     |          |      | LS        | \$10,000         | Evaluate alignment, drywell rehab alternatives, and potential for infiltration in open space. Brief memo.                                                                                                                    |
| <b>OTHER PROJECT COSTS</b>                     |          |      |           |                  |                                                                                                                                                                                                                              |
| Total Pre-design (Survey, Geotech, Pre-design) |          |      | LS        | \$22,000         |                                                                                                                                                                                                                              |
| Design                                         |          |      | LS        | \$45,000         | Assumes general sheet, 3 plans w/ profile, 1 detail sheet. No utility relocations included in design.                                                                                                                        |
| Permitting                                     |          |      | LS        | \$5,000          | Grading permit and street use permit.                                                                                                                                                                                        |
| Construction Management                        |          |      | 15%       | \$45,000         |                                                                                                                                                                                                                              |
| City of Lacey Project Management               |          |      | 5%        | \$15,000         |                                                                                                                                                                                                                              |
| <b>Total Estimated Project Cost:</b>           |          |      |           | <b>\$430,000</b> |                                                                                                                                                                                                                              |





**Capital Improvement Program Project  
Summary Sheet**

**White Fir Stormwater  
Installation**

**Location:** White Fir Drive NE

**Number:** 13-15 **Priority:** Low

**Estimated Cost:** \$420,000

**ENR CCI 11,268.48 (June 2019)**

**Problem Description:**

Lack of drainage infrastructure in this area is causing nuisance flooding. There is a poorly functioning dry well at the downstream end of the pipe network that should be evaluated.

**Project Solution:**

Install new permeable gravel shoulder with underdrain pipe on north and south shoulders of White Fir Dr NE. Connect underdrain to existing storm drain system. Existing system discharges to infiltration area that is functioning well. Evaluate adequacy of proposed solution, particularly the adequacy of existing infiltration pond to manage the runoff.

**Cost Estimate Assumptions:**

1,400 LF of permeable gravel shoulder (700 LF on both sides of road) 10 ft wide, 1,400 LF 8 In Dia Underdrain Pipe, repair 15 driveway aprons. 4 connections to existing drainage structures.



Site of future shoulder improvements, looking west.



Site of future shoulder improvements, looking east.



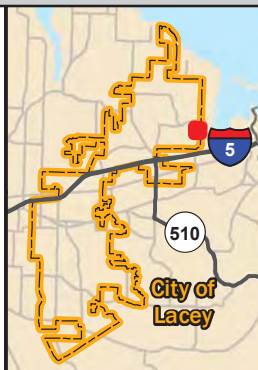
#### Legend

##### Existing

- Catch Basin
- ▲ Discharge
- Junction Box
- Conveyance

##### Proposed

- Infiltration



**Figure 9. City of Lacey Stormwater CIP 13-15: White Fir Stormwater Installation.**



0 75 150 300 Feet



City of Lacey Aerial, 2015

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**Engineering Construction Cost Estimate for Conceptual Design - DRAFT**

**Project Name:** White Fir Stormwater Installation  
**Project Number:** 17-06745-000  
**Client:** City of Lacey Stormwater Comprehensive Plan Update


**QA Review**

Completed/Updated By: Meghan Mullen  
 Last Updated On: 3/21/2019  
 Reviewed By: Matt Fontaine  
 Reviewed On: 6/11/2019  
 Approved By: Matt Fontaine  
 Approved On: 6/11/2019

| Item No. | Spec Division | Item Description                                                                     | Qty   | Unit | Unit Cost | Total Cost          |
|----------|---------------|--------------------------------------------------------------------------------------|-------|------|-----------|---------------------|
|          | <b>Div 1</b>  | <b>General Requirements</b>                                                          |       |      |           |                     |
| 1        |               | Mobilization                                                                         | 1     | L.S. | 10%       | \$ 11,684.8         |
| 2        |               | Erosion/Water Pollution Control                                                      | 1     | L.S. | 5%        | \$ 5,842.4          |
| 3        |               | Temporary Dewatering                                                                 | 1     | L.S. | 0%        | \$ -                |
| 4        |               | Utility Protection and Relocation                                                    | 1     | L.S. | 10%       | \$ 11,684.8         |
| 5        |               | Project Temporary Traffic Control                                                    | 1     | L.S. | 2%        | \$ 2,337.0          |
|          | <b>Div 2</b>  | <b>Earthwork</b>                                                                     |       |      |           |                     |
| 7        |               | Structure Excavation Class B, Incl. Haul                                             | 311   | C.Y. | \$ 20     | \$ 6,222.2          |
|          | <b>Div 4</b>  | <b>Bases</b>                                                                         |       |      |           |                     |
| 8        |               | Permeable Ballast                                                                    | 372   | S.Y. | \$ 60     | \$ 22,334.8         |
| 9        |               | Crushed Surfacing, Base Course                                                       | 27    | C.Y. | \$ 100    | \$ 2,740.7          |
|          | <b>Div 5</b>  | <b>Surface Treatments and Pavements</b>                                              |       |      |           |                     |
| 10       |               | HMA for Pavement Repair                                                              | 15    | Ton  | \$ 300    | \$ 4,350.0          |
|          | <b>Div 7</b>  | <b>Drainage Structures, Storm Sewers, Sanitary Sewers, Water Mains, and Conduits</b> |       |      |           |                     |
| 11       |               | Underdrain Pipe, 8 In. Dia.                                                          | 1,400 | L.F. | \$ 20     | \$ 28,000.0         |
| 12       |               | Connect to Existing Structure                                                        | 4     | Each | \$ 800    | \$ 3,200.0          |
| 13       |               | Infiltration System Improvements                                                     | 1     | L.S. | \$ 50,000 | \$ 50,000.0         |
|          |               | <b>Construction Subtotal</b>                                                         |       |      |           | <b>\$ 148,397</b>   |
|          |               | Contingency                                                                          | 50%   |      |           | <b>\$ 74,198.33</b> |
|          |               | Lacey Cost Adjustment Factor                                                         | 10%   |      |           | <b>\$ 14,839.67</b> |
|          |               | Subtotal (with Contingency and Lacey Cost Adj. Factor)                               |       |      |           | <b>\$ 237,435</b>   |
|          |               | Tax                                                                                  | 9.3%  |      |           | <b>\$ 22,081</b>    |
|          |               | <b>Construction Total (with Contingency and Tax)</b>                                 |       |      |           | <b>\$ 259,516</b>   |
|          |               | Survey                                                                               |       | L.S. |           | <b>\$ 10,000</b>    |
|          |               | Geotechnical / Infiltration Evaluation                                               |       | L.S. |           | <b>\$ 30,000</b>    |
|          |               | Predesign                                                                            |       | L.S. |           | <b>\$ -</b>         |
|          |               | Design                                                                               | 10%   |      |           | <b>\$ 26,000</b>    |
|          |               | Permitting                                                                           |       | L.S. |           | <b>\$ 5,000</b>     |
|          |               | Construction Management                                                              | 15%   |      |           | <b>\$ 38,927.41</b> |
|          |               | City of Lacey Project Management                                                     | 20%   |      |           | <b>\$ 51,903.22</b> |
|          |               | <b>Estimated Project Total (rounded to 2 significant figures)</b>                    |       |      |           | <b>\$ 420,000</b>   |



**Capital Improvement Program Project  
Summary Sheet**

**5th Ct SE and 5th Way  
Easement Storm  
Improvements**

**Location:** North of 5th Way SE and  
west of 5th Ct SE.

**Number:** 13-16 **Priority:** Low

**Estimated Cost:** \$760,000

**ENR CCI 11,268.48 (June 2019)**

**Problem Description:**

Pipes/ structures in backyard are creating a maintenance problem because access is limited.

**Project Solution:**

Relocate conveyance to the street during the next overlay. Fill and abandon the existing pipe located in the narrow easement behind the houses.

**Cost Estimate Assumptions:**

About 1,200 LF 24" Dia. Pipe, 5 new catch basins, and 2 connections to existing drainage.

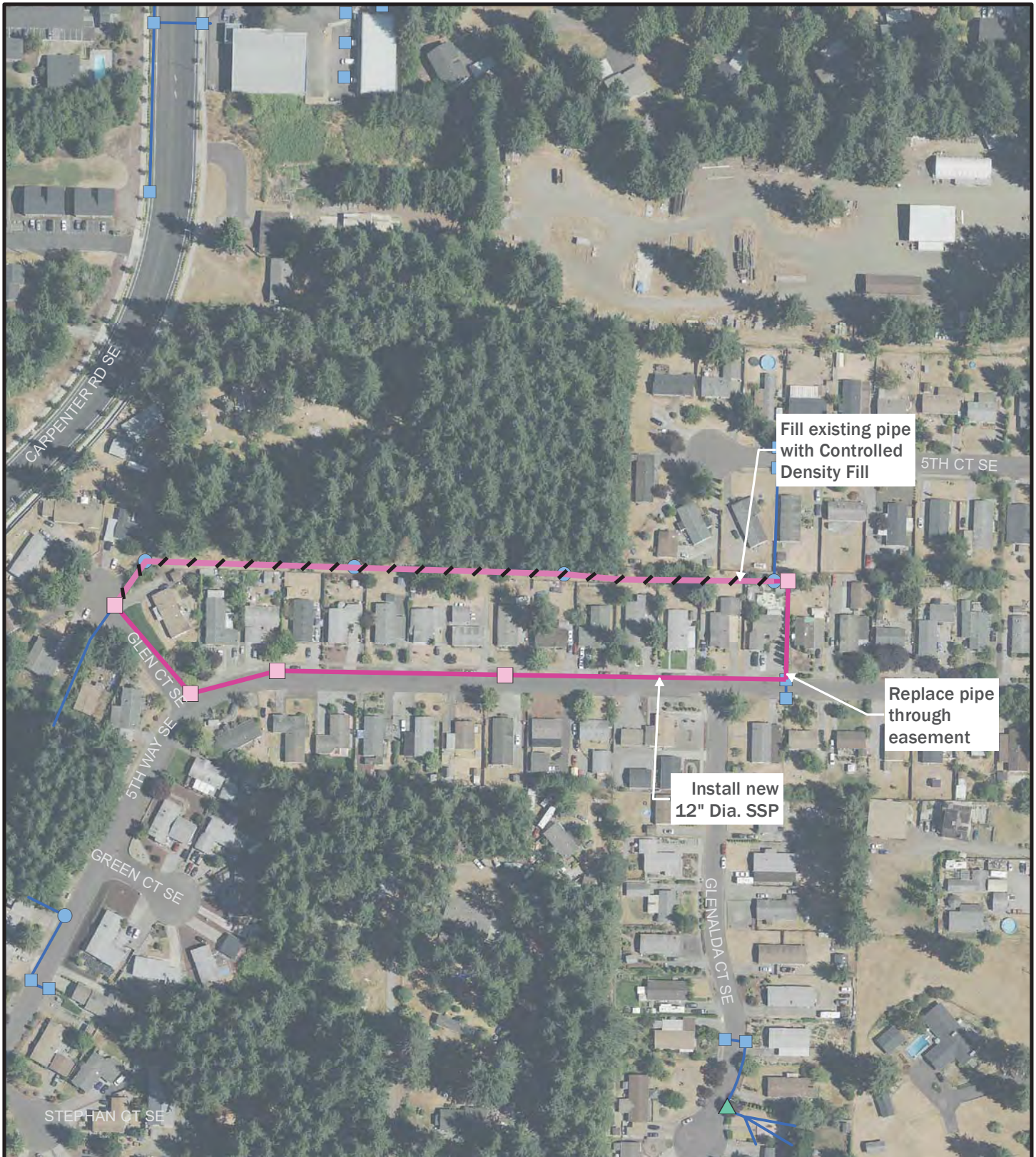


**Existing structure access**



**Existing narrow easement behind houses**





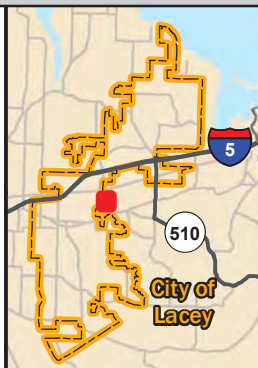
#### Legend

##### Existing

- Catch Basin
- ▲ Discharge
- Manhole
- Conveyance

##### Proposed

- Catch Basin
- - - Demolish
- Pipe or Culvert



**Figure 12. City of Lacey Stormwater CIP 13-16: 5th Ct SE and 5th Way Easement Storm Improvements.**



0 100 200 400 Feet



City of Lacey Aerial, 2015

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**Engineering Construction Cost Estimate for Conceptual Design - DRAFT**

**Project Name:** 5th Ct SE and 5th Way Easement Storm Improvements  
**Project Number:** 17-06745-000  
**Client:** City of Lacey Stormwater Comprehensive Plan Update


**QA Review**

Completed/Updated By: Meghan Mullen  
 Last Updated On: 4/15/2019  
 Reviewed By: Matt Fontaine  
 Reviewed On: 6/11/2019  
 Approved By: Matt Fontaine  
 Approved On: 6/11/2019

| Item No. | Spec Division | Item Description                                                                     | Qty   | Unit | Unit Cost | Total Cost          |
|----------|---------------|--------------------------------------------------------------------------------------|-------|------|-----------|---------------------|
|          | <b>Div 1</b>  | <b>General Requirements</b>                                                          |       |      |           |                     |
| 1        |               | Mobilization                                                                         | 1     | L.S. | 10%       | \$ 24,830           |
| 2        |               | Erosion/Water Pollution Control                                                      | 1     | L.S. | 5%        | \$ 12,415           |
| 3        |               | Temporary Dewatering                                                                 | 1     | L.S. | 2%        | \$ 4,966            |
| 4        |               | Utility Protection and Relocation                                                    | 1     | L.S. | 10%       | \$ 24,830           |
| 5        |               | Project Temporary Traffic Control                                                    | 1     | L.S. | 2%        | \$ 4,966            |
|          | <b>Div 2</b>  | <b>Earthwork</b>                                                                     |       |      |           |                     |
| 7        |               | Structure Excavation Class B, Incl. Haul                                             | 1,312 | C.Y. | \$ 20     | \$ 26,237           |
| 8        |               | Controlled Density Fill                                                              | 105   | C.Y. | \$ 210    | \$ 21,991           |
|          | <b>Div 4</b>  | <b>Bases</b>                                                                         |       |      |           |                     |
| 9        |               | Bank Run Gravel for Trench Backfill                                                  | 500   | C.Y. | \$ 15     | \$ 7,500            |
| 10       |               | Crushed surfacing, top course                                                        | 150   | Ton  | \$ 75     | \$ 11,250           |
|          | <b>Div 5</b>  | <b>Surface Treatments and Pavements</b>                                              |       |      |           |                     |
| 11       |               | HMA for Pavement Repair                                                              | 196   | Ton  | \$ 300    | \$ 58,725           |
|          | <b>Div 7</b>  | <b>Drainage Structures, Storm Sewers, Sanitary Sewers, Water Mains, and Conduits</b> |       |      |           |                     |
| 12       |               | Catch Basin Type 2                                                                   | 5     | Each | \$ 5,000  | \$ 25,000           |
| 13       |               | Connect to Drainage Structure                                                        | 2     | Each | \$ 800    | \$ 1,600            |
| 14       |               | Schedule A SSP, 24 In. Dia.                                                          | 1,200 | L.F. | \$ 80     | \$ 96,000           |
|          |               | <b>Construction Subtotal</b>                                                         |       |      |           | <b>\$ 320,311</b>   |
|          |               | Contingency                                                                          | 30%   |      |           | <b>\$ 96,093.33</b> |
|          |               | Lacey Cost Adjustment Factor                                                         | 10%   |      |           | <b>\$ 32,031.11</b> |
|          |               | Subtotal (with Contingency and Lacey Cost Adj. Factor)                               |       |      |           | <b>\$ 448,436</b>   |
|          |               | Tax                                                                                  | 9.3%  |      |           | <b>\$ 41,705</b>    |
|          |               | <b>Construction Total (with Contingency and Tax)</b>                                 |       |      |           | <b>\$ 490,140</b>   |
|          |               | Survey                                                                               |       | L.S. |           | <b>\$ 10,000</b>    |
|          |               | Geotechnical Evaluation                                                              |       | L.S. |           | <b>\$ -</b>         |
|          |               | Predesign                                                                            |       | L.S. |           | <b>\$ 10,000</b>    |
|          |               | Design                                                                               | 15%   |      |           | <b>\$ 74,000</b>    |
|          |               | Permitting                                                                           |       | L.S. |           | <b>\$ 5,000</b>     |
|          |               | Construction Management                                                              | 15%   |      |           | <b>\$ 73,521.01</b> |
|          |               | City of Lacey Project Management                                                     | 20%   |      |           | <b>\$ 98,028.01</b> |
|          |               | <b>Estimated Project Total (rounded to 2 significant figures)</b>                    |       |      |           | <b>\$ 760,000</b>   |





## Capital Improvement Program Project Summary Sheet

### Shady Lane Treatment Facility Improvements

Location: Shady Lane Road SE and  
Sierra Drive SE

Number: 13-17 Priority: Medium

Estimated Cost: \$160,000

ENR CCI 11,268.48 (June 2019)

#### Problem Description:

A large amount of sediment has accumulated in the wet pond and needs to be removed. High water levels have resulted in backwatering but no flooding.

#### Project Solution:

Remove sediment and vegetation. Revegetate in accordance with the Lacey Stormwater Design Manual. Install maintenance access, install structure at inlet to reduce sediment buildup, install low maintenance outlet structure. Because the spillway is functioning, consider abandoning the pipe to the outfall. Consider modifying the spillway to make maintenance easier.

#### Cost Estimate Assumptions:

Remove 2' of accumulated sediment from the wet pond, replant 0.2 acres, replace outfall, install hydrodynamic separator upstream. The cost has been increased from the original 2013 estimate. Permitting has not yet been accounted for in the cost estimate.

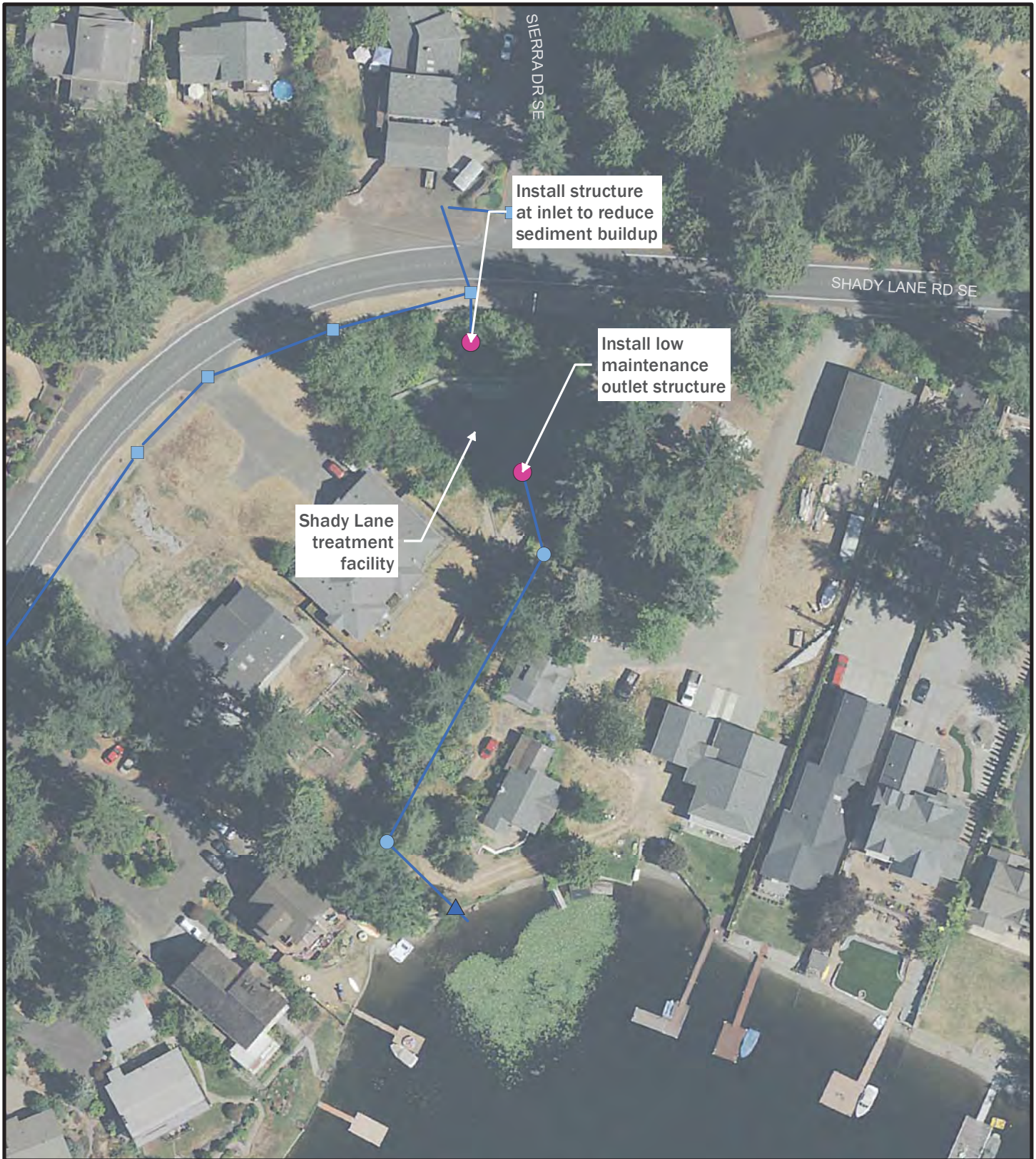


Facility spillway



Existing above-ground overflow from facility.





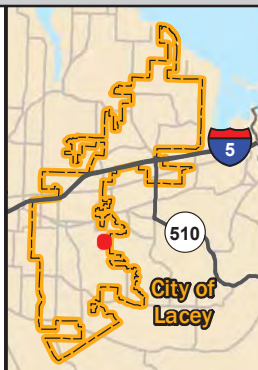
#### Legend

##### Existing

- Catch Basin
- ▲ Outfall
- Manhole
- Conveyance

##### Proposed

- Structure



**Figure 10. City of Lacey Stormwater CIP 13-17: Shady Lane Treatment Facility Improvements.**



0 40 80 160 Feet



City of Lacey Aerial, 2015

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CLIENT: City of Lacey

PROJECT: Stormwater Comprehensive Plan - CIP Cost Estimates

**PROJECT 17- Shady Lane Treatment Facility**

Prepared by: M. Fontaine

Checked by: N. Christensen

**Table 1. Conceptual Cost Estimate**

| Item                                         | Quantity | Unit | Unit Cost | Amount           | Notes                                                                                                                                                                                  |
|----------------------------------------------|----------|------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pond Excavation, Incl. Haul                  | 728      | CY   | \$17      | \$12,376         | Muck out wet ponds. Avg depth of 2'. No liner protection.                                                                                                                              |
| Hydrodynamic Separator                       | 1        | EA   | \$ 7,500  | \$7,500          | Engineers estimate.                                                                                                                                                                    |
| Outlet Structure                             | 1        | EA   | \$ 7,500  | \$7,500          | Engineers estimate.                                                                                                                                                                    |
| Planting - Shrubs and Seeding Mix            | 0.2      | AC   | \$ 10,000 | \$2,000          | Replant wetpond. Shrubs and wetland seeding.                                                                                                                                           |
| Site Restoration                             | 1        | LS   | \$ 5,000  | \$5,000          |                                                                                                                                                                                        |
| Replace Outfall                              | 1        | LS   | \$ 15,000 | \$15,000         | Difficult access.                                                                                                                                                                      |
| <b>TOTAL DIRECT COSTS:</b>                   |          |      |           | <b>\$49,000</b>  |                                                                                                                                                                                        |
| <b>MARKUPS AND OTHER COSTS</b>               |          |      |           |                  |                                                                                                                                                                                        |
| Mobilization                                 |          |      | 8%        | \$3,920          |                                                                                                                                                                                        |
| Temporary Erosion and Sediment Control       |          |      | 2%        | \$980            |                                                                                                                                                                                        |
| Temporary Dewatering                         |          |      | 10%       | \$4,900          | Significant dewatering.                                                                                                                                                                |
| Traffic Control                              |          |      | 0%        | \$0              |                                                                                                                                                                                        |
| Contingency                                  |          |      | 30%       | \$14,700         | 30% contingency due to uncertain excavation quantities.                                                                                                                                |
| Sales Tax                                    |          |      | 8.7%      | \$4,263          |                                                                                                                                                                                        |
| <b>Total Construction Cost:</b>              |          |      |           | <b>\$78,000</b>  |                                                                                                                                                                                        |
| <b>PREDESIGN COSTS</b>                       |          |      |           |                  |                                                                                                                                                                                        |
| Survey                                       |          |      | LS        | \$5,000          | Base map. Difficult conditions.                                                                                                                                                        |
| Geotechnical Evaluation                      |          |      | LS        | \$0              |                                                                                                                                                                                        |
| Predesign                                    |          |      | LS        | \$0              |                                                                                                                                                                                        |
| <b>OTHER PROJECT COSTS</b>                   |          |      |           |                  |                                                                                                                                                                                        |
| Total Predesign (Survey, Geotech, Predesign) |          |      |           | \$5,000          |                                                                                                                                                                                        |
| Design                                       |          |      | LS        | \$20,000         | Basic grading plan, planting plan, details for new outfall, and special provisions.                                                                                                    |
| Permitting                                   |          |      | LS        | \$15,000         | Will require permits from Army Corps, WDFW, and potentially City of Lacey, but permitting should not be difficult because work appears to fall under the Army Corps Nationwide permit. |
| Construction Management                      |          |      | 15%       | \$12,000         |                                                                                                                                                                                        |
| City of Lacey Project Management             |          |      | 5%        | \$4,000          |                                                                                                                                                                                        |
| <b>Total Estimated Project Cost:</b>         |          |      |           | <b>\$134,000</b> |                                                                                                                                                                                        |

## **APPENDIX E**

---

### **Gap Analysis and Needs Assessment**

| Table E-1. Recommended Activities for Flood Reduction. |                                                                                                                                                       | Funding     |        |        |        |        |        |        |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------|--------|--------|--------|--------|--------|
| Recommendation                                         | Assumptions                                                                                                                                           | Year 1      | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
|                                                        |                                                                                                                                                       | 2020        | 2021   | 2022   | 2023   | 2024   | 2025   | 2026   |
| Minimum                                                |                                                                                                                                                       | Minimum     |        |        |        |        |        |        |
| CIP projects (TBD)                                     | Stormwater projects identified through the CIP prioritization process and staff time (\$) included in CIP cost estimates for City project management. |             |        |        |        |        |        |        |
| Minimum Tier Total                                     |                                                                                                                                                       | \$ -        | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |
| Recommended                                            |                                                                                                                                                       | Recommended |        |        |        |        |        |        |
| All activities from Minimum (NPDES Compliant) tier     | Same assumptions as Minimum tier (NPDES Compliant).                                                                                                   | \$ -        | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |
| Recommended Tier Total                                 |                                                                                                                                                       | \$ -        | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |
| Enhanced                                               |                                                                                                                                                       | Enhanced    |        |        |        |        |        |        |
| All activities from Recommended tier                   | Same assumptions as Recommended tier.                                                                                                                 | \$ -        | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |
| Enhanced Tier Total                                    |                                                                                                                                                       | \$ -        | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |

| Staff (FTE) |        |        |        |        |        |        |
|-------------|--------|--------|--------|--------|--------|--------|
| Year 1      | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
| 2020        | 2021   | 2022   | 2023   | 2024   | 2025   | 2026   |
| Minimum     |        |        |        |        |        |        |
|             |        |        |        |        |        |        |
|             |        |        |        |        |        |        |
| Recommended |        |        |        |        |        |        |
|             |        |        |        |        |        |        |
|             |        |        |        |        |        |        |
| Enhanced    |        |        |        |        |        |        |
|             |        |        |        |        |        |        |
|             |        |        |        |        |        |        |

| Table E-2. Recommended Activities for Surface Water Quality Improvement (retrofitting). |                                                                                                                                                                                                                                                                                                                                                                                           | Funding     |        |        |        |        |        |        |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------|--------|--------|--------|--------|--------|
| Recommendation                                                                          | Assumptions                                                                                                                                                                                                                                                                                                                                                                               | Year 1      | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
|                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                           | 2020        | 2021   | 2022   | 2023   | 2024   | 2025   | 2026   |
| Minimum                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                           | Minimum     |        |        |        |        |        |        |
| Regional Water Quality Facility Program                                                 | Conduct study in conjunction with SMAP to locate, design and construct stormwater treatment facilities for existing untreated discharges, potentially supplementing with grant funding. Assumes \$100,000 included in the CIP plan to develop the program. 0.1 FTE (one-time cost) to develop the program and 0.1 FTE ongoing cost to apply for grant funding and administer the program. |             |        |        |        |        |        |        |
| Minimum Tier Total                                                                      |                                                                                                                                                                                                                                                                                                                                                                                           | \$ -        | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |
| Recommended                                                                             |                                                                                                                                                                                                                                                                                                                                                                                           | Recommended |        |        |        |        |        |        |
| All activities from Minimum (NPDES Compliant) tier                                      | Same assumptions as Minimum tier (NPDES Compliant).                                                                                                                                                                                                                                                                                                                                       | \$ -        | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |
| Recommended Tier Total                                                                  |                                                                                                                                                                                                                                                                                                                                                                                           | \$ -        | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |
| Enhanced                                                                                |                                                                                                                                                                                                                                                                                                                                                                                           | Enhanced    |        |        |        |        |        |        |
| All activities from Recommended tier                                                    | Same assumptions as Recommended tier.                                                                                                                                                                                                                                                                                                                                                     | \$ -        | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |
| Enhanced Tier Total                                                                     |                                                                                                                                                                                                                                                                                                                                                                                           | \$ -        | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |

| Staff (FTE) |        |        |        |        |        |        |
|-------------|--------|--------|--------|--------|--------|--------|
| Year 1      | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
| 2020        | 2021   | 2022   | 2023   | 2024   | 2025   | 2026   |
| Minimum     |        |        |        |        |        |        |
|             |        | 0.10   | 0.10   | 0.10   | 0.10   | 0.10   |
|             |        | 0.10   | 0.10   | 0.10   | 0.10   | 0.10   |
| Recommended |        |        |        |        |        |        |
|             |        | 0.10   | 0.10   | 0.10   | 0.10   | 0.10   |
|             |        | 0.10   | 0.10   | 0.10   | 0.10   | 0.10   |
| Enhanced    |        |        |        |        |        |        |
|             |        | 0.10   | 0.10   | 0.10   | 0.10   | 0.10   |
|             |        | 0.10   | 0.10   | 0.10   | 0.10   | 0.10   |



| Table E-3. Recommended Activities for Groundwater Quality Protection.                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Funding     |           |           |           |           |           |           |
|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Recommendation                                                                                                    | Assumptions                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Year 1      | Year 2    | Year 3    | Year 4    | Year 5    | Year 6    | Year 7    |
|                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2020        | 2021      | 2022      | 2023      | 2024      | 2025      | 2026      |
| Minimum                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Minimum     |           |           |           |           |           |           |
| Develop stormwater infiltration policies and regulations to protect groundwater, particularly for deep UIC wells. | Groundwater protection policies and regulations to be developed as part of 2019 SCP update and 2021 SDM update. Staff time to implement the policies is included in Table 8.                                                                                                                                                                                                                                                                                                 |             |           |           |           |           |           |           |
| Minimum Tier Total                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \$ -        | \$ -      | \$ -      | \$ -      | \$ -      | \$ -      | \$ -      |
| Recommended                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Recommended |           |           |           |           |           |           |
| All activities from Minimum (NPDES Compliant) tier                                                                | Same assumptions as Minimum tier (NPDES Compliant).                                                                                                                                                                                                                                                                                                                                                                                                                          | \$ -        | \$ -      | \$ -      | \$ -      | \$ -      | \$ -      | \$ -      |
| Water Quality and Infiltration Retrofit Program                                                                   | Retrofit for WQ improvement and infiltration improvement at existing infiltration trench/gallery locations (add treatment BMPs). Annual project costs are included in the CIP plan. Two weeks per year of staff time to implement the program.                                                                                                                                                                                                                               |             |           |           |           |           |           |           |
| Enhanced regional monitoring                                                                                      | Enhance the regional program to monitor groundwater and review results for trends in pollutants (particularly pathogens and nitrates; site-specific nitrate loading). Hire 1 FTE to do additional monitoring, monitor program design, collect and manage field data, and track non-point-source-related environmental data. Note that this full FTE will be half funded by the water utility and half funded by the surface water utility, so only 0.5 FTE is recorded here. |             |           |           |           |           |           |           |
| UIC monitoring                                                                                                    | Develop and implement a program to monitor groundwater in areas where deep UICs are proposed or existing. Assume 2 days per month of staff time to collect data and analyze results. Assume laboratory costs of \$40 k per year (\$100 for parameters or interest, 4 samples per year, and 10 sites).                                                                                                                                                                        |             | \$ 40,000 | \$ 40,000 | \$ 40,000 | \$ 40,000 | \$ 40,000 | \$ 40,000 |
| Recommended Tier Total                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \$ -        | \$ 40,000 | \$ 40,000 | \$ 40,000 | \$ 40,000 | \$ 40,000 | \$ 40,000 |
| Enhanced                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Enhanced    |           |           |           |           |           |           |
| All activities from Recommended tier                                                                              | Same assumptions as Recommended tier.                                                                                                                                                                                                                                                                                                                                                                                                                                        | \$ -        | \$ 40,000 | \$ 40,000 | \$ 40,000 | \$ 40,000 | \$ 40,000 | \$ 40,000 |
| Enhanced Tier Total                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \$ -        | \$ 40,000 | \$ 40,000 | \$ 40,000 | \$ 40,000 | \$ 40,000 | \$ 40,000 |

| Staff (FTE) |        |        |        |        |        |        |
|-------------|--------|--------|--------|--------|--------|--------|
| Year 1      | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
| 2020        | 2021   | 2022   | 2023   | 2024   | 2025   | 2026   |
| Minimum     |        |        |        |        |        |        |
|             |        |        |        |        |        |        |
|             |        |        |        |        |        |        |
| Recommended |        |        |        |        |        |        |
|             |        |        |        |        |        |        |
|             | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   |
|             | 0.50   | 0.50   | 0.50   | 0.50   | 0.50   | 0.50   |
|             | 0.11   | 0.11   | 0.11   | 0.11   | 0.11   | 0.11   |
|             | 0.65   | 0.65   | 0.65   | 0.65   | 0.65   | 0.65   |
| Enhanced    |        |        |        |        |        |        |
|             | 0.65   | 0.65   | 0.65   | 0.65   | 0.65   | 0.65   |
|             | 0.65   | 0.65   | 0.65   | 0.65   | 0.65   | 0.65   |

| Table E-4. Recommended Activities for Habitat Improvement. |                                                                                                                          | Funding     |        |        |        |        |        |        |
|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------------|--------|--------|--------|--------|--------|--------|
| Recommendation                                             | Assumptions                                                                                                              | Year 1      | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
|                                                            |                                                                                                                          | 2020        | 2021   | 2022   | 2023   | 2024   | 2025   | 2026   |
| Minimum                                                    |                                                                                                                          | Minimum     |        |        |        |        |        |        |
| CIP project(s)                                             | Projects identified through the CIP project prioritization process.                                                      |             |        |        |        |        |        |        |
| Minimum Tier Total                                         |                                                                                                                          | \$ -        | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |
| Recommended                                                |                                                                                                                          | Recommended |        |        |        |        |        |        |
| All activities from Minimum (NPDES Compliant) tier         | Same assumptions as Minimum tier (NPDES Compliant).                                                                      | \$ -        | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |
| Stream team                                                | Expansion of the habitat improvement program will be accomplished through public education activities listed in Table 5. |             |        |        |        |        |        |        |
| Recommended Tier Total                                     |                                                                                                                          | \$ -        | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |
| Enhanced                                                   |                                                                                                                          | Enhanced    |        |        |        |        |        |        |
| All activities from Recommended tier                       | Same assumptions as Recommended tier.                                                                                    |             |        |        |        |        |        |        |
| Enhanced Tier Total                                        |                                                                                                                          | \$ -        | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |

| Staff (FTE) |        |        |        |        |        |        |
|-------------|--------|--------|--------|--------|--------|--------|
| Year 1      | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
| 2020        | 2021   | 2022   | 2023   | 2024   | 2025   | 2026   |
| Minimum     |        |        |        |        |        |        |
|             |        |        |        |        |        |        |
|             |        |        |        |        |        |        |
| Recommended |        |        |        |        |        |        |
|             |        |        |        |        |        |        |
|             |        |        |        |        |        |        |
|             |        |        |        |        |        |        |
| Enhanced    |        |        |        |        |        |        |
|             |        |        |        |        |        |        |
|             |        |        |        |        |        |        |

| Table E-5. Recommended Activities for Public Participation (education, outreach, and involvement). |                                                                                                                                                                                                           | Funding     |           |        |        |        |        |        |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------|--------|--------|--------|--------|--------|
| Recommendation                                                                                     | Assumptions                                                                                                                                                                                               | Year 1      | Year 2    | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
|                                                                                                    |                                                                                                                                                                                                           | 2020        | 2021      | 2022   | 2023   | 2024   | 2025   | 2026   |
| Minimum                                                                                            |                                                                                                                                                                                                           | Minimum     |           |        |        |        |        |        |
| Evaluate behavior change                                                                           | Conduct new evaluation of a behavior change program. Use existing staff resporces to perform this work. (Due July 2020)                                                                                   |             |           |        |        |        |        |        |
| Conduct CBSM                                                                                       | Conduct CBSM (community-based social marketing) to meet future permit requirements. Assumes 100 consultant hours at \$100 per hour and 30 percent staff hours for project management. (Due February 2021) |             | \$ 10,000 |        |        |        |        |        |
| SWMP reporting                                                                                     | Define public involvement opportunities for the annual SWMP update and reporting process. Assume 16 hours of staff time every year.                                                                       |             |           |        |        |        |        |        |
| Post SWMP publicly                                                                                 | Make the SWMP document and Annual Compliance Report available to the public by posting on the City of Lacey website. Assume 4 hours of staff time each year.                                              |             |           |        |        |        |        |        |
| Minimum Tier Total                                                                                 |                                                                                                                                                                                                           | \$ -        | \$ 10,000 | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |
| Recommended                                                                                        |                                                                                                                                                                                                           | Recommended |           |        |        |        |        |        |
| All activities from Minimum (NPDES Compliant) tier                                                 | Same assumptions as Minimum tier (NPDES Compliant).                                                                                                                                                       | \$ -        | \$ 10,000 | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |
| Recommended Tier Total                                                                             |                                                                                                                                                                                                           | \$ -        | \$ 10,000 | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |

| Staff (FTE) |        |        |        |        |        |        |
|-------------|--------|--------|--------|--------|--------|--------|
| Year 1      | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
| 2020        | 2021   | 2022   | 2023   | 2024   | 2025   | 2026   |
| Minimum     |        |        |        |        |        |        |
|             |        |        |        |        |        |        |
|             | 0.02   |        |        |        |        |        |
|             | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   |
|             | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   |
|             | 0.03   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   |
| Recommended |        |        |        |        |        |        |
|             | 0.03   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   |
|             | 0.03   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   |

| Table E-5. Recommended Activities for Public Participation (education, outreach, and involvement). |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Funding  |           |        |        |        |        |        | Staff (FTE) |        |        |        |        |        |        |
|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------|--------|--------|--------|--------|--------|-------------|--------|--------|--------|--------|--------|--------|
| Recommendation                                                                                     | Assumptions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Year 1   | Year 2    | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 1      | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
|                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2020     | 2021      | 2022   | 2023   | 2024   | 2025   | 2026   | 2020        | 2021   | 2022   | 2023   | 2024   | 2025   | 2026   |
| Enhanced                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Enhanced |           |        |        |        |        |        | Enhanced    |        |        |        |        |        |        |
| All activities from Recommended tier                                                               | Same assumptions as Recommended tier.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | \$ -     | \$ 10,000 | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |             | 0.03   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   |
| Stream Restoration Organizing                                                                      | Support stream restoration community organizing.<br>o Increase awareness of Stream Team events, including advertisement in the parks catalogue<br>o Increase contribution to REEP and Stream Team articles<br>o Conduct additional 5th grade stormwater lessons to Lacey students and expand program to include multiple grade levels<br>o Conduct additional Eye on Nature Field Trips with Lacey students at the Nisqually Wildlife Refuge<br>o Conduct and offer additional riparian buffer restoration projects for City of Lacey residents<br>o Expand Water Resources’ ability to offer WIN Group project offerings at Woodland Creek Community Park |          |           |        |        |        |        |        | 0.50        | 0.50   | 0.50   | 0.50   | 0.50   | 0.50   | 0.50   |
| Update SOPs                                                                                        | Review and develop additional public education and outreach materials and Standard Operating Procedures (SOPs) for minimizing pollutant releases from permitted non-stormwater discharges.                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |           |        |        |        |        |        | 0.25        | 0.25   | 0.25   | 0.25   | 0.25   | 0.25   | 0.25   |
| Education support work                                                                             | Hire staff to support office work related to public education reporting and effectiveness analysis (in addition to the permit-compliant tasks described in the Minimum tier)<br>o Update the website more regularly<br>o Conduct staff training and public education and outreach on implementation of the 2016 Stormwater Design Manual.<br>o Determine a means of measuring impact of in-person programs<br>o Implement new or modify existing education and outreach activities, continue to track activities and monitor success.                                                                                                                      |          |           |        |        |        |        |        | 0.25        | 0.25   | 0.25   | 0.25   | 0.25   | 0.25   | 0.25   |
| Enhanced Tier Total                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | \$ -     | \$ 10,000 | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   | 1.00        | 1.03   | 1.01   | 1.01   | 1.01   | 1.01   | 1.01   |



| Table E-6. Recommended Activities for Pollution Source Control. |                                                                                                                                                                                                                                                                                                | Funding                   |          |          |        |        |        |        |
|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------|----------|--------|--------|--------|--------|
| Recommendation                                                  | Assumptions                                                                                                                                                                                                                                                                                    | Year 1                    | Year 2   | Year 3   | Year 4 | Year 5 | Year 6 | Year 7 |
|                                                                 |                                                                                                                                                                                                                                                                                                | 2020                      | 2021     | 2022     | 2023   | 2024   | 2025   | 2026   |
| Minimum (NPDES Compliant)                                       |                                                                                                                                                                                                                                                                                                | Minimum (NPDES Compliant) |          |          |        |        |        |        |
| Map outfall attributes                                          | Map size and material for all known MS4 outfalls. City staff time estimated at 0.25 FTE. (Due January 2020; assumes work performed in 2019)                                                                                                                                                    |                           |          |          |        |        |        |        |
| Map private connections                                         | Complete mapping of all known connections from the MS4 to a privately-owned stormwater system. City staff time estimated at 0.25 FTE. (Due August 2023)                                                                                                                                        |                           |          |          |        |        |        |        |
| Auto accidents tracking                                         | Integrate auto accidents into the Spill Response Plan. Use existing staff resources to accomplish this activity.                                                                                                                                                                               |                           |          |          |        |        |        |        |
| Additional inspections                                          | Add staff to inspect commercial and residential stormwater facilities. The number of facilities and the length of inspections has increased. Equipment is needed to improve the efficiency and equality of inspections and will be purchased in 2021.                                          |                           | \$ 5,000 |          |        |        |        |        |
| Business inventory                                              | Develop and maintain source control inventory. Dedicated initial staff time to develop the inventory and update the inventory annually. (Due August 2022)                                                                                                                                      |                           |          |          |        |        |        |        |
| Source control ordinance                                        | Develop ordinance and enforcement policy. Assumes ongoing work to review and update the ordinance. (Due August 2022)                                                                                                                                                                           |                           |          |          |        |        |        |        |
| Business inspections training                                   | Develop and implement on-going training program. Assumes 80 consultant hours at \$100/hour and 30 percent staff time for project management to develop materials and present initial training, 0.10 FTE to conduct future trainings and research/attend external trainings. (Due January 2023) |                           |          | \$ 8,000 |        |        |        |        |
| Implement business inspections                                  | Implement business inspection program. Assumes 0.5 FTE for implementation. (Due January 2023)                                                                                                                                                                                                  |                           |          |          |        |        |        |        |
| Minimum Tier Total                                              |                                                                                                                                                                                                                                                                                                | \$ -                      | \$ 5,000 | \$ 8,000 | \$ -   | \$ -   | \$ -   | \$ -   |

| Staff (FTE)               |        |        |        |        |        |        |
|---------------------------|--------|--------|--------|--------|--------|--------|
| Year 1                    | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
| 2020                      | 2021   | 2022   | 2023   | 2024   | 2025   | 2026   |
| Minimum (NPDES Compliant) |        |        |        |        |        |        |
|                           |        |        |        |        |        |        |
|                           | 0.25   |        |        |        |        |        |
|                           |        |        |        |        |        |        |
|                           | 0.25   | 0.25   | 0.25   | 0.25   | 0.25   | 0.25   |
|                           |        | 0.25   |        |        |        |        |
|                           |        | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   |
|                           |        | 0.01   | 0.10   | 0.10   | 0.10   | 0.10   |
|                           |        |        | 0.50   | 0.50   | 0.50   | 0.50   |
|                           | 0.50   | 0.56   | 0.90   | 0.90   | 0.90   | 0.90   |

| Table E-6. Recommended Activities for Pollution Source Control. |                                                                                                                                                                   | Funding     |          |          |        |        |        |        |
|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------|----------|--------|--------|--------|--------|
| Recommendation                                                  | Assumptions                                                                                                                                                       | Year 1      | Year 2   | Year 3   | Year 4 | Year 5 | Year 6 | Year 7 |
|                                                                 |                                                                                                                                                                   | 2020        | 2021     | 2022     | 2023   | 2024   | 2025   | 2026   |
| Recommended                                                     |                                                                                                                                                                   | Recommended |          |          |        |        |        |        |
| All activities from Minimum (NPDES Compliant) tier              | Same assumptions as Minimum (NPDES Compliant).                                                                                                                    | \$ -        | \$ 5,000 | \$ 8,000 | \$ -   | \$ -   | \$ -   | \$ -   |
| Enhance screening program                                       | Further develop and implement the Stormwater Outfall Illicit Discharge screening program. Assume an additional 0.25 FTE will be needed to implement this program. |             |          |          |        |        |        |        |
| Recommended Tier Total                                          |                                                                                                                                                                   | \$ -        | \$ 5,000 | \$ 8,000 | \$ -   | \$ -   | \$ -   | \$ -   |
| Enhanced                                                        |                                                                                                                                                                   | Enhanced    |          |          |        |        |        |        |
| All activities from Recommended tier                            | Same assumptions as Recommended.                                                                                                                                  | \$ -        | \$ 5,000 | \$ 8,000 | \$ -   | \$ -   | \$ -   | \$ -   |
| Enhanced Tier Total                                             |                                                                                                                                                                   | \$ -        | \$ 5,000 | \$ 8,000 | \$ -   | \$ -   | \$ -   | \$ -   |

| Staff (FTE) |        |        |        |        |        |        |
|-------------|--------|--------|--------|--------|--------|--------|
| Year 1      | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
| 2020        | 2021   | 2022   | 2023   | 2024   | 2025   | 2026   |
| Recommended |        |        |        |        |        |        |
|             | 0.50   | 0.56   | 0.90   | 0.90   | 0.90   | 0.90   |
|             | 0.25   | 0.25   | 0.25   | 0.25   | 0.25   | 0.25   |
|             | 0.75   | 0.81   | 1.15   | 1.15   | 1.15   | 1.15   |
| Enhanced    |        |        |        |        |        |        |
|             | 0.75   | 0.81   | 1.15   | 1.15   | 1.15   | 1.15   |
|             | 0.75   | 0.81   | 1.15   | 1.15   | 1.15   | 1.15   |

| Table E-7. Recommended Activities for Infrastructure Operations and Maintenance. |                                                                                                                                                                                                                                                                                                                                                                                               | Funding                   |           |        |        |        |        |        | Staff (FTE)               |        |        |        |        |        |        |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-----------|--------|--------|--------|--------|--------|---------------------------|--------|--------|--------|--------|--------|--------|
| Recommendation                                                                   | Assumptions                                                                                                                                                                                                                                                                                                                                                                                   | Year 1                    | Year 2    | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 1                    | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
|                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                               | 2020                      | 2021      | 2022   | 2023   | 2024   | 2025   | 2026   | 2020                      | 2021   | 2022   | 2023   | 2024   | 2025   | 2026   |
| Minimum (NPDES Compliant)                                                        |                                                                                                                                                                                                                                                                                                                                                                                               | Minimum (NPDES Compliant) |           |        |        |        |        |        | Minimum (NPDES Compliant) |        |        |        |        |        |        |
| Update SWPPPs                                                                    | Update municipal Stormwater Pollution Prevention Plans (SWPPPs) to reflect changes at multiple facilities that may include Decant / Pit facility, Parks Regional Athletic Complex (RAC), Parks Rainier Vista Park, odor control facilities, and well sites. Assumes 200 consultant hours at \$100/hour and 30 percent staff time for project management to update SWPPPs (Due December 2022). |                           | \$ 20,000 |        |        |        |        |        |                           | 0.03   |        |        |        |        |        |
| SWPPP inspections                                                                | Conduct wet and dry weather inspection as outlined in the SWPPPs for City-owned facilities. The SWPPPs require quarterly inspections during storm events and one dry-weather inspection each year of all BMPs (8 hours assumed per sampling event).                                                                                                                                           |                           |           |        |        |        |        |        |                           | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   |
| SWPPP spill history                                                              | Update spill history record for City-owned facilities. Assume two days of staff time.                                                                                                                                                                                                                                                                                                         |                           |           |        |        |        |        |        |                           | 0.01   |        |        |        |        |        |
| Minimum Tier Total                                                               |                                                                                                                                                                                                                                                                                                                                                                                               | \$ -                      | \$ 20,000 | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |                           | 0.09   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   |

| Table E-7. Recommended Activities for Infrastructure Operations and Maintenance. |                                                                                                                                                                                                                                                                                                  | Funding     |           |        |        |        |        |        | Staff (FTE) |        |        |        |        |        |        |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------|--------|--------|--------|--------|--------|-------------|--------|--------|--------|--------|--------|--------|
| Recommendation                                                                   | Assumptions                                                                                                                                                                                                                                                                                      | Year 1      | Year 2    | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 1      | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
|                                                                                  |                                                                                                                                                                                                                                                                                                  | 2020        | 2021      | 2022   | 2023   | 2024   | 2025   | 2026   | 2020        | 2021   | 2022   | 2023   | 2024   | 2025   | 2026   |
| Recommended                                                                      |                                                                                                                                                                                                                                                                                                  | Recommended |           |        |        |        |        |        | Recommended |        |        |        |        |        |        |
| All activities from Minimum (NPDES Compliant) tier                               | Same assumptions as Minimum.                                                                                                                                                                                                                                                                     | \$ -        | \$ 20,000 | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |             | 0.09   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   |
| Develop facility SOPs                                                            | Develop Standard Operating Procedures (SOPs) for inspection, operation, and maintenance of the following City facility types:<br>- Stormwater catch basins<br>- Flow control treatment facilities (multiple varieties of facilities)<br>Assume 80 hours to develop SOPs.                         |             |           |        |        |        |        |        |             | 0.05   |        |        |        |        |        |
| Document activity SOPs                                                           | Standard Operating Procedures (SOPs) are currently documented in work requests and should be documented formally (Due December 2022). Assuming all 15 generic activities in the NPDES permit apply and that SOPs are developed for each activity, assume 8 hours per activity to document SOPs.  |             |           |        |        |        |        |        |             | 0.07   |        |        |        |        |        |
| Ongoing improvements (2021)                                                      | As growth continues, the stormwater system will expand and continue to require ongoing improvements. To account for this growing need, the size of the maintenance crew will also need to increase. In 2021, the city expects to replace one of the seasonal employees with a journey-level FTE. |             |           |        |        |        |        |        |             | 0.50   | 0.50   | 0.50   | 0.50   | 0.50   | 0.50   |
| Ongoing improvements (2023)                                                      | To satisfy the need described above, hire another seasonal staff member.                                                                                                                                                                                                                         |             |           |        |        |        |        |        |             |        |        | 0.50   | 0.50   | 0.50   | 0.50   |
| Recommended Tier Total                                                           |                                                                                                                                                                                                                                                                                                  | \$ -        | \$ 20,000 | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |             | 0.70   | 0.55   | 1.05   | 1.05   | 1.05   | 1.05   |
| Enhanced                                                                         |                                                                                                                                                                                                                                                                                                  | Enhanced    |           |        |        |        |        |        | Enhanced    |        |        |        |        |        |        |
| All activities from Recommended tier                                             | Same assumptions as Recommended.                                                                                                                                                                                                                                                                 | \$ -        | \$ 20,000 | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |             | 0.70   | 0.55   | 1.05   | 1.05   | 1.05   | 1.05   |
| Enhanced Tier Total                                                              |                                                                                                                                                                                                                                                                                                  | \$ -        | \$ 20,000 | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |             | 0.70   | 0.55   | 1.05   | 1.05   | 1.05   | 1.05   |



| Table E-8. Recommended Activities for Development Practices. |                                                                                                                                                                                                                                                                                                                                                                                                                         | Funding                   |           |        |        |        |        |        |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-----------|--------|--------|--------|--------|--------|
| Recommendation                                               | Assumptions                                                                                                                                                                                                                                                                                                                                                                                                             | Year 1                    | Year 2    | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
|                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                         | 2020                      | 2021      | 2022   | 2023   | 2024   | 2025   | 2026   |
| Minimum (NPDES Compliant)                                    |                                                                                                                                                                                                                                                                                                                                                                                                                         | Minimum (NPDES Compliant) |           |        |        |        |        |        |
| Annual LID review                                            | Develop a framework for LID review of all new policies and continue annual review of new code and documents. Assumes \$20,000 one-time effort with consultant support and one-time City staff time estimated at 40 hours. Assumes 40 hours per year for ongoing annual review.                                                                                                                                          |                           | \$ 20,000 |        |        |        |        |        |
| Update SDM                                                   | Update Stormwater Design Manual in 2021. Assume \$100k for outside support is included in the CIP plan and 200 hours of staff time included here.                                                                                                                                                                                                                                                                       |                           |           |        |        |        |        |        |
| Enhanced site plan review                                    | Hire additional stormwater site plan review staff to distribute the burden of reviewing submittals against more complicated requirements. With current staffing levels, stormwater site plans cannot be reviewed on time, which results in financial and environmental risk for the City.                                                                                                                               |                           |           |        |        |        |        |        |
| Enhanced site inspection                                     | Hire additional site inspection staff. With current staffing levels, performance verification inspections cannot be conducted and inspectors don't have time to adequately review all stormwater facility elements (e.g. inspecting private roof drains, reviewing bioretention soil media [BSM] specifications, inspecting BSM delivered to the site,) which results in financial and environmental risk for the City. |                           |           |        |        |        |        |        |
| SW plan review checklists                                    | Update and develop additional stormwater plan review checklists and templates. Assumes 150 consultant hours at \$100/hour and 80 hours of staff time to manage the project.                                                                                                                                                                                                                                             |                           | \$ 15,000 |        |        |        |        |        |
| Minimum Tier Total                                           |                                                                                                                                                                                                                                                                                                                                                                                                                         | \$ -                      | \$ 35,000 | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |

| Staff (FTE)               |        |        |        |        |        |        |
|---------------------------|--------|--------|--------|--------|--------|--------|
| Year 1                    | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
| 2020                      | 2021   | 2022   | 2023   | 2024   | 2025   | 2026   |
| Minimum (NPDES Compliant) |        |        |        |        |        |        |
|                           | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   |
|                           | 0.11   |        |        |        |        |        |
|                           | 0.50   | 0.50   | 0.50   | 0.50   | 0.50   | 0.50   |
|                           | 0.50   | 0.50   | 0.50   | 0.50   | 0.50   | 0.50   |
|                           | 0.05   |        |        |        |        |        |
|                           | 1.18   | 1.02   | 1.02   | 1.02   | 1.02   | 1.02   |

| Table E-8. Recommended Activities for Development Practices. |                                                                                                                                                                                                                                                                                                                                                                                                                                               | Funding     |           |        |        |        |        |        |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------|--------|--------|--------|--------|--------|
| Recommendation                                               | Assumptions                                                                                                                                                                                                                                                                                                                                                                                                                                   | Year 1      | Year 2    | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
|                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2020        | 2021      | 2022   | 2023   | 2024   | 2025   | 2026   |
| Recommended                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                               | Recommended |           |        |        |        |        |        |
| All activities from Minimum (NPDES Compliant) tier           | Same assumptions as Minimum.                                                                                                                                                                                                                                                                                                                                                                                                                  | \$ -        | \$ 35,000 | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |
| Self-reporting policy                                        | Develop and implement a policy of self-reporting from contractors. Assumes 100 consultant hours at \$100 per hour and equivalent staff time to develop the policy. Assumes 40 hours per year to implement the policy.                                                                                                                                                                                                                         |             | \$ 10,000 |        |        |        |        |        |
| Tenant improvement policy                                    | Develop and implement a policy to address tenant improvements related to inspection of private facilities. Assumes 100 consultant hours at \$100 per hour and equivalent staff time to develop the policy. Assumes 40 hours per year to implement the policy.                                                                                                                                                                                 |             | \$ 10,000 |        |        |        |        |        |
| Enhanced inspector training                                  | Develop and implement on-going training program for construction site inspectors and private stormwater facility maintenance inspectors based on new permit requirements. Assumes 80 consultant hours at \$100/hour and 30 percent staff time to manage the project to develop training material and conduct initial training. Includes annual staff time needed to update training material, conduct future trainings, and attend trainings. |             | \$ 8,000  |        |        |        |        |        |
| Enhanced developer tools                                     | Develop additional stormwater plan review checklists and tools for contractors and developers. Assumes 150 consultant hours at \$100/hour and 80 hours of staff time to manage the project.                                                                                                                                                                                                                                                   |             | \$ 15,000 |        |        |        |        |        |
| Improve review process                                       | Hire additional stormwater site plan review and site inspection staff to do a more thorough initial review and review stormwater submittals within 10 business days of receipt. This will further reduce risk to the City.                                                                                                                                                                                                                    |             |           |        |        |        |        |        |
| Recommended Tier Total                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                               | \$ -        | \$ 78,000 | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |
| Enhanced                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                               | Enhanced    |           |        |        |        |        |        |
| All activities from Recommended tier                         | Same assumptions as Recommended.                                                                                                                                                                                                                                                                                                                                                                                                              | \$ -        | \$ 78,000 | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |
| Enhanced Tier Total                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                               | \$ -        | \$ 78,000 | \$ -   | \$ -   | \$ -   | \$ -   | \$ -   |

| Staff (FTE) |        |        |        |        |        |        |
|-------------|--------|--------|--------|--------|--------|--------|
| Year 1      | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
| 2020        | 2021   | 2022   | 2023   | 2024   | 2025   | 2026   |
| Recommended |        |        |        |        |        |        |
|             | 1.18   | 1.02   | 1.02   | 1.02   | 1.02   | 1.02   |
|             | 0.06   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   |
|             | 0.06   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   |
|             | 0.01   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   |
|             | 0.05   |        |        |        |        |        |
|             |        | 0.50   | 0.50   | 0.50   | 0.50   | 0.50   |
|             | 1.35   | 1.59   | 1.59   | 1.59   | 1.59   | 1.59   |
| Enhanced    |        |        |        |        |        |        |
|             | 1.35   | 1.59   | 1.59   | 1.59   | 1.59   | 1.59   |
|             | 1.35   | 1.59   | 1.59   | 1.59   | 1.59   | 1.59   |

| Table E-9. Recommended Activities for Stormwater Planning, Administration, and Funding. |                                                                                                                                                                                                                                                                                 | Funding     |           |            |        |        |        |        |
|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------|------------|--------|--------|--------|--------|
| Recommendation                                                                          | Assumptions                                                                                                                                                                                                                                                                     | Year 1      | Year 2    | Year 3     | Year 4 | Year 5 | Year 6 | Year 7 |
|                                                                                         |                                                                                                                                                                                                                                                                                 | 2020        | 2021      | 2022       | 2023   | 2024   | 2025   | 2026   |
| Minimum                                                                                 |                                                                                                                                                                                                                                                                                 | Minimum     |           |            |        |        |        |        |
| Long-range planning annual report questions                                             | Answer annual report questions with the 2021 annual report to Ecology summarizing coordination with long-range planning efforts. Assumes \$5,000 of consultant support plus 40 staff hours for management. (Responses due March 2021)                                           |             | \$ 5,000  |            |        |        |        |        |
| Long-range planning report                                                              | Prepare report in 2022 summarizing coordination with long-range planning efforts. Assumes \$5,000 of consultant support plus 40 staff hours for management. (Report due January 2023)                                                                                           |             |           | \$ 5,000   |        |        |        |        |
| SMAP                                                                                    | Stormwater management action planning (SMAP): priority watershed plan development. Assumes \$100,000 planning effort with 1,000 hours of consultant support at \$100/hr is included in the CIP. One-time City staff time estimated at 0.1 FTE. (Due March 2022 - March 2023)    |             |           | \$ 100,000 |        |        |        |        |
| Stormwater Comprehensive Plan Update                                                    | Assumes \$250,000 of external support is included in the CIP plan and 0.2 FTE of staff time.                                                                                                                                                                                    |             |           |            |        |        |        |        |
| Inter-disciplinary team                                                                 | Convene an inter-disciplinary team to advise the SWMP. Assumes that this team will include approximately 10 staff that will meet quarterly for 2 hours, but only 4 staff will record their time to the SWM Utility. (Due August 2020)                                           |             |           |            |        |        |        |        |
| Minimum Tier Total                                                                      |                                                                                                                                                                                                                                                                                 | \$ -        | \$ 5,000  | \$ 105,000 | \$ -   | \$ -   | \$ -   | \$ -   |
| Recommended                                                                             |                                                                                                                                                                                                                                                                                 | Recommended |           |            |        |        |        |        |
| All activities from Minimum (NPDES Compliant) tier                                      | Same assumptions as Minimum tier (NPDES Compliant).                                                                                                                                                                                                                             | \$ -        | \$ 5,000  | \$ 105,000 | \$ -   | \$ -   | \$ -   | \$ -   |
| Update rate structure                                                                   | Implement an impervious-area based rate structure. Assumes one-time staff time to implement the new rate structure based on the financial analysis performed during the Stormwater Comprehensive Plan update.                                                                   |             |           |            |        |        |        |        |
| Software integration                                                                    | More efficiently integrate multiple software types (excel, collector, HTE, and others). Assume 80 hours of consultant time at \$100 per hour and equivalent staff time to determine the best software integration approach. Assume 20 staff hours per year to provide training. |             | \$ 8,000  |            |        |        |        |        |
| Recommended Tier Total                                                                  |                                                                                                                                                                                                                                                                                 | \$ -        | \$ 13,000 | \$ 105,000 | \$ -   | \$ -   | \$ -   | \$ -   |
| Enhanced                                                                                |                                                                                                                                                                                                                                                                                 | Enhanced    |           |            |        |        |        |        |
| All activities from Recommended tier                                                    | Same assumptions as Recommended tier.                                                                                                                                                                                                                                           | \$ -        | \$ 13,000 | \$ 105,000 | \$ -   | \$ -   | \$ -   | \$ -   |
| Enhanced Tier Total                                                                     |                                                                                                                                                                                                                                                                                 | \$ -        | \$ 13,000 | \$ 105,000 | \$ -   | \$ -   | \$ -   | \$ -   |

| Staff (FTE) |        |        |        |        |        |        |
|-------------|--------|--------|--------|--------|--------|--------|
| Year 1      | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
| 2020        | 2021   | 2022   | 2023   | 2024   | 2025   | 2026   |
| Minimum     |        |        |        |        |        |        |
|             | 0.02   |        |        |        |        |        |
|             |        | 0.02   |        |        |        |        |
|             |        | 0.10   |        |        |        |        |
|             |        |        |        | 0.20   |        |        |
| 0.02        | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   |
| 0.02        | 0.04   | 0.14   | 0.02   | 0.22   | 0.02   | 0.02   |
| Recommended |        |        |        |        |        |        |
| 0.02        | 0.04   | 0.14   | 0.02   | 0.22   | 0.02   | 0.02   |
|             | 0.10   |        |        |        |        |        |
|             | 0.06   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   |
| 0.02        | 0.20   | 0.15   | 0.03   | 0.23   | 0.03   | 0.03   |
| Enhanced    |        |        |        |        |        |        |
| 0.02        | 0.20   | 0.15   | 0.03   | 0.23   | 0.03   | 0.03   |
| 0.02        | 0.20   | 0.15   | 0.03   | 0.23   | 0.03   | 0.03   |

| Table E-10. Summary of Outside Support and Equipment Cost. |        |           |           |          |          |          |          |
|------------------------------------------------------------|--------|-----------|-----------|----------|----------|----------|----------|
| Tier of Service                                            | Year 1 | Year 2    | Year 3    | Year 4   | Year 5   | Year 6   | Year 7   |
|                                                            | 2020   | 2021      | 2022      | 2023     | 2024     | 2025     | 2026     |
| Minimum Tier Total                                         | \$0    | \$75,000  | \$113,000 | \$0      | \$0      | \$0      | \$0      |
| Recommended Tier Total                                     | \$0    | \$166,000 | \$153,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 |
| Enhanced Tier Total                                        | \$0    | \$166,000 | \$153,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 |



| Table E-11. Summary of Staff Hours (FTE). |        |        |        |        |        |        |        |
|-------------------------------------------|--------|--------|--------|--------|--------|--------|--------|
| Tier of Service                           | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
|                                           | 2020   | 2021   | 2022   | 2023   | 2024   | 2025   | 2026   |
| Minimum Tier Total                        | 0.02   | 1.84   | 1.88   | 2.09   | 2.29   | 2.09   | 2.09   |
| Recommended Tier Total                    | 0.02   | 3.68   | 3.86   | 4.58   | 4.78   | 4.58   | 4.58   |
| Enhanced Tier Total                       | 1.02   | 4.68   | 4.86   | 5.58   | 5.78   | 5.58   | 5.58   |

## **APPENDIX F**

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### **Financial Analysis**

## **APPENDIX F-1**

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### **Original Stormwater Utility Rate Study**

# City of Lacey

## Stormwater Utility Rate Study

FINAL REPORT  
June 2020

Washington  
7525 166th Avenue NE, Ste. D215  
Redmond, WA 98052  
425.867.1802  
Oregon  
4000 Kruse Way Pl., Bldg. 1, Ste 220  
Lake Oswego, OR 97035  
503.841.6543  
Colorado  
1320 Pearl St, Ste 120  
Boulder, CO 80302  
719.284.9168  
[www.fcsgroup.com](http://www.fcsgroup.com)

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**FCS GROUP**  
Solutions-Oriented Consulting



June 12, 2020

Doug Christenson  
Water Resources Engineer  
City of Lacey, WA  
420 College Street SE  
Lacey, WA 98503

Subject: Stormwater Utility Rate Study in Support of the 2020 Stormwater Comprehensive Plan

Dear Mr. Christenson:

FCS GROUP is pleased to submit this report documenting the Stormwater Rate Study conducted for the City of Lacey. The recommended revenue increase needs are shown below; the 2020 increase was adopted by City Council in November of 2019, via *Ordinance No. 1556*.

| Summary of Results    | 2020<br>(Adopted) | 2021  | 2022  | 2023  | 2024  | 2025  |
|-----------------------|-------------------|-------|-------|-------|-------|-------|
| Annual Rate Increases | 4.50%             | 4.50% | 4.50% | 4.50% | 4.50% | 4.50% |

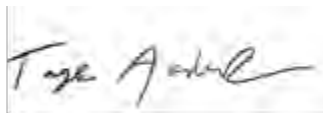
These increases are forecast to generate the revenue needed to fully fund the utility on a standalone basis, considering operating and maintenance expenditures, fiscal policy achievement, and the programmatic, staffing, and capital project needs identified in the City's Stormwater Comprehensive Plan. The detailed methodologies used to derive the revenue needs are included in this report.

It has been a pleasure to work with City staff on this effort. Please let us know if you have any questions or need additional information. John can be reached at (425) 336-1865 or [JohnG@fcsgroup.com](mailto:JohnG@fcsgroup.com).

Sincerely,



John Ghilarducci  
Project Principal



Tage Aaker  
Project Manager



Amanda Levine  
Analyst

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# Section I. INTRODUCTION

## Utility Background

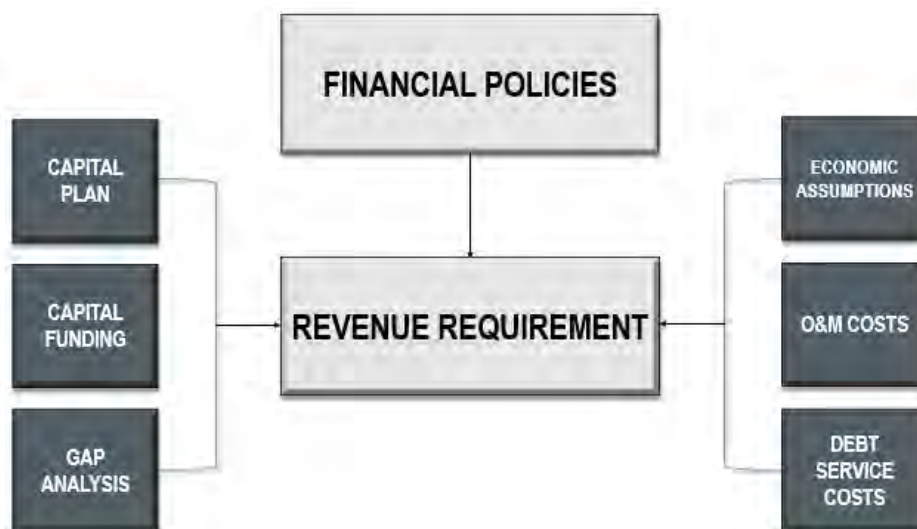
In 1985, the City of Lacey (City) formed a stormwater utility because of the increasing need to manage surface water. As noted in the City’s Stormwater Comprehensive Plan (SCP), “The City’s stormwater utility manages a large and complex storm drainage system in the public right-of-way. This storm drainage system is important to protecting public and private property, ensuring public safety, and providing flow control and water quality treatment to stormwater runoff before it discharges to receiving waters.” The utility is responsible for 6,150 catch basins and storm drains, 135 miles of storm system pipe, 83 outfalls, and many other elements as noted in Table 2-1 of the SCP.

Monthly service charges are collected from properties within the City limits to provide resources to plan, manage, design, construct, maintain, and upgrade the City’s system. The City of Lacey contracted with FCS GROUP to perform a stormwater utility rate study, the purpose of which is to ensure the City has the resources to continue to provide this valuable service into the future.

## Rate Study

The main purpose of this rate study is to develop a funding plan (“revenue requirement”) for the City’s stormwater utility for the 2020-25 study period. This study period aligns with the capital improvement program (CIP) identified in the City’s SCP. The revenue requirement identifies the total revenue needed to fully fund the utility on a standalone basis considering current financial obligations and future capital expenditures identified in the City’s CIP. The revenue requirement also incorporates additional programmatic and staffing needs resulting from a gap analysis performed by Herrera Environmental Consultants, Inc. (Herrera), which was further refined and documented in the Draft SCP. Revenue increases are applied “across-the-board” for the utility; there were no rate design changes incorporated in this rate study.

Exhibit 1: Revenue Requirement Overview



## Section II. FISCAL POLICIES

---

The basic framework for evaluating utility revenue needs includes sound fiscal policies. Several policy topics are important to consider further as part of managing the finances of the stormwater utility, including operating reserves, capital reserves, debt service coverage, and rate funded capital.

### Operating Reserves

An operating reserve is designed to provide a liquidity cushion; it protects the utility from the risk of short-term variation in the timing of revenue collection or payment of expenses. City Resolution No. 992, which documents City-adopted fiscal policies, states there needs to be at least two months' worth of operating revenue (excluding one-time revenues) in each utility's operating fund. Based on this adopted policy, the forecast targets an operating reserve for the stormwater utility of between two and three months' worth of annual rate revenues.

**Recommended Policy:** Achieve a year-end minimum balance target of between **60-90 days (16%-25%)** of total annual operating revenues. This equates to a range of between **\$675,000-\$1 million** in 2020 based on the 2020 forecasted annual rate revenue of \$4,100,000.

### Capital Reserve

The capital reserve provides a source of emergency funding for unexpected asset failures or other unanticipated capital needs. It can also help the utility address cash flow issues related to capital projects. Given these different purposes, there are a variety of potential benchmarks for setting a minimum balance for this reserve. Some potential options include: a percentage (commonly 1 – 2%) of the original cost of total fixed assets; a rolling multi-year average of capital improvement program costs; or an amount sufficient to fund an equipment failure. This capital reserve policy is not intended to guard against catastrophic system failure or extreme acts of nature.

**Recommended Policy:** A *minimum* capital ending fund balance target of **1% of fixed assets** (non-depreciated original cost of construction) is recommended. This equates to **\$640,000** based on a fixed asset inventory totaling approximately \$64 million as of the beginning of 2020. The reserve increases as the City executes the CIP, thereby adding fixed assets to the utility. Capital reserves larger than this may be prudent if the City is saving for future capital projects that cannot be funded with same-year rate revenues.

### Debt Service Coverage

Debt service coverage is typically a requirement associated with revenue bonds and some State loans, and it is an important benchmark to measure the riskiness of the utility's capital funding plans. Coverage is most easily understood as a factor applied to annual bonded debt service. If a utility sells revenue bonds, a coverage requirement of 1.20 means that the utility agrees to collect enough revenue to meet operating expenses and not only pay debt service but collect an additional 20% increment above bonded debt service.

The extra revenue is a financial cushion that makes bondholders more confident that debt service will be paid on time. The extra revenue can be used for capital expenditures, to build reserves for future



asset replacement, or for debt service on subordinate debt. Achieving a bonded debt service coverage level greater than the minimum required level is a positive signal that bond rating agencies notice, and it can result in more favorable terms if the utility needs to go to the market to sell bonds.

**Recommended Policy:** While 1.20 is the legal minimum coverage for the City’s 2013 revenue bonds—the City’s only stormwater utility related debt—we recommend a target coverage of at least 1.50 to 2.00. Throughout the forecast, a debt service coverage of 6.20 or greater is achieved.

## Rate Funded Capital

Rate funded capital is the funding of long-term infrastructure replacement needs through a regular (annual) and predictable rate provision. Most commonly, utilities that have addressed replacement funding needs have used historical (original cost) depreciation expense as the basis for a reasonable level of reinvestment in the system. This strategy can help minimize a utility’s reliance on debt.

**Recommended Policy:** The City desires to fund its capital program without relying on debt, and instead plans to rely on a mix of existing reserves and annual rate funded capital. Therefore, the utility should strive to generate revenues to cover operating costs, existing debt service, and the approximate annual average capital program. Any funding deficit between annual capital expenditures and annual rate funded capital must be covered by drawing down capital reserves. The recommended rate strategy allows the utility to cash-fund nearly \$900,000 of capital projects per year by 2025 compared to average capital expenditures of \$1.1 million per year.

While it is the City’s written policy to fund annual depreciation expense (\$1.85 million in 2018 for the stormwater utility) it appears unnecessary to fund that amount each year in the near-term since annual capital expenditures are only \$1.1 million per year.

Setting aside \$1.85 million per year would add roughly \$750,000 per year to the already solid cash position of the utility’s capital reserve. The City should reevaluate whether or not funding full depreciation expense is advisable during subsequent rate evaluations, taking into consideration prudent levels of annual capital expenditures in the near and long-term planning horizon.

**Exhibit 2** provides a summary of the recommended fiscal policies for the stormwater utility.

Exhibit 2: Summary of Fiscal Policies

| Policy                | Recommended Target                                                                                                            |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Operating Reserve     | 60-90 days of operating revenues (16%-25%)                                                                                    |
| Capital Reserve       | A minimum of 1% of the original cost of fixed assets                                                                          |
| Debt Service Coverage | If debt is issued, an internal policy target of at least 1.50 to 2.00x is prudent                                             |
| Rate Funded Capital   | Set rates to allow the utility to cash fund its capital program, to be supplemented by existing capital reserves as available |

## Section III. REVENUE REQUIREMENT

This section presents the revenue requirement analysis results for the stormwater utility, as summarized in **Exhibit 3**. The 4.5% increase for 2020 has already been adopted by the City in *Ordinance No. 1556*, provided as **Appendix V.B.** to this report.

As mentioned previously, the revenue requirement analysis considers fiscal policies, operating and maintenance expenditures, additional programmatic and staffing needs identified in the recommended level of service in the Draft SCP, existing debt service, and capital expenditures from the CIP.

Exhibit 3: Summary Results of Revenue Requirement Forecast

| Summary of Results    | 2020<br>(Adopted) | 2021  | 2022  | 2023  | 2024  | 2025  |
|-----------------------|-------------------|-------|-------|-------|-------|-------|
| Annual Rate Increases | 4.50%             | 4.50% | 4.50% | 4.50% | 4.50% | 4.50% |

### III.A. ECONOMIC & INFLATION FACTORS

The operating and maintenance expenditure forecast largely relies on the City's 2020 adopted budget for the stormwater operating fund (Fund 403). The line items in the budget are then adjusted each year by utilizing one of the following applicable factors:

- General Cost Inflation – assumed to be 2.5 percent per year based on both the Washington State Economic & Revenue Forecast Council projection for the Consumer Price Index as well as the recent historical performance of the Seattle-Tacoma-Bellevue Consumer Price Index.
- Construction Cost Inflation – assumed to be 3.0 percent per year based on the Engineering News-Record Construction Cost Index (20-City Average).
- Taxes – State Business and Occupation tax rate of 1.5 percent; City utility tax rate of 6.0 percent. Note that this 6.0 percent utility tax is applied as a markup on the utility bill above the stated rates shown in **Exhibit 13**.
- Personnel Cost Inflation – based on Employment Cost Indices from the U.S. Bureau of Labor Statistics.
  - » Labor Cost Inflation: assumed to be 2.5 percent per year.
  - » Benefits Cost Inflation: assumed to be 3.5 percent per year.
- Fund Earnings – assumed to be 0.25 percent per year based on input from City staff. Fund earnings have decreased significantly since March 2020 due to actions taken by the Federal Reserve System in response to the COVID-19 pandemic.
- Customer Account Growth – assumed to be 0.5 percent per year, based on discussions with the City staff at the time of analysis.

### III.B. FUND BALANCES

The stormwater utility's operating activity is tracked in Fund 403 and its capital activity is tracked in Fund 412. The starting 2020 balance for Fund 403 totaled \$2,798,566. For this analysis, 90-days' worth of operating revenues was set aside for the operating reserve minimum balance, which is approximately \$1,000,000 based on forecasted operating revenues for 2020. The balance exceeding this minimum was assumed to be available for capital expenditures as shown in **Exhibit 4**.

Exhibit 4: Operating Fund Balance Calculations (Fund 403)

| Fund 403          | Source             | 1/1/2020 Balance | Setting the Operating Reserve                                                                                                      |
|-------------------|--------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Operating Reserve | Cash               | \$2,462,770      | Operating Reserve: \$4,100,000 * 90/365<br>Rounded: \$1,000,000<br>Available for Capital: \$2,798,566 - \$1,000,000<br>\$1,798,566 |
|                   | Cash/ Money Market | \$335,796        |                                                                                                                                    |
|                   | Total              | \$2,798,566      |                                                                                                                                    |

The starting 2020 balance for Fund 412 totaled \$3,639,538. When combined with the reserves available for capital from Fund 403, \$5.4 million was assumed to be available for capital expenditures as shown in **Exhibit 5**.

Exhibit 5: Capital Fund Balance Calculations (Fund 412)

| Fund 412        | Source             | 1/1/2020 Balance | Available for Capital                                                         |
|-----------------|--------------------|------------------|-------------------------------------------------------------------------------|
| Capital Reserve | Cash               | \$3,116,620      | Fund 403 above 90-days: \$1,798,566<br>Fund 412: \$3,639,538 =<br>\$5,438,104 |
|                 | Cash/ Money Market | \$522,918        |                                                                               |
|                 | Total              | \$3,639,538      |                                                                               |

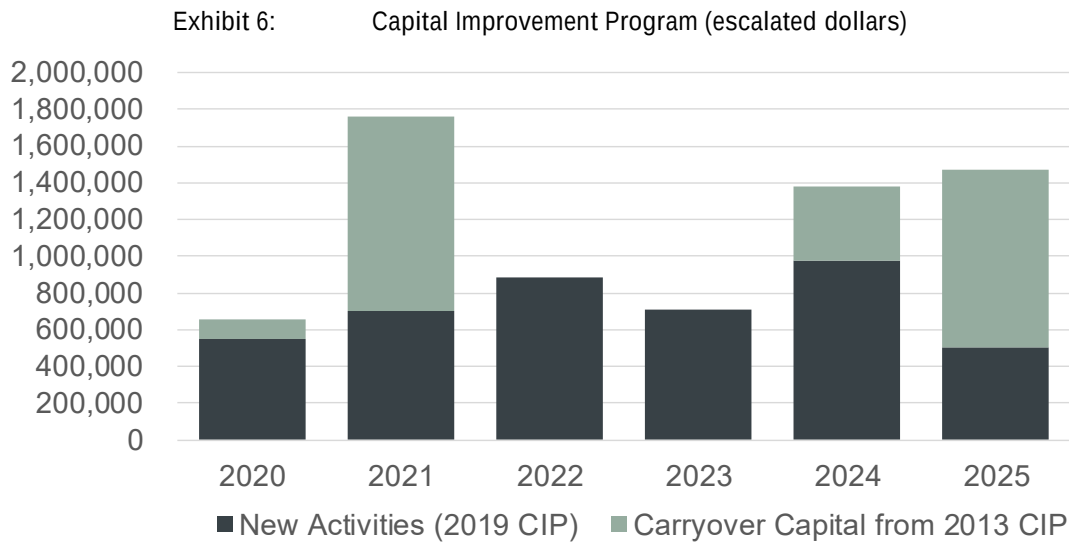
### III.C. EXISTING DEBT OBLIGATIONS

The City has only one existing debt obligation related to the stormwater utility: the 2013 Revenue Bond. The stormwater utility's share is 16.8% and the average principal plus interest payment is approximately \$100,000 per year – the final payment for this loan will be made in 2033.

### III.D. CAPITAL EXPENDITURE FORECAST

The 2020-25 CIP was provided by Herrera. Costs were provided by project, by year, and are in 2019 dollars. To estimate the actual spending by year, costs are escalated to the estimated year of construction. **Exhibit 6** shows the planned annual capital spending, with cost escalation. The graph is split into two colors to represent two types of capital projects represented in the utility's capital improvement program:

- The dark blue bar represents the "New Activities" from the 2020 SCP; and
- The green bar represents the "Carryover Capital from 2013 CIP" list.



A few summary notes related to the capital plan are provided below:

- The 2020-25 spending plan totals \$6.2 million (\$6.9 million with cost escalation)
- The average annual escalated CIP is \$1.1 million; the highest spending is in 2021 (\$1.8 million).

**Exhibit 7** lists the “Carryover Projects” while **Exhibit 8** lists the “New Activities.” Tables include the project name and ID number, the uninflated cost estimates (in \$1,000s) and the estimated year(s) of design, permitting, and construction for each project. Note that the “2026+” column contains projects to be completed outside of the 2020-25 study period.

Exhibit 7: Carryover Projects from 2013 CIP: Capital Project Cost & Timing in \$1,000s (2019 Dollars)

| ID    | Description                                                          | Total   | 2020  | 2021    | 2022 | 2023 | 2024  | 2025  | 2026 +  |
|-------|----------------------------------------------------------------------|---------|-------|---------|------|------|-------|-------|---------|
| 13-7  | Diamond Stormwater Alternative                                       | \$380   | \$ -  | \$-     | \$-  | \$-  | \$-   | \$80  | \$300   |
| 13-9  | Clearbrook Drainage System Improv.                                   | \$480   |       |         |      |      |       | 80    | 400     |
| 13-10 | Homann Area System Rehabilitation                                    | \$320   |       |         |      |      | 120   | 200   |         |
| 13-11 | 1010 Midway Storm Improv.                                            | \$50    |       |         |      |      |       |       | 50      |
| 13-12 | Belair-Impala Storm System Installation                              | \$1,100 | 100   | 1,000   |      |      |       |       |         |
| 13-14 | Alder and Gemini Drainage System Improv.                             | \$520   |       |         |      |      | 70    | 450   |         |
| 13-15 | White Fir Stormwater Installation                                    | \$420   |       |         |      |      |       |       | 420     |
| 13-16 | 5 <sup>th</sup> Ct SE and 5 <sup>th</sup> Way Easement Storm Improv. | \$760   |       |         |      |      |       |       | 760     |
| 13-17 | Shady Lane Treatment Facility Improv.                                | \$160   |       |         |      |      | 160   |       |         |
|       | Carryover Projects Total                                             | \$4,190 | \$100 | \$1,000 | \$-  | \$-  | \$350 | \$810 | \$1,930 |



Exhibit 8: New Activities: Capital Project Cost & Timing in \$1,000s (2019 Dollars)

| ID    | Description                                       | Total   | 2020  | 2021    | 2022  | 2023  | 2024    | 2025    | 2026<br>+ |
|-------|---------------------------------------------------|---------|-------|---------|-------|-------|---------|---------|-----------|
| 19-1  | Westminster Pond Modification                     | \$340   | \$ -  | \$ -    | \$60  | \$280 | \$-     | \$-     | \$-       |
| 19-2  | 26th Loop Conveyance                              | \$510   |       |         |       | 100   | 410     |         |           |
| 19-3  | Stormwater Design Manual (SDM) Update             | \$180   | 50    | 60      | 70    |       |         |         |           |
| 19-4  | Woodland Creek Stormwater Treatment Facility      | \$480   |       | 50      | 430   |       |         |         |           |
| 19-5  | Woodland Creek Community Park Habitat Restoration | \$50    |       | 50      |       |       |         |         |           |
| 19-6  | Stormwater Management Action Planning (SMAP)      | \$100   |       |         | 100   |       |         |         |           |
| 19-7  | Regional Water Quality Facility Program           | \$200   |       |         |       | 100   | 100     |         |           |
| 19-8  | Infiltration Retrofit Program                     | \$200   |       |         |       |       | 100     | 100     |           |
| 19-9  | Miscellaneous Storm System Improvements           | \$900   | 150   | 150     | 150   | 150   | 150     | 150     |           |
| 19-10 | Stormwater Comprehensive Plan (SCP) Update        | \$250   |       |         |       |       | 80      | 170     |           |
| 19-11 | Land Purchase for Future Facility Improvements    | \$350   |       | 350     |       |       |         |         |           |
|       | CIP Projects already underway in 2020             | \$336   | 336   |         |       |       |         |         |           |
|       | New Activities Projects Total                     | \$3,896 | \$536 | \$660   | \$810 | \$630 | \$840   | \$420   | \$ -      |
|       | Grand Total of Exhibit 7 & 8                      | \$8,086 | \$636 | \$1,660 | \$810 | \$630 | \$1,190 | \$1,230 | \$1,930   |

## III.E. REVENUE REQUIREMENT

### III.E.1. Methodology

The revenue requirement analysis evaluates the sufficiency of the utility's revenues against its financial obligations in the context of two sufficiency tests described below:

- **Cash Flow Test.** The cash flow test determines whether or not the utility's annual revenues are sufficient to cover the known cash requirements for each year of the forecast. The City can temporarily waive the requirements of the cash flow test as part of a conscious decision to phase in rate increases, as long as its operating reserve balance is sufficient to absorb the resulting cash-flow deficit.
- **Coverage Test.** The coverage test evaluates the utility's ability to meet applicable bond coverage requirements. As this test focuses on annual financial performance, it precludes the use of

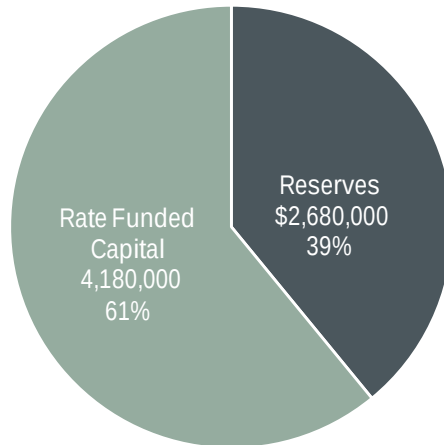
reserves to cover shortfalls. Since the City has revenue bonds outstanding, the coverage test must always be met, as failure to do so may result in a downgrading of the City's credit rating.

In determining the annual revenue requirement, the test with the greatest deficiency generally drives the rate increase in any given year. For this forecast, the cash flow sufficiency test is always greater than the debt service coverage test. As previously noted, with the recommended rate increases, a comfortable debt service coverage ratio of 6.20 or greater is achieved throughout the forecast.

### III.E.2. Capital Funding Strategy

As previously mentioned, 2020-25 capital spending totals \$6.2 million. After applying estimated cost escalation, capital spending through 2025 totals \$6.9 million. Of that \$6.9 million total, \$2.7 million is expected to be funded with existing reserves accumulated as of the beginning of 2020 and \$4.2 million is expected to be funded with rate revenues set aside for capital during the six-year planning period. The capital funding strategy includes no debt financing as shown in **Exhibit 9**.

Exhibit 9: Capital Funding Strategy 2020-25



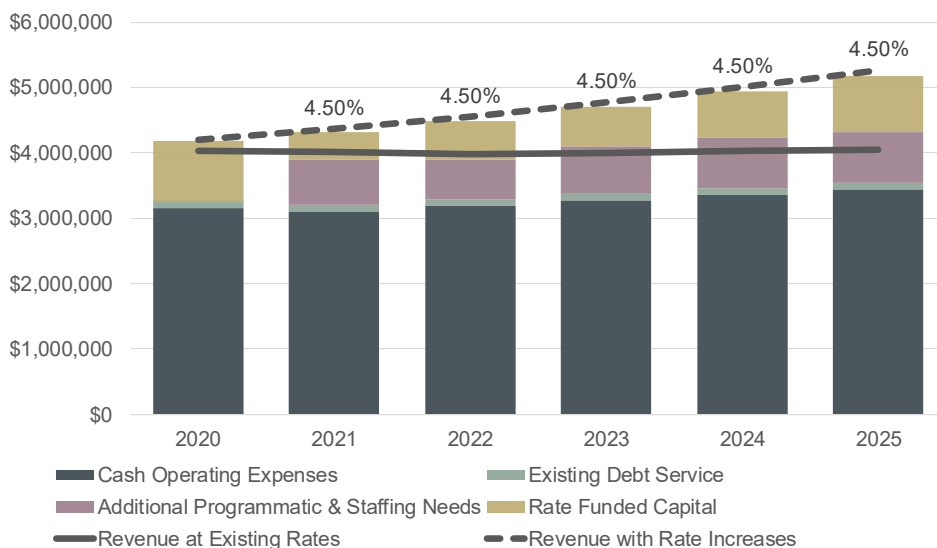
### III.E.3. Revenue Requirement

**Exhibit 10** graphically represents the revenue requirement forecast through 2025. The bars represent costs of the utility such as operating expenses, existing debt service and annual rate revenue earmarked for capital projects. The solid grey line represents revenue at existing 2020 rates and the dashed line shows forecasted revenue with rate increases. Other observations are provided below:

- Solid grey line: Revenue at existing rates.
  - » Rate revenue is expected to be roughly \$4 million in 2020 and is expected to grow at 0.50% per year with customer growth.
  - » The City's 2020 rate revenue is sufficient to cover operating expenditures, debt service, and approximately \$1 million in capital projects and/or capital reserve contributions.
- Dashed grey line: Revenues with rate increases.
  - » As the costs associated with the additional programmatic and staffing needs are incorporated into the forecast starting in 2021, rate revenue must increase to continue to allow the utility to cash-fund capital projects.
  - » Rate revenues are expected to grow to just over \$5.2 million per year by 2025.

- Dark blue bar: Cash operating expenses.
  - » Operating expenses are based on the adopted 2020 budget and increase with the annual cost escalation assumptions previously discussed.
  - » This bar does not include the costs for additional programmatic and staffing needs, which make up a majority of the operating expense increases during the forecast.
- Light green bar: Existing debt service.
  - » The stormwater utility's share of the 2013 revenue bond debt service is approximately \$100,000 per year and is expected to be fully repaid in 2033.
- Purple bar: Recommended Level of Service from the Draft SCP.
  - » Operating expenses increase significantly in 2021 to reflect findings from the gap analysis performed by Herrera and recommendations of the Draft SCP, which identified programmatic and staffing requirements in addition to the costs included in the adopted 2020 budget.
  - » Programmatic requirements (\$70,000 per year on average) and staffing requirements will help support different programs including surface water quality improvement, groundwater quality protection, public participation, pollution source control, infrastructure operations and maintenance, development practices, and stormwater planning and administration. Based on the recommendations of the Draft SCP, 3.7 FTEs will be added in 2021, and an additional 0.9 FTE will be added in 2023. City staff provided low- and high-end salary and benefit estimates per FTE. The high-end estimates were used in the analysis to be conservative; this resulted in a range of \$133,000-\$158,000 per FTE depending on the position (plus cost escalation).
- Gold bar: Rate funded capital.
  - » In 2020, roughly \$940,000 is available for rate funded capital. In 2021, there is a decrease due to increased operating expenses from the Draft SCP's recommended level of service. Approximately \$415,000 is available in 2021 for rate funded capital.
  - » This amount increases gradually after 2021 as revenues increase with rate increases. By 2025, \$870,000 per year would be available for capital projects.

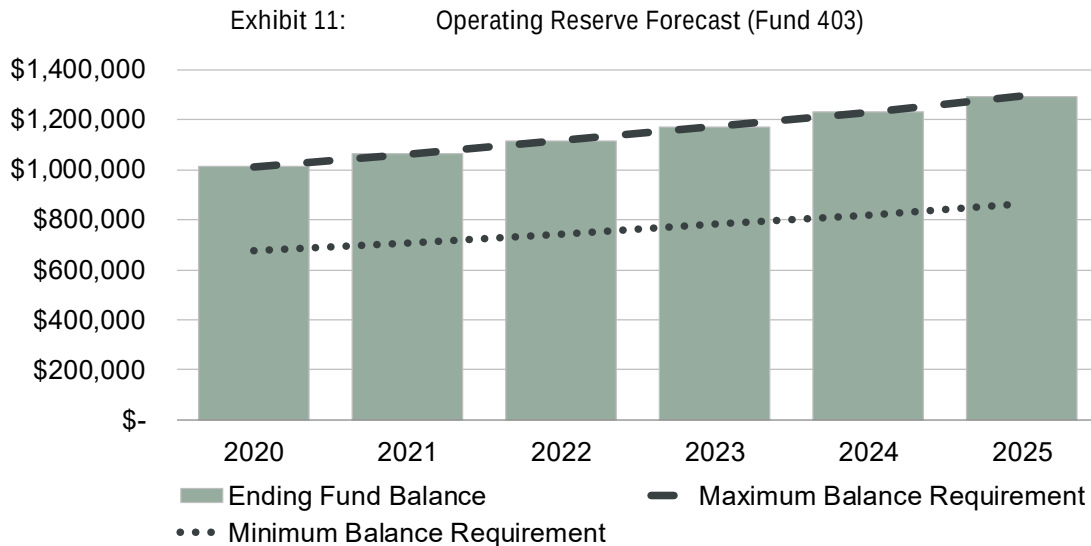
Exhibit 10: Annual Stormwater Utility Revenue Requirement Forecast 2020-25



### III.E.4. Forecasted Reserve Level

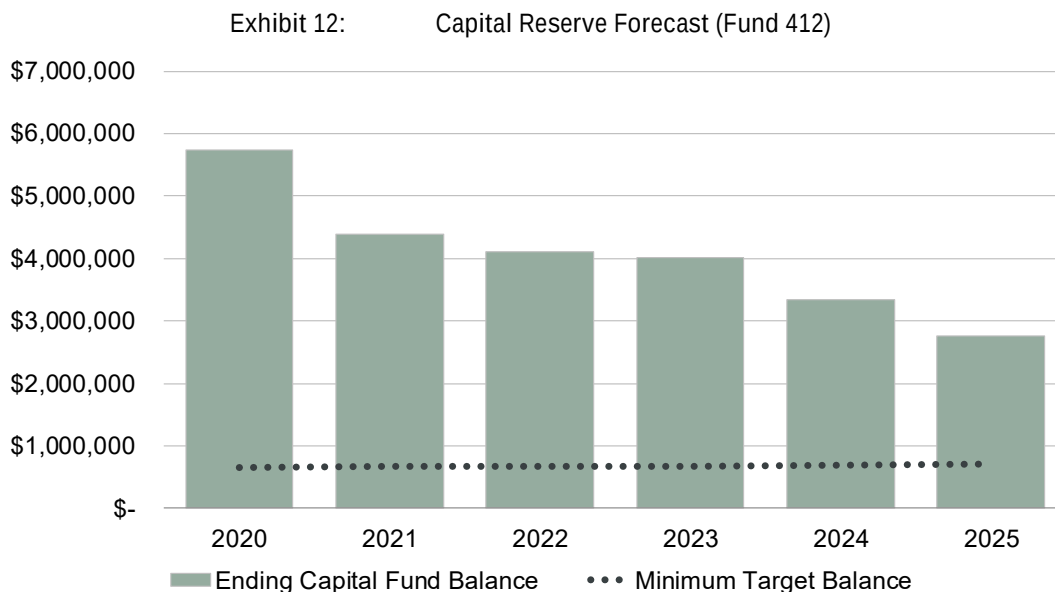
#### Operating Reserve

The target operating reserve is equal to 60-90 days of operating revenues. **Exhibit 11** shows that in each year of the forecast, the utility is expected to have 90 days of cash in the operating reserve. This target increases as rate revenues increase with annual rate adjustments.



#### Capital Reserve

The recommended policy for the capital reserve is to achieve a year-end balance of at least 1.0 percent of the original cost of fixed assets. The projected ending capital fund balance for 2020 is just under \$6 million. As shown in **Exhibit 12**, this balance is forecast to be gradually drawn down to below \$3 million by 2025, as capital expenditures slightly outpace annual rate funded capital.





## Section IV. CONCLUSION

### Revenue Requirement & Rate Schedule

To cover the new forecasted financial obligations of the stormwater utility, an annual rate increase of 4.5 percent is needed each year in the planning period of 2021-2025. A rate increase of 4.5 percent has already been adopted for 2020. The recommended rate increases allow the utility to accomplish the following:

- Continue to fund existing operating expenses, plus cost escalation;
- Allow the utility to fund an average of \$730,000 per year in additional programmatic and staffing costs to meet the programmatic and staffing needs identified in the Draft SCP;
- Allow the utility to fund \$6.9 million in capital projects from 2020-2025 (escalated dollars) without relying on debt;
- Generate nearly \$900,000 per year for rate-funded capital by 2025; and
- Maintain utility reserves at a healthy level throughout the forecast.

**Exhibit 13** shows the proposed rate schedule with “across-the-board” increases for all customers.

Exhibit 13: Recommended Rate Schedule

| Summary of Results                         | 2020<br>(Adopted) | 2021     | 2022     | 2023     | 2024     | 2025     |
|--------------------------------------------|-------------------|----------|----------|----------|----------|----------|
| Annual Increases                           | 4.50%             | 4.50%    | 4.50%    | 4.50%    | 4.50%    | 4.50%    |
| Residential Charges (per developed parcel) |                   |          |          |          |          |          |
| Single-Family Residential                  | \$11.87           | \$12.41  | \$12.96  | \$13.55  | \$14.16  | \$14.79  |
| Duplex-Family Residential                  | \$23.74           | \$24.81  | \$25.93  | \$27.09  | \$28.31  | \$29.59  |
| Non-Residential (per gross acre)           |                   |          |          |          |          |          |
| Very Light (0% - 10%)                      | \$5.45            | \$5.70   | \$5.95   | \$6.22   | \$6.50   | \$6.79   |
| Moderately Light (>10% - 25%)              | \$19.69           | \$20.57  | \$21.50  | \$22.47  | \$23.48  | \$24.53  |
| Light (>25% - 40%)                         | \$38.12           | \$39.84  | \$41.63  | \$43.50  | \$45.46  | \$47.51  |
| Moderate (>40% - 55%)                      | \$58.11           | \$60.72  | \$63.46  | \$66.31  | \$69.30  | \$72.42  |
| Moderately Heavy (>55% - 70%)              | \$79.11           | \$82.67  | \$86.39  | \$90.27  | \$94.34  | \$98.58  |
| Heavy (>70% - 85%)                         | \$102.05          | \$106.65 | \$111.45 | \$116.46 | \$121.70 | \$127.18 |
| Very Heavy (>85% - 100%)                   | \$126.26          | \$131.94 | \$137.88 | \$144.08 | \$150.56 | \$157.34 |

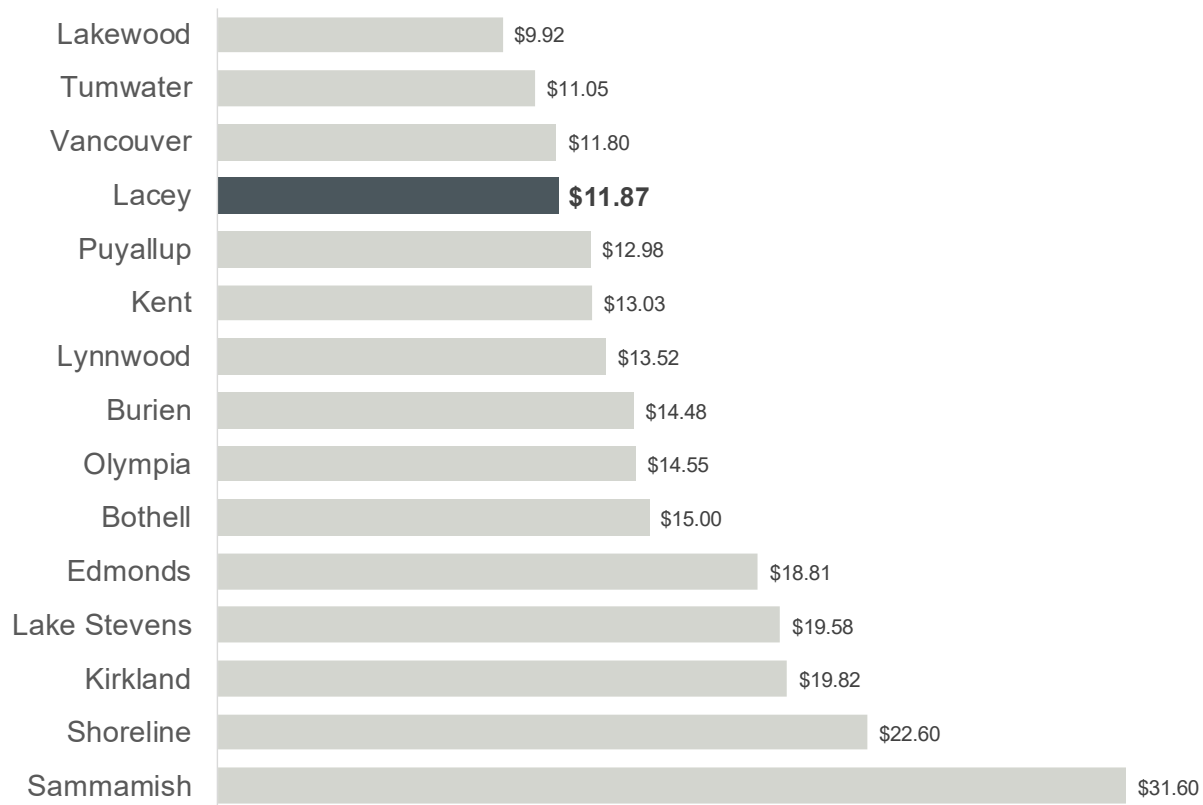
## Single-Family Residential Rate Comparison

As a resource to the City and its customers, a rate survey of comparable utilities was performed.

**Exhibit 14** shows each jurisdiction's 2020 monthly single-family residential (SFR) rate. Note that each jurisdiction has a unique set of geographic traits, customers, and system characteristics that can have a significant impact on rates. However, all jurisdictions included in the rate comparison are Western Washington cities that are all subject to the National Pollutant Discharge Elimination System (NPDES) Phase II Municipal Stormwater Permit.

Some cities embed their city utility tax in their rates, while others (like Lacey) separately itemize the tax on customer bills above the stated rates. We do not have data on the billing practices of other cities, so there may or may not be a tax embedded in other utility rates. The City utility tax was excluded from the City of Lacey rates.

Exhibit 14: Monthly 2020 Single-Family Residential Stormwater Rates



## Updating This Study's Findings

It is recommended that the City revisit the study findings during the forecast period to check that the assumptions used are still appropriate and that no significant changes have occurred that would alter the results of the study. The City should use the study findings as a living document, routinely comparing the study outcomes to actual revenues and expenses. Any significant or unexpected changes may require adjustments to the rate strategy recommended in this report.

## Rate Structure Considerations for the Future

While the City's existing rate structure charges a higher rate for higher densities of development (percent coverage), the actual rate per unit of impervious surface area changes very little from class to class (midpoint to midpoint). The structure also perpetuates inequities among non-SFR customers at the extreme ends of each class range. For example, a one-acre parcel that is 54% impervious would pay significantly less than a one-acre parcel that is 56% impervious, even though they have comparable amounts of impervious area. If two customers have similar amounts of impervious area, and thus similar contributions to the stormwater system, they should be charged similarly. An example of the inequity of the current system is shown below in **Exhibit 15**, where Parcel B has 4% more impervious area but is charged a monthly rate that is 36% higher because Parcel B falls within the 'Moderately Heavy' rate tier instead of the 'Moderate' rate tier.

Exhibit 15: Inequity Example #1 – Similar Customers Pay Different Rates

| Parcel | Gross Acres | Percentage Impervious | Impervious Square Feet | Impervious Rate Category | Monthly Rate |
|--------|-------------|-----------------------|------------------------|--------------------------|--------------|
| A      | 1.0         | 54%                   | 23,522                 | Moderate                 | \$58.11      |
| B      | 1.0         | 56%                   | 24,394                 | Moderately Heavy         | \$79.11      |
|        |             | Increase              | 4%                     |                          | 36%          |

Meanwhile, that same one-acre parcel that is 56% impervious would pay the same as a similarly sized property that is 70% impervious. If two parcels have significantly different amounts of impervious area, and thus significantly different contributions to the stormwater system, they should be charged quite differently. An example of this inequity is shown in **Exhibit 16**, where Parcel C has 25% more impervious area but pays the same rate as Parcel B.

Exhibit 16: Inequity Example #2 – Dissimilar Customers Pay the Same Rate

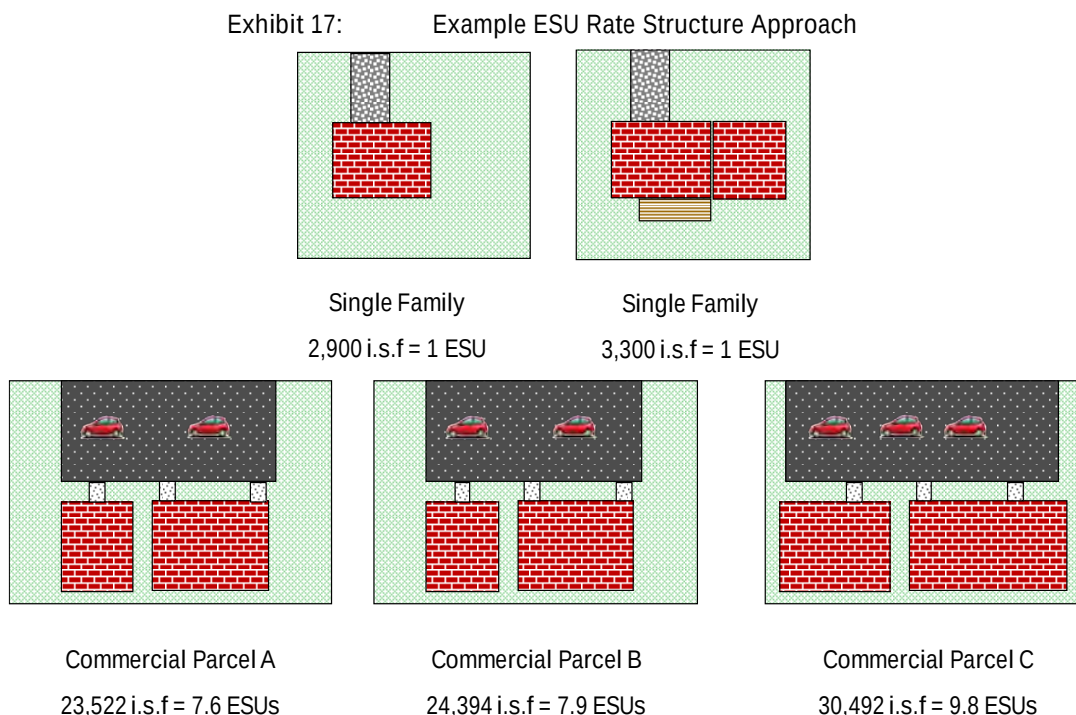
| Parcel | Gross Acres | Percentage Impervious | Impervious Square Feet | Impervious Rate Category | Monthly Rate |
|--------|-------------|-----------------------|------------------------|--------------------------|--------------|
| B      | 1.0         | 56%                   | 24,394                 | Moderately Heavy         | \$79.11      |
| C      | 1.0         | 70%                   | 30,492                 | Moderately Heavy         | \$79.11      |
|        |             | Increase              | 25%                    |                          | 0%           |

To address these inequities, it is recommended that the City consider an equivalent service unit (ESU) based approach sometime in the future. Under an ESU based approach, each non-SFR customer's bill is calculated based on the number of ESUs on the parcel. A uniform rate could

continue to be imposed on all SFR parcels regardless of impervious surface area, while the rate paid by non-SFR parcels would become more equitable.

With an ESU based approach, the rate is typically calculated as a dollar amount per ESU. One ESU is equal to the average impervious area found on an SFR parcel—for example: 3,100 impervious square feet. Note that a sampling analysis would be necessary to determine the average amount of impervious surface area on the City's SFR parcels, unless that data is already available.

**Exhibit 17** shows an illustration of how the ESU rate approach could apply to different properties.



The following observations are provided:

- Single-family residential parcels would still have a uniform, fixed monthly charge.
- Other developed parcels (commercial, multi-family, etc.): The charge for these customers would be based on the actual measured impervious surface area, expressed as a number of ESUs. In this example, one ESU is assumed to equal 3,100 impervious square feet.

**Exhibit 18** revisits the example parcels from **Exhibits 15** and **16**. Under the ESU approach, Parcels A and B would be assigned 7.6 and 7.9 ESUs respectively, while Parcel C would be assigned 9.8 ESUs. Under the ESU approach charges would be more equitable:

- Parcel B has 4% more impervious area than Parcel A and would be charged 4% more than Parcel A. Under the current system Parcel B pays 36% more than Parcel A, despite having similar impervious area.
- Parcel C has 25% more impervious area than Parcel B, and would be charged 25% more than Parcel B. Under the current system Parcel B and Parcel C pay the same, despite having significantly different impervious area.



Exhibit 18: Example Charges Under an ESU-Based Rate Structure

| Parcel | Gross Acres | Percentage Impervious | Impervious Square Feet | ESUs* | Monthly Charge** |
|--------|-------------|-----------------------|------------------------|-------|------------------|
| A      | 1.0         | 54%                   | 23,522                 | 7.6   | \$76             |
| B      | 1.0         | 56%                   | 24,394                 | 7.9   | \$79             |
| C      | 1.0         | 70%                   | 30,492                 | 9.8   | \$98             |

\* Hypothetical ESU value of 3,100 impervious square feet; assumes rounding to nearest 1/10<sup>th</sup>.

\*\* Assuming a hypothetical rate of \$10 per ESU for illustration purposes only.

## Section V. APPENDICES

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## V.A. RATE MODEL

| Rate Adjustment                     | 2020    | 2021    | 2022    | 2023    | 2024    | 2025    |
|-------------------------------------|---------|---------|---------|---------|---------|---------|
| Annual Increase (%)                 | 4.50%   | 4.50%   | 4.50%   | 4.50%   | 4.50%   | 4.50%   |
| Debt Service Coverage (bonded debt) | 10.44   | 5.72    | 7.35    | 7.58    | 8.59    | 10.25   |
| Single Family Monthly Charge        | \$11.87 | \$12.41 | \$12.96 | \$13.55 | \$14.16 | \$14.79 |
| Monthly Increase                    | \$0.51  | \$0.53  | \$0.56  | \$0.58  | \$0.61  | \$0.64  |

| Operating Activity & Reserve                   | 2020                | 2021                | 2022                | 2023                | 2024                | 2025                |
|------------------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| <b>Beginning Fund Balance</b>                  | <b>\$ 1,000,000</b> | <b>\$ 1,011,672</b> | <b>\$ 1,062,484</b> | <b>\$ 1,115,847</b> | <b>\$ 1,171,890</b> | <b>\$ 1,230,748</b> |
| <b>Revenue</b>                                 |                     |                     |                     |                     |                     |                     |
| 403-0000-343.51-01 Sales                       | \$ 4,102,893        | \$ 4,308,961        | \$ 4,525,379        | \$ 4,752,666        | \$ 4,991,368        | \$ 5,242,060        |
| 403-0000-345.83-00 Plan Checking Fees          | 4,069               | 4,069               | 4,069               | 4,069               | 4,069               | 4,069               |
| 403-0000-345.83-02 Inspection Services         | 14,634              | 14,634              | 14,634              | 14,634              | 14,634              | 14,634              |
| Street Sweeper Driver Grant                    | 81,017              | 41,642              | -                   | -                   | -                   | -                   |
| Investment Interest                            | 2,597               | 2,626               | 2,753               | 2,886               | 3,026               | 3,174               |
| <b>Total Revenues</b>                          | <b>\$ 4,205,209</b> | <b>\$ 4,371,932</b> | <b>\$ 4,546,835</b> | <b>\$ 4,774,255</b> | <b>\$ 5,013,098</b> | <b>\$ 5,263,936</b> |
|                                                |                     | 4.0%                | 4.0%                | 5.0%                | 5.0%                | 5.0%                |
| <b>Operating Expenditures</b>                  |                     |                     |                     |                     |                     |                     |
| <b>General Services</b>                        |                     |                     |                     |                     |                     |                     |
| 403-4201-538.10-01 Salaries - Regular          | \$ 353,645          | \$ 362,486          | \$ 371,548          | \$ 380,837          | \$ 390,358          | \$ 400,117          |
| 403-4201-538.10-05 Salaries - Overtime         | 1,000               | 1,025               | 1,051               | 1,077               | 1,104               | 1,131               |
| 403-4201-538.10-06 Salaries - Part-Time        | 953                 | 977                 | 1,001               | 1,026               | 1,052               | 1,078               |
| 403-4201-538.20-01 Employer Paid Benefits      | 156,102             | 161,566             | 167,220             | 173,073             | 179,131             | 185,400             |
| 403-4201-538.31-01 Office & Operating Supply   | 2,541               | 2,605               | 2,670               | 2,736               | 2,805               | 2,875               |
| 403-4201-538.31-02 Small Tools & Equipment     | 1,500               | 1,538               | 1,576               | 1,615               | 1,656               | 1,697               |
| 403-4201-538.31-17 Supplies - Uniform Purchase | 2,260               | 2,317               | 2,374               | 2,434               | 2,495               | 2,557               |
| 403-4201-538.31-27 Software Upgrade            | 5,260               | 5,392               | 5,526               | 5,664               | 5,806               | 5,951               |
| 403-4201-538.31-35 Replaced Equipment          | 15,000              | 15,375              | 15,759              | 16,153              | 16,557              | 16,971              |
| 403-4201-538.41-01 Prof. Svc - Other           | 15,759              | 16,153              | 16,557              | 16,971              | 17,395              | 17,830              |
| 403-4201-538.41-02 Prof. Svc - Engineering     | 275,136             | 282,014             | 289,065             | 296,291             | 303,699             | 311,291             |
| 403-4201-538.41-05 Prof. Svc - Audit           | 450                 | 461                 | 473                 | 485                 | 497                 | 509                 |
| 403-4201-538.41-15 Prof. Svc - Legal           | 2,200               | 2,255               | 2,311               | 2,369               | 2,428               | 2,489               |
| 403-4201-538.41-17 Prof. Svc - Water Resources | 564,024             | 578,125             | 592,578             | 607,392             | 622,577             | 638,141             |
| 403-4201-538.41-23 Prof. Svc - Local Monitor   | 40,000              | 41,000              | 42,025              | 43,076              | 44,153              | 45,256              |
| 403-4201-538.41-27 Prof. Svc - PIE Program     | 50,000              | 51,250              | 52,531              | 53,845              | 55,191              | 56,570              |
| 403-4201-538.41-32 Prof. Svc - Utility Locates | 725                 | 743                 | 762                 | 781                 | 800                 | 820                 |
| 403-4201-538.41-42 Illicit Discharge Detect.   | 9,000               | 9,225               | 9,456               | 9,692               | 9,934               | 10,183              |
| 403-4201-538.41-43 Analyze Stormwater Sample   | 10,000              | 10,250              | 10,506              | 10,769              | 11,038              | 11,314              |
| 403-4201-538.42-01 Telecommunications          | 2,500               | 2,563               | 2,627               | 2,692               | 2,760               | 2,829               |
| 403-4201-538.43-01 Transportation/Per Diem     | 2,228               | 2,284               | 2,341               | 2,399               | 2,459               | 2,521               |
| 403-4201-538.43-02 Dues, Subscriptions, Publ   | 173                 | 177                 | 182                 | 186                 | 191                 | 196                 |
| 403-4201-538.43-03 Registrations               | 2,818               | 2,888               | 2,961               | 3,035               | 3,111               | 3,188               |
| 403-4201-538.45-01 Equipment Rental            | 5,424               | 5,560               | 5,699               | 5,841               | 5,987               | 6,137               |
| 403-4201-538.45-02 IMS Rental                  | 35,330              | 36,213              | 37,119              | 38,047              | 38,998              | 39,973              |
| 403-4201-538.45-03 Copier Rentals              | 499                 | 511                 | 524                 | 537                 | 551                 | 565                 |
| 403-4201-538.46-01 Insurance - Liability       | 13,888              | 14,235              | 14,591              | 14,956              | 15,330              | 15,713              |
| 403-4201-538.46-02 Insurance - Fire/Property   | 377                 | 386                 | 396                 | 406                 | 416                 | 427                 |
| 403-4201-538.47-01 Utility - Electric          | 2,800               | 2,870               | 2,942               | 3,015               | 3,091               | 3,168               |
| 403-4201-538.47-02 Utility - City of Lacey     | 529                 | 542                 | 556                 | 570                 | 584                 | 599                 |
| 403-4201-538.47-03 Utility - Natural Gas       | 811                 | 831                 | 852                 | 873                 | 895                 | 918                 |
| 403-4201-538.47-07 Utility - Solid Waste       | 2,000               | 2,050               | 2,101               | 2,154               | 2,208               | 2,263               |
| 403-4201-538.48-01 Rep & Maint - Equipment     | 553                 | 567                 | 581                 | 596                 | 610                 | 626                 |
| 403-4201-538.49-06 Maintenance Contracts       | 1,018               | 1,043               | 1,070               | 1,096               | 1,124               | 1,152               |
| 403-4201-538.49-23 Custodial                   | 3,063               | 3,140               | 3,218               | 3,299               | 3,381               | 3,466               |
| 403-4201-538.49-25 Assessments/Taxes           | 20,000              | 20,500              | 21,013              | 21,538              | 22,076              | 22,628              |
| 403-4201-538.49-35 CDL - Physicals/Licenses    | 120                 | 123                 | 126                 | 129                 | 132                 | 136                 |
| 403-4201-538.49-43 Regional Monitoring Prog.   | 10,000              | 10,250              | 10,506              | 10,769              | 11,038              | 11,314              |
| 403-4201-538.49-44 Project Green               | 11,900              | 12,198              | 12,502              | 12,815              | 13,135              | 13,464              |
| 403-4201-538.50-90 Indirect Cost Plan Change   | 171,998             | 176,298             | 180,705             | 185,223             | 189,854             | 194,600             |
| 403-4201-538.60-01 Capital Outlays - Equipment | 4,280               | 4,387               | 4,497               | 4,609               | 4,724               | 4,842               |
| <b>Total General Services</b>                  | <b>\$ 1,797,864</b> | <b>\$ 1,844,372</b> | <b>\$ 1,892,097</b> | <b>\$ 1,941,071</b> | <b>\$ 1,991,329</b> | <b>\$ 2,042,903</b> |
|                                                |                     | 2.6%                | 2.6%                | 2.6%                | 2.6%                | 2.6%                |



| Operating Activity & Reserve           |                                 | 2020         | 2021         | 2022         | 2023         | 2024         | 2025         |
|----------------------------------------|---------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <b>Customer Service</b>                |                                 |              |              |              |              |              |              |
| 403-4202-514.10-01                     | Salaries - Regular              | \$ 7,768     | \$ 7,962     | \$ 8,161     | \$ 8,365     | \$ 8,574     | \$ 8,789     |
| 403-4202-514.20-01                     | Employer Paid Benefits          | 3,930        | 4,068        | 4,210        | 4,357        | 4,510        | 4,668        |
| 403-4202-514.31-01                     | Office & Operating Supply       | 200          | 205          | 210          | 215          | 221          | 226          |
| 403-4202-514.42-01                     | Telecommunications              | 50           | 51           | 53           | 54           | 55           | 57           |
| 403-4202-514.42-02                     | Communications - Postage        | 1,750        | 1,794        | 1,839        | 1,885        | 1,932        | 1,980        |
| 403-4202-514.45-02                     | IMS Rental                      | 5,994        | 6,144        | 6,297        | 6,455        | 6,616        | 6,782        |
| 403-4202-514.45-08                     | Lease Miscellaneous             | 500          | 513          | 525          | 538          | 552          | 566          |
| 403-4202-514.46-06                     | AWC-L & I Pool                  | 765          | 784          | 804          | 824          | 844          | 866          |
| 403-4202-514.49-01                     | Excise Taxes                    | 62,427       | 62,739       | 63,053       | 63,368       | 63,685       | 64,003       |
| 403-4202-514.49-01                     | Excise Taxes - on New Rate Rev. | 2,809        | 5,774        | 8,901        | 12,199       | 15,678       | 19,346       |
| 403-4202-514.49-02                     | Printing & Binding              | 500          | 513          | 525          | 538          | 552          | 566          |
| 403-4202-514.49-27                     | Bad Debt Expense                | 1,800        | 1,845        | 1,891        | 1,938        | 1,987        | 2,037        |
| Total Customer Service                 |                                 | \$ 88,493    | \$ 92,390    | \$ 96,469    | \$ 100,738   | \$ 105,206   | \$ 109,883   |
|                                        |                                 |              | 4.4%         | 4.4%         | 4.4%         | 4.4%         | 4.4%         |
| <b>Stormwater Facility Maintenance</b> |                                 |              |              |              |              |              |              |
| 403-4203-538.10-01                     | Salaries - Regular              | \$ 374,446   | \$ 383,807   | \$ 393,402   | \$ 403,237   | \$ 413,318   | \$ 423,651   |
| 403-4203-538.10-05                     | Salaries - Overtime             | 4,000        | 4,100        | 4,203        | 4,308        | 4,415        | 4,526        |
| 403-4203-538.10-06                     | Salaries - Part-Time            | 44,761       | 45,880       | 47,027       | 48,203       | 49,408       | 50,643       |
| 403-4203-538.20-01                     | Employer Paid Benefits          | 209,073      | 216,391      | 223,964      | 231,803      | 239,916      | 248,313      |
| 403-4203-538.31-01                     | Office & Operating Supply       | 35,040       | 35,916       | 36,814       | 37,734       | 38,678       | 39,645       |
| 403-4203-538.31-02                     | Small Tools & Equipment         | 2,500        | 2,563        | 2,627        | 2,692        | 2,760        | 2,829        |
| 403-4203-538.31-17                     | Supplies - Uniform Purchase     | 1,600        | 1,640        | 1,681        | 1,723        | 1,766        | 1,810        |
| 403-4203-538.31-22                     | Manhole/Ring/Lid Replace        | 4,000        | 4,100        | 4,203        | 4,308        | 4,415        | 4,526        |
| 403-4203-538.34-01                     | Fuel                            | 750          | 769          | 788          | 808          | 828          | 849          |
| 403-4203-538.41-01                     | Prof. Svc - Other               | 13,000       | 13,325       | 13,658       | 14,000       | 14,350       | 14,708       |
| 403-4203-538.45-01                     | Equipment Rental                | 356,747      | 365,666      | 374,807      | 384,177      | 393,782      | 403,626      |
| 403-4203-538.47-01                     | Utility - Electric              | 900          | 923          | 946          | 969          | 993          | 1,018        |
| 403-4203-538.47-02                     | Utility - City of Lacey         | 13,000       | 13,325       | 13,658       | 14,000       | 14,350       | 14,708       |
| 403-4203-538.48-01                     | Rep & Maint - Equipment         | 800          | 820          | 841          | 862          | 883          | 905          |
| 403-4203-538.48-03                     | Rep & Maint - Facilities        | 52,050       | 53,351       | 54,685       | 56,052       | 57,453       | 58,890       |
| 403-4203-538.49-10                     | Uniform Contract/Cleaning       | 500          | 513          | 525          | 538          | 552          | 566          |
| 403-4203-538.49-29                     | Vactor Waste                    | 30,000       | 30,750       | 31,519       | 32,307       | 33,114       | 33,942       |
| 403-4203-538.60-03                     | Building Improv                 | 125,000      | -            | -            | -            | -            | -            |
| Total Stormwater Facility Maintenance  |                                 | \$ 1,268,167 | \$ 1,173,837 | \$ 1,205,347 | \$ 1,237,720 | \$ 1,270,981 | \$ 1,305,155 |
|                                        |                                 |              | -7.4%        | 2.7%         | 2.7%         | 2.7%         | 2.7%         |
| <b>Gap Analysis</b>                    |                                 |              |              |              |              |              |              |
| Programmatic & Staffing Costs          |                                 |              |              |              |              |              |              |
| Recommended Level of Service           |                                 | \$ 2,728     | \$ 694,816   | \$ 612,799   | \$ 732,486   | \$ 782,532   | \$ 773,807   |
| Total Operating Expenditures           |                                 | \$ 3,157,252 | \$ 3,805,415 | \$ 3,806,711 | \$ 4,012,015 | \$ 4,150,048 | \$ 4,231,749 |
|                                        |                                 |              | 20.5%        | 0.0%         | 5.4%         | 3.4%         | 2.0%         |
| <b>Capital Activity</b>                |                                 |              |              |              |              |              |              |
| 2013 Revenue Bonds Debt Service        |                                 | \$ 101,635   | \$ 101,525   | \$ 102,207   | \$ 101,971   | \$ 101,685   | \$ 101,517   |
| Rate Funded Capital                    |                                 | 934,650      | 414,181      | 584,553      | 604,225      | 702,506      | 868,857      |
| Total Capital Activity                 |                                 | \$ 1,036,285 | \$ 515,707   | \$ 686,760   | \$ 706,197   | \$ 804,192   | \$ 970,374   |
| Revenue Less Obligations               |                                 | \$ 11,672    | \$ 50,811    | \$ 53,363    | \$ 56,043    | \$ 58,858    | \$ 61,814    |
| <b>Ending Fund Balance</b>             |                                 | \$ 1,011,672 | \$ 1,062,484 | \$ 1,115,847 | \$ 1,171,890 | \$ 1,230,748 | \$ 1,292,563 |
| 90-Day Target                          |                                 | 1,011,672    | 1,062,484    | 1,115,847    | 1,171,890    | 1,230,748    | 1,292,563    |

| Capital Activity                                          | 2020                | 2021                  | 2022                | 2023                | 2024                  | 2025                  | Total               |
|-----------------------------------------------------------|---------------------|-----------------------|---------------------|---------------------|-----------------------|-----------------------|---------------------|
| <b>Beginning Fund Balance</b>                             | <b>\$ 5,438,103</b> | <b>\$ 5,731,149</b>   | <b>\$ 4,398,564</b> | <b>\$ 4,109,005</b> | <b>\$ 4,014,433</b>   | <b>\$ 3,347,439</b>   |                     |
| <b>Revenues</b>                                           |                     |                       |                     |                     |                       |                       |                     |
| Rate Funded Capital                                       | \$ 934,650          | \$ 414,181            | \$ 584,553          | \$ 604,225          | \$ 702,506            | \$ 868,857            | \$ 4,108,973        |
| Interest Earnings                                         | 13,595              | 14,328                | 10,996              | 10,273              | 10,036                | 8,369                 | \$ 67,597           |
| <b>Total Resources</b>                                    | <b>\$ 6,386,349</b> | <b>\$ 6,159,658</b>   | <b>\$ 4,994,114</b> | <b>\$ 4,723,503</b> | <b>\$ 4,726,975</b>   | <b>\$ 4,224,664</b>   | <b>\$ 4,176,570</b> |
| <b>Capital Expenditures</b>                               |                     |                       |                     |                     |                       |                       |                     |
| 19-1 Westminster Pond Modification                        | -                   | -                     | (65,564)            | (315,142)           | -                     | -                     | (380,706)           |
| 19-2 26th Loop Conveyance                                 | -                   | -                     | -                   | (112,551)           | (475,302)             | -                     | (587,853)           |
| 19-3 Stormwater Design Manual (SDM) Update                | (51,500)            | (63,654)              | (76,491)            | -                   | -                     | -                     | (191,645)           |
| 19-4 Woodland Creek Stormwater Treatment Facility         | -                   | (53,045)              | (469,873)           | -                   | -                     | -                     | (522,918)           |
| 19-5 Woodland Creek Community Park Habitat Restoration    | -                   | (53,045)              | -                   | -                   | -                     | -                     | (53,045)            |
| 19-6 Stormwater Management Action Planning (SMAP)         | -                   | -                     | (109,273)           | -                   | -                     | -                     | (109,273)           |
| 19-7 Regional Water Quality Facility Program              | -                   | -                     | -                   | (112,551)           | (115,927)             | -                     | (228,478)           |
| 19-8 Infiltration Retrofit Program                        | -                   | -                     | -                   | -                   | (115,927)             | (119,405)             | (235,333)           |
| 19-9 Miscellaneous Storm System Improvements              | (154,500)           | (159,135)             | (163,909)           | (168,826)           | (173,891)             | (179,108)             | (999,369)           |
| 19-10 Stormwater Comprehensive Plan (SCP) Update          | -                   | -                     | -                   | -                   | (92,742)              | (202,989)             | (295,731)           |
| 19-11 Land Purchase for Future Facility Improvements      | -                   | (371,315)             | -                   | -                   | -                     | -                     | (371,315)           |
| 13-7 Diamond Stormwater Alternative                       | -                   | -                     | -                   | -                   | -                     | (95,524)              | (95,524)            |
| 13-9 Clearbrook Drainage System Improvements              | -                   | -                     | -                   | -                   | -                     | (95,524)              | (95,524)            |
| 13-10 Homann Area System Rehabilitation (Analysis/Design) | -                   | -                     | -                   | -                   | (139,113)             | (238,810)             | (377,923)           |
| 13-11 1010 Midway Storm Improvements                      | -                   | -                     | -                   | -                   | -                     | -                     | -                   |
| 13-12 Belair-Impala Storm System Installation             | (103,000)           | (1,060,900)           | -                   | -                   | -                     | -                     | (1,163,900)         |
| 13-14 Alder and Gemini Drainage System Improvements       | -                   | -                     | -                   | -                   | (81,149)              | (537,324)             | (618,473)           |
| 13-15 White Fir Stormwater Installation                   | -                   | -                     | -                   | -                   | -                     | -                     | -                   |
| 13-16 5th Ct SE and 5th Way Easement Storm Improvements   | -                   | -                     | -                   | -                   | -                     | -                     | -                   |
| 13-17 Shady Lane Treatment Facility Improvements          | -                   | -                     | -                   | -                   | (185,484)             | -                     | (185,484)           |
| CIP already underway in 2020                              | (346,200)           | -                     | -                   | -                   | -                     | -                     | (346,200)           |
| <b>Total Escalated Capital Expenditures</b>               | <b>\$ (655,200)</b> | <b>\$ (1,761,094)</b> | <b>\$ (885,109)</b> | <b>\$ (709,071)</b> | <b>\$ (1,379,536)</b> | <b>\$ (1,468,684)</b> | <b>(6,858,694)</b>  |
| <b>Ending Fund Balance</b>                                | <b>\$ 5,731,149</b> | <b>\$ 4,398,564</b>   | <b>\$ 4,109,005</b> | <b>\$ 4,014,433</b> | <b>\$ 3,347,439</b>   | <b>\$ 2,755,980</b>   |                     |
| 1% of Fixed Assets Target Min.                            | 648,274             | 665,885               | 674,736             | 681,827             | 695,622               | 710,309               |                     |

Note: The following projects have planned expenditures in 2026 or beyond: 13-7; 13-9; 13-11; 13-15, and 13-16.

## V.B. ORDINANCE NO. 1556

ORDINANCE NO. 1556

CITY OF LACEY

AN ORDINANCE RELATING TO STORMWATER SERVICE RATES, AMENDING SECTION 13.70.030 OF THE LACEY MUNICIPAL CODE AND APPROVING A SUMMARY FOR PUBLICATION.

WHEREAS, the City of Lacey is committed to comply with the Phase II Western Washington Municipal Stormwater Permit, which provides for the requirements necessary to preserve water quality and resources, and

WHEREAS, it is necessary to increase the stormwater service rates in order to provide for the additional maintenance costs to meet system requirements and provide funding for scheduled capital improvements; NOW, THEREFORE,

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF LACEY, WASHINGTON, as follows:

Section 1. Section 13.70.030 of the Lacey Municipal Code is hereby amended to read as follows:

13.70.030 Service charge rate.

Subject to the rate adjustments provided in LMC 13.70.035, the storm and surface water utility charges shall be levied upon the basis of a flat monthly rate for all developed single-family residential parcels and two-family residential parcels and a sliding rate for all other parcels. The sliding rate shall be determined by measuring the amount of impervious surface area on each parcel and dividing that figure by the total area of the parcel to determine the percent of impervious surface and therefore the rate category. The monthly charge shall be that amount resulting from multiplying the service charge for the rate category applicable to the parcel by the total area of the parcel. The rate categories, the parameters of impervious surface for said rate categories and the monthly service charge applicable to each category shall be as follows:

| Rate-Category              | Percent-of-Impervious-Surface | 2014-Monthly-Service-Charge-Per-Gross-Acre | 2015-Monthly-Service-Charge-Per-Gross-Acre | 2016-Monthly-Service-Charge-Per-Gross-Acre |
|----------------------------|-------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|
| 1 Single-Family-Residence- | N/A-                          | 8.03                                       | 8.75                                       | 9.54                                       |
| 2 Duplex-Family-Residence- | N/A-                          | 16.05                                      | 17.50                                      | 19.07                                      |
| 3 Very-Light-              | 0% to 10%-                    | 3.68                                       | 4.01                                       | 4.38                                       |
| 4 Moderate-Light-          | >10% to 25%-                  | 13.32                                      | 14.51                                      | 15.82                                      |
| 5 Light-                   | >25% to 40%-                  | 25.78                                      | 28.10                                      | 30.63                                      |
| 6 Moderate-                | >40% to 55%-                  | 39.29                                      | 42.83                                      | 46.69                                      |
| 7 Moderately-Heavy-        | >55% to 70%-                  | 53.50                                      | 58.31                                      | 63.56                                      |
| 8 Heavy-                   | >70% to 85%-                  | 69.01                                      | 75.22                                      | 81.99                                      |
| 9 Very-Heavy-              | >85% to 100%-                 | 85.38                                      | 93.07                                      | 101.44                                     |



| Rate Category             | Percent of Impervious Surface | 2017-Monthly-Service-Charge-Per-Gross-Acre | 2018-Monthly-Service-Charge-Per-Gross-Acre | 2019-Monthly-Service-Charge-Per-Gross-Acre | 2020-Monthly-Service-Charge-Per-Gross-Acre |
|---------------------------|-------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|
| 1 Single Family Residence | N/A                           | 10.11                                      | 10.72                                      | 11.36                                      | 11.87                                      |
| 2 Duplex Family Residence | N/A                           | 20.22                                      | 21.43                                      | 22.72                                      | 23.74                                      |
| 3 Very Light              | 0% to 10%                     | 4.64                                       | 4.92                                       | 5.21                                       | 5.45                                       |
| 4 Moderate Light          | >10% to 25%                   | 16.77                                      | 17.78                                      | 18.84                                      | 19.69                                      |
| 5 Light                   | >25% to 40%                   | 32.46                                      | 34.41                                      | 36.48                                      | 38.12                                      |
| 6 Moderate                | >40% to 55%                   | 49.49                                      | 52.46                                      | 55.60                                      | 58.11                                      |
| 7 Moderately Heavy        | >55% to 70%                   | 67.37                                      | 71.42                                      | 75.70                                      | 79.11                                      |
| 8 Heavy                   | >70% to 85%                   | 86.91                                      | 92.13                                      | 97.66                                      | 102.05                                     |
| 9 Very Heavy              | >85% to 100%                  | 107.63                                     | 113.98                                     | 120.82                                     | 126.26                                     |

The rates set forth above shall be effective for all stormwater utility billings during calendar year 2020 and thereafter rendered on or after January 1, 2014, through 2019. ~~Thereafter, the 2019 rates shall remain in effect until further amended.~~

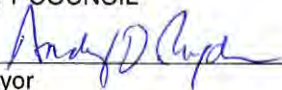
Section 2. This Ordinance shall be effective as of January 1, 2020.

Section 3. The City Clerk and the codifiers of this ordinance are authorized to make necessary corrections to this ordinance including, but not limited to, the correction of scrivener's/clerical errors, references, ordinance numbering, section/subsection numbers and any references thereto.

Section 4. The Summary attached hereto is hereby approved for publication.

PASSED BY THE CITY COUNCIL OF THE CITY OF LACEY, WASHINGTON, on this 14<sup>th</sup> day of November, 2019.

CITY COUNCIL

  
Mayor

Attest:

Approved as to form:

  
City Clerk

  
City Attorney

SUMMARY FOR PUBLICATION  
ORDINANCE NO. 1556  
CITY OF LACEY

The City Council of the City of Lacey, Washington, passed on November 14, 2019, Ordinance No. 1556, entitled "AN ORDINANCE RELATING TO STORMWATER SERVICE RATES, AMENDING SECTION 13.70.030 OF THE LACEY MUNICIPAL CODE AND APPROVING A SUMMARY FOR PUBLICATION."

A section by section summary of this ordinance is as follows:

Section 1 amends section 13.70.030 establishing stormwater rates for 2020 for purposes of providing revenue for increased maintenance and capital expenditures for the stormwater utility system.

Section 2 establishes the effective date of January 1, 2020.

Section 3 provides provisions for corrections.

Section 4 approves this summary.

A copy of the full text of this Ordinance will be mailed without charge to any person requesting the same from the City of Lacey.

Published: November 18, 2019

## V.C. FISCAL POLICIES PER RESOLUTION NO. 992

**RESOLUTION NO. 992**

**CITY OF LACEY**

**A RESOLUTION OF THE CITY OF LACEY, WASHINGTON, AMENDING  
THE FISCAL POLICIES OF THE CITY.**

WHEREAS, the stewardship of public funds, their safe-keeping, proper use and management, is one of the most important responsibilities entrusted to the officials and managers of the City of Lacey, and

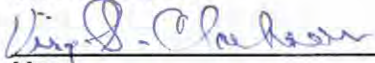
WHEREAS, the City Council adopted Resolution No. 945 on May 14, 2009, which established the City of Lacey's fiscal policies, and

WHEREAS, new regulations, standards, and updated guidance require additions and amendments to the adopted fiscal policies,

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF LACEY, WASHINGTON, that those certain policies set forth in the document entitled City of Lacey Fiscal Policies, attached hereto and made a part hereof as though fully set forth at length are hereby approved and adopted as the fiscal policies to be followed by the City Council and management of the City of Lacey.

PASSED BY THE CITY COUNCIL OF THE CITY OF LACEY, WASHINGTON,  
this 28<sup>th</sup> day of February, 2013.

CITY COUNCIL

  
Mayor

Attest:

  
City Clerk

Approved as to form:

  
City Attorney



## **Reserve Fund Policies**

### **Purpose:**

Adequate reserve levels are a necessary component of the City's overall financial management strategy and a key factor in how external rating agencies (Standard & Poor's and Moody's) measure the City's overall financial strength.

### **Policies:**

1. Reserves required by law, ordinance, and bond covenants shall be maintained.
2. It will be the policy of the City to maintain an operating reserve equal to at least two (2) months operating revenues in the General, Utility, and Internal Service funds.
  - a. This reserve will exclude the beginning fund balance and identified one-time revenues.
  - b. Operating reserves are maintained to address temporary revenue shortfalls; payment of approved expenditures due to cash flow shortage; reserves for expenditures deemed necessary by the City Council; and, temporary short-term interfund loans.
  - c. The committed fund balance designation can only be removed by the same formal action of the City Council
3. Assigned fund balances are established based on the intent expressed by the City Council.
  - a. The City Manager and Finance Director are authorized by Resolution No. 974 to classify fund balances as assigned.
4. All expenditures drawn from committed and assigned reserve accounts will require Council approval unless previously authorized by adoption and/or amendment of the annual budget.
  - a. The order of the spending of fund balances shall be restricted, committed, assigned, and unassigned.

## **Enterprise Fund Policies**

### **Purpose:**

Enterprise funds are to be established for City services when it is the intent of the City to finance all costs of services through user charges.

### **Policies:**

1. Enterprise funds will be established for all City-operated utility services, which include water, wastewater, stormwater, and reclaimed water.
2. Enterprise fund expenditures will be established at a level sufficient to properly maintain the fund's infrastructure and provide for necessary replacement while also contributing to capital development.
3. Each enterprise fund will maintain an adequate rate structure to cover the costs of all operations, including maintenance, depreciation, capital and debt service requirements, reserves (as established by fiscal policy or bond covenant), and any other cost deemed necessary.
4. Rates may be offset from available fund cash after requirements are met for cash flow and scheduled reserve contributions.
5. Enterprise funds will establish and maintain reserves for general contingency and capital purposes consistent with those maintained for general government services.
6. Revenue bonds will be issued only when projected operating revenues and general facility connection fees are insufficient for the enterprise's capital financing needs.
7. The City will insure that net operating revenues of the enterprise constitute a minimum of 1.2 times the annual debt service requirements.
8. Generally, the City will limit the maturities of all utility revenue bond issues to twenty (20) years but under unusual circumstances shall not exceed thirty (30) years.

## **Debt Management Policies**

### **Purpose:**

The issuance of debt by the City and the amount of debt is an important factor in measuring the City's financial performance and condition. A debt policy can assist the Council and staff to integrate the issuance of debt with other long-term planning, financial and management objectives. This policy requires an evaluation of the impact of each debt issue on the City's overall financial position, in addition to providing guidance to not exceed acceptable levels of indebtedness.

### **Policies:**

1. The City will not use long-term debt to finance current operations.
2. Whenever possible, the City will identify alternative sources of funding to minimize the level of debt.
  - a. The City will examine and pursue all applicable state and federal grant and low-interest loan programs for funding capital improvement projects.
3. Long-term borrowing will be confined to capital improvements or similar projects with an extended life when it is not practical to be financed from current revenues.
4. Debt payment schedules shall not extend beyond the estimated useful life of the asset being financed.
5. The City will keep the average maturity of general obligation bonds at or below twenty (20) years.
6. The City will maintain good communications with bond rating agencies (Standard & Poor's and Moody's) concerning its financial condition, and will take all appropriate and responsible measures to sustain quality bond ratings.
  - a. The City's annual financial report will be distributed to the rating agencies and The Municipal Securities Rulemaking Board (MSRB) no later than July 31<sup>st</sup> of the following year of the report.
  - b. The report shall include all secondary market disclosure required by the Securities Exchange Commission (SEC).
  - c. Disclosures required by MSRB will be made within the required timeframes.
7. The City may use interfund loans rather than outside debt instruments to meet short-term cash flow needs.
  - a. Interfund loans are to be authorized by Council resolution and will include a repayment schedule including an interest amount at least equivalent to prevailing rates set through the Washington State Local Government Investment Pool.
  - b. A short-term, interfund loan is defined as three to five years when cash is available and will not impact the lending fund's current operating requirements.
8. Short-term debt instruments (e.g., Bond Anticipation Notes, etc.), if used, should be limited to twelve to twenty-four months and then only to meet the immediate financing needs of a project for which long-term financing has been secured but not yet received.
  - a. Exceptions may be necessary for large scale LID/ULID projects.
9. Special Assessment bonds or other self-supporting bonds will be issued in place of general obligation bonds, where possible, to assure the greatest degree of public equity and flexibility for City finances.
10. The City will use the services of legally certified and credible bond counsel and underwriter in the preparation of all bond representations.



11. The City will comply with all statutory debt limitations imposed by the Revised Code of Washington (RCW).
  - a. The City's debt limit will not exceed an aggregated total of 7.5% of the assessed value of the taxable property within the City.
  - b. Compliance with state law and this policy will be documented each year in the City's CAFR.
  - c. The following individual percentages (as defined by state law) will not be exceeded in any specific debt category:

|                                     |                        |
|-------------------------------------|------------------------|
| i. General Debt                     | 2.5% of assessed value |
| ii. Utility Debt                    | 2.5% of assessed value |
| iii. Open Space and Park Facilities | 2.5% of assessed value |
12. No debt will be issued for which the City is not confident that a sufficient, specifically identified revenue source is available for repayment.
13. Credit enhancements will be considered for each long-term bond issue where there is a cost/benefit to the City or unique circumstances warrant the expense.
14. Reserve accounts will be maintained as required by bond ordinances and where deemed advisable.
  - a. The City will structure such debt service reserves so that they do not violate IRS arbitrage regulations.
15. The City will use refunding bonds where appropriate when restructuring its current outstanding debt and/or improving restrictive bond conditions.
16. Bond refunding opportunities will be evaluated as they become available. The net present value savings percentage and current market conditions will be considered before beginning the refunding process. The net present value savings percentage should be at least 5.0 percent.



## **APPENDIX F-2**

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### **Alternative Stormwater Utility Rate Study: No Rate Increase for 2021 Memorandum**

**Date:** June 10, 2020

**To:** Doug Christenson, Water Resources Engineer;  
Public Works, City of Lacey

**From:** John Ghilarducci, Principal  
Tage Aaker, Project Manager

**Subject:** 2022-2025 Impact of No Rate Increase in 2021

## Original Scenario

FCS GROUP recently completed a rate study for the City of Lacey's stormwater utility in May of 2020. The recommended rate adjustments from this study are shown in **Exhibit 1**. These increases enable the utility to operate on a standalone basis by recovering costs associated with operations and maintenance, fiscal policy achievement, and the programmatic, staffing, and capital project needs identified in the City's Stormwater Comprehensive Plan.

Exhibit 1: Original Scenario: Recommended Rate Adjustments and Capital Activity

| Original Scenario          | 2021        | 2022        | 2023        | 2024        | 2025        |
|----------------------------|-------------|-------------|-------------|-------------|-------------|
| Across-the-Board Increase  | 4.5%        | 4.5%        | 4.5%        | 4.5%        | 4.5%        |
| Annual Rate Funded Capital | \$414,000   | \$585,000   | \$604,000   | \$703,000   | \$869,000   |
| Ending Capital Reserve     | \$4,399,000 | \$4,109,000 | \$4,014,000 | \$3,347,000 | \$2,756,000 |

Due to the economic impacts of the COVID-19 pandemic on the City's ratepayers, the City requested that FCS GROUP analyze the implications of not increasing utility rates in 2021. Two scenarios were generated for the City's consideration, and the preferred scenario is documented in this memo.

## Preferred Alternative Scenario

This scenario intends to fund a similar amount of annual rate funded capital by 2025, by increasing rate adjustments in 2022-2025 to make up for a zero percent rate increase in 2021.

Exhibit 2: Alternative Scenario: Recommended Rate Adjustments and Capital Activity

| Alternative Scenario       | 2021        | 2022        | 2023        | 2024        | 2025        |
|----------------------------|-------------|-------------|-------------|-------------|-------------|
| Across-the-Board Increase  | 0.0%        | 5.5%        | 5.5%        | 5.5%        | 5.5%        |
| Annual Rate Funded Capital | \$232,000   | \$434,000   | \$489,000   | \$627,000   | \$838,000   |
| Ending Capital Reserve     | \$4,216,000 | \$3,775,000 | \$3,564,000 | \$2,821,000 | \$2,198,000 |

The only difference between the Alternative Scenario and the Original Scenario documented in the main body of the report is the rate adjustments and resulting impacts on annual rate funded capital and the capital reserve. No changes to inflation, operating, or capital expenditures were made under this scenario. The capital reserve is sufficient to absorb the delay in rate increases – however, the ending capital reserve will be less in the Alternative Scenario as a result. The following observations are provided for the Alternative Scenario:

- The Alternative Scenario targets a similar level of rate funded capital by 2025;
  - » Original Scenario: \$869,000
  - » Alternative Scenario: \$838,000
- The capital reserve in the Alternative Scenario is lower than in the Original Scenario because of the ‘late start’ with no rate increases in 2021;
  - » Original Scenario: \$2,756,000
  - » Alternative Scenario: \$2,198,000
- The monthly rate in 2025 is similar under either scenario:
  - » Original Scenario: \$14.79
  - » Alternative Scenario: \$14.71
- In either scenario, in any year, the operative reserve meets the minimum target.
- In either scenario, in any year, the capital reserve exceeds the minimum target.

## Summary

The City has sufficient reserves to defer stormwater rate increases until 2022. The recommended rate adjustment strategy if the City adopts no rate increase in 2021 is to increase rates at 5.5% per year for 2022-25. In comparison, the City could achieve a similar result by increasing rates at 4.5% per year for 2021-25. The detailed forecast tables for both the Original Scenario and Alternative Scenario are provided in the appendices to this memo.

Exhibit 3: Impact to Single-Family Monthly Rate

|                            | 2021     | 2022     | 2023     | 2024     | 2025     |
|----------------------------|----------|----------|----------|----------|----------|
| Original Scenario          |          |          |          |          |          |
| Across-the-Board Increase  | 4.5%     | 4.5%     | 4.5%     | 4.5%     | 4.5%     |
| Monthly Single-Family Rate | \$12.41  | \$12.96  | \$13.55  | \$14.16  | \$14.79  |
| Alternative Scenario       |          |          |          |          |          |
| Across-the-Board Increase  | 0.0%     | 5.5%     | 5.5%     | 5.5%     | 5.5%     |
| Monthly Single-Family Rate | \$11.87  | \$12.52  | \$13.21  | \$13.94  | \$14.71  |
| Alternative Below Original | (\$0.54) | (\$0.44) | (\$0.34) | (\$0.22) | (\$0.08) |

# APPENDICES – SUMMARY TABLES

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City of Lacey  
Revenue Requirement Study: Stormwater Utility  
One-Page Summary

ALTERNATIVE SCENARIO

| Rate Adjustment                     | 2020    | 2021    | 2022    | 2023    | 2024    | 2025    |
|-------------------------------------|---------|---------|---------|---------|---------|---------|
| Annual Increase (%)                 | 4.50%   | 0.00%   | 5.50%   | 5.50%   | 5.50%   | 5.50%   |
| Debt Service Coverage (bonded debt) | 10.44   | 3.92    | 5.87    | 6.44    | 7.83    | 9.94    |
| Single Family Monthly Charge        | \$11.87 | \$11.87 | \$12.52 | \$13.21 | \$13.94 | \$14.71 |
| Monthly Increase                    |         | \$0.00  | \$0.65  | \$0.69  | \$0.73  | \$0.77  |

| Operating Activity & Reserve |                             | 2020         | 2021         | 2022         | 2023         | 2024         | 2025         |
|------------------------------|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Beginning Fund Balance       |                             | \$ 1,000,000 | \$ 1,011,672 | \$ 1,062,484 | \$ 1,115,847 | \$ 1,171,890 | \$ 1,230,748 |
| Revenue                      |                             |              |              |              |              |              |              |
| 403-0000-343.51-01           | Sales                       | \$ 4,102,893 | \$ 4,123,408 | \$ 4,371,946 | \$ 4,635,465 | \$ 4,914,868 | \$ 5,211,112 |
| 403-0000-345.83-00           | Plan Checking Fees          | 4,069        | 4,069        | 4,069        | 4,069        | 4,069        | 4,069        |
| 403-0000-345.83-02           | Inspection Services         | 14,634       | 14,634       | 14,634       | 14,634       | 14,634       | 14,634       |
|                              | Street Sweeper Driver Grant | 81,017       | 41,642       | -            | -            | -            | -            |
|                              | Investment Interest         | 2,597        | 2,626        | 2,753        | 2,886        | 3,026        | 3,174        |
| Total Revenues               |                             | \$ 4,205,209 | \$ 4,186,379 | \$ 4,393,402 | \$ 4,657,054 | \$ 4,936,597 | \$ 5,232,988 |
|                              |                             |              | -0.4%        | 4.9%         | 6.0%         | 6.0%         | 6.0%         |
| Operating Expenditures       |                             |              |              |              |              |              |              |
| General Services             |                             |              |              |              |              |              |              |
| 403-4201-538.10-01           | Salaries - Regular          | \$ 353,645   | \$ 362,486   | \$ 371,548   | \$ 380,837   | \$ 390,358   | \$ 400,117   |
| 403-4201-538.10-05           | Salaries - Overtime         | 1,000        | 1,025        | 1,051        | 1,077        | 1,104        | 1,131        |
| 403-4201-538.10-06           | Salaries - Part-Time        | 953          | 977          | 1,001        | 1,026        | 1,052        | 1,078        |
| 403-4201-538.20-01           | Employer Paid Benefits      | 156,102      | 161,566      | 167,220      | 173,073      | 179,131      | 185,400      |
| 403-4201-538.31-01           | Office & Operating Supply   | 2,541        | 2,605        | 2,670        | 2,736        | 2,805        | 2,875        |
| 403-4201-538.31-02           | Small Tools & Equipment     | 1,500        | 1,538        | 1,576        | 1,615        | 1,656        | 1,697        |
| 403-4201-538.31-17           | Supplies - Uniform Purchase | 2,260        | 2,317        | 2,374        | 2,434        | 2,495        | 2,557        |
| 403-4201-538.31-27           | Software Upgrade            | 5,260        | 5,392        | 5,526        | 5,664        | 5,806        | 5,951        |
| 403-4201-538.31-35           | Replaced Equipment          | 15,000       | 15,375       | 15,759       | 16,153       | 16,557       | 16,971       |
| 403-4201-538.41-01           | Prof. Svc - Other           | 15,759       | 16,153       | 16,557       | 16,971       | 17,395       | 17,830       |
| 403-4201-538.41-02           | Prof. Svc - Engineering     | 275,136      | 282,014      | 289,065      | 296,291      | 303,699      | 311,291      |
| 403-4201-538.41-05           | Prof. Svc - Audit           | 450          | 461          | 473          | 485          | 497          | 509          |
| 403-4201-538.41-15           | Prof. Svc - Legal           | 2,200        | 2,255        | 2,311        | 2,369        | 2,428        | 2,489        |
| 403-4201-538.41-17           | Prof. Svc - Water Resources | 564,024      | 578,125      | 592,578      | 607,392      | 622,577      | 638,141      |
| 403-4201-538.41-23           | Prof. Svc - Local Monitor   | 40,000       | 41,000       | 42,025       | 43,076       | 44,153       | 45,256       |
| 403-4201-538.41-27           | Prof. Svc - PIE Program     | 50,000       | 51,250       | 52,531       | 53,845       | 55,191       | 56,570       |
| 403-4201-538.41-32           | Prof. Svc - Utility Locates | 725          | 743          | 762          | 781          | 800          | 820          |
| 403-4201-538.41-42           | Illicit Discharge Detect.   | 9,000        | 9,225        | 9,456        | 9,692        | 9,934        | 10,183       |
| 403-4201-538.41-43           | Analyze Stormwater Sample   | 10,000       | 10,250       | 10,506       | 10,769       | 11,038       | 11,314       |
| 403-4201-538.42-01           | Telecommunications          | 2,500        | 2,563        | 2,627        | 2,692        | 2,760        | 2,829        |
| 403-4201-538.43-01           | Transportation/Per Diem     | 2,228        | 2,284        | 2,341        | 2,399        | 2,459        | 2,521        |
| 403-4201-538.43-02           | Dues, Subscriptions, Publ   | 173          | 177          | 182          | 186          | 191          | 196          |
| 403-4201-538.43-03           | Registrations               | 2,818        | 2,888        | 2,961        | 3,035        | 3,111        | 3,188        |
| 403-4201-538.45-01           | Equipment Rental            | 5,424        | 5,560        | 5,699        | 5,841        | 5,987        | 6,137        |
| 403-4201-538.45-02           | IMS Rental                  | 35,330       | 36,213       | 37,119       | 38,047       | 38,998       | 39,973       |
| 403-4201-538.45-03           | Copier Rentals              | 499          | 511          | 524          | 537          | 551          | 565          |
| 403-4201-538.46-01           | Insurance - Liability       | 13,888       | 14,235       | 14,591       | 14,956       | 15,330       | 15,713       |
| 403-4201-538.46-02           | Insurance - Fire/Property   | 377          | 386          | 396          | 406          | 416          | 427          |
| 403-4201-538.47-01           | Utility - Electric          | 2,800        | 2,870        | 2,942        | 3,015        | 3,091        | 3,168        |
| 403-4201-538.47-02           | Utility - City of Lacey     | 529          | 542          | 556          | 570          | 584          | 599          |
| 403-4201-538.47-03           | Utility - Natural Gas       | 811          | 831          | 852          | 873          | 895          | 918          |
| 403-4201-538.47-07           | Utility - Solid Waste       | 2,000        | 2,050        | 2,101        | 2,154        | 2,208        | 2,263        |
| 403-4201-538.48-01           | Rep & Maint - Equipment     | 553          | 567          | 581          | 596          | 610          | 626          |
| 403-4201-538.49-06           | Maintenance Contracts       | 1,018        | 1,043        | 1,070        | 1,096        | 1,124        | 1,152        |
| 403-4201-538.49-23           | Custodial                   | 3,063        | 3,140        | 3,218        | 3,299        | 3,381        | 3,466        |
| 403-4201-538.49-25           | Assessments/Taxes           | 20,000       | 20,500       | 21,013       | 21,538       | 22,076       | 22,628       |
| 403-4201-538.49-35           | CDL - Physicals/Licenses    | 120          | 123          | 126          | 129          | 132          | 136          |
| 403-4201-538.49-43           | Regional Monitoring Prog.   | 10,000       | 10,250       | 10,506       | 10,769       | 11,038       | 11,314       |
| 403-4201-538.49-44           | Project Green               | 11,900       | 12,198       | 12,502       | 12,815       | 13,135       | 13,464       |
| 403-4201-538.50-90           | Indirect Cost Plan Change   | 171,998      | 176,298      | 180,705      | 185,223      | 189,854      | 194,600      |
| 403-4201-538.60-01           | Capital Outlays - Equipment | 4,280        | 4,387        | 4,497        | 4,609        | 4,724        | 4,842        |
| Total General Services       |                             | \$ 1,797,864 | \$ 1,844,372 | \$ 1,892,097 | \$ 1,941,071 | \$ 1,991,329 | \$ 2,042,903 |
|                              |                             |              | 2.6%         | 2.6%         | 2.6%         | 2.6%         | 2.6%         |

| Operating Activity & Reserve          |                                 | 2020         | 2021         | 2022         | 2023         | 2024         | 2025         |
|---------------------------------------|---------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Customer Service                      |                                 |              |              |              |              |              |              |
| 403-4202-514.10-01                    | Salaries - Regular              | \$ 7,768     | \$ 7,962     | \$ 8,161     | \$ 8,365     | \$ 8,574     | \$ 8,789     |
| 403-4202-514.20-01                    | Employer Paid Benefits          | 3,930        | 4,068        | 4,210        | 4,357        | 4,510        | 4,668        |
| 403-4202-514.31-01                    | Office & Operating Supply       | 200          | 205          | 210          | 215          | 221          | 226          |
| 403-4202-514.42-01                    | Telecommunications              | 50           | 51           | 53           | 54           | 55           | 57           |
| 403-4202-514.42-02                    | Communications - Postage        | 1,750        | 1,794        | 1,839        | 1,885        | 1,932        | 1,980        |
| 403-4202-514.45-02                    | IMS Rental                      | 5,994        | 6,144        | 6,297        | 6,455        | 6,616        | 6,782        |
| 403-4202-514.45-08                    | Lease Miscellaneous             | 500          | 513          | 525          | 538          | 552          | 566          |
| 403-4202-514.46-06                    | AWC-L & I Pool                  | 765          | 784          | 804          | 824          | 844          | 866          |
| 403-4202-514.49-01                    | Excise Taxes                    | 62,427       | 62,739       | 63,053       | 63,368       | 63,685       | 64,003       |
| 403-4202-514.49-01                    | Excise Taxes - on New Rate Rev. | 2,809        | 2,823        | 6,461        | 10,336       | 14,462       | 18,854       |
| 403-4202-514.49-02                    | Printing & Binding              | 500          | 513          | 525          | 538          | 552          | 566          |
| 403-4202-514.49-27                    | Bad Debt Expense                | 1,800        | 1,845        | 1,891        | 1,938        | 1,987        | 2,037        |
| Total Customer Service                |                                 | \$ 88,493    | \$ 89,440    | \$ 94,029    | \$ 98,874    | \$ 103,990   | \$ 109,391   |
|                                       |                                 |              | 1.1%         | 5.1%         | 5.2%         | 5.2%         | 5.2%         |
| Stormwater Facility Maintenance       |                                 |              |              |              |              |              |              |
| 403-4203-538.10-01                    | Salaries - Regular              | \$ 374,446   | \$ 383,807   | \$ 393,402   | \$ 403,237   | \$ 413,318   | \$ 423,651   |
| 403-4203-538.10-05                    | Salaries - Overtime             | 4,000        | 4,100        | 4,203        | 4,308        | 4,415        | 4,526        |
| 403-4203-538.10-06                    | Salaries - Part-Time            | 44,761       | 45,880       | 47,027       | 48,203       | 49,408       | 50,643       |
| 403-4203-538.20-01                    | Employer Paid Benefits          | 209,073      | 216,391      | 223,964      | 231,803      | 239,916      | 248,313      |
| 403-4203-538.31-01                    | Office & Operating Supply       | 35,040       | 35,916       | 36,814       | 37,734       | 38,678       | 39,645       |
| 403-4203-538.31-02                    | Small Tools & Equipment         | 2,500        | 2,563        | 2,627        | 2,692        | 2,760        | 2,829        |
| 403-4203-538.31-17                    | Supplies - Uniform Purchase     | 1,600        | 1,640        | 1,681        | 1,723        | 1,766        | 1,810        |
| 403-4203-538.31-22                    | Manhole/Ring/Lid Replace        | 4,000        | 4,100        | 4,203        | 4,308        | 4,415        | 4,526        |
| 403-4203-538.34-01                    | Fuel                            | 750          | 769          | 788          | 808          | 828          | 849          |
| 403-4203-538.41-01                    | Prof. Svc - Other               | 13,000       | 13,325       | 13,658       | 14,000       | 14,350       | 14,708       |
| 403-4203-538.45-01                    | Equipment Rental                | 356,747      | 365,666      | 374,807      | 384,177      | 393,782      | 403,626      |
| 403-4203-538.47-01                    | Utility - Electric              | 900          | 923          | 946          | 969          | 993          | 1,018        |
| 403-4203-538.47-02                    | Utility - City of Lacey         | 13,000       | 13,325       | 13,658       | 14,000       | 14,350       | 14,708       |
| 403-4203-538.48-01                    | Rep & Maint - Equipment         | 800          | 820          | 841          | 862          | 883          | 905          |
| 403-4203-538.48-03                    | Rep & Maint - Facilities        | 52,050       | 53,351       | 54,685       | 56,052       | 57,453       | 58,890       |
| 403-4203-538.49-10                    | Uniform Contract/Cleaning       | 500          | 513          | 525          | 538          | 552          | 566          |
| 403-4203-538.49-29                    | Vactor Waste                    | 30,000       | 30,750       | 31,519       | 32,307       | 33,114       | 33,942       |
| 403-4203-538.60-03                    | Building Improv                 | 125,000      | -            | -            | -            | -            | -            |
| Total Stormwater Facility Maintenance |                                 | \$ 1,268,167 | \$ 1,173,837 | \$ 1,205,347 | \$ 1,237,720 | \$ 1,270,981 | \$ 1,305,155 |
|                                       |                                 |              | -7.4%        | 2.7%         | 2.7%         | 2.7%         | 2.7%         |
| Gap Analysis                          |                                 |              |              |              |              |              |              |
| Programmatic & Staffing Costs         |                                 |              |              |              |              |              |              |
| Recommended Level of Service          |                                 | \$ 2,728     | \$ 694,816   | \$ 612,799   | \$ 732,486   | \$ 782,532   | \$ 773,807   |
| Total Operating Expenditures          |                                 | \$ 3,157,252 | \$ 3,802,464 | \$ 3,804,271 | \$ 4,010,151 | \$ 4,148,832 | \$ 4,231,256 |
|                                       |                                 |              | 20.4%        | 0.0%         | 5.4%         | 3.5%         | 2.0%         |
| Capital Activity                      |                                 |              |              |              |              |              |              |
| 2013 Revenue Bonds Debt Service       |                                 | \$ 101,635   | \$ 101,525   | \$ 102,207   | \$ 101,971   | \$ 101,685   | \$ 101,517   |
| Rate Funded Capital                   |                                 | 934,650      | 231,578      | 433,560      | 488,888      | 627,222      | 838,400      |
| Total Capital Activity                |                                 | \$ 1,036,285 | \$ 333,104   | \$ 535,767   | \$ 590,860   | \$ 728,907   | \$ 939,917   |
| Revenue Less Obligations              |                                 | \$ 11,672    | \$ 50,811    | \$ 53,363    | \$ 56,043    | \$ 58,858    | \$ 61,814    |
| Ending Fund Balance                   |                                 | \$ 1,011,672 | \$ 1,062,484 | \$ 1,115,847 | \$ 1,171,890 | \$ 1,230,748 | \$ 1,292,563 |
| 90-Day Target                         |                                 | 1,011,672    | 1,062,484    | 1,115,847    | 1,171,890    | 1,230,748    | 1,292,563    |

| Capital Activity                     |                                                     | 2020         | 2021           | 2022         | 2023         | 2024           | 2025           | Total        |
|--------------------------------------|-----------------------------------------------------|--------------|----------------|--------------|--------------|----------------|----------------|--------------|
| Beginning Fund Balance               |                                                     | \$ 5,438,103 | \$ 5,731,149   | \$ 4,215,961 | \$ 3,774,953 | \$ 3,564,208   | \$ 2,820,804   |              |
| Revenues                             |                                                     |              |                |              |              |                |                |              |
| Rate Funded Capital                  |                                                     | \$ 934,650   | \$ 231,578     | \$ 433,560   | \$ 488,888   | \$ 627,222     | \$ 838,400     | \$ 3,554,300 |
| Interest Earnings                    |                                                     | 13,595       | 14,328         | 10,540       | 9,437        | 8,911          | 7,052          | \$ 63,863    |
| Total Resources                      |                                                     | \$ 6,386,349 | \$ 5,977,055   | \$ 4,660,062 | \$ 4,273,278 | \$ 4,200,340   | \$ 3,666,257   | \$ 3,618,163 |
| Capital Expenditures                 |                                                     |              |                |              |              |                |                |              |
| 19-1                                 | Westminster Pond Modification                       | -            | -              | (65,564)     | (315,142)    | -              | -              | (380,706)    |
| 19-2                                 | 26th Loop Conveyance                                | -            | -              | -            | (112,551)    | (475,302)      | -              | (587,853)    |
| 19-3                                 | Stormwater Design Manual (SDM) Update               | (51,500)     | (63,654)       | (76,491)     | -            | -              | -              | (191,645)    |
| 19-4                                 | Woodland Creek Stormwater Treatment Facility        | -            | (53,045)       | (469,873)    | -            | -              | -              | (522,918)    |
| 19-5                                 | Woodland Creek Community Park Habitat Restoration   | -            | (53,045)       | -            | -            | -              | -              | (53,045)     |
| 19-6                                 | Stormwater Management Action Planning (SMAP)        | -            | -              | (109,273)    | -            | -              | -              | (109,273)    |
| 19-7                                 | Regional Water Quality Facility Program             | -            | -              | -            | (112,551)    | (115,927)      | -              | (228,478)    |
| 19-8                                 | Infiltration Retrofit Program                       | -            | -              | -            | -            | (115,927)      | (119,405)      | (235,333)    |
| 19-9                                 | Miscellaneous Storm System Improvements             | (154,500)    | (159,135)      | (163,909)    | (168,826)    | (173,891)      | (179,108)      | (999,369)    |
| 19-10                                | Stormwater Comprehensive Plan (SCP) Update          | -            | -              | -            | -            | (92,742)       | (202,989)      | (295,731)    |
| 19-11                                | Land Purchase for Future Facility Improvements      | -            | (371,315)      | -            | -            | -              | -              | (371,315)    |
| 13-7                                 | Diamond Stormwater Alternative                      | -            | -              | -            | -            | -              | (95,524)       | (95,524)     |
| 13-9                                 | Clearbrook Drainage System Improvements             | -            | -              | -            | -            | -              | (95,524)       | (95,524)     |
| 13-10                                | Homann Area System Rehabilitation (Analysis/Design) | -            | -              | -            | -            | (139,113)      | (238,810)      | (377,923)    |
| 13-11                                | 1010 Midway Storm Improvements                      | -            | -              | -            | -            | -              | -              | -            |
| 13-12                                | Belair-Impala Storm System Installation             | (103,000)    | (1,060,900)    | -            | -            | -              | -              | (1,163,900)  |
| 13-14                                | Alder and Gemini Drainage System Improvements       | -            | -              | -            | -            | (81,149)       | (537,324)      | (618,473)    |
| 13-15                                | White Fir Stormwater Installation                   | -            | -              | -            | -            | -              | -              | -            |
| 13-16                                | 5th Ct SE and 5th Way Easement Storm Improvements   | -            | -              | -            | -            | -              | -              | -            |
| 13-17                                | Shady Lane Treatment Facility Improvements          | -            | -              | -            | -            | (185,484)      | -              | (185,484)    |
|                                      | CIP already underway in 2020                        | (346,200)    | -              | -            | -            | -              | -              | (346,200)    |
| Total Escalated Capital Expenditures |                                                     | \$ (655,200) | \$ (1,761,094) | \$ (885,109) | \$ (709,071) | \$ (1,379,536) | \$ (1,468,684) | (6,858,694)  |
| Ending Fund Balance                  |                                                     | \$ 5,731,149 | \$ 4,215,961   | \$ 3,774,953 | \$ 3,564,208 | \$ 2,820,804   | \$ 2,197,572   |              |
| 1% of Fixed Assets Target Min.       |                                                     | 648,274      | 665,885        | 674,736      | 681,827      | 695,622        | 710,309        |              |



City of Lacey  
Revenue Requirement Study: Stormwater Utility  
One-Page Summary

ORIGINAL SCENARIO

| Rate Adjustment                     | 2020    | 2021    | 2022    | 2023    | 2024    | 2025    |
|-------------------------------------|---------|---------|---------|---------|---------|---------|
| Annual Increase (%)                 | 4.50%   | 4.50%   | 4.50%   | 4.50%   | 4.50%   | 4.50%   |
| Debt Service Coverage (bonded debt) | 10.44   | 5.72    | 7.35    | 7.58    | 8.59    | 10.25   |
| Single Family Monthly Charge        | \$11.87 | \$12.41 | \$12.96 | \$13.55 | \$14.16 | \$14.79 |
| Monthly Increase                    |         | \$0.53  | \$0.56  | \$0.58  | \$0.61  | \$0.64  |

| Operating Activity & Reserve |                             | 2020         | 2021         | 2022         | 2023         | 2024         | 2025         |
|------------------------------|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Beginning Fund Balance       |                             | \$ 1,000,000 | \$ 1,011,672 | \$ 1,062,484 | \$ 1,115,847 | \$ 1,171,890 | \$ 1,230,748 |
| Revenue                      |                             |              |              |              |              |              |              |
| 403-0000-343.51-01           | Sales                       | \$ 4,102,893 | \$ 4,308,961 | \$ 4,525,379 | \$ 4,752,666 | \$ 4,991,368 | \$ 5,242,060 |
| 403-0000-345.83-00           | Plan Checking Fees          | 4,069        | 4,069        | 4,069        | 4,069        | 4,069        | 4,069        |
| 403-0000-345.83-02           | Inspection Services         | 14,634       | 14,634       | 14,634       | 14,634       | 14,634       | 14,634       |
|                              | Street Sweeper Driver Grant | 81,017       | 41,642       | -            | -            | -            | -            |
|                              | Investment Interest         | 2,597        | 2,626        | 2,753        | 2,886        | 3,026        | 3,174        |
| Total Revenues               |                             | \$ 4,205,209 | \$ 4,371,932 | \$ 4,546,835 | \$ 4,774,255 | \$ 5,013,098 | \$ 5,263,936 |
|                              |                             |              | 4.0%         | 4.0%         | 5.0%         | 5.0%         | 5.0%         |
| Operating Expenditures       |                             |              |              |              |              |              |              |
| General Services             |                             |              |              |              |              |              |              |
| 403-4201-538.10-01           | Salaries - Regular          | \$ 353,645   | \$ 362,486   | \$ 371,548   | \$ 380,837   | \$ 390,358   | \$ 400,117   |
| 403-4201-538.10-05           | Salaries - Overtime         | 1,000        | 1,025        | 1,051        | 1,077        | 1,104        | 1,131        |
| 403-4201-538.10-06           | Salaries - Part-Time        | 953          | 977          | 1,001        | 1,026        | 1,052        | 1,078        |
| 403-4201-538.20-01           | Employer Paid Benefits      | 156,102      | 161,566      | 167,220      | 173,073      | 179,131      | 185,400      |
| 403-4201-538.31-01           | Office & Operating Supply   | 2,541        | 2,605        | 2,670        | 2,736        | 2,805        | 2,875        |
| 403-4201-538.31-02           | Small Tools & Equipment     | 1,500        | 1,538        | 1,576        | 1,615        | 1,656        | 1,697        |
| 403-4201-538.31-17           | Supplies - Uniform Purchase | 2,260        | 2,317        | 2,374        | 2,434        | 2,495        | 2,557        |
| 403-4201-538.31-27           | Software Upgrade            | 5,260        | 5,392        | 5,526        | 5,664        | 5,806        | 5,951        |
| 403-4201-538.31-35           | Replaced Equipment          | 15,000       | 15,375       | 15,759       | 16,153       | 16,557       | 16,971       |
| 403-4201-538.41-01           | Prof. Svc - Other           | 15,759       | 16,153       | 16,557       | 16,971       | 17,395       | 17,830       |
| 403-4201-538.41-02           | Prof. Svc - Engineering     | 275,136      | 282,014      | 289,065      | 296,291      | 303,699      | 311,291      |
| 403-4201-538.41-05           | Prof. Svc - Audit           | 450          | 461          | 473          | 485          | 497          | 509          |
| 403-4201-538.41-15           | Prof. Svc - Legal           | 2,200        | 2,255        | 2,311        | 2,369        | 2,428        | 2,489        |
| 403-4201-538.41-17           | Prof. Svc - Water Resources | 564,024      | 578,125      | 592,578      | 607,392      | 622,577      | 638,141      |
| 403-4201-538.41-23           | Prof. Svc - Local Monitor   | 40,000       | 41,000       | 42,025       | 43,076       | 44,153       | 45,256       |
| 403-4201-538.41-27           | Prof. Svc - PIE Program     | 50,000       | 51,250       | 52,531       | 53,845       | 55,191       | 56,570       |
| 403-4201-538.41-32           | Prof. Svc - Utility Locates | 725          | 743          | 762          | 781          | 800          | 820          |
| 403-4201-538.41-42           | Illicit Discharge Detect.   | 9,000        | 9,225        | 9,456        | 9,692        | 9,934        | 10,183       |
| 403-4201-538.41-43           | Analyze Stormwater Sample   | 10,000       | 10,250       | 10,506       | 10,769       | 11,038       | 11,314       |
| 403-4201-538.42-01           | Telecommunications          | 2,500        | 2,563        | 2,627        | 2,692        | 2,760        | 2,829        |
| 403-4201-538.43-01           | Transportation/Per Diem     | 2,228        | 2,284        | 2,341        | 2,399        | 2,459        | 2,521        |
| 403-4201-538.43-02           | Dues, Subscriptions, Publ   | 173          | 177          | 182          | 186          | 191          | 196          |
| 403-4201-538.43-03           | Registrations               | 2,818        | 2,888        | 2,961        | 3,035        | 3,111        | 3,188        |
| 403-4201-538.45-01           | Equipment Rental            | 5,424        | 5,560        | 5,699        | 5,841        | 5,987        | 6,137        |
| 403-4201-538.45-02           | IMS Rental                  | 35,330       | 36,213       | 37,119       | 38,047       | 38,998       | 39,973       |
| 403-4201-538.45-03           | Copier Rentals              | 499          | 511          | 524          | 537          | 551          | 565          |
| 403-4201-538.46-01           | Insurance - Liability       | 13,888       | 14,235       | 14,591       | 14,956       | 15,330       | 15,713       |
| 403-4201-538.46-02           | Insurance - Fire/Property   | 377          | 386          | 396          | 406          | 416          | 427          |
| 403-4201-538.47-01           | Utility - Electric          | 2,800        | 2,870        | 2,942        | 3,015        | 3,091        | 3,168        |
| 403-4201-538.47-02           | Utility - City of Lacey     | 529          | 542          | 556          | 570          | 584          | 599          |
| 403-4201-538.47-03           | Utility - Natural Gas       | 811          | 831          | 852          | 873          | 895          | 918          |
| 403-4201-538.47-07           | Utility - Solid Waste       | 2,000        | 2,050        | 2,101        | 2,154        | 2,208        | 2,263        |
| 403-4201-538.48-01           | Rep & Maint - Equipment     | 553          | 567          | 581          | 596          | 610          | 626          |
| 403-4201-538.49-06           | Maintenance Contracts       | 1,018        | 1,043        | 1,070        | 1,096        | 1,124        | 1,152        |
| 403-4201-538.49-23           | Custodial                   | 3,063        | 3,140        | 3,218        | 3,299        | 3,381        | 3,466        |
| 403-4201-538.49-25           | Assessments/Taxes           | 20,000       | 20,500       | 21,013       | 21,538       | 22,076       | 22,628       |
| 403-4201-538.49-35           | CDL - Physicals/Licenses    | 120          | 123          | 126          | 129          | 132          | 136          |
| 403-4201-538.49-43           | Regional Monitoring Prog.   | 10,000       | 10,250       | 10,506       | 10,769       | 11,038       | 11,314       |
| 403-4201-538.49-44           | Project Green               | 11,900       | 12,198       | 12,502       | 12,815       | 13,135       | 13,464       |
| 403-4201-538.50-90           | Indirect Cost Plan Change   | 171,998      | 176,298      | 180,705      | 185,223      | 189,854      | 194,600      |
| 403-4201-538.60-01           | Capital Outlays - Equipment | 4,280        | 4,387        | 4,497        | 4,609        | 4,724        | 4,842        |
| Total General Services       |                             | \$ 1,797,864 | \$ 1,844,372 | \$ 1,892,097 | \$ 1,941,071 | \$ 1,991,329 | \$ 2,042,903 |
|                              |                             |              | 2.6%         | 2.6%         | 2.6%         | 2.6%         | 2.6%         |

| Operating Activity & Reserve          |                                 | 2020         | 2021         | 2022         | 2023         | 2024         | 2025         |
|---------------------------------------|---------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Customer Service                      |                                 |              |              |              |              |              |              |
| 403-4202-514.10-01                    | Salaries - Regular              | \$ 7,768     | \$ 7,962     | \$ 8,161     | \$ 8,365     | \$ 8,574     | \$ 8,789     |
| 403-4202-514.20-01                    | Employer Paid Benefits          | 3,930        | 4,068        | 4,210        | 4,357        | 4,510        | 4,668        |
| 403-4202-514.31-01                    | Office & Operating Supply       | 200          | 205          | 210          | 215          | 221          | 226          |
| 403-4202-514.42-01                    | Telecommunications              | 50           | 51           | 53           | 54           | 55           | 57           |
| 403-4202-514.42-02                    | Communications - Postage        | 1,750        | 1,794        | 1,839        | 1,885        | 1,932        | 1,980        |
| 403-4202-514.45-02                    | IMS Rental                      | 5,994        | 6,144        | 6,297        | 6,455        | 6,616        | 6,782        |
| 403-4202-514.45-08                    | Lease Miscellaneous             | 500          | 513          | 525          | 538          | 552          | 566          |
| 403-4202-514.46-06                    | AWC-L & I Pool                  | 765          | 784          | 804          | 824          | 844          | 866          |
| 403-4202-514.49-01                    | Excise Taxes                    | 62,427       | 62,739       | 63,053       | 63,368       | 63,685       | 64,003       |
| 403-4202-514.49-01                    | Excise Taxes - on New Rate Rev. | 2,809        | 5,774        | 8,901        | 12,199       | 15,678       | 19,346       |
| 403-4202-514.49-02                    | Printing & Binding              | 500          | 513          | 525          | 538          | 552          | 566          |
| 403-4202-514.49-27                    | Bad Debt Expense                | 1,800        | 1,845        | 1,891        | 1,938        | 1,987        | 2,037        |
| Total Customer Service                |                                 | \$ 88,493    | \$ 92,390    | \$ 96,469    | \$ 100,738   | \$ 105,206   | \$ 109,883   |
|                                       |                                 |              | 4.4%         | 4.4%         | 4.4%         | 4.4%         | 4.4%         |
| Stormwater Facility Maintenance       |                                 |              |              |              |              |              |              |
| 403-4203-538.10-01                    | Salaries - Regular              | \$ 374,446   | \$ 383,807   | \$ 393,402   | \$ 403,237   | \$ 413,318   | \$ 423,651   |
| 403-4203-538.10-05                    | Salaries - Overtime             | 4,000        | 4,100        | 4,203        | 4,308        | 4,415        | 4,526        |
| 403-4203-538.10-06                    | Salaries - Part-Time            | 44,761       | 45,880       | 47,027       | 48,203       | 49,408       | 50,643       |
| 403-4203-538.20-01                    | Employer Paid Benefits          | 209,073      | 216,391      | 223,964      | 231,803      | 239,916      | 248,313      |
| 403-4203-538.31-01                    | Office & Operating Supply       | 35,040       | 35,916       | 36,814       | 37,734       | 38,678       | 39,645       |
| 403-4203-538.31-02                    | Small Tools & Equipment         | 2,500        | 2,563        | 2,627        | 2,692        | 2,760        | 2,829        |
| 403-4203-538.31-17                    | Supplies - Uniform Purchase     | 1,600        | 1,640        | 1,681        | 1,723        | 1,766        | 1,810        |
| 403-4203-538.31-22                    | Manhole/Ring/Lid Replace        | 4,000        | 4,100        | 4,203        | 4,308        | 4,415        | 4,526        |
| 403-4203-538.34-01                    | Fuel                            | 750          | 769          | 788          | 808          | 828          | 849          |
| 403-4203-538.41-01                    | Prof. Svc - Other               | 13,000       | 13,325       | 13,658       | 14,000       | 14,350       | 14,708       |
| 403-4203-538.45-01                    | Equipment Rental                | 356,747      | 365,666      | 374,807      | 384,177      | 393,782      | 403,626      |
| 403-4203-538.47-01                    | Utility - Electric              | 900          | 923          | 946          | 969          | 993          | 1,018        |
| 403-4203-538.47-02                    | Utility - City of Lacey         | 13,000       | 13,325       | 13,658       | 14,000       | 14,350       | 14,708       |
| 403-4203-538.48-01                    | Rep & Maint - Equipment         | 800          | 820          | 841          | 862          | 883          | 905          |
| 403-4203-538.48-03                    | Rep & Maint - Facilities        | 52,050       | 53,351       | 54,685       | 56,052       | 57,453       | 58,890       |
| 403-4203-538.49-10                    | Uniform Contract/Cleaning       | 500          | 513          | 525          | 538          | 552          | 566          |
| 403-4203-538.49-29                    | Vactor Waste                    | 30,000       | 30,750       | 31,519       | 32,307       | 33,114       | 33,942       |
| 403-4203-538.60-03                    | Building Improv                 | 125,000      | -            | -            | -            | -            | -            |
| Total Stormwater Facility Maintenance |                                 | \$ 1,268,167 | \$ 1,173,837 | \$ 1,205,347 | \$ 1,237,720 | \$ 1,270,981 | \$ 1,305,155 |
|                                       |                                 |              | -7.4%        | 2.7%         | 2.7%         | 2.7%         | 2.7%         |
| Gap Analysis                          |                                 |              |              |              |              |              |              |
| Programmatic & Staffing Costs         |                                 |              |              |              |              |              |              |
| Recommended Level of Service          |                                 | \$ 2,728     | \$ 694,816   | \$ 612,799   | \$ 732,486   | \$ 782,532   | \$ 773,807   |
| Total Operating Expenditures          |                                 | \$ 3,157,252 | \$ 3,805,415 | \$ 3,806,711 | \$ 4,012,015 | \$ 4,150,048 | \$ 4,231,749 |
|                                       |                                 |              | 20.5%        | 0.0%         | 5.4%         | 3.4%         | 2.0%         |
| Capital Activity                      |                                 |              |              |              |              |              |              |
| 2013 Revenue Bonds Debt Service       |                                 | \$ 101,635   | \$ 101,525   | \$ 102,207   | \$ 101,971   | \$ 101,685   | \$ 101,517   |
| Rate Funded Capital                   |                                 | 934,650      | 414,181      | 584,553      | 604,225      | 702,506      | 868,857      |
| Total Capital Activity                |                                 | \$ 1,036,285 | \$ 515,707   | \$ 686,760   | \$ 706,197   | \$ 804,192   | \$ 970,374   |
| Revenue Less Obligations              |                                 | \$ 11,672    | \$ 50,811    | \$ 53,363    | \$ 56,043    | \$ 58,858    | \$ 61,814    |
| Ending Fund Balance                   |                                 | \$ 1,011,672 | \$ 1,062,484 | \$ 1,115,847 | \$ 1,171,890 | \$ 1,230,748 | \$ 1,292,563 |
| 90-Day Target                         |                                 | 1,011,672    | 1,062,484    | 1,115,847    | 1,171,890    | 1,230,748    | 1,292,563    |

| Capital Activity                     |                                                     | 2020         | 2021           | 2022         | 2023         | 2024           | 2025           | Total        |
|--------------------------------------|-----------------------------------------------------|--------------|----------------|--------------|--------------|----------------|----------------|--------------|
| Beginning Fund Balance               |                                                     | \$ 5,438,103 | \$ 5,731,149   | \$ 4,398,564 | \$ 4,109,005 | \$ 4,014,433   | \$ 3,347,439   |              |
| Revenues                             |                                                     |              |                |              |              |                |                |              |
| Rate Funded Capital                  |                                                     | \$ 934,650   | \$ 414,181     | \$ 584,553   | \$ 604,225   | \$ 702,506     | \$ 868,857     | \$ 4,108,973 |
| Interest Earnings                    |                                                     | 13,595       | 14,328         | 10,996       | 10,273       | 10,036         | 8,369          | \$ 67,597    |
| Total Resources                      |                                                     | \$ 6,386,349 | \$ 6,159,658   | \$ 4,994,114 | \$ 4,723,503 | \$ 4,726,975   | \$ 4,224,664   | \$ 4,176,570 |
| Capital Expenditures                 |                                                     |              |                |              |              |                |                |              |
| 19-1                                 | Westminster Pond Modification                       | -            | -              | (65,564)     | (315,142)    | -              | -              | (380,706)    |
| 19-2                                 | 26th Loop Conveyance                                | -            | -              | -            | (112,551)    | (475,302)      | -              | (587,853)    |
| 19-3                                 | Stormwater Design Manual (SDM) Update               | (51,500)     | (63,654)       | (76,491)     | -            | -              | -              | (191,645)    |
| 19-4                                 | Woodland Creek Stormwater Treatment Facility        | -            | (53,045)       | (469,873)    | -            | -              | -              | (522,918)    |
| 19-5                                 | Woodland Creek Community Park Habitat Restoration   | -            | (53,045)       | -            | -            | -              | -              | (53,045)     |
| 19-6                                 | Stormwater Management Action Planning (SMAP)        | -            | -              | (109,273)    | -            | -              | -              | (109,273)    |
| 19-7                                 | Regional Water Quality Facility Program             | -            | -              | -            | (112,551)    | (115,927)      | -              | (228,478)    |
| 19-8                                 | Infiltration Retrofit Program                       | -            | -              | -            | -            | (115,927)      | (119,405)      | (235,333)    |
| 19-9                                 | Miscellaneous Storm System Improvements             | (154,500)    | (159,135)      | (163,909)    | (168,826)    | (173,891)      | (179,108)      | (999,369)    |
| 19-10                                | Stormwater Comprehensive Plan (SCP) Update          | -            | -              | -            | -            | (92,742)       | (202,989)      | (295,731)    |
| 19-11                                | Land Purchase for Future Facility Improvements      | -            | (371,315)      | -            | -            | -              | -              | (371,315)    |
| 13-7                                 | Diamond Stormwater Alternative                      | -            | -              | -            | -            | -              | (95,524)       | (95,524)     |
| 13-9                                 | Clearbrook Drainage System Improvements             | -            | -              | -            | -            | -              | (95,524)       | (95,524)     |
| 13-10                                | Homann Area System Rehabilitation (Analysis/Design) | -            | -              | -            | -            | (139,113)      | (238,810)      | (377,923)    |
| 13-11                                | 1010 Midway Storm Improvements                      | -            | -              | -            | -            | -              | -              | -            |
| 13-12                                | Belair-Impala Storm System Installation             | (103,000)    | (1,060,900)    | -            | -            | -              | -              | (1,163,900)  |
| 13-14                                | Alder and Gemini Drainage System Improvements       | -            | -              | -            | -            | (81,149)       | (537,324)      | (618,473)    |
| 13-15                                | White Fir Stormwater Installation                   | -            | -              | -            | -            | -              | -              | -            |
| 13-16                                | 5th Ct SE and 5th Way Easement Storm Improvements   | -            | -              | -            | -            | -              | -              | -            |
| 13-17                                | Shady Lane Treatment Facility Improvements          | -            | -              | -            | -            | (185,484)      | -              | (185,484)    |
|                                      | CIP already underway in 2020                        | (346,200)    | -              | -            | -            | -              | -              | (346,200)    |
| Total Escalated Capital Expenditures |                                                     | \$ (655,200) | \$ (1,761,094) | \$ (885,109) | \$ (709,071) | \$ (1,379,536) | \$ (1,468,684) | (6,858,694)  |
| Ending Fund Balance                  |                                                     | \$ 5,731,149 | \$ 4,398,564   | \$ 4,109,005 | \$ 4,014,433 | \$ 3,347,439   | \$ 2,755,980   |              |
| 1% of Fixed Assets Target Min.       |                                                     | 648,274      | 665,885        | 674,736      | 681,827      | 695,622        | 710,309        |              |