1. CALL TO ORDER
   Pledge of Allegiance & Roll Call

2. COUNCIL BUSINESS
   A. Review/Discussion - Office Manager Job Description
   B. Review/Discussion - Ordinance - Cell Tower Siting - Updating EMC 18.100.110
   C. Review/Discussion - SWMP Update
   D. Review/Discussion - SW Rates
   E. Review/Discussion - Purchase Agreement (no material)
   F. Review/Discussion - Ordinance - Street Vacation
   G. Review/Discussion - Resolution - Credit Card Policy Update
   H. Review/Discussion - Resolution - Street Light Contract

3. OTHER COUNCIL ITEMS

4. ADJOURN

Study Sessions are meetings for Council to review upcoming and pertinent business of the City, no action is taken by the City Council. Study Sessions are open to the public, but public input is reserved for the regular Council meetings.
SUMMARY STATEMENT:

While interviewing to fill our plans examiner/inspector position, staff interviewed an individual that, while not picked for the position, had the potential to help the City address a number of other administrative needs (Swiss cheese holes) for permit coordinator back-up, code enforcement management, addressing, grant and contract management, as well as back up the plans examiner/inspector position. The City Council approved funding for a second plans examiner/inspector position. The individual was hired with the understanding the job description in all likelihood would change within the first year of employment, as the Mayor identified the full scope of the administrative need (where the Swiss Cheese holes were). The individual was not successful in their role and was released shortly into the probationary period. Staff, under the Mayor’s direction crafted the Office Manager’s Job Description rewrite, to better address filling the aforementioned needs, as well as provide a greater scope of administrative function back-ups as well as primary task clerical ongoing and project management needs. This position will not back up the plans examiner/inspector function, which will occur by backfilling from the Building Official or up filling from the Inspector Intern position. The original Office Manager position was combined with HR Director and was a Director level position. The City has chosen a new path for HR (City Clerk/HR Director) and converted the Office Manager position to a mid-management level.

In addition, the position needs assessment identified a strong desire to attach one position to all city project tracking, monitoring and execution status reporting to provide staff, leadership, Mayor and the Council, a comprehensive picture of the City workload. These functions were included in old job descriptions (Admin Coordinator) in place prior to the recession layoffs in 2009, where the City maintained 18 full time positions.

This position is proposed to be at the same pay scale as the Accounting Manager (Range FT-17-08).

COUNCIL COMMITTEE REVIEW AND RECOMMENDATION:

RECOMMENDED ACTION: Move to Approve the Revised Office Manager Job Description.

ALTERNATIVES TO RECOMMENDED ACTION:
1) Do not adopt
2) Forward to Study Session for further review
CITY OF EDGEWOOD

OFFICE MANAGER - Job Description

Department: Administration  Salary Range: $4,844-$6,403/mo.

Opening Date:  Closing Date: Open until Filled

This position is a full-time, non-union, FLSA exempt position.

GENERAL SCOPE OF WORK:
The Office Manager is responsible for managing and overseeing the City of Edgewood’s day-to-day office activities by providing adequate support to City staff, ensuring high levels of organizational efficiency, and providing effective communication. This position may come in contact with sensitive and confidential information that may be of critical or strategic nature. The Office Manager is responsible for intra-office communication protocols, administrative procedures, inventory control, office staff supervision, project management, and task delegation, and the primary backup for the Permit Coordinator. This position performs a wide range of cross-functional office duties, teaming with all departments at City Hall. Work is often performed independently, with a high degree of discretion; however, the position serves at the direction of the City Clerk.

ESSENTIAL JOB FUNCTIONS:
The duties listed below are intended only as illustrations of the various types of work that may be performed. The omission of specific statements of duties does not exclude them from the position if the work is similar, related, or a logical assignment to the position. Reasonable accommodations may be made to enable performance of these essential functions.

1. Manages office services by ensuring office operations and procedures are organized; correspondence are controlled; filing systems are designed; supply requisitions are reviewed and approved; and that clerical ongoing and project management functions are properly assigned and monitored.
2. Maintains office efficiency by carrying out planning and execution of equipment procurement, layouts, and office systems.
3. Develops and implements office policies by setting up procedures and standards to guide the operation of the office; ensures that results are measured against standards, while making necessary changes along the way.
4. Assigns project tasks to other staff members, as necessary, and monitors the performance of each assigned task.
5. Reviews and analyzes special projects and keeps the City’s executive team properly informed.
6. Ensures top performance of office staff by providing adequate coaching and guidance.
7. Attends educational workshops, reviews industry publications, joins professional associations, and builds networks with fellow professionals in order to remain updated of technical and professional knowledge and responsibilities.
8. Participates actively in the planning and execution of company events.
9. Develops standards to enhance operational procedures.
10. Manages the City’s relationship with the Information Technology (IT) Department to assess equipment needs and deal with issues quickly to return staff and equipment to full operation.
11. Assists with new employment - in processing and initiating benefit enrollment.
12. Partners with the Accounting Manager to assist with mailings, purchase orders, and other necessary accounting tasks.
13. Coordinates schedules, appointments, and leaves of absences.
14. Maintains knowledge of Front Counter tasks and standard operating procedures.

NECESSARY KNOWLEDGE, SKILLS AND ABILITIES:
To perform this job successfully, the person in this position must be able to perform each Essential Job Function. The requirements listed below are representative of the knowledge, skills, and abilities necessary to meet the minimum qualifications for this position.

Required
- High School diploma, GED, or equivalent.
- Strong administrative skills, with knowledge of modern office and clerical practices and procedures, and skills in the operation of a personal computer, including word processing and permitting software, calculator, ruler, copier, fax machine, and telephone.
- Ability to keep sensitive information confidential
- Ability to plan and execute diverse tasks at the same time without supervision.
- Ability to effectively communicate both orally and in writing.
- Documentation to fulfill the requirements of the Immigration and Nationality Act is mandatory within 3 days of employment.

Preferred
- Bachelor’s degree in business, public administration, or other related discipline.
- Three (3) years of office management experience.

Special Considerations:
The incumbent will be joining an organization with fewer than 20 full-time positions. As a small and nimble organization, the City of Edgewood needs to hire and retain individuals interested in working with a small team. A hiring objective for this position is to find an employee that will be competently qualified and interested in the work diversity offered by a full-service municipal corporation operating with a limited budget and staffing.

PHYSICAL DEMANDS AND WORKING CONDITIONS:
The physical demands described herein are representative of those that must be met by an employee to successfully perform the essential job functions. The work environment characteristics described herein are representative of those an employee may encounter while performing the essential functions of this position. Work is performed in both field and office settings. This position requires ability to transport oneself to a variety of locations, primarily in and around Pierce County.

While performing the duties of this job, the employee is required to stand, walk, use hands and fingers, handle, feel or operate objects, tools, or controls, and reach with hands and arms. Hand-eye coordination is necessary to operate
computers and various pieces of office and field equipment. The employee is occasionally required to sit, climb stairs or ladders, or balance and walk on scaffolding; stoop, kneel, crouch or crawl; talk and hear. The employee may occasionally be required to lift or move up to 50 pounds with or without a reasonable accommodation. Specific vision abilities required by this job include close vision, distance vision, peripheral vision, and the ability to adjust focus.

Duties are performed both indoors and outdoors under a variety of weather and environmental conditions, including wind, mud, rain, and snow. Duties are usually performed alone, but are also performed as part of a work team. Attendance at some night meetings may be required. The work environment is fast-paced and moderate to very noisy.

ACKNOWLEDGEMENTS:
The statements contained herein reflect general details as necessary to describe the principal functions of this job, the level of knowledge and skill typically required, and the scope of responsibility, but should not be considered an all-inclusive listing of work requirements. Individuals may perform other duties as assigned including work in other functional areas to cover absences or relief, to equalize peak work periods or otherwise to balance the workload.

EQUAL OPPORTUNITY EMPLOYER - AMERICANS WITH DISABILITIES ACT
The City of Edgewood is an Equal Opportunity Employer. Women and minorities are encouraged to apply. Requirements outlined in this job description may be subject to modification to reasonably accommodate individuals with disabilities who are otherwise qualified for employment in this position. However, some requirements may exclude individuals who pose a direct threat or significant risk to the health and safety of themselves or other employees. This job description does not constitute an employment agreement between the Employer and Employee and is subject to change as the needs of the Employer and requirements of the job change.

This position description does not constitute a contract for employment. It is subject to change by the City as the needs of the City and requirements change.

The City of Edgewood is a Drug Free workplace and an Equal Opportunity Employer.

If you meet the minimum qualifications and are interested in applying for this position, please send a cover letter, resume, and signed EOCC statement to:

City of Edgewood
Human Resources
2224 104th Ave E
Edgewood, WA 98372-1513

Submittals may also be e-mailed to humanresources@cityofedgewood.org.

Incomplete submittals will be disqualified. Only those applicants selected to move forward in the process may be contacted. Submittals will be retained in accordance with Records Retention practices. If you have questions regarding the application process, please contact human resources at 253-952-3299 or via e-mail at humanresources@cityofedgewood.org.
SUBJECT: Code amendment pertaining to the standards and procedures for permitting, approval, collocation, removal, replacement, design, and maintenance of new and existing wireless communication facilities.  

Agenda Item #: 2B  

For Agenda of: August 21, 2018  

Prepared by: Darren Groth  

ATTACHMENTS (list): ☒ Staff Report  
☒ Draft of City Ordinance with Attachments A (Title 10) and B (Title 15)  

Review of Materials:  

<table>
<thead>
<tr>
<th>Reviewer</th>
<th>Expenditure Required</th>
<th>Amount Budgeted</th>
<th>Appropriation Required</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mayor, Daryl Eidinger</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>Asst. City Administrator, Dave Gray</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>August 7, 2018: Study Session</td>
</tr>
<tr>
<td>City Attorney, Carol Morris</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>August 14, 2018: Public Hearing</td>
</tr>
<tr>
<td>City Clerk, Rachel Pitzel</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>August 21, 2018: Study Session</td>
</tr>
<tr>
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<td>August 28, 2018: Adoption</td>
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<td>Public Works, Jeremy Metzler</td>
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Fiscal Note/Consideration: N/A

SUMMARY STATEMENT:  

The City recognized a need to update various provisions of its Edgewood Municipal Code (EMC) pertaining to wireless communication facilities (WCF). The current EMC Section 18.100.110 is not current and does not match the needs of the various communication companies wanting to provide wireless coverage in Edgewood. As a result, the proposal will repeal and replace the current EMC code with the attached Article 10 – Use Provisions and Article 15 – WCF Definitions.

COUNCIL COMMITTEE REVIEW AND RECOMMENDATION: The Planning Commission recommended approval of the draft ordinance, as modified below.  

1. Section 10.4.J – Permit Timing language updated for clarity;  
2. Tables 1 and 2 – tower height increased allowances with a CUP; and  
3. Tables 1 and 2 – footnote sentence language structure.

RECOMMENDED ACTION: Receive a briefing, hold a discussion, and provide any direction to staff regarding the proposed code amendment.
**Discussion**

On May 14, 2018, the Planning Commission opened a discussion item regarding cell tower siting in Edgewood. The conversation focused on the current code requirements for personal wireless service facilities (PWSFs). Section 18.100.110 of the Edgewood Municipal Code (EMC) addresses the issues of location and appearance associated with PWSFs. Currently, a PWSF may be located via a Conditional Use Permit in the following land use zones:

1. Commercial, MUR, Business Park, and Town Center; provided, that they are located within 300 feet of Meridian Avenue East.
2. Industrial, which are not required to be within 300 feet of Meridian Avenue East.
3. Public; provided, that they are located within 600 feet of Meridian Avenue East.

The limitation to within 300 or 600 feet of Meridian Avenue potentially limits the availability of tower siting that will comprehensively cover the city. As such, several representatives from various cellular companies approached the City staff to seek code modification that will be technologically sound and still meet the needs of the community. During the May 14 meeting, the Planning Commission discussed various options to move forward with possible code amendments. The Commission allowed staff to meet with stakeholders in order to draft amendments that keep up with national technology standards and address the following items of local importance:

1. Aesthetics;
2. Safety, of the facilities and emissions;
3. Accessibility;
4. Separation distance setbacks; and
5. Co-location requirements.

Staff met with representatives of multiple cellular companies and drafted a model code. The initial model code has been revised in accordance with applicable state law and EMC processing provisions. In addition, several sections of the model code were rewritten to match the specific language contained in the model ordinance presented on the National League of Cities website.

The National League of Cities model code was intended to serve as the initial basis for the first model code presented to the Planning Commission during its June 11, 2018 meeting. The revised draft code was published online for the public hearing and shared with the industry representatives.

The Planning Commission held a public hearing on the draft code on July 9, 2018. Chair Lowry opened the public hearing at 6:07 p.m. Community Development Director Darren Groth briefed the Commission on the requested code amendment. Kim Allen, Wireless Policy Group, was present and voiced support for the code change request, but made two language amendment recommendations.

The first recommendation was to clarify the language pertaining to permit timing in Section 10.4.J.

The second recommendation was to allow increased tower heights if the applicant seeks a Conditional Use Permit.
In addition to the two recommended changes from Ms. Allen, Commissioner Guillory also suggested a similar format for all table footnotes.

After all of the suggested modifications to the presented code, the Planning Commission voted 4-0 to recommend approval of the draft code with all three text modifications. The draft code and ordinance presented herein includes all of the updates recommended by the Planning Commission.

On August 7, 2018, Director Groth briefed the City Council on this item and indicated that a public hearing was scheduled for the August 14 regular City Council meeting.

On August 14, City Council held a public hearing for AB18-034, which proposed Ordinance No. 18-0526, relating to Wireless Communication Facilities (WCF) and the standards and procedures for permitting, approval, collocation, removal, replacement, design, and maintenance of new and existing WCFs to conform to Federal Law and applicable regulations; establishing an application submittal and approval process; providing for termination of non-conforming structures; repealing Section 18.100.110 of the Edgewood Municipal Code (EMC); and adopting a new Section 18.100.110 to the Edgewood Municipal Code. The Mayor opened the public hearing and accepted comments from three members of the public, as well as a submitted comment letter of support from Ms. Allen.

On August 21, 2018, this item will again be briefed to City Council as an after action of the public hearing to finalize the draft in preparation for final action. This code amendment is scheduled for final adoption during the August 28, 2018 City Council meeting.
ORDINANCE NO. 18-0526

AN ORDINANCE OF THE CITY OF EDGEWOOD, WASHINGTON, RELATING TO WIRELESS COMMUNICATION FACILITIES (WCF) AND THE STANDARDS AND PROCEDURES FOR PERMITTING, APPROVAL, COLLOCATION, REMOVAL, REPLACEMENT, DESIGN, AND MAINTENANCE OF NEW AND EXISTING WCFs TO CONFORM TO FEDERAL LAW AND APPLICABLE REGULATIONS; ESTABLISHING AN APPLICATION SUBMITTAL AND APPROVAL PROCESS; PROVIDING FOR TERMINATION OF NON-CONFORMING STRUCTURES; REPEALING SECTION 18.100.110 OF THE EDGEWOOD MUNICIPAL CODE (EMC); AND ADOPTING A NEW SECTION 18.100.110 TO THE EDGEWOOD MUNICIPAL CODE; PROVIDING FOR SEVERABILITY; AND ESTABLISHING AN EFFECTIVE DATE.

WHEREAS, in 1934, Congress enacted the Communications Act of 1934, creating the FCC and granting it authority over common carriers engaged in the provision of interstate or foreign communications services; and

WHEREAS, in 1996 Congress enacted Pub. L. No. 104-104, 110 Stat. 70 (the “1996 Act”), amending the Communications Act of 1934 and implementing regulations applicable to both wireless and wireline communications facilities for the purpose of removal of barriers to entry into the telecommunications market while preserving local government zoning authority except where specifically limited under the 1996 Act; and

WHEREAS, in the 1996 Act, Congress imposed substantive and procedural limitations on the traditional authority of state and local governments to regulate the location, construction, and modification of wireless facilities and incorporated those limitations into the Communications Act of 1934; and

WHEREAS, the City has adopted regulations that have been codified as part of the Municipal Code of the City establishing local requirements for the location, construction, and modification of wireless facilities; and

WHEREAS, in 2012 Congress passed the “Middle Class Tax Relief and Job Creation Act of 2012” (the “Spectrum Act”) (PL-112-96; codified at 47 U.S.C. § 1455(a)); and

WHEREAS, Section 6409 (hereafter “Section 6409”) of the Spectrum Act implements additional substantive and procedural limitations upon state and local government authority to regulate modification of existing wireless antenna support structures and base stations; and

WHEREAS, Congress through its enactment of Section 6409 of the Spectrum Act, has mandated that local governments approve, and cannot deny, an application requesting modification of an existing tower or base station if such modification does not substantially change the physical dimensions of such tower or base station; and
WHEREAS, the 1996 Act empowers the Federal Communications Commission (the “FCC”) to prescribe such rules and regulations as may be necessary in the public interest to carry out the provisions of the 1996 Act, and subsequently added portions of the 1996 Act such as Section 6409; and

WHEREAS, the FCC, pursuant to its rule making authority, adopted and released a Notice of Proposed Rulemaking in September of 2013 (In re Acceleration of Broadband Deployment by Improving Wireless Facilities Siting Policies, WT Docket Nos. 13-238, 13-32; WC Docket No. 11-59; FCC 13-122) which focused in part upon whether or not the FCC should adopt rules regarding implementation of Section 6409; and

WHEREAS, on October 21, 2014, the FCC issued its report and order, WT Docket Nos. 13-238, 13-32; WC Docket No. 11-59; FCC 14-153, in the above described proceeding (the “Report and Order” or “Order”) clarifying and implementing statutory requirements related to state and local government review of infrastructure siting, including Section 6409, with the intent of facilitating and expediting the deployment of equipment and infrastructure to meet the demand for wireless capacity; and

WHEREAS, the rules adopted by the FCC in its Report and Order implementing Section 6409 are intended by the FCC to spur wireless broadband deployment, in part, by facilitating the sharing of infrastructure that supports wireless communications through incentives to collocate on structures that already support wireless facilities; and

WHEREAS, the Report and Order also adopts measures that update the FCC’s review processes under the National Environmental Policy Act of 1969 (“NEPA”) and section 106 of the National Historic Preservation Act of 1966 (“NHPA”), with a particular emphasis on accommodating new wireless technologies that use smaller antennas and compact radio equipment to provide mobile voice and broadband service; and

WHEREAS, on January 5, 2015, the FCC released an Erratum to the Report and Order making certain amendments to the provisions of the Report and Order related to NEPA and Section 106 of the NHPA; and

WHEREAS, that part of the Report and Order related to implementation of Section 6409, amends 47 C.F.R. Part 1 (PART 1 – PRACTICE AND PROCEDURE) by adding new Subpart CC § 1.40001 and establishing both substantive and procedural limitations upon local government application and development requirements applicable to proposals for modification to an existing antenna support structure or an existing base station (“Eligible Facility Request Rules”); and

WHEREAS, the Order, among other things, defines key terms utilized in Section 6409, establishes application requirements limiting the information that can be required from an applicant, implements a 60 shot clock and tolling provisions, establishes a deemed approved remedy for applications not timely responded to, requires cities to approve a project permit application requesting modification of an existing tower or base station that does not substantially change the physical dimensions of such tower or base station, and establishes development standards that govern such proposed modifications; and
WHEREAS, the Report and Order provides that the Eligible Facility Request Rules will be effective 90 days following publication in the Federal Register; and

WHEREAS, the Order was published in the Federal Register on Thursday, January 8, 2015, Federal Register; Vol. 80; No. 5, resulting in the Eligible Facility Request Rules becoming effective on April 8, 2015; and

WHEREAS, the Order is subject to appeal, however, even if an appeal is filed, the appeal will not automatically delay implementation of the Eligible Facility Request Rules; and

WHEREAS, the City Council finds that it is required under Section 6409 of the Spectrum Act and the Eligible Facility Request Rules established in the Order, to adopt and implement local development and zoning regulations that are consistent with Section 6409 and the Order; and

WHEREAS, an Environmental Checklist for a non-project action was prepared under the State Environmental Policy Act (RCW Chapter 43.21.C), pursuant to Washington Administrative Code Chapter 197-11, and a determination of Non-Significance (“DNS”) was issued on the 20th day of June, 2018; and

WHEREAS, in accordance with RCW 36.70A.106 and WAC 365-196-630, a notice of intent to adopt the proposed new development regulations was sent to the State of Washington Department of Commerce and to other state agencies to allow for a 60-day review and comment period, which comment period ended prior to adoption of this ordinance; and

WHEREAS, the Planning Commission held a Public Hearing to receive public testimony regarding the proposed code amendment at their July 9, 2018 meeting; and

WHEREAS, after the public hearing, the Planning Commission recommended approval, with modifications of the draft code and forwarded their recommendation to City Council; and

WHEREAS, the City Council held a public hearing on August 14, 2018; and

WHEREAS, the City Council considered this ordinance, the Planning Commission’s recommendation, and the public’s input received during the prior public hearings at its regular City Council meeting of August 28, 2018; and

WHEREAS, the City Council finds that the proposed development and zoning regulations are reasonable and necessary in order bring the City’s development regulations into compliance with the mandate imposed upon the City by Congress pursuant to Section 6409 and the regulations imposed upon the City by the FCC pursuant to its Report and Order, and are therefore in the public interest; and

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF EDGEOOD, WASHINGTON, DO ORDAIN AS FOLLOWS:
Section 1. Section 18.100.110 of the Edgewood Municipal Code is hereby repealed.

Section 2. A new Section 18.100.110 to the Edgewood Municipal Code is hereby adopted, all as set forth in Attachments A and B, which are attached hereto and incorporated herein by this reference.

Section 3. Severability. Should any section, paragraph, sentence, clause or phrase of this ordinance, or its application to any person or circumstance be declared unconstitutional or otherwise invalid for any reason, or should any portion of this ordinance be preempted by state or federal law or regulation, such decision or preemption shall not affect the validity of the remaining portions of this ordinance or its application to other persons or circumstances.

Section 4. Effective Date and Publication. A summary of this ordinance consisting of its title shall be published in the official newspaper of the City. This ordinance shall take effect and be in full force five (5) days after the date of publication.


__________________________________________
Daryl Eidinger, Mayor

ATTEST/AUTHENTICATED:

__________________________________________
Rachel Pitzel, City Clerk

APPROVED AS TO FORM:

__________________________________________
Carol Morris, CITY ATTORNEY

DATE OF PUBLICATION:
EFFECTIVE DATE:
Title 10 – Use Provisions
Chapter 10.40 -- Wireless Communications Facilities.

A. Purpose. The purpose of this Division is:
1. To protect the community’s natural beauty, visual quality and safety while facilitating the reasonable and balanced provision of wireless communication services. More specifically, it is the City’s goal to minimize the visual impact of WCFs on the community, particularly in and near residential zones;
2. To promote and protect the public health, safety, and welfare, preserve the aesthetic character of the Edgewood community, and to reasonably regulate the development and operation of WCFs within the City to the extent permitted under State and federal law;
3. To minimize the impact of WCFs by establishing standards for siting design and screening;
4. To encourage the collocation of antennas on existing structures, thereby minimizing new visual impacts and reducing the potential need for new towers that are built in or near residential zones by encouraging that WCFs first be located on buildings, existing towers or utility poles in public rights-of-way;
5. To protect residential zones from excessive development of WCFs;
6. To ensure that towers in or near residential zones are only sited when alternative facility locations are not feasible;
7. To preserve the quality of living in residential areas which are in close proximity to WCFs;
8. To preserve the opportunity for continued and growing service from the wireless industry;
9. To preserve neighborhood harmony and scenic viewsheds and corridors;
10. To accommodate the growing need and demand for wireless communication services;
11. To establish clear guidelines and standards and an orderly process for expedited permit application review intended to facilitate the deployment of wireless transmission equipment, to provide advanced communication services to the City, its residents, businesses and community at large;
12. To ensure City zoning regulations are applied consistently with federal telecommunications laws, rules, regulations and controlling court decisions;
13. To encourage the use of Distributed Antenna Systems (DAS) and other small cell systems that use components that are a small fraction of the size of macrocell deployments, and can be installed with little or no impact on utility support structures, buildings, and other existing structures;
14. To provide regulations which are specifically not intended to, and shall not be interpreted or applied to, (1) prohibit or effectively prohibit the provision of personal wireless services, (2) unreasonably discriminate among functionally equivalent service providers, or (3) regulate WCFs and wireless transmission equipment on the basis of the environmental effects of radio frequency emissions to the extent that such emissions comply with the standards established by the Federal Communications Commission; and

15. To implement Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012 (“Spectrum Act”), as interpreted by the Federal Communications Commission’s (“FCC” or “Commission”) Acceleration of Broadband Deployment Report & Order, which requires a state or local government to approve any Eligible Facilities Request for a modification of an existing tower or base station that does not result in a substantial change to the physical dimensions of such tower or base station.

B. Exemptions. The following are exempt from the provisions of this Div. 10.4 and shall be permitted in all zones:

1. Industrial processing equipment and scientific or medical equipment using frequencies regulated by the Federal Communications Commission (FCC).

2. Antennas and related equipment, no more than three feet in height, that are being stored, shipped, or displayed for sale.

3. Facilities used for purposes of public safety, such as, but not limited to, police, hospitals, and the regional 911 system.

4. Wireless radio towers, equipment, facilities, and associated appurtenances utilized for temporary emergency communications in the event of a disaster.

5. Licensed amateur (ham) radio stations.

6. Satellite dish antennas less than two meters in diameter, including direct to home satellite services, when used as a secondary use of the property.

7. Personal wireless service facilities, which existed on or prior to February 14, 1998; except that this exemption does not apply to modifications of existing facilities.

8. Routine maintenance or repair of a personal wireless service facility and related equipment (excluding structural work or changes in height or dimensions of antennas, towers, or buildings); provided, that compliance with the standards of this section are maintained.

9. Subject to compliance with all other applicable standards of this code, a building permit application need not be filed for emergency repair or maintenance of a personal wireless service facility until 30 days after the completion of such emergency activity.

10. Automated meter reading systems are permitted on utility poles provided any equipment mounted on the poles is less than 14 inches by 12 inches by 12 inches for the structure and associated antennas are less than 18
inches from the structure. This exemption shall be allowed in all zoning areas; however, structures are allowed only on power poles for the intended use of the power poles owner and may not be leased to other users.

C. New Wireless Communication Antenna Arrays -- permitted in all zones with administrative use permit as long as they meet the following requirements:
   1. Concealment and design requirements (as set forth in Div. 10.4.(F)(5) and (6); and
   2. Attached to or inside of an existing or replacement nonresidential structure with a maximum additional height of no more than 15 feet above the existing structure, or the minimum necessary to meet the required safety clearances or pole owner’s requirements.

D. Distributed Antenna Systems and Small Cells.
   1. Siting.
      a. Distributed Antenna Systems (DAS) and Small Cells are permitted in all zones as long as they meet the following requirements:
         i. DAS and Small Cells in public right-of-way subject to the City’s approval of a master use permit/franchise agreement under EMC Title 12.
         ii. DAS and Small Cells require an administrative use permit and a building permit if their installation requires construction of a new utility support structure or building;
         iii. DAS and Small Cells do not require an administrative use permit or building permit if the height of a replacement structure, including antennas, is no more than the greater of: (1) fifteen feet taller than the existing utility support structure; or (2) the minimum height necessary to provide the required safety clearances from transmission or distribution lines and pole owner requirements.
      b. Multiple Site DAS and Small Cells are permitted, per the following requirements:
         i. An administrative use permit for multiple distributed antennas that are part of a larger overall DAS network;
         ii. An administrative use permit for multiple small cells paced to provide wireless coverage in a contiguous area;
         iii. For locations in the public right-of-way, a single master use permit/franchise agreement (Title 12 EMC) may be used for multiple node locations in DAS and/or small cell networks throughout the City.
      a. All related equipment, including but not limited to ancillary equipment, radios, cables, associated shrouding, microwaves, and conduit which are mounted on utility support structures shall not be mounted more than six (6) inches from the surface of the support structure, unless a
further distance is technically required, and is confirmed in writing by the support structure owner.

b. Equipment for small cell facilities must be attached to the utility support structure, unless otherwise permitted to be ground mounted. The equipment must be placed in the smallest enclosure possible for the intended purpose. The equipment enclosure may not exceed seventeen (17) cubic feet. Multiple equipment enclosures may be acceptable if designed to more closely integrate with the support structure design and does not cumulatively exceed seventeen (17) cubic feet. The applicant shall place the equipment enclosure behind any banners or road signs that may be on the support structure, if such banners or road signs are allowed by the pole owner and provided by the City.

c. An applicant who desires to enclose its antennas and equipment within a unified enclosure may do so, provided that such unified enclosure does not exceed four (4) cubic feet. To the extent possible the unified enclosure shall be placed so as to appear as an integrated part of the utility support structure or behind banners or signs. The unified enclosure may not be placed more than six (6) inches from the surface of the support structure, unless a further distance is technically required and confirmed in writing by the support structure owner.

d. Small cell facilities mounted on cables strung between existing utility poles shall conform to all of the following standards:
   i. Each strand mounted facility shall not exceed (3) cubic feet in volume;
   ii. Only one strand mounted facility is permitted per cable between any two existing poles;
   iii. The strand mounted devices shall be placed as close as possible to the nearest utility pole, in no event more than six (6) feet from the pole unless a greater distance is technically necessary or required by the pole owner for safety clearance;
   iv. No strand mounted device shall be located in or above the portion of the roadway open to vehicular traffic;
   v. Ground mounted equipment to accommodate such strand mounted facilities is not permitted, except when placed in pre-existing equipment cabinets;
   vi. Pole mounted equipment for strand mounted facilities shall meet the requirements of for pole mounted small cells; and
   vii. Such strand mounted devices must be installed to cause the least visual impact and with the minimum exterior cabling or wires (other than the original strand) necessary to meet the technological needs of the facility.
E. Standards -- Towers.

1. Prohibition. Only monopole towers are permitted in the City. Lattice towers and guyed towers are prohibited.

2. Siting. An administrative use permit is required to site a new tower in accordance with the criteria contained in Table 1 and Table 2. In addition, the location shall be subject to any additional siting priorities set forth in this chapter.

<table>
<thead>
<tr>
<th>Zoning District</th>
<th>Located in Public Right-of-way (ROW)</th>
<th>Maximum Tower Height [2]</th>
<th>Stealth Design</th>
<th>Setback from Property Lines (does not apply within ROW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C, MUR, TC, Public [1]</td>
<td>Yes</td>
<td>60’</td>
<td>See Footnote 1</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>60’</td>
<td>See Footnote 1</td>
<td>20’</td>
</tr>
<tr>
<td>BP, I [1]</td>
<td>(allowed in ROW only if less than or equal to 70’)</td>
<td>100’</td>
<td>See Footnote 1</td>
<td>20’</td>
</tr>
</tbody>
</table>

[1] Stealth design is required if an applicant constructs a tower in or within 150 feet of a residential zone.
[2] Tower heights of up to 120 feet can be requested through a Conditional Use Permit (CUP), where compatibility can be fully addressed.

<table>
<thead>
<tr>
<th>Zoning District</th>
<th>Maximum Tower Height [2]</th>
<th>Stealth Design</th>
<th>Setback from Property Lines (does not apply within ROW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF, MR [3]</td>
<td>60’</td>
<td>Required</td>
<td>20’</td>
</tr>
</tbody>
</table>

[3] Stealth design is required if an applicant constructs a tower in or within 50 feet of a residential zone.
[4] An additional 20 feet in height in these zones is allowed if applicant uses stealth design.

3. Tower Sharing and Collocation. New WCF facilities must, to the maximum extent feasible, collocate on existing towers or other structures of a similar height to avoid construction of new towers, unless precluded by zoning constraints such as height, structural limitations, inability to obtain authorization by the owner of an alternative location, or where an alternative location will not meet the service coverage objectives of the applicant. Applications for a new tower must address all existing towers.
or structures of a similar height within 1/2 mile of the proposed site as follows: (a) by providing evidence that a request was made to locate on the existing tower or other structure, with no success; or (b) by showing that locating on the existing tower or other structure is infeasible.

4. Preferred Tower Locations. In addition to the development standards in this chapter, an applicant for a tower must submit documentation to demonstrate that there is a need for a new tower if it is to be located in a residential zone or within one hundred fifty (150) feet of an existing residential lot. An evaluation of the operational needs of the wireless communications provider, alternative sites, alternative existing facilities upon which the proposed antenna array might be located, and collocation opportunities on existing support towers within one-half mile of the proposed site shall be provided. Evidence shall demonstrate that no practical alternative is reasonably available to the applicant. All new towers proposed to be located in a residential zone or within 150 feet of a residential zone are permitted only after application of the following siting priorities, ordered from most-preferred to least-preferred. In addition, the applicant for a tower located in a residential zone or within 150 feet of a residential zone shall address these preferences in an alternative sites analysis provided with the complete application.
   a. City-owned or operated property and facilities, that are not in residential zones or located within 150 feet of residential zones;
   b. Industrial zones and business park zones (I & BP);
   c. Nonresidential (not SF or MR) zones;
   d. City-owned or operated property and facilities in any zone;
   e. Commercial, mixed use residential, town center & public zones (C, MUR, TC & Public);

5. Compliance with Code. The proposed tower shall satisfy all of the provisions and requirements of this Div. 10.4.

6. Public Notice. In addition to the notice requirements of EMC Chapter 18.40 and Section 18.50.040 for a conditional use permit, tower proposals in residential zones and within 150 feet of a residential zone shall include the following public notice:
   a. A black and white architectural elevation and color photo simulation rendering of the proposed WCF; and
   b. The sign required by EMC 18.40.180 shall include that same architectural elevation and color photo simulation combination selected by the City that depicts the visual impact of the WCF.

F. General Development Standards Applicable to WCF’s. The following criteria shall be applied in approving, approving with conditions or denying a permit for a WCF. Unless otherwise provided in this chapter, WCF construction shall be consistent with the development standards of the zoning district in which it is located.

1. Height. Refer to Tables 1 and 2.
2. Setback Requirements.
   a. Refer to Tables 1 and 2 for towers.
   b. All equipment shelters, cabinets or other on-the-ground ancillary equipment shall be buried or meet the setback requirement of the zone in which located. Notwithstanding the setbacks provided for in Tables 1 and 2, when a residence is located on an adjacent parcel, the minimum side setback from the lot line for a new tower must be equal to the height of the proposed tower, unless:
      i. The tower is constructed with breakpoint design technology. If the tower has been constructed using breakpoint design technology, the minimum setback distance shall be equal to 110 percent (110%) of the distance from the top of the structure to the breakpoint level of the structure, or the applicable zone’s minimum side setback requirements, whichever is greater. (For example, on a 100-foot tall monopole with a breakpoint at eighty [80] feet, the minimum setback distance would be twenty-two [22] feet [110 percent of twenty (20) feet, the distance from the top of the monopole to the breakpoint] or the minimum side yard setback requirements for that zone, whichever is greater.) Provided, that if an applicant proposes to use breakpoint design technology to reduce the required setback from a residence, the issuance of building permits for the tower shall be conditioned upon approval of the tower design by a structural engineer.
      ii. Landscaping. All landscaping shall be installed and maintained in accordance with this chapter. Existing on-site vegetation shall be preserved to the greatest extent reasonably possible and disturbance of the existing topography shall be minimized. The Director may grant a waiver from the required landscaping based on findings that a different requirement would better serve the public interest.
      iii. Tower bases, when fenced (compounds), or large equipment shelters (greater than three feet by three feet by three feet), shall be landscaped. Tower bases shall be screened by fencing and landscaping, which will encompass a five-foot radius around the fenced area.
      iv. If fencing is installed, it shall consist of decorative masonry or wood fencing.
      v. Visual Impact. All WCFs in residential zones and within 150 feet of residential zones, including equipment enclosures, shall be sited and designed to minimize adverse visual impacts on surrounding properties and the traveling public to the greatest extent reasonably possible, consistent with the proper functioning of the WCF. Such WCFs and equipment enclosures shall be integrated through location and design to blend in with the existing characteristics of the site. Such WCFs shall also be designed to either resemble the surrounding landscape and
other natural features where located in proximity to natural surroundings, or be compatible with the urban, built environment, through matching and complimentary existing structures and specific design considerations such as architectural designs, height, scale, color and texture, and/or be consistent with other uses and improvements permitted in the relevant zone.

vi. Use of Stealth Design/Technology. Stealth design is required in residential zones and to the extent shown in Tables 1 and -2. Stealth and concealment techniques must be appropriate given the proposed location, design, visual environment, and nearby uses, structures, and natural features. Stealth design shall be designed and constructed to substantially conform to surrounding building designs or natural settings, so as to be visually unobtrusive. Stealth design that relies on screening WCFs in order to reduce visual impact must screen all substantial portions of the facility from view. Stealth and concealment techniques do not include incorporating faux-tree designs of a kind that are not native to the Pacific Northwest.

vii. Lighting. For new towers, only such lighting as is necessary to satisfy FAA requirements is permitted. All FAA-required lighting shall use lights that are designed to minimize downward illumination. Security lighting for the equipment shelters or cabinets and other on-the-ground ancillary equipment is also permitted as long as it is down shielded to keep light within the boundaries of the site. Motion detectors for security lighting are encouraged in residential zones or adjacent to residences.

viii. Noise. At no time shall transmission equipment or any other associated equipment (including, but not limited to, heating and air conditioning units) at any wireless communication facility emit noise that exceeds the applicable limit(s) established in EMC 18.90.140(E).

ix. Signage. No facilities may bear any signage or advertisement(s) other than signage required by law or expressly permitted or required by the City.

x. Code compliance. All facilities shall at all times comply with all applicable federal, state and local building codes, electrical codes, fire codes and any other code related to public health and safety.

xi. Building-mounted WCFs.

a. In residential zones, all transmission equipment shall be concealed within existing architectural features to the maximum extent feasible. Any new architectural features proposed to conceal the transmission equipment shall be designed to mimic the existing underlying structure, shall be proportional to the existing underlying structure or
conform to the underlying use and shall use materials in similar quality, finish, color and texture as the existing underlying structure.

b. In residential zones, all roof-mounted transmission equipment shall be set back from all roof edges to limit visibility from the right-of-way the maximum extent feasible.

c. In all other zones, antenna arrays and supporting transmission equipment shall be installed so as to camouflage, disguise, or conceal them to make them closely compatible with and blend into the setting or host structure.

d. WCFs in the public rights-of-way.

a. Preferred locations. Facilities shall be located as far from residential uses as feasible, and on main corridors and arterials to the extent feasible. Facilities in the rights-of-way shall maintain at least a two hundred (200) foot separation from other wireless facilities (except with respect to DAS or Small Cells), except when collocated or on opposite sides of the same street.

b. Pole-mounted or tower-mounted equipment. All pole-mounted and tower-mounted transmission equipment shall be mounted as close as possible to the pole or tower so as to reduce the overall visual profile to the maximum extent feasible while still maintaining required safety clearances. All pole-mounted and tower-mounted transmission equipment shall be painted with flat, non-reflective colors that blend with the visual environment.

c. Exception from Setback Requirements. Setbacks do not apply to facilities in the right-of-way, as shown in Tables 1 and -2.

d. Accessory Equipment. In residential zones, all equipment shall be located or placed in an existing building, underground, or in an equipment shelter or cabinet that is (a) designed to blend in with existing surroundings, using architecturally compatible construction and colors; and (b) located so as to be unobtrusive as possible consistent with the proper functioning of the WCF.

e. Spacing of Towers. Towers shall maintain a minimum spacing of one-half mile, unless it can be demonstrated that physical limitations (such as topography, terrain, tree cover or location of buildings) in the immediate service area prohibit adequate service by the existing facilities or that collocation is not feasible.

f. Entire Lot Controls. For purposes of determining whether the installation of a WCF complies with development standards, such as, but not limited to, setback and lot coverage requirements, the dimensions of the entire lot shall control, even though a WCF is located on a leased parcel within that lot.
xvi. Back-up Power Sources. The City encourages proposed WCFs to include back-up power sources, such as batteries or generators, to maintain wireless service in the event of an emergency, such as a natural disaster. So long as the WCF otherwise complies with this chapter, a WCF using such back-up power during an emergency will be presumed to neither be detrimental to the public health, safety, and general welfare, nor injurious to, or adversely affect, the uses, property, or improvements adjacent to and in the vicinity of the site upon which the proposed use is proposed to be located.

G. Final Inspection.
1. A Certificate of Occupancy will only be granted upon satisfactory evidence that the WCF was installed in substantial compliance with the approved plans and photo simulations.
2. Failure to Comply. If it is found that the WCF installation does not substantially comply with the approved plans and photo simulations, the applicant immediately shall make any and all such changes required to bring the WCF installation into compliance.

H. Maintenance.
1. All wireless communication facilities must comply with all standards and regulations of the FCC and any other State or federal government agency with the authority to regulate wireless communication facilities.
2. The site and the wireless communication facilities, including all landscaping, fencing and related transmission equipment must be maintained at all times in a neat and clean manner and in accordance with all approved plans.
3. All graffiti on wireless communication facilities must be removed at the sole expense of the permittee after notification by the City to the owner, operator, or both of the WCF.
4. If any FCC, state or other governmental license or any other governmental approval to provide communication services is ever revoked as to any site permitted or authorized by the City, the permittee must inform the City of the revocation within thirty (30) days of receiving notice of such revocation.

I. Discontinuation of Use.
1. Any WCF that is no longer needed and its use is discontinued shall be reported immediately by the service provider to the Community Development Director. Discontinued facilities shall be completely removed within six months and the site restored to its pre-existing condition.
2. There shall also be a rebuttable presumption that any WCF that is regulated by this chapter and that is not operated for a period of six (6) months shall be considered abandoned. This presumption may be
rebutted by a showing that such WCF is an auxiliary back-up or emergency utility or device not subject to regular use or that the WCF is otherwise not abandoned. For those WCFs deemed abandoned, all equipment, including, but not limited to, antennas, poles, towers, and equipment shelters associated with the WCF shall be removed within six (6) months of the cessation of operation. Irrespective of any agreement among them to the contrary, the owner or operator of such unused facility, or the owner of a building or land upon which the WCF is located, shall be jointly and severally responsible for the removal of abandoned WCFs. If the WCF is not thereafter removed within ninety (90) days of written notice from the City, the City may remove the WCF at the owner of the property’s expense or at the owner of the WCF’s expense, including all costs and attorneys’ fees. If there are two or more wireless communications providers collocated on a single support structure, this provision shall not become effective until all providers cease using the WCF for a continuous period of six (6) months.

J. Limits on Issued Permits. Approved conditional and administrative permits for PWSFs shall be restricted by the following permit limitations.

1. An approved permit shall be valid for one (1) year from the date of the City’s approval, with an opportunity for a six (6) month extension. If not issued within the validity timeframe, i.e., within 12 or 18 months, the permit shall become null and void.

2. The terms and conditions of an issued, but unused permit, for a PWSF shall expire five (5) years after the effective date of the permit approval.

K. Costs Associated with Review of Applications.

1. In addition to the application fee, the applicant shall reimburse the city for costs of professional engineers and other consultants hired by the city to review and inspect the applicant’s proposal. These professional services may include but are not limited to: engineering, technical reviews, legal, planning, hearing examiner, environmental review, critical areas review, financial, accounting, soils, mechanical and structural engineering.

2. The technical expert review may include, but is not limited to (a) the accuracy and completeness of the items submitted with the application; (b) the applicability of analysis and techniques and methodologies proposed by the applicant; (c) the validity of conclusions reached by the applicant; and (d) whether the proposed WCF complies with the applicable approval criteria set forth in this chapter. The selection of the third-party expert may be by mutual agreement between the provider and the city, or at the discretion of the city, with a provision for the provider and interested parties to comment on the proposed expert and review his or her qualifications. The applicant shall pay the cost for any independent consultant fees, along with applicable overhead recovery, through a deposit, estimated by the City, paid within ten (10) days of the City’s request. When the City requests such payment, the application
shall be deemed incomplete for purposes of application processing timelines. In the event that such costs and fees do not exceed the deposit amount, the City shall refund any unused portion within thirty (30) days after the final permit is released or, if no final permit is released, within thirty (30) days after the City receives a written request from the applicant. If the costs and fees exceed the deposit amount, then the applicant shall pay the difference to the City before the permit is issued.

L. Eligible Facilities Requests.
1. Procedure. This Div. 10.4(L) describes the sole and exclusive procedure for review and approval of a proposed facilities modification which the applicant asserts is subject to review under Section 6409 of the Spectrum Acct. In the event that any part of an application for a project permit approval includes a proposed facilities modification, the proposed facilities modification portion of the application shall be reviewed under this Div. 10.4(L).
2. Non-conforming structures. This Div. 10.4(L) shall not apply to a proposed facility modification to an eligible support structure that is not a legally conforming, or legally nonconforming structure at the time the completed eligible facilities modification application is filed with the City.
3. Replacement. This Div. 10.4(L) shall not apply to a proposed facility modification to an eligible support structure that will involve replacement of the tower or base station.
4. SEPA Review. Unless otherwise provided by law or regulation, decisions pertaining to eligible facilities requests are exempt from the requirements of RCW 43.21C.030(2)(c).
5. Application. An application for an Eligible Facilities Modification and supplemental submittals is received by the City upon the date such application is filed with the City. In order to be complete, the application must include all of the information and materials required in Article 16 of this Code.
6. Determination of Completeness. The City shall, within 21 days after receipt of the application, review the application under the procedures set forth in Subsection F below.
a. Within 60 days of the date on which an applicant submits an application seeking approval for an Eligible Facilities Request, the City shall either approve the application (unless the application is tolled as set forth in Subsection F below), or determine that the application is not covered by an Eligible Facilities Request.
b. An Eligible Facilities application shall be approved, and an Eligible Facilities Permit issued, upon determination by the City that the proposed facilities modification is subject to this Section and that it does not substantially change the physical dimensions of an Eligible Support Structure. An Eligible Facilities application shall be denied upon written determination by the City that the proposed facilities
modification is not subject to this Section or will substantially change the physical dimensions of an Eligible Support Structure. A proposed facilities modification will substantially change the physical dimensions of an eligible support structure if it meets any of the substantial change criteria in Article 15 (Definitions).

c. An Eligible Facilities Modification Permit issued pursuant to this Div. 10.4.(L), and any application that has been deemed approved, shall be and is conditioned upon compliance with any generally applicable building, structural, electrical, and health/safety codes.

8. Tolling of Timeframe for Review. The application review period begins to run when the application is received, and may be tolled when the City determines that the application is incomplete and provides notice of an incomplete application; or by mutual agreement between the City and the applicant.

a. To toll the timeframe for an incomplete application, the City must provide written notice to the applicant within 30 days of receipt of the application, specifically delineating all missing documents or information required in the application.

b. The timeframe for review begins running again when the applicant makes a supplemental submission in response to the City’s notice of incomplete application.

c. Following a supplemental submission by the applicant, the City will notify the applicant within 10 days that the supplemental submission did not provide the information identified in the original notice delineating missing information. The timeframe is tolled in the case of second or subsequent notices pursuant to the procedures identified in this Subsection F. Second or subsequent notices of incompleteness may not specify missing documents or information that were not delineated in the original notice of incomplete application.

9. Failure to Act. In the event that the City fails to approve or deny an Eligible Facilities Request within the timeframe for review in Div. 10.4.(L)(8) above (accounting for any tolling), the request shall be deemed approved. The deemed approval does not become effective until the applicant notifies the City in writing after the review period has expired (accounting for any tolling) that the application has been deemed approved.
Title 15 – Definitions
Chapter 15.20 – Definitions
Section 15.20.010 -- Wireless Communications Facilities

A.

1. **Abandon.** When an owner of a Support Structure intends to permanently and completely cease all business activity associated therewith.

2. **Accessory Equipment.** Any equipment serving or being used in conjunction with a Telecommunications Facility or Support Structure. This equipment includes, but is not limited to, utility or transmission equipment, power supplies, generators, batteries, cables, equipment buildings, cabinets and storage sheds, shelters or other structures.

3. **Adequate public facilities.** Facilities which have the capacity to serve development without decreasing levels of service below minimums established by the City in the Comprehensive Plan.

4. **Amateur Radio Tower.** A facility used for personal, non-commercial radio licensed by the Federal Communications Commission.

5. **Antenna.** Any system of electromagnetically tuned wires, poles, rods, reflecting discs or similar devices used to transmit or receive electromagnetic waves between terrestrial and/or orbital based points, and includes, but is not limited to:
   a. Whip antenna(s): An omni-directional antenna which transmits and receives radio frequency signals in a 360-degree radial pattern, typically four inches or less in diameter.
   b. Panel antenna(s): A directional antenna which transmits and receives radio frequency signals in a specific directional pattern of up to 120 degrees, typically thin and rectangular in shape.
   c. Tubular antenna(s): A hollow tube typically twelve (12) inches in diameter containing either omni-directional or directional antennas, depending on the specific site requirement. Often used as a means to mitigate the appearance of antennas on top of light standards and power poles.
   d. Parabolic (or dish) antenna(s): A bowl-shaped device for the reception and/or transmission of communications signals in a narrow and specific direction.
   e. Ancillary antenna(s): An antenna that is less than twelve (12) inches in its largest dimension and that is not directly used to provide personal wireless communications services. An example would be a global positioning satellite (GPS) antenna.

6. **Antenna Array.** A single or group of antenna elements and associated mounting hardware, transmission lines, or other appurtenances which share a common attachment device such as a mounting frame or mounting support structure for the sole purpose of transmitting or receiving electromagnetic waves.
B.

1. **Base station.** The structure or equipment at a fixed location that enables wireless communications licensed or authorized by the FCC, between user equipment and a communications network. The term does not encompass a tower as defined in this Code or any equipment associated with a tower.

   a. The term Base Station includes, but is not limited to, equipment associated with wireless communications services such as private, broadcast, and public safety services, as well as unlicensed wireless services and fixed wireless services such as microwave backhaul.

   b. The term Base Station includes, but is not limited to, radio transceivers, antennas, coaxial or fiber-optic cable, regular and backup power supplies, and comparable equipment, regardless of technological configuration (including Distributed Antenna Systems and small-cell networks).

   c. The term Base Station includes any structure other than a tower that, at the time an eligible facilities modification application is filed with the City under this Code, supports or houses equipment described in paragraphs a-b above, and that has been reviewed and approved under the applicable zoning or siting process, or under another State, county or local regulatory review process, even if the structure was not built for the sole or primary purpose of providing such support.

   d. The term Base Station does not include any structure that, at the time a completed eligible facilities modification application is filed with the City, does not support or house equipment described in paragraphs a-c above.

C.

1. **Carrier on Wheels or Cell on Wheels (COW).** A portable self-contained Telecommunications Facility that can be moved to a location and set up to provide wireless services on a temporary or emergency basis. A COW is normally vehicle-mounted and contains a telescoping boom as the Antenna support structure.

2. **Collocation.** The mounting or installation of transmission equipment on an existing support structure for the purpose of transmitting, receiving, or both transmitting and receiving radio frequency signals for communication purposes. When applied to Eligible Facilities Requests, Collocation means the mounting or installation of transmission equipment on an eligible support structure.

3. **Concealed Telecommunications Facility.** Any Telecommunications Facility that is integrated as an architectural feature of an Existing Structure or any new Support Structure designed so that the purpose of the Facility or Support Structure for providing wireless services is not readily apparent to a casual observer. Concealment shall also refer to an eligible support structure and transmission facility designed to look like some feature other than a wireless tower or base station.

D. None

E.

1. **Electromagnetic field (EMF).** The field produced by the operation of equipment used in transmitting and receiving radio frequency signals.
2. **Eligible Facilities Request.** Any request for modification of an existing tower or base station that does not substantially change the physical dimensions of such tower or base station, involving:

   a. Collocation of new transmission equipment;
   
   b. Removal of transmission equipment; or
   
   c. Replacement of transmission equipment.

3. **Eligible Support Structure.** Any existing tower or base station as defined in this Section, provided that it is existing at the time the relevant application is filed with the City under this Chapter.

4. **Equipment shelter.** The structure associated with a PWSF that is used to house electronic switching equipment, cooling systems, and back-up power systems.

5. **Existing.** As applied to a tower or base station, means a constructed tower or base station that has been reviewed and approved under the applicable zoning process of the City or another agency with jurisdiction. With regard to a telecommunications facility, it is a previously erected Support Structure or other structure, e.g., buildings or water tanks, to which Telecommunications Facilities may be attached.

F.

1. **FAA.** The Federal Aviation Administration.
2. **FCC.** The Federal Communications Commission.

G.

1. **Guyed Tower.** A support structure, such as a pole or narrow metal framework, which is held erect by the use of wires, anchors, or a combination of wires and anchors. This definition is used whether the tower is partially, temporarily, or additionally guyed.

H. None

I. None

J. None

K. None

L.

1. **Lattice Tower.** A support structure that consists of a network of crossed metal braces, forming a tower which is usually triangular or square in cross-section.
M.

1. **Major Modifications.** Improvements to existing Telecommunications Facilities or Support Structures that result in a Substantial Increase to the Existing Structure. Collocation of new Telecommunications Facilities to an existing Support Structure without Replacement of the structure shall not constitute a Major Modification.

2. **Microcell.** A wireless communications facility consisting of an antenna that is either:
   a. Four feet in height and with an area of not more than 580 square inches; or
   b. If a tubular antenna, no more than twelve (12) inches in diameter and no more than six feet high.

3. **Minor facility.** A wireless communications facility consisting of up to three (3) antennas, each of which is either:
   a. Four (4) feet in height and with an area of not more than 580 square inches;
   b. If a tubular antenna, no more than twelve (12) inches in diameter and no more than six (6) feet high; and the associated equipment cabinets that are less than or equal to six (6) feet in height and no more than forty-eight (48) square feet in floor area; or
   c. A whip antenna which is four (4) inches or less in diameter and no more than fifteen (15) feet in length.

4. **Minor Modification.** Improvements to Existing Structures that result in some material change to the Facility or Support Structure but of a level, quality or intensity that is less than a Substantial Increase. Minor Modifications include the Replacement of the Structure.

5. **Monopole.** A single tubular support structure erected as a freestanding pole supporting one or more Antenna. A Monopole is not a Tower.

N. None

O.

1. **Ordinary Maintenance.** Ensuring that Telecommunications Facilities and Support Structures are kept in good operating condition. Ordinary Maintenance includes inspections, testing and modifications that maintain functional capacity, aesthetic and structural integrity. Ordinary Maintenance includes replacing Antennas of a similar size, weight, shape and color and Accessory Equipment within an existing Telecommunications Facility and relocating the Antennas of approved Telecommunications Facilities to different height levels on an existing Monopole or tower upon which they are currently located. Ordinary Maintenance does not include Minor and Major Modifications.

P.

1. **Personal Wireless Service Facilities.** Unstaffed facilities that are used for the transmission or reception, or both, of personal wireless services, including, but not necessarily limited to, antenna arrays, transmission cables, equipment shelters and support structures.
R.

1. **Replacement.** Constructing a new Support Structure of proportions and of equal height or such other height that would not constitute a Substantial Increase to a pre-existing Support Structure in order to support a Telecommunications Facility or to accommodate Collocation and removing the pre-existing Support Structure.

S.

1. **Site.** For towers other than towers in the public rights-of-way, shall mean and refer to the current boundaries of the leased or owned property surrounding the tower and any access or utility easements currently related to the site, and, for other Eligible Support Structures, shall mean and be further restricted to, that area in proximity to the structure and to other transmission equipment already deployed on the ground.

2. **Small cells.** Compact WCFs containing their own transceiver equipment and function like cells in a mobile network but provide a smaller coverage area than traditional macrocells. Small cells must meet the parameters in Subsections a-b below. For purposes of these definitions, volume is a measure of the exterior displacement, not the interior volume of the enclosures. Antennas or equipment concealed from public view in or behind an otherwise approved structure or concealment are not included in calculating volume.

   a. Small Cell Antenna: Each antenna shall be no more than three (3) cubic feet in volume.

   b. Small Cell Equipment. Each equipment enclosure shall be no larger than seventeen (17) cubic feet in volume. Associated conduit, mounting bracket or extension arm, electric meter, concealment, telecommunications demarcation box, ground-based enclosures, battery back-up power systems, grounding equipment, power transfer switch, and cut-off switch may be located outside the primary equipment enclosure(s) and are not included in the calculation of equipment volume.

3. **Small cell network.** A collection of interrelated small cell facilities designed to deliver personal wireless services.

4. **Spectrum Act.** The “middle Class Tax Relief and Job Creation Act of 2012,” (Public Law 112-96; codified at 47 U.S.C. Sec. 1455(a)).

5. **Stealth design.** Technology that minimizes the visual impact of wireless communications facilities by camouflaging, disguising, screening, and/or blending into the surrounding environment. Examples of stealth design include but are not limited to facilities disguised as trees, flagpoles, bell towers, utility and light poles, and architecturally screened roof-mounted antennas.

6. **Substantial Change.** A modification substantially changes the physical dimensions of an eligible support structure if it meets any of the following criteria:

   a. For towers not in a public right-of-way, it increases the height of the tower by more than ten (10) percent or by the height of one (1) additional antenna array with separation from the nearest existing antenna not to exceed twenty feet, whichever is greater; for other eligible support structures, it increases the height of the structure by more than ten (10) percent, or by more than ten (10) feet, whichever distance is greater;
b. For towers not in a public right-of-way, it involves adding an appurtenance to the body of the tower what would protrude from the edge of the tower more than twenty (20) feet, or more than the width of the Tower structure at the level of the appurtenance, whichever is greater; for other eligible support structures, it involves adding an appurtenance to the body of the structure that would protrude from the edge of the structure by more than six (6) feet;

c. For any eligible support structure, it involves installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets; or for towers in the public rights-of-way and base stations, it involves installation of any new equipment cabinets on the ground if there are no pre-existing ground cabinets associated with the structure, or else involves installation of ground cabinets that are more than ten (10) percent larger in height or overall volume than any other ground cabinets associated with the structure;

d. It entails any excavation or deployment outside the current site;

e. It would defeat the concealment elements of the eligible support structure; or

f. It does not comply with conditions associated with the siting approval of the construction or modification of the eligible support structure or base station equipment, provided however that this limitation does not apply to any modification that is non-compliant only in a manner that would not exceed the thresholds identified in this definition of “Substantial Change,” Subsections a-f.

7. **Support Structure.** Any built structure, including any guy wires and anchors, to which antennas and other necessary associated hardware is mounted. Support structures may include, but are not limited to Lattice Towers; Guyed Towers; Monopoles; or Existing nonresidential structures that are identified in this chapter to which a PWSF may be attached with certain conditions.

T.

1. **Telecommunications Facility.** Any unmanned facility established for the purpose of providing wireless transmission of voice, data, images or other information including, but not limited to, cellular telephone service, personal communications service (PSC) and paging service. A Telecommunications Facility can consist of one or more Antennas and Accessory Equipment or one base station.

2. **Tower.** Any structure built for the sole or primary purpose of supporting any FCC-licensed or authorized antennas and their associated facilities, including structures that are constructed for wireless communications services including, but not limited to, private, broadcast and public safety services, as well as unlicensed wireless services and fixed wireless services such as microwave backhaul and the associated site.

3. **Tower Height.** The vertical distance measured from the base of the tower structure at grade to the highest point of the structure including the antenna. A lightning rod, not to exceed ten (10) feet in height, may be exempted from the tower height measurement.

4. **Transmission Equipment.** Equipment that facilitates transmission for any wireless communication service licensed or authorized by the FCC, including, but not limited to, radio transceivers, antennas, coaxial or fiber-optic cable, and regular and backup power supply. The term includes equipment associated with wireless communications services including, but not limited to, private, broadcast, and public safety services, as well as unlicensed wireless services and fixed wireless services such as microwave backhaul.
U.

1. **Unified Enclosure.** A small cell facility providing concealment of antennas and equipment within a single enclosure.

2. **Utility Support Structure.** Utility poles or utility towers supporting electrical, telephone, cable, or other similar facilities; street light standards; pedestrian light standards; traffic light structures; traffic sign structures; or water towers.

V. None

W.

1. **Wireless Communications Facilities or WCF.** A staffed or unstaffed facility or location for the transmission or reception of radio frequency (RF) signals or other wireless communications or other signals for commercial communications purposes, typically consisting of one or more antennas or group of antennas, a tower or attachment support structure, transmission cables and other transmission equipment and an equipment enclosure or cabinets.

X. None

Y. None

Z. None
**SUBJECT:** Comprehensive Surface Water Management Plan Update

**Agenda Item #:** 2C

**For Agenda of:** August 21, 2018

**Prepared by:** Jeremy Metzler

**ATTACHMENTS (list):** ☒ DRAFT Ordinance 18-0xxx
   ☒ Final Draft SWMP
   ☒ DRAFT SWMP Appendix E – Financial Analysis

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<th>Expenditure Required:</th>
<th>Amount Budgeted:</th>
<th>Appropriation Required:</th>
<th>Timeline:</th>
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<td>☐</td>
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<td>☐</td>
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<tr>
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<td>N/A</td>
<td>N/A</td>
<td>Public Hearing – August 28, 2018</td>
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<td>Community Development Director, Darren Groth</td>
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<td>N/A</td>
<td>N/A</td>
<td>Ord. Adoption – Sept. 11, 2018</td>
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<td>Public Works, Jeremy Metzler</td>
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**Fiscal Note/Consideration:**
The Surface Water Management Plan (SWMP) Update is fully paid for with Surface Water Utility Funds. The Capital Improvement Plan and rate analysis components of this update will recommend revisions to the City’s Surface Water Rates, and there will be opportunities for public input and discussion before any such revisions are made.

**SUMMARY STATEMENT:**
As discussed at prior Study Sessions, we have reviewed Herrera's draft of the comprehensive SWMP update with Mt. View – Edgewood Water Company, the public, and the Planning Commission, soliciting discussion, comment and direction. Based on redlines and revisions, Herrera has prepared the attached final draft.

Also included herewith is the completed draft Financial Analysis from FCS Group (SWMP Appendix E). As presented to Council at the May 1, 2018 Study Session by FCS Group, existing Surface Water Rates barely cover ongoing operations and maintenance costs and do not adequately fund proposed capital improvements. The FCS analysis provides recommendations for utility rate increases to fund the utility and capital projects identified in the SWMP as Critical only, including debt financing to accelerate project implementation. There is also an analysis of what a System Development Charge (SDC) may look like. If desired, an SDC would provide equity between existing and new customers, and would serve to provide another source of capital funding (beyond user rates).

Updating the SWMP is necessary to ensure a viable utility over the long-term, which manages both ongoing maintenance and capital improvement needs.

**COUNCIL COMMITTEE REVIEW AND RECOMMENDATION:** N/A

**RECOMMENDED ACTION:**
Discuss and provide feedback on the Surface Water Management Plan as presented, prior to public hearing consideration at the next Regular Council Meeting.

**ALTERNATIVES TO RECOMMENDED ACTION:**
1) Forward to Study Session for further review
ORDINANCE NO. 18-0xxx

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, RELATING TO SURFACE WATER MANAGEMENT, ADOPTING THE 2018 SURFACE WATER MANAGEMENT PLAN UPDATE.

WHEREAS, the City is required to adopt a Surface Water Management Plan (SWMP); and

WHEREAS, the Surface Water Management Plan must be updated on a regular basis and incorporated into the City’s Comprehensive Plan; and

WHEREAS, the City’s consultant completed the 2018 SWMP Update; and

WHEREAS, the City’s SEPA Responsible Official issued a Determination of Non-Significance on August 3, 2018 for the Surface Water Management Plan Update, which was not appealed; and

WHEREAS, a public hearing on the 2018 SWMP Update was held on August 28, 2018; and

WHEREAS, the City Council considered adoption of the 2018 Surface Water Management Plan Update during its regular meeting of September 11, 2018;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, HEREBY ORDAINS AS FOLLOWS:

Section 1. The City Council does hereby adopt the 2018 Comprehensive Surface Water Management Plan (SWMP) Update, a copy of which is attached as Exhibit A and incorporated herein by reference.

Section 2. Effective Date. This Ordinance will take effect five days after publication as required by law.

ADOPTED THIS 11th day of September, 2018.

__________________________________
Daryl Eidinger, Mayor

ATTEST:

__________________________________
Rachel Pitzel, City Clerk

APPROVED AS TO FORM:

__________________________________
Carol Morris, City Attorney
Exhibit A
Surface Water Management Plan
Note:
Some pages in this document have been purposely skipped or blank pages inserted so that this document will copy correctly when duplexed.
Acknowledgements

1. Introduction
   1.1. Purpose of this Plan
   1.2. Regulatory Drivers
   1.3. Goals and Policies
   1.4. Plan Development

2. Study Area Characteristics
   2.1. Drainage Basin Characteristics
   2.2. Geology and Soils
   2.3. Land Use and Zoning
   2.4. Surface Water Resources
      2.4.1. Streams
      2.4.2. Closed Depression Basins or Potholes
   2.5. Critical and Hazard Areas
      2.5.1. Wetlands, Riparian Habitat, and Salmon Bearing Streams
      2.5.2. Natural Hazards
      2.5.3. Groundwater Resources
   2.6. Expected Future Conditions
      2.6.1. Climate Change
      2.6.2. Population Growth and Annexations
   2.7. Stormwater System Characteristics
      2.7.1. Stormwater System Features
      2.7.2. Stormwater System Maintenance

3. Identified Problems and Recommendations
   3.1. Pothole Flooding
      3.1.1. Edgewood Bowl Pothole
      3.1.2. Lake Chalet Pothole
      3.1.3. Pinedale Pond/114th Avenue Pothole
      3.1.4. 108th Avenue Pothole
      3.1.5. Surprise Lake Pothole
      3.1.6. 122nd Avenue Pothole
TABLES

Table 2-1. Drainage Basin Size and Impervious Surface Characteristics..............................................8
Table 2-2. Land Use Characteristics and Percent of Edgewood Zoned for each Category in 2015.........................................................................................................................15
Table 2-3. Zoning Designations by Drainage Basin in Edgewood .................................................................17
Table 2-4. Catchment Size, Pothole Size, and Flooded Area Comparison...................................................23
Table 2-5. Critical Areas in Edgewood Drainage Basins...........................................................................27
Table 2-6. Predicted Climate Change for Edgewood Area (interpreted from Mauger et al. 2015) .................................................................................................................................................34
Table 2-7. Expected Responses to Stormwater Management Components from Predicted Climate Change Effects ..................................................................................................................35
Table 2-8. Summary of Key Features of the City of Edgewood’s Stormwater System.........................36
Table 3-1. CIP Projects Identified to Address Pothole Flooding.a ..........................................................42
Table 3-2. CIP Projects Related to Stream Protection and Planning..........................................................44
Table 3-3. CIP Projects Related to Localized Flooding..............................................................................45
Table 5-1. High Priority Program Activities and Costs...............................................................................60
Table 5-2. Lower Priority Programs Activities and Costs ........................................................................62
Table 5-3. Anticipated Future Required Program Needs and Tasks............................................................64
Table 5-4. Current (2017) and Recommended City of Edgewood SWMP Staff Support.......................65
Table 5-5. Capital Improvement Project (CIP) List for Edgewood’s Stormwater Plan.........................67
FIGURES

Figure 2-1. Subbasin Boundaries in the City of Edgewood.................................................................9
Figure 2-2. Geologic Units as Mapped for the City of Edgewood.......................................................14
Figure 2-3. 2015 Mapped Zoning Designations in the City of Edgewood.........................................19
Figure 2-4. Surface Water Features in the City of Edgewood............................................................21
Figure 2-5. Wetlands and Salmon Bearing Streams.........................................................................26
Figure 2-6. Mapped Flood and Landslide Hazards in the City of Edgewood.................................30
Figure 2-7. Vulnerable Aquifer Recharge Areas and Wellhead Protection Areas............................32
Figure 2-8. Mapped Stormwater System Infrastructure in the City of Edgewood............................37
Figure 3-1. Locations of Proposed Stormwater Capital Improvement Projects..............................40
Figure 5-1. Comparison of Population Densities for Nearby Small Cities........................................69
Figure 5-2. Stormwater Fee Revenue Generated from Non-Residential Customers as a Percent of Total Fee Revenue..................................................................................69
ACKNOWLEDGEMENTS

This Comprehensive Surface Water Management Plan was produced through the combined efforts, ideas, and cooperation of the following Edgewood City staff, appointed and elected officials, and consultants.

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Jeremy Metzler, PE Public Works Director
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Luke Meyers City Council
Tyron Christopherson City Council
Rosanne Tomyn City Council
Stephanie (Shook) Hunter City Council
John C. West City Council
Nate Lowry City Council

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Associated Earth Sciences, Incorporated

Curtis Koger Hydrogeologist
1. INTRODUCTION

Historically, stormwater management referred to management of underground pipes and conveyance networks to enhance draining and reduce flooding. However, urban development over the past century has adversely affected both the volume of runoff generated and the quality of that stormwater runoff. The increased volume of runoff generated can impact erosion, flooding, and stream flows, as well as reduce groundwater recharge. The increased delivery of pollutants can impact stream and groundwater quality and therefore the health of aquatic life and the condition of our drinking water. As a consequence, stormwater management at a city level has become more complex and includes many components, from maintaining the infrastructure of pipes, catch basins, and treatment devices, to programs to educate residents and businesses about reducing pollutants, to creating ways to reduce the volume of stormwater generated and the amount of pollutants it carries.

The National Pollutant Discharge Elimination System (NPDES) is the program that addresses impacts from discharge of pollutants from sources such as stormwater. In Washington State the NPDES program is administered by the State Department of Ecology (Ecology) through authorization from the United States Environmental Protection Agency (EPA). The City of Edgewood’s (City) stormwater program is regulated via Ecology’s Phase II Western Washington Municipal Stormwater Permit (the Permit). The Permit includes extensive requirements related to stormwater program management, system design requirements, operations and maintenance, and more. In addition to the Permit, the City has obligations associated with the Puyallup River Total Maximum Daily Load (the TMDL) that relate to the management of stormwater.

Effective stormwater management can control runoff to create a developed landscape that behaves more like pre-development conditions by retaining runoff and by providing stormwater treatment. This Comprehensive Surface Water Management Plan (CSWMP) lays out a stormwater management program that reflects the unique features of Edgewood’s environment, meets the needs of current and anticipated regulatory requirements (primarily requirements of the NPDES program), and identifies Capital Improvement Program (CIP) projects that address existing problems. It also outlines the staffing, equipment and financial resources needed for the City to fully implement the plan.
1.1. **Purpose of this Plan**

The purpose of this plan is to guide the City's stormwater management program in a manner that protects public and private infrastructure; provides protection for natural resources; is consistent with applicable local, state, and federal regulations; and establishes an equitable stormwater utility rate that reflects these needs. The plan:

- Establishes goals for stormwater management in the city (Section 1)
- Provides background information on the area and stormwater system (Section 2)
- Describes stormwater and surface water problems the City is experiencing and potential solutions (Section 3)
- Describes the different components of the stormwater management program and recommendations for improvement (Section 4)
- Provides a plan for implementation that identifies resource needs and focuses on efficient use of limited resources (Section 5)
- Provides a financial analysis to support the highest priority needs (Section 6)

The information provided in the different sections of this report is supported by a number of appendices:

- Appendix A provides detail on the City's existing stormwater program and provides detailed recommendations for improvement.
- Appendix B summarizes size and flooding characteristics of Edgewood's potholes.
- Appendices C and D contain project summary sheets and cost estimates for each of the CIP projects identified during this planning effort.
- Appendix D contains the subbasin inventory for the City, essentially a compilation of the GIS data derived for each of the subbasins.

1.2. **Regulatory Drivers**

Due to the critical importance of stormwater and its relationship to the protection of natural resources there are many regulatory drivers, the following describes those that are most relevant to the development of this CSWMP:

- The primary regulatory driver for Edgewood’s stormwater program is, and will continue to be, the Permit. The Permit is driven by the federal Clean Water Act. It has extensive requirements related to stormwater program management, system design requirements,
operations and maintenance, and more. Section 4 of this CSWMP details the specific Permit requirements and their impact on the City’s CSWMP. (The existing Permit became effective in August 2013 and covers the years from 2013 -2019. This comprehensive plan will also be in effect for the as yet to be approved 2019 Permit. Preliminary draft language that has been released for the 2019–2023 NPDES Phase II Permit (Ecology 2017). The draft includes significant changes in terms of requirements related to watershed planning, characterization of outfalls, and expansion of source control programs.

- State surface water and groundwater quality standards require the City to manage discharges from stormwater systems in a manner that supports achieving these standards.

- There is a Total Maximum Daily Load (TMDL) for the Puyallup watershed which includes Jovita Creek; a stream for which a small part flows through Edgewood. In addition to participating in the TMDL Implementation group, the TMDL requires that Edgewood implement Illicit Discharge Detection Elimination (IDDE) activities in the Jovita Creek basin.

- The federal Endangered Species Act (ESA) protects listed species and prohibits activities that might result in a loss or “take” of a listed species. This includes activities related to the City’s stormwater program.

- The Washington State Growth Management Act (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 to ensure environmentally responsible and economically sustainable development, including planning for stormwater-related capital facilities. The state regulation addressing Underground Injection Control (UIC) wells defines how wells will be assessed and constructed and requires extra protection for those determined to be a high threat to groundwater. Many stormwater facilities are defined as wells if they infiltrate directly to the ground.

- Several sections of the Edgewood Municipal Code (EMC) govern aspects of stormwater management for new development and redevelopment project sites.

### 1.3. Goals and Policies

The following goals and policies from the City’s Comprehensive Plan are relevant to this CSWMP and the operations of the stormwater utility.

- Goal NA.II. Protect and enhance water quality.

- Goal NA.V. Minimize risks to people, property, and the environment posed by geological and flood hazard areas.
• Goal U.I. Ensure the location and design of utility facilities meets the community’s needs.

• Goal U.II. Support the provision of quality utility services that are reliable, efficient, and financially and environmentally sustainable.
  o Policy U.II.c. Support timely expansion, maintenance, and replacement of utility facilities.
  o Policy U.II.d. Encourage the use of new technologies that will enhance the quality of utility services, and that are financially feasible and consistent with community needs.
  o Policy U.II.e. Support improvements in utility services that support local businesses and economic development.
  o Policy U.II.f. Encourage public education that reduces demand for utility services.

• Goal U.III. Work with regional partners to address regional utility issues.

• Goal CF.II. Provide adequate capital facilities that address past deficiencies, meet the needs of growth, and enhance the quality of life through acceptable level of service.

• Goal CF.III. Ensure that planned capital facilities are financially feasible.

• Goal CF.IV. Design and locate capital facilities with features and characteristics that support the environment, energy efficiency, aesthetics, technological innovation, cost-effectiveness, and sustainability.

• Goal CF.V. Maintain capital facilities so that they are reliable, functional, safe, sanitary, clean, attractive, and financially sustainable.

• Goal LU.III. Promote development that respects and preserves the natural environment.
  o Policy LU.III.f. Protect the quality and quantity of water resources.

• Goal PR.V. Protect and manage natural areas for the enjoyment of current and future generations.

The following additional goals have been developed to guide the City’s CSWMP. They support actions that will reduce flooding impacts, ensure stormwater is managed efficiently, and protect water resources:

• Implement, improve, and refine (adaptively manage) a surface water management program that protects the natural environment, reflects current regulations, is fiscally responsible, and that meets sustainability goals of the City.
• Build, maintain and repair the City’s stormwater infrastructure in a cost-effective manner that supports attainment of the flow, water quality and financial goals of this surface water management plan.

• Ensure the regulations, policies, and guidance documents that provide the framework for the City’s stormwater program (the stormwater manual, stormwater comprehensive plan, and City municipal code) are regularly updated.

• Operate the stormwater management program within the constraints of the stormwater utility budget and through active collaboration with other programs, agencies, and through leverage of other funding mechanisms.

• Comply with all applicable requirements from federal, state, and local governments related to water resource protection.

• Protect surface waters from the impacts of increased pollutant loads, flooding and erosion through fully supporting requirements of the adopted stormwater manual and by encouraging practices that reduce use of pesticides, fertilizers, and other contaminants and education to support proper disposal of wastes.

• Protect groundwater resources and supplies by regulating land use activities, requiring a higher level of stormwater treatment within wellhead protection areas, encouraging practices that promote responsible infiltration, preserve native soils and vegetation, and by encouraging use of low-impact vegetation.

• Guide regional development of the stormwater management and resource protection framework through participation in local and regional management and planning groups.

• Encourage engagement of the public in stormwater management through providing education, opportunities for involvement and stewardship, and soliciting public input to the stormwater management program.

• Focus on public education and training as first steps in addressing stormwater concerns and enforcement as needed.

• Prioritize the most beneficial and cost-effective projects and programs to ensure that available resources are used efficiently.

• Implement an equitable and logical stormwater utility rate structure.
1.4. **Plan Development**

The first step in development of this plan was to review the previous Surface Water Management Plans. Generally, earlier plans identified a similar series of problems including; erosion in streams, local conveyance flooding issues, steep slopes, and flooding of closed depression basins (potholes). During this initial data and document review stage, GIS and other pertinent data was acquired and reviewed in preparation for the project kickoff workshop.

City staff from multiple departments and key members of the consultant team attended a plan development workshop. The purpose of the workshop was to gather information on general background conditions in the city, the existing stormwater system, recent and planned stormwater facilities; and to discuss how the City is addressing meeting different components of the Permit. In addition, the team developed a list of problems and needs. In preparation for the workshop a detailed questionnaire about the City’s stormwater program was distributed to participants to help gather staff input and perspectives on a consistent set of questions. The findings from the questionnaire were used to facilitate the workshop.

Following the workshop, progress toward development of this plan occurred on five fronts:

- **Background characterization data** was obtained and summarized to form the framework for the CSWMP.
- **An evaluation of data gaps and needs** related to complying with the Permit was carried out, including a summary of staffing, equipment, and budget needs to support the program.
- **CIP’s** were identified and prioritized through discussions with the City and conceptual designs were prepared.
- **A more detailed study** (feasibility assessment) was developed for potentially discharging treated stormwater to the ground and a grant application was prepared to support the effort.
- **A financial analysis of the stormwater utility** was completed to evaluate implementation of plan recommendations.

Information from these different efforts was then used to develop this CSWMP and to lay out a plan for its implementation.
2. STUDY AREA CHARACTERISTICS

Edgewood is located in Pierce County and is bordered by the cities of Puyallup, Sumner, Pacific, Fife, and Milton, and by areas of unincorporated King and Pierce Counties. The city encompasses approximately 8.5 square miles (5,540 acres). Most (80 percent) of the city is situated on the top of a steep sided plateau called the North Hill Plateau, while the remainder lies in the Puyallup River valley. The 2010 Census estimate of the city’s population was 9,387. Edgewood’s estimated population in 2015 was 10,734, representing a 9 percent growth over the six-year period (US Census Bureau 2016).

2.1. DRAINAGE BASIN CHARACTERISTICS

In the previous surface water management plan (Kato & Warren 1997), the city was divided into 14 subbasins delineated to the extent known by their hydrologic boundaries. Those subbasins have been revised slightly and re-sorted into 18 drainage subbasins using more recent Lidar mapping (Table 2-1 and Figure 2-1). These 18 subbasins have been divided into seven groups that reflect the either the main perennial stream basin that they are affiliated with or their similar geographic features.

Most of the project area is characterized as a plateau ranging from 300 to 500 feet in elevation with steep slopes to the west, south, and east above flat river valley floodplains around 40 to 70 feet in elevation. As described in the sections below, many of the subbasins convey water from the plateau through steep ravines to the valley bottom, which results in erosion and sedimentation concerns. Another feature of the city is that much of the plateau area is characterized by several closed depressions, known locally as potholes, which collect water during the wet season, frequently resulting in flooded roads, property, and houses during wet winters.
Table 2-1. Drainage Basin Size and Impervious Surface Characteristics.

<table>
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<tr>
<th>Basin Group/Subbasins</th>
<th>Area Within the City (acres)</th>
<th>Impervious Surface (acres)</th>
<th>(percent)</th>
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<tr>
<td>White River Basin</td>
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<tr>
<td>North Slopes</td>
<td>274.3</td>
<td>23.1</td>
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<td>Central Slopes</td>
<td>75.2</td>
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<td>Southern Slopes</td>
<td>194.0</td>
<td>62.1</td>
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<tr>
<td>Jovita Creek Basin</td>
<td></td>
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<tr>
<td>Jovita Creek</td>
<td>622.4</td>
<td>121.1</td>
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<tr>
<td>Puyallup River Basin</td>
<td></td>
<td></td>
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<tr>
<td>Upper Wapato Creek</td>
<td>444.6</td>
<td>82.7</td>
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<td>Wapato Creek Basin</td>
<td></td>
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<tr>
<td>Lower Wapato Creek</td>
<td>576.6</td>
<td>133.0</td>
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<td>Simons Creek Basin</td>
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<td>529.2</td>
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<td>Tributary to Simons Creek</td>
<td>261.3</td>
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<td>Surprise Lake Creek</td>
<td>474.7</td>
<td>86.3</td>
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<td>Hylebos Creek</td>
<td>4.7</td>
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<td>Pothole Basins</td>
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<tr>
<td>Edgewood Bowl Pothole</td>
<td>656.0</td>
<td>136.0</td>
<td>21%</td>
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<td>Lake Chalet Pothole</td>
<td>136.0</td>
<td>36.5</td>
<td>27%</td>
</tr>
<tr>
<td>Pinedale Pond/114th Avenue Pothole</td>
<td>384.3</td>
<td>83.5</td>
<td>22%</td>
</tr>
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<td>108th Ave Pothole</td>
<td>225.9</td>
<td>49.2</td>
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<td>122nd Ave Pothole</td>
<td>347.7</td>
<td>60.5</td>
<td>17%</td>
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<td>Surprise Lake Pothole</td>
<td>73.8</td>
<td>17.8</td>
<td>24%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,343.0</strong></td>
<td><strong>1,090.6</strong></td>
<td><strong>20%</strong></td>
</tr>
</tbody>
</table>

**White River Basin**

The White River basin includes three subbasins: the North, Central, and Southern Slopes, which drain from the eastern edge of the city. They are similar in size and geography. Each subbasin consists of three distinct topographical areas: a small portion of the upland plateau, the steep slopes, and the flat lowland plain. Surface flow from these subbasins is carried to the White River via culverts, overland flow, and roadside ditches. The steeply sloped areas are mostly undeveloped and covered by second- or third-growth trees and brush. The flatter areas on the plateau are more developed, but this area comprises only a small portion of the basin. The steep, sandy side slopes have formed deep ravines. As would be expected due to the steep slopes, erosion and sedimentation are problematic and may increase as development within the basin increases.
Figure 2-1.
Subbasin Boundaries in the City of Edgewood.
**Jovita Creek Basin**

Jovita Creek basin is located in the northeast section of the city. It is one of the largest basins within the city; however, most of the contributing area lies outside of the city. Similar to other basins in Edgewood, a portion of the basin in the uplands (elevation above 300 feet) and a narrow, steep stream corridor leading to the valley floor (elevation around 70 feet).

The drainage basin for Jovita Creek is approximately 2.9 square miles; the majority of which extends north of Edgewood into unincorporated King County, approximately one third of the drainage basin (0.9 square miles) lies within the city. There are two main tributaries to Jovita Creek. The southern tributary is located north of Edgewood, east of Meridian Avenue and flows from a large wetland complex. The other tributary encompasses a much larger drainage area including Spider Lake, Fivemile Lake, and Trout Lake. Trout Lake in King County is an important source of base flow to the stream.

Except for the commercial area along Meridian Avenue East and Eighth Street East and the agricultural area on the valley floor, only few small subdivisions have been developed within the subbasin and within city limits. The large portion of the subbasin within unincorporated King County and the city of Pacific is more heavily developed. Thus, upstream watershed use that is outside of the City’s purview is a driving factor in the condition of this subbasin.

Within the city, the main stem of Jovita Creek flows in a steep-sided canyon. At the mouth of the canyon, the stream flows adjacent to Jovita Creek Boulevard before its confluence with the Milwaukee Ditch (Soatan Creek), which flows southerly to the White River. The adjacent hill slopes in the canyon are subject to frequent slides caused by runoff from the plateau above, tree falls, unstable slopes, and high flows in the creek. Jovita Boulevard East has been washed out on several occasions due to flooding and sediment discharge from Jovita Creek.

**Puyallup River Basin**

The Puyallup River basin is the discharge point for the Upper Wapato Creek subbasin. A portion of this subbasin is located on the plateau. There is a very steep section with multiple steep ravines draining from the plateau toward the Pony Lake area, but the topography toward the east (in the southeastern corner of the city) is more moderately sloped as it moves from the plateau to the valley floor.

**Wapato Creek Basin**

The Wapato Creek basin within the city of Edgewood includes only the Lower Wapato Creek subbasin because the stormwater conveyance system has directed subbasins that might naturally have been directed toward Wapato Creek to the Puyallup. This subbasin conveys runoff from the south central area of the city to Wapato Creek. Similar to the other subbasins in Edgewood, the Lower Wapato Creek subbasin includes an upland region located on the plateau area that is connected to the valley by steep slopes. The sloped area remains undeveloped and
covered by second- or third-growth trees and brush. The most development in the basin occurs downstream in the flat valley. Erosion and sedimentation are concerns as the water is conveyed through the deep ravines on the steep slopes and this may increase as development within the plateau area of the basin increases.

**Simons Creek Basin**

Simons Creek basin includes two subbasins: Simons Creek, and Tributaries to Simons Creek. These two subbasins are located entirely within city limits in the southwest area of the city. Like much of Edgewood, most of the contributing area to these subbasins is situated on the plateau with a narrow, steep stream corridor leading to the valley floor. The most significant drainage feature in these subbasins is Simons Creek. The residential and commercial areas along Meridian Avenue comprise most of the impervious area in the basin.

**Hylebos Creek Basin**

The Hylebos Creek basin includes the Surprise Lake Creek, Surprise Lake, and Hylebos Creek subbasins. These subbasins are located in the northwest corner of the city. Surprise Lake subbasin is upstream of Surprise Lake and Surprise Lake Creek is downstream of the lake, all of it flows to Hylebos Creek. Surprise Lake itself (and much of the Surprise Lake subbasin) is located outside of the city of Edgewood in the city of Milton, along with most of the Hylebos Creek basin. The Surprise Lake and Surprise Lake Creek subbasins convey water from a fairly large drainage area on the upland plateau and then through the narrow, steep corridor of Surprise Lake Creek. Except for the commercial area along Meridian Avenue East, most of the subbasin areas within Edgewood are lightly developed compared to Milton, which includes some multi-family developments; this is especially true for the area surrounding Surprise Lake. As a result, roads and commercial developments comprise a high percentage of the man-made impervious area in the basin.

**Pothole Basins**

Unlike the other basins in the city, the following six pothole basins are located entirely on the plateau area and are entirely within the city limits: Edgewood Bowl Pothole, Lake Chalet Pothole, Pinedale Pond/114th Avenue Pothole, 108th Avenue Pothole, 122nd Avenue Pothole, and Surprise Lake Pothole basins. These are closed-depression basins; there are no natural flow paths that connect these subbasins with nearby stream systems. These basins contain undulating hills on the plateau and wetlands or other surface water features within the potholes themselves. Development density in the pothole basins is primarily low, with some more heavily developed areas within the Lake Chalet and Surprise Lake Potholes. The majority of impervious surface in the pothole subbasins comes from roads and single-family homes. Flooding in these subbasins already occurs with regular frequency. There is significant potential for future development throughout these basins, which is expected to result in more frequent and extensive flooding in the future.
2.2. GEOLOGY AND SOILS

The majority of the city of Edgewood is located on the upland called the North Hill plateau. This plateau is overlain with till that was formed as the glacier advanced during the Vashon glaciation 15,000 to 13,500 years ago. As the glacier retreated, water from the melting ice deposited over the till thick layers of sand and gravel called outwash. The outwash was left in irregular heaps and was pitted with hollows that became today’s “potholes” (Kato & Warren 1997). Therefore, the upland area consists of Vashon till, which is dense, non-stratified silty sand to sandy silt with slow permeability in unweathered zones, and Vashon recessional outwash deposits, which includes well-sorted, stratified, unconsolidated coarse-grained sediment with rapid permeability. The steep valley walls bordering the plateau contain exposed outcrops deposited before the Vashon glaciation. These deposits include the Stuck drift, the Puyallup formation, and the Salmon Springs drift.

Soils are often categorized by hydrologic soil group (HSG) according to their ability to infiltrate water. Based on HSG classification most of the city would have soils amenable to infiltration. However, in the case of Edgewood and many other areas in the Puget Sound basin, it is the underlying geology not the soils that drive infiltration capacity. In much of the city there is a dense till layer that sits approximately 2 to 4 feet below the ground surface (Figure 2-2). This layer prevents water from seeping deeper into the ground. In fact, when surface soils are disturbed even this narrow soil layer can be lost or compromised leading to increased runoff and an increased potential for flooding.

2.3. LAND USE AND ZONING

Land use is linked with the percentage of impervious surface that, in combination with soil drainage properties, determines the amount of stormwater runoff generated by a parcel. Land use also impacts the type and concentration of pollutants that might be expected to accumulate on the land surface. Existing land use has not been mapped for the City, but in the case of Edgewood, existing zoning (as of 2015) is a fair surrogate measure. The City’s zoning mapping was condensed into 12 generalized categories. Table 2-2 describes generalized development and typical runoff characteristics associated with each land use/zoning category, and Table 2-3 and Figure 2-3 show the distribution of zoning categories by drainage basin. In the future it can be expected that impervious surface will increase significantly as the population expands and the city densifies. Another important change will likely be growth in the number and type of businesses that occupy commercial/industrial zones.

Overall, land use (as defined by zoning) within the city is currently largely residential, with over 75 percent of the city zoned as low and moderate single family residential development. The following are some general land use patterns:
• Residential land use is by far the dominant land use type.

• Meridian Avenue East includes the highest density developments with town center, commercial, and mixed use residential land uses.

• The flatter areas in the White River and Puyallup River valleys contain pockets of industrial, commercial, and mixed use residential land uses on the outer edges of the city.

• The coverage of impervious surface in Edgewood is closely related to land use. In general, the areas with the most impervious surface tend to coincide with the higher density residential and commercial areas such as Meridian Avenue East (Jovita Creek, Surprise Lake Creek, Surprise Lake, and Surprise Lake Pothole basins) and the White River Valley (North Slopes Subbasin) (Table 2-3).
Figure 2-2. Geologic Units as Mapped for the City of Edgewood.
<table>
<thead>
<tr>
<th>Land Use Category (zoning equivalent)</th>
<th>Generalized Properties</th>
<th>Zoning Area (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Park</td>
<td>This land use accommodates a wide range of employment and commercial uses, including professional office, senior housing and apartments, light industrial and retail uses. Significant landscaping is emphasized in this zone, and impervious surface percentages are moderate.</td>
<td>0.7%</td>
</tr>
<tr>
<td>Commercial</td>
<td>Allowable use includes large format retail, auto-oriented uses, and regional scale commercial uses. Light industrial uses are also allowed. This land use provides a transition to the Town Center, and multifamily housing is allowed. Generally high percentage of impervious surface.</td>
<td>1.9%</td>
</tr>
<tr>
<td>Industrial</td>
<td>This land use provides for regional research, light manufacturing, warehousing, and other major regional employment uses. Industrial lands are limited to areas where regional transportation access is available. Generally high percentage of impervious surface.</td>
<td>0.3%</td>
</tr>
<tr>
<td>Mixed Residential – Low (MR-1)</td>
<td>Low residential density using a variety of urban housing types and designs, including small-lot detached dwellings, duplexes, and townhouses. Impervious surface percentages are low to moderate.</td>
<td>1.7%</td>
</tr>
<tr>
<td>Mixed Residential – Medium (MR-2)</td>
<td>Moderate residential density using a variety of urban housing types and designs, including small-lot detached dwellings, duplexes, and townhouses. Generally associated with a moderate percentage of impervious surface</td>
<td>1.2%</td>
</tr>
<tr>
<td>Mixed Use Residential</td>
<td>This land use includes a variety of medium density housing types and some commercial and professional office uses. This serves as a transition to areas of more intensive development. Impervious surfaces are moderate to high.</td>
<td>2.9%</td>
</tr>
<tr>
<td>Public</td>
<td>This land use provides for moderate-scale and large-scale activities relating to the purpose of state and local governmental entities and semi-public institutions providing necessary public services, including utilities and open spaces. Associated with a fairly high percentage of impervious surface, though parks and open spaces are associated with lower percentages of impervious surface.</td>
<td>3.9%</td>
</tr>
<tr>
<td>Public ROW*a</td>
<td>Includes highway ROWs. Generally associated with a high percentage of impervious surface, although planted areas within the ROW may allow for significant infiltration.</td>
<td>0.1%</td>
</tr>
<tr>
<td>Single Family – Low (SF-2)</td>
<td>This land use contains large residential lots with extensive tree coverage. The percentage of impervious surface is low.</td>
<td>38.8%</td>
</tr>
<tr>
<td>Single Family – Medium (SF-3)</td>
<td>Single family medium and high land use categories are the City’s primary residential zones. The percentage of impervious surface is low to moderate.</td>
<td>45.5%</td>
</tr>
<tr>
<td>Single Family – High (SF-5)</td>
<td>Single family medium and high land use categories are the City’s primary residential zones. The percentage of impervious surface is moderate.</td>
<td>1.2%</td>
</tr>
<tr>
<td>Town Center</td>
<td>The Town Center is an integral part of the City’s economic development strategy emphasizing a planned mix of pedestrian-oriented commercial, business, and residential development. Impervious surface percentages are high.</td>
<td>1.7%</td>
</tr>
</tbody>
</table>

*a Visual inspection of land use areas with no land use designation indicates that these areas are part of the Public ROW and have been included in this category.
### Table 2-3. Zoning Designations by Drainage Basin in Edgewood.

<table>
<thead>
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<tbody>
<tr>
<td>White River Basin</td>
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</tr>
<tr>
<td>North Slopes</td>
<td>0.0% 0%</td>
<td>4.2% 2%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>270.1% 98%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
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<tr>
<td>Central Slopes</td>
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<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>75.2% 100%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td></td>
</tr>
<tr>
<td>Southern Slopes</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>18.6% 10%</td>
<td>0.0% 0%</td>
<td>35.5% 18%</td>
<td>139.9% 72%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td></td>
</tr>
<tr>
<td>Jovita Creek Basin</td>
<td></td>
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</tr>
<tr>
<td>Jovita Creek</td>
<td>34.8% 6%</td>
<td>33.6% 5%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>22.1% 4%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>423.9% 68%</td>
<td>65.2% 10%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
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<tr>
<td>Puyallup River Basin</td>
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<td></td>
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<tr>
<td>Upper Wapato Creek</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>18.3% 4%</td>
<td>0.0% 0%</td>
<td>2.0% 0%</td>
<td>1.4% 0%</td>
<td>69.5% 16%</td>
<td>353.5% 80%</td>
<td></td>
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<tr>
<td>Wapato Creek Basin</td>
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</tr>
<tr>
<td>Lower Wapato Creek</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.1% 0%</td>
<td>13.8% 2%</td>
<td>0.0% 0%</td>
<td>12.7% 2%</td>
<td>8.9% 2%</td>
<td>24.6% 4%</td>
<td>515.1% 89%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
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<tr>
<td>Simons Creek Basin</td>
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</tr>
<tr>
<td>Simons Creek</td>
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<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>5.4% 1%</td>
<td>15.6% 3%</td>
<td>366.4% 69%</td>
<td>42.8% 8%</td>
<td>69.3% 13%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tributary to Simons Creek</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>27.7% 11%</td>
<td>9.8% 4%</td>
<td>0.0% 0%</td>
<td>223.2% 85%</td>
<td>0.0% 0%</td>
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<tr>
<td>Hylebos Creek Basin</td>
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</tr>
<tr>
<td>Surprise Lake Creek</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>76.8% 16%</td>
<td>0.0% 0%</td>
<td>76.7% 16%</td>
<td>15.0% 3%</td>
<td>0.0% 0%</td>
<td>278.2% 59%</td>
<td>21.8% 5%</td>
<td>6.2% 1%</td>
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<td>Surprise Lake</td>
<td>0.0% 0%</td>
<td>42.9% 69%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>1.1% 2%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>15.0% 24%</td>
<td>0.0% 0%</td>
<td>1.8% 3%</td>
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</tr>
<tr>
<td>Hylebos Creek</td>
<td>4.7% 100%</td>
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<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>428.3% 65%</td>
<td>165.1% 25%</td>
<td>0.0% 0%</td>
<td>0.1% 0%</td>
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<td>Pothole Basins</td>
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<td>Edgewood Bosil Pothole</td>
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<td>0.0% 0%</td>
<td>13.3% 2%</td>
<td>0.0% 0%</td>
<td>49.2% 8%</td>
<td>428.3% 65%</td>
<td>91.3% 67%</td>
<td>5.2% 4%</td>
<td></td>
</tr>
<tr>
<td>Lake Chalet Pothole</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>24.5% 18%</td>
<td>14.5% 11%</td>
<td>0.6% 0%</td>
<td>350.4% 91%</td>
<td>28.2% 7%</td>
<td>0.0% 0%</td>
<td></td>
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<td>Pineville Pond/114th Avenue Pothole</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>5.7% 1%</td>
<td>0.0% 0%</td>
<td>350.4% 91%</td>
<td>28.2% 7%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
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<td>108th Avenue Pothole</td>
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<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>114.9% 51%</td>
<td>110.2% 49%</td>
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<td>122nd Avenue Pothole</td>
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<td>0.0% 0%</td>
<td>10.3% 3%</td>
<td>0.0% 0%</td>
<td>278.3% 80%</td>
<td>59.1% 17%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td></td>
</tr>
<tr>
<td>Surprise Lake Pothole</td>
<td>0.0% 0%</td>
<td>23.0% 31%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>21.0% 28%</td>
<td>0.0% 0%</td>
<td>0.0% 0%</td>
<td>214.2% 29%</td>
<td>81.4% 11%</td>
<td>0.0% 0%</td>
<td>8.1% 11%</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>39.5% 1%</strong></td>
<td><strong>103.6% 2%</strong></td>
<td><strong>18.4% 0%</strong></td>
<td><strong>90.6% 2%</strong></td>
<td><strong>62.8% 1%</strong></td>
<td><strong>157.1% 3%</strong></td>
<td><strong>208.2% 4%</strong></td>
<td><strong>3.8% 0%</strong></td>
<td><strong>2,072.0% 39%</strong></td>
<td><strong>2,431.8% 46%</strong></td>
<td><strong>64.6% 1%</strong></td>
<td><strong>90.7% 2%</strong></td>
</tr>
</tbody>
</table>
Figure 2-3. 2015 Mapped Zoning Designations in City of Edgewood.

Legend
- Tax parcel
- Edgewood city limits
- County boundary
- Waterbody

Zoning
- SF-2
- SF-3
- SF-5
- MR-1
- MR-2
- MUR
- Public
- TC
- Public ROW

Source: City of Edgewood
2.4. **Surface Water Resources**

The key surface water features in Edgewood include four perennial streams and six closed depression basins, referred to as potholes. With the exception of the pothole called Lake Chalet, which retains water year-round, the potholes are a series of open-water wetlands during most of the year but become lake-like during the winter when they are filled by stormwater runoff. These water bodies, shown in Figure 2-4, are all within the Puyallup River Watershed, which is tributary to Commencement Bay in Puget Sound.

Brief information about each water body is provided below. Water quality is summarized in terms of the water body’s inclusion on Washington State’s most recent Water Quality Assessment (Ecology 2015). The Water Quality Assessment is a requirement of the Clean Water Act and is regulated by the US Environmental Protection Agency (EPA). Washington State Department of Ecology (Ecology) is responsible for implementing the Clean Water Act at the state level and conducts the biennial water quality assessment. In this assessment water bodies are grouped into five categories:

- **Category 1:** Meets tested standards for clean waters.
- **Category 2:** Waters of concern. (There may be some evidence of pollution but not enough to require a TMDL or clean-up plan.)
- **Category 3:** Insufficient data.
- **Category 4:** Polluted waters that do not require a clean-up plan. (Typically, this is because a plan is already in place or the impairment is related to flow rather than water quality.)
- **Category 5:** Polluted waters that require a TMDL, or other clean-up plan. (Traditionally referred to as the “303(d) list,” Ecology 2015.)

2.4.1. **Streams**

**Jovita Creek**

The drainage basin for Jovita Creek is approximately 2.9 square miles, the majority of which extends north of Edgewood into King County; approximately one-third of the drainage basin (0.9 square miles) lies within the city. There are two main tributaries to Jovita Creek. The southern tributary is located north of Edgewood, east of Meridian Avenue. The headwaters area consists of a large emergent wetland (Kato & Warren 1997). The other tributary flows from Trout Lake in King County and is an important source of base flow to the stream. Within the city, the main stem of Jovita Creek flows in a steep-sided canyon. At the mouth of the canyon, the stream flows adjacent to Jovita Creek Boulevard before its confluence with the White River. The adjacent hill slopes in the canyon are subject to frequent slides caused by runoff from the plateau above, tree falls, unstable slopes, and high flows in the creek. Jovita Boulevard East has been washed out on several occasions due to flooding and sediment discharge from Jovita Creek.
Figure 2-4. Surface Water Features in the City of Edgewood.

Legend

- **Edgewood city limits**
- **County boundary**
- **Untyped Stream/Drainage Course**
- **Type F Stream (Fish Bearing)**
- **Waterbody**

Source: City of Edgewood
Due to bacteria exceedances of state water quality standards, Jovita Creek is considered an “impaired water” and is therefore included on the Washington State 303(d) list and was included as part of the Puyallup River bacteria TMDL. Since there is a TMDL in place for the Puyallup River and Jovita Creek, are listed as Category 4 waters, indicating that there is a pollutant of concern but that a plan is in place to address the issue. The City’s responsibilities under the TMDL are to track construction activities in the Jovita Creek basin and prioritize field screening for illicit discharges in this area.

**Simons Creek**

Formed in a steep ravine in the southern portion of Edgewood, Simons Creek is fed by stormwater runoff. Although the headwaters are near Lake Chalet, there is currently no direct hydrologic connection between the stream and the Lake Chalet pothole. No homes or roads on the plateau are threatened by the stream, but residents on the valley floor experience frequent high sediment flows out of the ravine. After leaving the ravine, Simons Creek flattens out and flows approximately a mile before entering Wapato Creek.

Due to bacteria exceedances of state water quality standards, Simons Creek is considered an “impaired water” and is therefore included on the Washington State 303(d) list. Simon’s Creek is listed as Category 4 because there is no clean-up plan or TMDL in place to address this issue. There is also a Category 2 listing due to potential for benzene pollution, and it is listed as Category 4 due to low instream flow.

**Surprise Lake Creek**

Surprise Lake Creek is the outflow from Surprise Lake near the western boundary of the city. Most of the lower portion of this stream flows through a steep ravine; the slope decreases just east of Freeman Road. Then the stream is culverted across private property and enters a culvert under Freeman Road before joining Hylebos Creek (Kato & Warren 1997). The steep ravine through which the stream travels is subject to frequent slides and erosion. Surprise Lake Creek is listed as Category 5 for mercury and as Category 2 for potential pH impairment.

**Wapato Creek**

Although a significant portion of the city conveys water toward Wapato Creek, only a small portion of the stream lies in the southwest corner of the city. The stream is located in the flat river valley bottom flowing somewhat parallel to the Puyallup River. Several drainages convey runoff west from the southern slopes of the city into the Blair Waterway and then into Commencement Bay in Puget Sound. Wapato Creek is listed as impaired (Category 5) due to both high bacteria and low dissolved oxygen and also has documented low instream flows (Category 4).
2.4.2. Closed Depression Basins or Potholes

Edgewood contains six hydrologically isolated closed depression basins or “potholes” that have no natural outflow and are therefore prone to flooding during wet weather. As the soils in the watersheds contributing to these potholes become saturated, the water moves as surface and subsurface flow to the potholes, causing water levels to rise. About 35 percent of the total city area drains to these potholes (Kato & Warren 1997). Approximately 0.28 square miles or 180 acres becomes inundated during periods of prolonged wet weather, such as the winter of 2016–2017, impacting almost one-third of the city due to road closures and property damage. Flooding events have occurred with regular frequency in recent years, with at least three events over the past 10 years (J. Metzler, personal communication).

All of the potholes are mapped as wetlands. There are no specific water quality standards applied to wetlands, but state antidegradation criteria require that designated uses of wetlands, such as groundwater exchange and stormwater attenuation, be protected and that hydrologic conditions and wetland vegetation be maintained. Table 2-4 describes the physical characteristics of each pothole, while Appendix B includes descriptions of stormwater-related problems associated with each pothole.

### Table 2-4. Catchment Size, Pothole Size, and Flooded Area Comparison.

<table>
<thead>
<tr>
<th>Pothole Name</th>
<th>Size of catchment (acres)</th>
<th>Size of Pothole (acres)</th>
<th>1997 Flooded Area (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edgewood Bowl Pothole</td>
<td>656</td>
<td>86</td>
<td>64</td>
</tr>
<tr>
<td>Lake Chalet</td>
<td>136</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>Pinedale Pond (114th Avenue) Pothole</td>
<td>384</td>
<td>59</td>
<td>48</td>
</tr>
<tr>
<td>108th Avenue Pothole</td>
<td>226</td>
<td>69</td>
<td>30</td>
</tr>
<tr>
<td>122nd Avenue Pothole</td>
<td>348</td>
<td>18</td>
<td>23</td>
</tr>
<tr>
<td>Surprise Lake Pothole</td>
<td>74</td>
<td>5</td>
<td>4.3</td>
</tr>
</tbody>
</table>

Note: All sizes are approximate based on elevations.

- Size calculated from approximate pothole boundaries at flood stage provided by the City.
- From Kato and Warren 1997

**Edgewood Bowl**

The largest of the potholes is locally referred to as the Edgewood Bowl. It lies in the northeast section of Edgewood (Figure 2-4) adjacent to the Jovita Creek and North Slopes (White River) subbasins. The western border is a ridge east of Meridian Avenue North; the adjacent watershed to the west is Surprise Lake. The pothole is approximately 86 acres in size with a contributing area of approximately 656 acres. There is standing water in the bottom of the pothole for most if not all of the year.

Infiltration is limited in this pothole by the underlying compacted soil layers (Figure 2-2). During years of high precipitation, waters in the individual low areas rise and form one large area of
standing water. During bad events, roads and driveways have been closed for months at a time. In 1997, the maximum flooded area was approximately 64 acres (Kato & Warren 1997).

**Lake Chalet**

Lake Chalet is located in a depression in west-central Edgewood. Fed by stormwater runoff, it retains water year-round. The pothole is approximately 18 acres in size with a contributing area of approximately 136 acres. During years of high precipitation, it frequently floods the adjacent low-lying areas. In 1997, the maximum flooded area was 13 acres (Kato & Warren 1997). A culvert south of the lake carries water between the lake and an adjacent depression, but there is no outlet control.

**Pinedale Pond/114th Avenue Pothole**

This pothole lies immediately south of the main Edgewood Bowl pothole. The pothole is approximately 59 acres in size with a contributing area of approximately 384 acres. It is hydrologically separated from the larger pothole by a minor east-west running ridge in the vicinity of 24th Street East. The southern border is generally 32nd Street East with a short extension to 36th Street East. It exhibits the same characteristics and performance as the larger pothole. In 1997, the maximum flooded area for this pothole was approximately 48 acres.

**108th Avenue Pothole**

This pothole lies between the 122nd Avenue, Lake Chalet, and Pinedale Pond/114th Avenue Potholes. The pothole is approximately 69 acres in size with a contributing area of approximately 226 acres. A small area of this pothole remains wet year-round. The flat surrounding topography leads to large inundated areas: in 1997, the maximum flooded area was 30 acres.

**Surprise Lake Pothole**

Surprise Lake Pothole is the smallest of the Edgewood potholes and is located west of the Edgewood Bowl Pothole near Meridian Avenue and 16th Street East. The pothole is approximately 5 acres in size with a contributing area of approximately 74 acres. There is no standing water in this basin under dry weather conditions. Localized flooding can occur during heavy rainfall periods. The maximum flooded area in 1997 was 4 acres.

**122nd Avenue Pothole**

This smaller and steeper-sided pothole lies south of the Pinedale Pond/114th Avenue pothole. The pothole is approximately 18 acres in size with a contributing area of approximately 348 acres. Its boundaries are defined generally by 32nd Street East to the north and 43rd Street Court East to the south. It is adjacent to the steep slopes on the eastern and southern edges of the city. It has wetland plants and areas of standing water, is fed by stormwater runoff, and its
only avenues of drainage are limited infiltration and evaporation. In 1997, the maximum flooded area was 23 acres.

2.5. **Critical and Hazard Areas**

Critical areas are designated to protect natural resources and prevent harm to the community from natural hazards. The term “natural resources” typically refers to streams, wetlands, fish and wildlife habitat, wetlands, critical aquifer recharge areas (CARAs), and wellhead protection areas (WHPAs). Generally speaking, natural hazards refer to geologically hazardous areas (e.g., steep slopes) and areas at risk for flooding. Critical areas are regulated at the state and county level. Edgewood’s critical areas ordinance (CAO) (No. 17-492) was amended and adopted in 2018. The following sections describe the natural resources (groundwater, wetlands, and habitat) protected by the CAO and the natural hazard areas that have been defined to protect the public from harm.

2.5.1. **Wetlands, Riparian Habitat, and Salmon Bearing Streams**

Wetland, riparian habitat, and salmon bearing streams are all considered critical habitat and the City’s Critical Areas Ordinance (CAO) and municipal code (EMC 14.30. and EMC 14.40.) are the primary mechanisms used for protecting these areas.

Mapped wetlands in the city are shown on Figure 2-5. Approximately 6.5 percent of the city is mapped as wetland, including areas along the stream corridors, floodplains in the valley, and within potholes on the plateau. Table 2-5 identifies the area of wetlands for each basin. The Edgewood Bowl and 108th Avenue Pothole basins have the largest percentage of wetland of all basins within the city.

Protection of riparian habitat is of high importance in Edgewood because many of the area’s streams provide critical habitat for salmon spawning and rearing. The Washington Department of Fish and Wildlife (WDFW) fish passage website (<http://apps.wdfw.wa.gov/fishpassage/> documents the presence of salmonids and barriers to fish passage. Figure 2-5 shows the stream reaches used by salmon, and barriers such as dams, weirs, and undersized culverts.
Figure 2-5. Wetlands and Salmon Bearing Streams.

Legend
- Edgewood city limits
- County boundary
- Wetland (City of Edgewood)
- Stream corridor
- Stream reaches used by salmon
- Fish passage barrier (WDFW)
  - Road crossing
  - Dam
  - Miscellaneous barrier

Source: Washington Department of Fish and Wildlife
Table 2-5. Critical Areas in Edgewood Drainage Basins.

<table>
<thead>
<tr>
<th>Basin Group/Subbasin</th>
<th>Wetland (ac) (%)</th>
<th>Stream Corridor (ac) (%)</th>
<th>WHPAs Vulnerable ARAs (ac) (%)</th>
<th>Steep Slopes (&gt;20%) (ac) (%)</th>
<th>Steep Slopes (&gt;40%) (ac) (%)</th>
<th>FEMA 100 year Floodplain (ac) (%)</th>
<th>Flood Hazard Area (ac) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>White River Basin</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Slopes</td>
<td>7.5 3%</td>
<td>29.8 11%</td>
<td>1.4 1%</td>
<td>3.7 1%</td>
<td>138.2 50%</td>
<td>9.9 3%</td>
<td>0.0 0%</td>
</tr>
<tr>
<td>Central Slopes</td>
<td>2.7 4%</td>
<td>0.0 0%</td>
<td>0.0 0%</td>
<td>1.0 1%</td>
<td>46.1 61%</td>
<td>2.3 3%</td>
<td>0.0 0%</td>
</tr>
<tr>
<td>Southern Slopes</td>
<td>1.2 1%</td>
<td>0.0 0%</td>
<td>0.0 0%</td>
<td>0.5 0%</td>
<td>53.7 28%</td>
<td>6.0 5%</td>
<td>0.0 0%</td>
</tr>
<tr>
<td><strong>Jovita Creek Basin</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jovita Creek</td>
<td>59.0 9%</td>
<td>224.3 36%</td>
<td>434.3 70%</td>
<td>7.4 1%</td>
<td>60.1 10%</td>
<td>9.7 2%</td>
<td>12.6 2%</td>
</tr>
<tr>
<td><strong>Pugettup River Basin</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Wapato Creek</td>
<td>16.9 4%</td>
<td>27.3 6%</td>
<td>4.7 1%</td>
<td>13.2 3%</td>
<td>107.3 24%</td>
<td>4.0 1%</td>
<td>0.0 0%</td>
</tr>
<tr>
<td><strong>Wapato Creek Basin</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower Wapato Creek</td>
<td>23.1 4%</td>
<td>177.4 31%</td>
<td>370.4 64%</td>
<td>181.1 31%</td>
<td>68.6 12%</td>
<td>4.2 1%</td>
<td>55.7 10%</td>
</tr>
<tr>
<td><strong>Simons Creek Basin</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simons Creek</td>
<td>13.7 3%</td>
<td>233.6 44%</td>
<td>503.4 95%</td>
<td>37.7 7%</td>
<td>52.4 10%</td>
<td>6.6 1%</td>
<td>24.3 5%</td>
</tr>
<tr>
<td>Tributary to Simons Creek</td>
<td>10.6 4%</td>
<td>78.1 30%</td>
<td>238.7 91%</td>
<td>56.6 22%</td>
<td>21.6 8%</td>
<td>1.0 0%</td>
<td>14.5 6%</td>
</tr>
<tr>
<td><strong>Hylebos Creek Basin</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surprise Lake Creek</td>
<td>15.8 3%</td>
<td>216.9 46%</td>
<td>63.3 13%</td>
<td>2.2 0%</td>
<td>89.0 19%</td>
<td>8.6 0%</td>
<td>13.5 3%</td>
</tr>
<tr>
<td>Surprise Lake</td>
<td>3.0 5%</td>
<td>0.0 0%</td>
<td>34.9 56%</td>
<td>0.0 0%</td>
<td>0.5 1%</td>
<td>0.0 0%</td>
<td>0.0 0%</td>
</tr>
<tr>
<td>Hylebos Creek</td>
<td>0.0 0%</td>
<td>0.0 0%</td>
<td>0.7 16%</td>
<td>0.0 0%</td>
<td>0.6 13%</td>
<td>0.0 0%</td>
<td>0.0 0%</td>
</tr>
<tr>
<td><strong>Pothole Basins</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Edgewood Bowl Pothole</td>
<td>88.9 14%</td>
<td>0.0 0%</td>
<td>634.6 97%</td>
<td>0.0 0%</td>
<td>5.4 1%</td>
<td>0.0 0%</td>
<td>0.0 0%</td>
</tr>
<tr>
<td>Lake Chalet Pothole</td>
<td>11.1 8%</td>
<td>0.0 0%</td>
<td>136.0 100%</td>
<td>0.0 0%</td>
<td>0.8 1%</td>
<td>0.0 0%</td>
<td>0.0 0%</td>
</tr>
<tr>
<td>Pinedale Pond/114th Avenue Pothole</td>
<td>30.0 8%</td>
<td>0.0 0%</td>
<td>357.5 93%</td>
<td>0.0 0%</td>
<td>2.0 1%</td>
<td>0.0 0%</td>
<td>0.0 0%</td>
</tr>
<tr>
<td>108th Avenue Pothole</td>
<td>30.8 14%</td>
<td>0.0 0%</td>
<td>225.9 100%</td>
<td>0.0 0%</td>
<td>0.6 0%</td>
<td>0.0 0%</td>
<td>0.0 0%</td>
</tr>
<tr>
<td>122nd Avenue Pothole</td>
<td>25.5 7%</td>
<td>0.0 0%</td>
<td>234.2 67%</td>
<td>0.0 0%</td>
<td>1.7 0%</td>
<td>0.0 0%</td>
<td>0.0 0%</td>
</tr>
<tr>
<td>Surprise Lake Pothole</td>
<td>5.7 8%</td>
<td>0.0 0%</td>
<td>67.4 91%</td>
<td>0.0 0%</td>
<td>1.1 1%</td>
<td>0.0 18%</td>
<td>0.0 0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>345.6 6%</td>
<td>987.4 18%</td>
<td>3,307.5 62%</td>
<td>303.5 6%</td>
<td>649.6 12%</td>
<td>52.3 1%</td>
<td>120.7 2%</td>
</tr>
</tbody>
</table>
Within Edgewood, there are four streams with documented fish presence:

- Surprise Lake Creek and Jovita Creek support Fall Chinook and Pink Salmon;
- The unnamed tributaries in the Central Slopes subbasin support Pink Salmon, Fall Chinook, Fall Chum, and Winter Steelhead;
- Simon’s Creek supports Coho and Fall Chum; and
- Wapato Creek supports Coho, Fall Chinook, and Fall Chum.

There are 13 inventoried fish passage barriers in the city, all associated with Jovita Creek.

### 2.5.2. Natural Hazards

Natural hazards are defined in the CAO and designated pursuant to Chapter 14 EMC. The most pertinent natural hazards affecting stormwater planning and development are flood and landslide hazard areas.

**Landslide Hazards and Steep Slopes**

Landslide hazard areas are defined as areas potentially subject to land regression or retreat due to a combination of geologic, seismic, and/or hydrologic or manmade factors, such as vegetation loss, soil type, slope instability, and hydrology. Steep slopes, defined as areas between 20 and 40 percent slope and greater than 40 percent slope, were also calculated and mapped for the City (Figure 2-6).

Steep slopes are mapped along much of the eastern and southern edges of the city and are associated with the stream and drainage corridors that convey water from the plateau area to the valley bottom (Table 2-5 and Figure 2-6). In total, approximately 23 percent of the city is classified as having steep slopes greater than 20 percent and 1 percent of the city is classified as having steep slopes greater than 40 percent (Table 2-5). There are three basins where steep slopes (greater than 20 percent) comprise more than 50 percent of the area: Central Slopes, North Slopes, and Southern Slopes. Stormwater infiltration based BMPs can exacerbate landslide hazards, thus this data needs to be considered during stormwater project development.
Figure 2-6. Mapped Flood and Landslide Hazards in the City of Edgewood.

Legend
- Edgewood city limits
- County boundary
- City-identified flood hazard areas
- FEMA floodway
- City-identified floodway
- FEMA 100-year floodplain
- City-identified 100-year floodplain

Source: City of Edgewood

Map: USGS Aerial (2015)
**Flood Hazards**

The Federal Emergency Management Agency (FEMA) designates flood zones (floodways and floodplains) based on predicted flood recurrence intervals. The 100-year floodplains as designated by FEMA are mapped on Figure 2-6. This includes areas that may be flooded by rivers during high flow conditions. Riverine flooding is a significant concern in the Jovita Creek, Simons Creek, and Surprise Lake Creek basins, where streams discharge from steep slopes to flow across relatively flat valleys, but this includes only 2 percent of the city. FEMA floodplain mapping does not account for the flood hazards related to the pothole basins. These are flooded much more frequently than the 100-year frequency used by FEMA and have a different, local designation as flood hazards. About 6.6 percent of the city is classified as a flood hazard, as shown in Figure 2-6 and Table 2-5. As described previously, flooded areas associated with the potholes can impact up to 30 percent of the city due to road closures.

**2.5.3. Groundwater Resources**

Groundwater resources are an important consideration for stormwater planning efforts, because many stormwater management strategies that rely upon infiltration have the potential to influence groundwater quality. The local water purveyor, Mountain View-Edgewood Water Company (MTVE), relies on groundwater for its sole source of supply (Engineering Consultants Northwest 2017), and has won awards for the quality of their drinking water. A Wellhead Protection Plan developed for MTVE (Robinson-Noble 2005) lays out the major components for source protection, including a susceptibility assessment, a delineated wellhead protection area, a spill response plan, and contingency plans.

Vulnerable Aquifer Recharge Areas (VARAs), defined as areas with a critical aquifer recharging effect on aquifers used for potable water, and wellhead protection areas (WHPAs) defined as a surface and subsurface land area regulated to prevent contamination of a well or well-field supplying a public water, have recently been adopted by the City during an update of their Critical Areas Ordinance. As shown in Table 2-5, 6 percent of the city is within a VARA. These are concentrated in the valley along Wapato Creek in the southwest area of the city with a smaller area in the floodplain of Jovita Creek. Approximately 62 percent of the city is within a designated WHPA for the MTVE wells. Designated WHPAs and VARAs within the city are shown on Figure 2-7.
Figure 2-7. Vulnerable Aquifer Recharge Areas and Wellhead Protection Areas.

Legend

- Edgewood city limits
- County boundary
- Vulnerable aquifer recharge area
- Wellhead protection area
- Waterbody
- Stream

Source: City of Edgewood

USDA, Aerial (2015)
2.6. **Expected Future Conditions**

2.6.1. **Climate Change**

*Predicted Climate Changes*

Significant research on climate change predictions has been conducted by the Climate Impacts Group (CIG) at the University of Washington. This research projects the local effects of global climate change using 20 global climate models and two greenhouse gas emissions scenarios. Local climate impacts are identified by downscaling model results and supplementing data with regional climate models. Some general, stormwater-related predictions for the Puget Sound area for the next 50 years include (Mauger et al. 2015):

- There are no statistically significant trends toward wetter or drier conditions.
- Future occurrences of heavy rainfall are projected to be more frequent and more intense and will exacerbate flooding in many areas.
- Seasonal, year-to-year, and decade-to-decade variations will remain an important feature of local climates.
- There is a projected increase in landslide risk, erosion, and sediment transport during wetter months.
- For rain dominant watersheds, projected streamflow changes are less dramatic than those watersheds closer to the snowline.

Table 2-6 summarizes CIG’s most recent climate change predictions for the watershed that contains the Edgewood area (Mauger et al. 2015). As shown, predictions indicate that average winter and summer temperatures will increase, winter precipitation and runoff will increase, and summer precipitation and runoff will decrease. Peak flows were not predicted for the streams within Edgewood; however, the general prediction for most of the Puget Sound basin is an increase in the magnitude and frequency of these flows.
Table 2-6. Predicted Climate Change for Edgewood Area (interpreted from Mauger et al. 2015).

<table>
<thead>
<tr>
<th>Climate Component</th>
<th>Historical</th>
<th>Lower Emission Rate Scenario</th>
<th>Higher Emission Rate Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>38 to 43 (degrees F)</td>
<td>+2 to +3 (change degrees)</td>
<td>+ 4 to +5 (change degrees)</td>
</tr>
<tr>
<td>Average Winter Temperature</td>
<td>60 to 64 (degrees F)</td>
<td>+3.9 to +5.6 (change degrees)</td>
<td>+5.6 to +7.2 (change degrees)</td>
</tr>
<tr>
<td>Winter Precipitation</td>
<td>34 to 45 (inches)</td>
<td>+7 to +8.5% (percent change)</td>
<td>+8.5% to +10% (percent change)</td>
</tr>
<tr>
<td>Summer Precipitation</td>
<td>8 to 12 (inches)</td>
<td>-8 to -6% (percent change)</td>
<td>Unknown^</td>
</tr>
<tr>
<td>Maximum 24-Hour Precipitation</td>
<td>1.6 to 2.3 (inches)</td>
<td>+10 to +15% (percent change)</td>
<td>+15 to +20% (percent change)</td>
</tr>
<tr>
<td>Summer Water Deficit</td>
<td>4 to 9 (inches)</td>
<td>+1 to +2 (change inches)</td>
<td>+1 to +2 (change inches)</td>
</tr>
<tr>
<td>Winter Runoff</td>
<td>18 to 24 (inches)</td>
<td>0 to +20%</td>
<td>0 to +20%</td>
</tr>
<tr>
<td>Summer Runoff</td>
<td>0 to 8 (inches)</td>
<td>-10% to 0%</td>
<td>-10% to 0%</td>
</tr>
</tbody>
</table>

^ Unknown: The projected changes are based on 10 different global climate models. If there was less than 80 percent agreement between the models on the direction of change, then the results are reported as unknown.

These predicted climate changes would alter stream flows, flood risk, water quality, and habitat as shown in Table 2-7. Increased winter precipitation will increase flood risk, including risk of surface water flooding in potholes and stormwater conveyance. It could also increase the risk of groundwater induced flooding. The summertime increases in air temperature will result in an increase in the number of growing degree days in addition to overall increases in evaporation and transpiration, thus increasing the potential for future summer water deficits. This in turn means both a reduction in the amount of water that is available to recharge groundwater during the summer months as well as increased removal from groundwater supplies. Many wetlands located in the upland potholes serve as habitat for waterfowl and may be threatened by increased dry periods in the summer. Cold water fish using streams leading from the plateau may be threatened by increased temperatures and reduced dissolved oxygen and flow.
Table 2-7. Expected Responses to Stormwater Management Components from Predicted Climate Change Effects.

<table>
<thead>
<tr>
<th>Stormwater Management Component</th>
<th>Predicted Response to Climate Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stream Flows</td>
<td>Increased winter flows</td>
</tr>
<tr>
<td></td>
<td>Decreased summer flows</td>
</tr>
<tr>
<td></td>
<td>Likely Increased magnitude and frequency of peak events</td>
</tr>
<tr>
<td>Groundwater Supply</td>
<td>Decreased recharge during summer months</td>
</tr>
<tr>
<td></td>
<td>Increased use during summer months</td>
</tr>
<tr>
<td>Flood Risk</td>
<td>Increased flood risk from rivers, streams, and stormwater conveyance system</td>
</tr>
<tr>
<td></td>
<td>Possible increase in groundwater induced flooding</td>
</tr>
<tr>
<td></td>
<td>Increased flood risk from channel migration</td>
</tr>
<tr>
<td>Water Quality</td>
<td>Increased average and summer water temperature</td>
</tr>
<tr>
<td></td>
<td>Increased erosion and suspended materials</td>
</tr>
<tr>
<td></td>
<td>Lower dissolved oxygen</td>
</tr>
<tr>
<td></td>
<td>Increased algal blooms</td>
</tr>
<tr>
<td>Habitat</td>
<td>Wetland conversion from perennial to seasonal</td>
</tr>
<tr>
<td></td>
<td>Possible loss of streamside vegetation</td>
</tr>
<tr>
<td></td>
<td>Decrease in cooler/oxygenated water habitats</td>
</tr>
</tbody>
</table>

2.6.2. Population Growth and Annexations

Population growth and new annexations can result in a further strain for stormwater management programs. While both population growth and annexations would bring additional revenue to the stormwater utility, increased populations result in more impervious area and therefore more runoff and more pollutant sources. Annexations result in an expansion of the service area and likely a new set of existing drainage system problems and resource constraints.

The 2010 Census estimate of the city’s population was 9,387. Edgewood’s estimated population in 2015 was 10,734, representing a 9 percent growth over the six-year period (US Census Bureau 2016). According to the City of Edgewood’s 2015 Comprehensive Plan, the population is expected to grow to 13,700 by 2035 (Edgewood 2015). There are no current plans for annexations, and a large part of the city is bounded by other cities, so this is not generally a concern for stormwater planning in Edgewood.
2.7. **STORMWATER SYSTEM CHARACTERISTICS**

### 2.7.1. Stormwater System Features

The City’s Stormwater Utility manages a large and complex storm drainage system that consists of underground pipes, open ditch conveyance, stormwater treatment features and more as summarized in Table 2-8. While some of this system drains to wetlands and ponds within closed depressions that infiltrate to groundwater, most of the conveyance network directs stormwater from the plateau to the Puyallup River valley. A map of the City’s stormwater system is provided in Figure 2-8.

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity(^{a,b})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catch Basins</td>
<td>523</td>
</tr>
<tr>
<td>Manholes</td>
<td>19</td>
</tr>
<tr>
<td>Control Structures</td>
<td>56</td>
</tr>
<tr>
<td>Vaults</td>
<td>10</td>
</tr>
<tr>
<td>Drywells</td>
<td>54</td>
</tr>
<tr>
<td>Detention Ponds(^c)</td>
<td>4</td>
</tr>
<tr>
<td>City Storm System Pipes</td>
<td>22 miles</td>
</tr>
<tr>
<td>City Storm System Channels</td>
<td>28 miles</td>
</tr>
</tbody>
</table>

\(^a\) Based on City of Edgewood GIS data provided in 2017.

\(^b\) Feature count includes only City-owned features. Stormwater features with “Null” values for ownership are excluded from feature summary.

\(^c\) The City’s mapped data does not include stormwater ponds, although mapped pipes and channels discharge to public ponds. These pipes were identified and checked using aerial photos to identify unmapped ponds and ponds fed by multiple pipes.

### 2.7.2. Stormwater System Maintenance

A majority of Edgewood’s municipal maintenance and inspection activities that are required by the Permit are performed by Pierce County Public Works crews through an interlocal agreement (ILA) between the City and Pierce County Public Works and Utilities Department. As part of this agreement, the City specifies a list of work to be completed each year, including street sweeping, Vactor services, and small engineering projects. The County also provides services to the City on an on-call basis, though these requests may be denied under special circumstances such as extreme weather events.
Figure 2-8. Mapped Stormwater System Infrastructure in the City of Edgewood.

Legend

- Edgewood city limits
- County boundary
- City limits
- Roads
- Waterbody
- Public pipe
- Channel
- Catch basin
- Dry well
- Public stormwater pond

Source: City of Edgewood

USDA, Aerial (2015)

K:\Projects\Y2017\17-06504-000\Project\FigX_StormwaterSystem_8.5x11.mxd
3. IDENTIFIED PROBLEMS AND RECOMMENDATIONS

Review of previous stormwater plans and information obtained during a workshop with City staff was used to develop an initial list of problems to be evaluated during work on this plan. These problems were evaluated using desktop methods and limited field evaluation to assess site-specific opportunities and constraints. To address the problems, 14 capital improvement program (CIP) project solutions are included in this plan. Two of the listed CIP projects represent multiple projects; these are the City’s annual spot improvement program to address small localized flooding issues and pothole reduction plans, which would eventually address flooding in five different potholes. Figure 3-1 shows approximate project locations, not including projects associated with the City’s spot improvement program.

The projects fall into three categories; Pothole Flooding, Stream Planning and Protection, and Other Localized Flooding, as organized below. Project summary sheets, conceptual figures, and cost estimates are included in Appendix C for seven of the projects that were considered a potentially high priority.

3.1. POTHOLE FLOODING

Edgewood’s six potholes receive stormwater runoff from surrounding neighborhoods and frequently flood during the winter months. This flooding is extensive and impacts a large portion of the city; during the winter of 2017 it impacted over 30 percent of the city and caused complete closure of multiple roadways for 32 consecutive days. A detailed alternatives assessment for addressing this stormwater problem was performed as part of developing the City’s 1997 surface water management plan, but no clear solution was identified to address the problem.
Figure 3-1. Locations of Proposed Stormwater Capital Improvement Projects.

Legend
- Edgewood city limits
- County boundary
- CIP Locations
- CIP Study Area
- Waterbody
- Stream

K:\Projects\Y2017\17-06504-000\Project\Report\FigX_CIPLocations_8.5x11.mxd
Pothole flooding remains the most significant stormwater-related issue in Edgewood; and given anticipated future development and projected wetter winter climate (See Section 2.5), the problem will likely increase in severity unless flood reduction strategies are implemented. One potential option for addressing this is to send treated stormwater to underground aquifers. Since there are some critical issues to evaluate before this option can be considered, a feasibility assessment for the Edgewood Bowl pothole is the first listed project. Depending upon the outcome of the feasibility assessment, a pilot project, i.e., the Infiltration Pilot Project Design and Construction project, would be completed to field test the application. Flood reduction studies would then be undertaken to develop detailed plans for five of the potholes. These plans will develop a preferred strategy for each pothole, which could include regional infiltration facilities, land acquisition, and upland stormwater management, or a combination of these. Completing the infiltration feasibility assessment and pilot project before development of individual flood reduction plans will allow consideration of regional infiltration facilities as a flood reduction option, if it is determined that they provide appropriate safeguards for existing drinking water supplies, are cost effective, and are supported by stakeholders.

For Lake Chalet, the sixth pothole, a solution has already been identified that involves routing water through new and existing pipes to Simon’s Creek, which was the natural overflow route for this pothole prior to modern development. Three alternatives for routing the water from Lake Chalet have been considered, and each is included as a project summary sheet in Appendix C.

Table 3-1 lists all the CIP project solutions proposed to address pothole flooding. As stated above, implementation of the Infiltration Pilot Project Design and Construction project would be contingent upon the results from the Edgewood Bowl Pothole Pilot Project Feasibility Assessment. Both projects would be coordinated with the MTVE.

A brief description of the specific flooding problems associated with each pothole is provided below.
### Table 3-1. CIP Projects Identified to Address Pothole Flooding.a

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Summary</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edgewood Bowl Pothole Pilot</td>
<td>Assess the feasibility of using stormwater treatment and infiltration through an underground injection control (UIC) wellfield to reduce flooding in the Edgewood Bowl Pothole. This project includes monitoring water levels and water quality of the potholes.</td>
<td>$460,000</td>
</tr>
<tr>
<td>Lake Chalet Pothole Flood Reduction Project</td>
<td>Convey water out of the pothole to reduce water surface elevation during flooding events.</td>
<td>$400,000 to $2,000,000 (Cost range reflects differences of using pumped flow, gravity flow, or horizontal directionally drilled siphon alternatives.)</td>
</tr>
<tr>
<td>Infiltration Pilot Project Design and Construction</td>
<td>Design and construct a pilot project to demonstrate the effectiveness of using stormwater treatment and infiltration through an underground injection control (UIC) wellfield to reduce flooding in the Edgewood Bowl Pothole.</td>
<td>$1,900,000 (Implementation is dependent upon results of Edgewood Bowl Pilot Project Feasibility Assessment)</td>
</tr>
<tr>
<td>Pothole Flood Reduction Plans</td>
<td>Develop and evaluate alternatives to address flooding in five of the potholes (not including Lake Chalet, which is addressed through a different project).</td>
<td>$850,000 ($170,000 per pothole)</td>
</tr>
</tbody>
</table>

*a* See Appendix C for project summary sheets, figures, and cost estimates related to these CIP projects.

### 3.1.1. Edgewood Bowl Pothole

Edgewood Bowl Pothole is the highest priority pothole because it is the largest in terms of contributing area and flooded area. In 1997, 10 individual flooding problems were associated with Edgewood Bowl Pothole, including three areas of road closures (110th Avenue East, 16th Street East, and 114th Avenue East) and private property damage such as flooded crawl spaces, septic systems, drywells, and driveway erosion. In addition to property damage and safety issues caused by the flooding, wetlands associated with the pothole may be impacted by the water level fluctuation. The feasibility assessment and pilot projects listed in Table 3-1 are currently planned to occur in the Edgewood Bowl Pothole because it is the City’s highest priority.

### 3.1.2. Lake Chalet Pothole

Flooding associated with the Lake Chalet Pothole affects many septic systems in the frequently flooded region near the pothole, and there are two drinking water wells near the pothole. In addition to these water quality concerns, 29th Street East is frequently closed due to flooding and two adjacent private properties are impacted. Projects in the Lake Chalet Pothole include monitoring to evaluate water quality and hydrologic conditions and a project to convey water from Lake Chalet to Simon’s Creek to control flooding (Table 3-1). A flood reduction study is not currently planned for this pothole; however, if the currently proposed conveyance project is
found to be infeasible, a flood reduction study will be needed. Any flood reduction project that drains water from this pothole will need to address the volume of water that needs to be controlled and the frequency and duration of discharge to evaluate potential downstream impacts as well as impacts on groundwater recharge.

### 3.1.3. Pinedale Pond/114th Avenue Pothole

There are several flooding problems associated with this pothole: seasonal flooding is experienced on eleven private properties and three roadways are on the flood fringe (117th Avenue East, 112th Avenue East, and 32nd Street East). Flooding of this pothole also affects associated wetland areas.

### 3.1.4. 108th Avenue Pothole

The 108th Avenue Pothole is located close to the Pinedale Pond/114th Avenue Pothole with similar challenges and a lack of water quality data for ponded areas and wetlands. There are five flooding problems associated with this pothole: two private properties and three roadways (108th Avenue East, 32nd Street East, and 36th Street East).

### 3.1.5. Surprise Lake Pothole

Surprise Lake Pothole is the smallest of the Edgewood potholes. There is flood risk for two houses and one septic system, which is a water quality concern.

### 3.1.6. 122nd Avenue Pothole

The 122nd Avenue Pothole has steeper slopes surrounding it that limit the area affected when the water level rises. Although the 1997 plan identified private homes, driveways, and buildings flooded along 122nd Avenue East, only one private driveway has been impacted by the rising water levels recent years.

### 3.2. Stream Planning and Protection

Two projects have been identified to restore and protect local streams that will require planning and assessment before specific solutions can be identified, these are listed in Table 3-2. The Jovita Creek project will require extensive coordination with other local jurisdictions before a protection and restoration plan can be developed. The Mortenson Farm site has been identified as a possible mitigation site by the Washington State Department of Transportation to mitigate for the impacts from future construction of the SR 167 Extension project. Therefore, this will also
require coordination but may likely be partially funded by the Washington State Department of Transportation.

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Summary</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jovita Creek Regional Improvement Feasibility Study&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Develop a plan for the Jovita Creek basin that will define actions to address flooding, slope stability, erosion, water quality, and habitat health.</td>
<td>$500,000</td>
</tr>
<tr>
<td>Mortenson Farm Regional Stormwater Improvements</td>
<td>WQ Improvements, Stream Channel Restoration, Regional Detention Evaluation, Wetland Enhancement, Passive Recreation</td>
<td>TBD (Coordinating with WSDOT as part of SR 167 Mitigation)</td>
</tr>
</tbody>
</table>

<sup>a</sup> See Appendix C for project summary sheet, figure, and cost estimate related to this CIP project.

### 3.3. **Other Identified Flooding Projects**

There are localized, nuisance flooding problems that are caused by such things as undersized culverts, erosion from steep slopes, deteriorating infrastructure, lack of maintenance of stormwater facilities, and/or changes to land use or the drainage network on adjacent or nearby property. If these problems are on City property or are a result of problems with City-controlled infrastructure, they can be addressed over time as part of a long-term repair and rehabilitation program, other related infrastructure upgrades (e.g., roadway repairs), or stand-alone projects in the CIP plan. Table 3-3 lists CIP projects that address identified, localized flooding problems. The first listed project, “City Drainage Infrastructure Program/Spot Improvements” is not a specific project but addresses this long term need.

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*Stormwater runoff on the side of Jovita Boulevard in Edgewood transports pollutants and can damage the roadway.*
Table 3-3. CIP Projects Related to Localized Flooding.

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Summary</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>City Drainage Infrastructure Program/Spot Improvements</td>
<td>Ongoing annual program to identify and address small localized drainage problems.</td>
<td>$100,000 (annual cost)</td>
</tr>
<tr>
<td>108th Avenue East/36th Street East Road Flooding</td>
<td>Evaluate alternatives and implement a project to prevent roadway flooding.</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>24th/112th Seasonal Ponding</td>
<td>Shoulder and culvert improvements to resolve seasonal flooding and dangerous roadside conditions.</td>
<td>$175,000</td>
</tr>
<tr>
<td>108th Avenue East/8th to 16th Flooding</td>
<td>Improving collection and conveyance system on dead-end road; handling public runoff to reduce private property flooding.</td>
<td>$350,000</td>
</tr>
<tr>
<td>Edgewood Drive East Drainage Improvements&lt;sup&gt;a&lt;/sup&gt;</td>
<td>This project will improve conveyance to reduce roadway and property flooding during large storm events.</td>
<td>$860,000</td>
</tr>
<tr>
<td>25th Street East Drainage Improvements&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Stabilize and repair slide damage to prevent slides, shoulder erosion, and roadway flooding in the future.</td>
<td>$200,000</td>
</tr>
<tr>
<td>Jovita Boulevard Rehabilitation</td>
<td>Reconstruct existing roadway to protect slopes, prevent erosion, and preserve storm drainage conveyance.</td>
<td>$500,000</td>
</tr>
<tr>
<td>Meridian Avenue Corridor Study</td>
<td>Recent widening between 8th Street East and 24th Street East isolated properties on the east side, making surface water improvements prohibitive in some cases. Opportunities to restore natural drainage pathways are needed.</td>
<td>$50,000</td>
</tr>
</tbody>
</table>

<sup>a</sup> See Appendix C for project summary sheet, figure, and cost estimate related to this CIP project.

<sup>b</sup> This roadway segment is now closed to traffic, and the City is re-evaluating the design solution for this site.

As is the case in most jurisdictions, there are also localized flooding problems that stem from private property, such as where drainage patterns have been changed resulting in damage to adjacent or downstream private properties. The City has limited jurisdiction on private property and is further constrained by laws that prohibit the use of public funds for private benefit. The City should develop a protocol for addressing flooding or stormwater discharge issues associated with private property. The protocol should include outreach to adjacent property owners and education on responsibilities and follow-up activities. The City may also want to consider identifying these problems on property tax assessments or use other mechanisms to alert potential property owners during property transactions.
3.4. **Program Review and Updates**

Stormwater program priorities and needs are continually changing. The following provides a list of steps that should be scheduled to occur routinely to ensure efficiency of the City’s overall stormwater program.

**Recommendations**

- Develop and maintain a list of known drainage problems and encourage field staff to contribute to the list on a quarterly basis, especially after storm events when they may have noted problems in the field.

- Annually review CIP projects planned by other departments to make more efficient use of limited resources by combining projects from multiple departments.

- Consider flow control and water quality retrofits through modification of existing facilities or LID development practices as part of projects programmed through other departments.

- Add flow control and water quality retrofit CIP projects or neighborhood drainage improvement CIP projects to the site-specific problems list.

- Revise this Comprehensive Stormwater Plan at least every 5 years, to ensure that it provides for effective long-term stormwater project planning, system maintenance, response to mandates, and program funding.

- Ensure the City’s stormwater manual is regularly updated and ensure all City and private projects conform with the City’s adopted stormwater requirements.
4. STORMWATER MANAGEMENT PROGRAM

This section includes a summary of stormwater management program needs. It includes those programmatic needs that are driven by regulations (i.e., the NPDES Phase II Permit [ Permit] and State UIC guidelines) and the City’s goals and policies that pertain to the stormwater program as listed in Section 1.3. A detailed Gap Analysis and Needs Assessment related to Permit compliance was completed as a part of development of this plan and is included as Appendix A.

4.1. NPDES Phase II Permit Compliance

The most significant regulatory requirement facing the City’s SWMP is the NPDES Phase II Permit (Ecology 2013), which addresses a variety of issues associated with stormwater runoff and requires the City to develop several distinct stormwater management program components. The City’s current Stormwater Management Program (SWMP) is designed to achieve compliance with the Permit, to minimize the adverse impacts of stormwater on the natural and built environments (i.e., preventing flooding, reducing flow rates, and improving water quality), and meet the goals and policies outlined above.

As one of the first tasks in development of this plan, the City’s SWMP activities and documentation were reviewed (based on information provided in 2016) to identify gaps in the existing SWMP. The primary focus of this effort was to evaluate the program against requirements of the Permit; however, other program needs have also been included if they were identified as goals in the Citywide Edgewood Comprehensive Plan, by City staff, and by the consultant team based on experience in other jurisdictions. The Gap Analysis and Needs Assessment (Gap Analysis) in Appendix A provides a detailed review of the City’s activities as they pertain to the Permit and provides recommendations on filling the gaps in stormwater program coverage along with estimated costs for doing so. This section is intended as an overview of the findings and includes all recommendations from the Gap Analysis.

The current Permit specifies requirements for the following stormwater program components:

- Public education and outreach
- Public involvement and participation
- Illicit discharge detection and elimination (IDDE)
- Controlling runoff from new development, redevelopment, and construction sites
• Municipal operations and maintenance
• Compliance with Total Maximum Daily Load (TMDL) Requirements
• Monitoring and Assessment
• Reporting Requirements

Recommendations associated with each of these components are provided in the following sections. Chapter 5 provides an estimate of the additional staff and equipment resources that will be required to implement the entire program.

4.1.1. Public Education and Outreach

This SWMP program component provides education and outreach to the general public and businesses. The gap analysis and needs assessment identified a number of areas where the City should expand their education and outreach program.

Recommendations

Required by Current Regulations

• Conduct a survey to evaluate the effectiveness of the City’s targeted education program. The City has identified engineers, developers, and contractors as their target audience and chosen “technical standards for stormwater site development” and “LID techniques” as subject areas to promote stormwater education and has developed an educational handout to support the program. The remaining need is to evaluate the program’s effectiveness and then to revise the handout based on survey findings.

• Identify and implement a stewardship program such as tree planting events, rain barrel distribution, catch basin marking, or coordination with other stewardship programs such as the Pierce Conservation District’s Stream Teams.

Recommended Program Improvements

• Continue hosting community workshops for stormwater issues.

• Identify regional partners and educational programs and include links to these on the City website (Examples are provided in Appendix A.)
• Implement the following activities as identified in the 2017 SWMP:
  o Work with Puyallup School District to support stormwater education opportunities
  o Work with the Pierce County Parks' Conservation Futures grant program to preserve sensitive areas
• Finalize educational handouts for paving contractors

4.1.2. Public Involvement and Participation

The City’s program ensures that there is ample opportunity for the public to understand and comment on issues related to stormwater management in the city. No gaps or improvement needs were identified for this program component.

4.1.3. Illicit Discharge Detection and Elimination (IDDE)

The City meets the IDDE requirements of the Permit, primarily through inspections conducted by Pierce County staff through an Interlocal Agreement (ILA). In accordance with the ILA, Pierce County staff inspect and clean catch basins, which could detect illicit discharges, and conduct response (elimination) work if requested to support IDDE needs of the Permit. The program also includes mapping and inventorizing the stormwater system, development of an ordinance to prohibit illicit discharges, and a tracked training program for staff to identify and detect illicit discharges.

A number of permit requirements have not yet been met for this Permit component. The most significant gap in program coverage is related to the requirement to map the tributary areas associated with outfalls and discharge points of 24 inches or more in diameter, which is required by February 2, 2018. The City has initially identified five outfalls and begun the mapping of the tributary areas, but based on a desktop analysis of the stormwater system, it is likely that a number of other points in the system should be classified as outfalls or discharge points. The Permit defines “outfalls” as points (ends of pipes or ditches) where stormwater leaves the City’s system and enters a surface water and “discharge points” as points where discharge leaves the system through facilities or BMPs designed to infiltrate (See the Permit for complete definitions).

Recommendations:

Required by Current Regulations

• Map the tributary areas associated with known outfalls and discharge points of 24 inches or more in diameter.

• Continue the outfall inventory to include all locations where pipes and ditches discharge to potholes, wetlands, ponds, or streams and map the tributary area for all outfalls with a diameter of 24 inches or greater.
• Continue discharge point inventory to include all locations where pipes and ditches discharge to BMPs or facilities designed to infiltrate and map the tributary area for all outfalls and discharge points with a diameter of 24 inches or greater as well as all geographic areas that do not discharge stormwater to surface waters.

• Establish an ongoing IDDE training program for appropriate City staff and a tracking form to document staff training.

• Adopt the IC/ID Field Screening and Source Tracing Guidance Manual and a documented tracking system for field activities.

**Recommended Program Improvements**

• Request that Pierce County update their catch basin inspection form to allow tracking of non-oil discharges.

• Improve publicity associated with reporting spills; display the spill hotline number prominently on the City’s website and advertise it in City news outlets.

• Provide additional IDDE educational resources and references on the City’s website. (Appendix A lists some example informative links.)

• Purchase basic equipment to assist with field screening including, mirror and pole, dye testing supplies, sand bags, smoke testing equipment, ammonia test strips, pH probe (with temperature probe), surfactant test kit, and potassium meter.

4.1.4. **Controlling Runoff from New Development, Redevelopment, and Construction Sites**

This permit component addresses runoff from new development, redevelopment, and construction site projects. It lays out requirements for a permitting and review, development of a plan for long terms operations and maintenance and inspection of stormwater facilities, and requires staff training. It also requires incorporation of LID principles and BMPs in development-related codes, rules, and regulations. The City currently requires Stormwater Maintenance Agreements for new development that spell out these inspection, maintenance, and reporting requirements.

One of the requirements of this component of the Permit is for the City to conduct annual inspections of privately-owned stormwater facilities. This requires first creating an inventory of those facilities, ensuring access agreements are in place with landowners, and implementation of the inspection and tracking program. This is the most critical gap for this component of the program.
In conjunction with pothole flood reduction plans described in Section 3, the City should evaluate how requirements for new development and redevelopment can be modified to support flood reduction in the potholes. Options include imposing regulations that restrict increases in impervious surface in areas tributary to the potholes, developing more stringent requirements for flow control in closed depression basins, and developing a funding strategy (e.g., fee-in-lieu system) that would enable redevelopment projects to fund regional flow control facilities, such as large infiltration facilities.

**Recommendations**

**Required by Current Regulations**

- Develop an inventory of privately owned facilities and implement a plan for inspections as well as procedures for record keeping and enforcement tracking.

- Update the Surface Water Compliance Application forms to ensure consistency with the 2015 Pierce County Stormwater Management and Site Development Manual (PCM).

**Recommended Program Improvements**

- Consider posting the SWPPP short form on the City’s website

- Consider developing additional checklists and/or BMP sizing guidance.

- Consider adding additional training opportunities for plan reviewers and site inspectors and track related training.

- Conduct a Stormwater BMP Feasibility Assessment and provide maps for use by plan reviewers, developers and engineers.

- Develop a protocol for addressing private property-driven flooding issues. The protocol should include outreach to adjacent property owners and education on responsibilities and follow up activities. Consider identifying the drainage problems on property tax assessments or use other mechanisms to alert potential property owners during property transactions.

**4.1.5. Municipal Operations and Maintenance**

The City’s municipal operations and maintenance program reduces stormwater impacts with regular activities such as catch basin cleaning and facility inspections. The program also includes detailed stormwater control plans for some facilities, staff training, and record management. The City’s ILA with Pierce County assigns Pierce County with responsibilities for routine inspections, catch basin cleaning, and street sweeping, although during emergencies, City staff perform inspections and some maintenance tasks.
The City has adopted and implemented the PCM, which identifies maintenance standards and inspection requirements for stormwater facilities and meets other minimum requirements of Ecology’s Stormwater Management Manual for Western Washington (Ecology 2012).

**Recommendations**

**Recommended Program Improvements**

- Request that Pierce County provide an annual list of maintenance activities completed by Pierce County crews through the ILA.

- Request training records for the Pierce County crews responsible for City O&M activities.

- Develop a template and populate a training tracking log from City and County records.

- Finalize SOPs related to maintenance and operations to document the City’s specific practices, policies and procedures. (The City has adopted Pierce County SOPs with some modifications, but these need to be finalized.)

**4.1.6. Compliance with Total Maximum Daily Loads (TMDLs)**

The Puyallup Watershed Water Quality Improvement Project (Ecology 2017) (aka Puyallup River TMDL Plan) lays out a plan for addressing fecal coliform (FC) bacteria issues in the Puyallup River. The City of Edgewood must comply with TMDL requirements to designate areas discharging via the City’s stormwater system to Jovita Creek (a tributary to the Puyallup) as high priority areas for IDDE field screening. Because IDDE field screening is conducted by Pierce County through the ILA, the City needs to designate Jovita Creek Watershed as high priority for routine field screening and communicate that designation to the county.

**Recommendations**

**Required by Current Regulations**

- Designate Jovita Creek Watershed as high priority for routine field screening and communicate that designation to Pierce County.
4.1.7. Monitoring and Assessment

The City contributes to the regional stormwater monitoring program in compliance with the Permit requirements. Because the City has also recently conducted some local stormwater monitoring, the City should report these projects and any results to Ecology.

**Recommendations**

**Required by Current Regulations**

- The City recently conducted a Hydrologic Surface Water Analysis for the 108th Avenue East neighborhood, and is preparing for further monitoring and potential improvements. A project description and results summary should be provided to Ecology in the next annual report.

**Addresses Anticipated Regulations**

- A surface water and groundwater monitoring program for the Edgewood potholes has been recommended (Section 3); if implemented the results should be included in the following years annual report.

4.1.8. Reporting

The City submits annual reports to Ecology and has developed a summary of internal coordination mechanisms, public access to records, and 5-year record storage. There were no gaps identified for this permit section.

4.1.9. Preparation for the Next Permit

The draft 2019–2023 NPDES Phase II Permit contains at least three components that the City should be aware of and start preparing for during the time that this Plan will be in place: a subbasin inventory, a source control program, and watershed planning. It is expected that much of what might be required for the subbasin inventory has been developed as part of this plan. (Appendix D provides all of the basin inventory data that is provided in different parts of this plan in one complete table.)

**Source Control Program for Existing Development**

The 2019–2023 NPDES Phase II Permit is expected to require the development and implementation of a proactive, preventative, inspection-based source control program for existing development. The preliminary draft permit includes the following:

- Develop a source control inventory
- Develop an ordinance and enforcement policy
• Develop and implement an on-going training program

• Implement a business inspection program.

**Recommendations**

**Addresses Anticipated Regulations**

- Create the source control business inventory template and begin populating the inventory focusing on new businesses and adding existing businesses as opportunity allows.

- Review existing source control requirements in EMC 13.25 after the new Permit is issued and revise if necessary to meet Permit requirements.

- Begin to develop inspection, enforcement, and training programs for this new Permit requirement.

- Implement a business inspection program by the deadline in the future Permit.

**Long-Term Watershed Planning**

Although the specifics are still being crafted, the Permit will include a need to conduct long term planning to protect receiving waters. The steps are likely to include:

- Creating an inventory of basins

- Prioritizing the basins using existing characterization information

- Identifying priority catchments within basins for planning

- Identifying approaches to protecting and restoring the catchment.

The basins as defined in this plan should be considered to represent the inventory of basins and much of the characterization data provided in this plan should suffice for an initial characterization. Since the City has already prioritized basins for planning as reflected in the CIP list, the key steps described in the draft guidance should be considered as already met.

**Recommendations**

- None at this time.
4.2. **Underground Injection Control (UICs)**

Underground Injection Controls (UIC wells) are part of the storm drainage system in the city that is not regulated through the Permit. Instead, UIC wells are regulated by Ecology as described in Ecology Publication 05-10-067 titled *Guidance Manual for UIC Wells that Manage Stormwater* (Ecology 2006). UIC wells must either be rule-authorized or covered by a state waste discharge permit to operate. To be rule-authorized, a registration form must be submitted with the Department of Ecology and wells must meet the non-endangerment standard, which means that they cannot endanger groundwater.

The City’s storm drain system includes multiple UIC wells, including 54 drywells (see Table 2-8) and numerous infiltration pipes, and none of the UIC wells appear to be registered with Ecology. The City is required to register its UIC wells with Ecology and to accomplish this, needs to inventory the UIC wells and determine the type of facility and the year of construction. UIC wells constructed before February 3, 2006, are considered “existing” UIC wells, and a well assessment must be completed to determine if any of the existing wells are a high threat to groundwater. Wells constructed after February 3, 2006, are considered “new” UIC wells, and do not require a well assessment. The existing UIC wells that are a high threat to groundwater must be retrofitted to protect groundwater quality.

The City should conduct the UIC well assessment using GIS analysis to evaluate land use around the wells (indicates potential for pollution), soil type, depth to groundwater (indicates likelihood of soil treatment potential), and location relative to groundwater protection areas.

**Recommendations**

**Required by Current Regulations**

- Conduct a complete inventory of all publicly-owned and operated UIC wells and register them with Ecology.
- Using the UIC guidance, determine which existing UIC wells pose a high threat to groundwater and then complete a well assessment to identify those high threat wells.
- Retrofit public wells that are a high threat to groundwater (no timeline for this is set by Ecology).
- Design and construct all new UIC wells according to the specifications in the UIC guidance (ongoing).
Recommended Program Improvements

- Construct opportunistic retrofits of all public UIC wells that pose a threat to groundwater by installing upstream water quality treatment facilities or other site-specific retrofits.

- Develop a targeted outreach program for private UIC well owners in areas found to pose a high threat to groundwater.

4.3. Asset Management

Edgewood is served by a traditional conveyance network of catch basins, buried conveyance pipes, and open ditches. Much of this infrastructure is more than 80 years old, and therefore repair and replacement of the infrastructure is an important long-term need. Development of an asset management system will help address this need and enable the City to execute proactive repair, rehabilitation, and replacement strategies, rather than more costly, reactive emergency response to system failures. Asset management can be used to identify parts of the conveyance system that are prone to failure or that align with proposed projects in other departments, enabling the City to make more efficient and effective use of limited resources by combining projects from multiple departments.

The City should include a budget line item to cover regular repair and replacements separately from other CIP projects to avoid delaying CIP implementation when critical system repair needs arise. In the longer term, the City should consider long term asset management when purchasing infrastructure management software or equipment, such as CCTV inspection equipment, that could be shared between departments.

The following list lays out the recommendations related to establishing an asset management program. Although these are important they are not included as priority items in the Implementation Plan (Section 5) because the City has other important needs to focus on during the next 5 to 6 years.

Recommendations for Future Program

- Establish a program for collecting CCTV data on the buried conveyance network to evaluate condition and establish repair priorities.

- Select or develop an asset management platform to integrate software and database forms for evaluating and tracking repair and maintenance activities.

- Develop an asset management program to justify the systematic rehabilitation and replacement of infrastructure based on conditions assessment and criticality analysis.

- Include a permanent fund for a repair and replacement of existing stormwater infrastructure in the annual budget.
4.4. Preparing for Climate Change

As described previously, 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. The potential for increased winter precipitation is likely to exacerbate conveyance and pothole flooding problems that Edgewood is already facing. Further, enhancing groundwater recharge and protecting water quality will become increasingly important as population grows, groundwater demands increase, and water resources become scarcer.

Recommendations

The following activities, some of which were identified in previous sections of this Plan, will help to prepare for and to mitigate climate change impacts:

- Implement pothole flood reduction studies and projects.
- Continue to promote dispersed infiltration (LID techniques) to control 100 percent of stormwater runoff on all sites, where it is feasible.
- Model the stormwater system to determine what areas are at, or near, flow capacity and thus prone to increased flood risk.
- Modify conveyance sizing requirements for new and redevelopment to account for larger peak flow events.
- Retrofit existing stormwater facilities to improve (or add) treatment performance and construct new facilities more conservatively.
5. PLAN IMPLEMENTATION

The following subsections describe stormwater program improvements and projects that are needed to fully achieve the City’s surface water management goals and policies. The first three subsections define the stormwater program activities that need to be implemented and the staffing and equipment that are required to implement the activities. The final subsection defines capital improvement project (CIP) needs and a proposed timeline for project implementation.

5.1. STORMWATER PROGRAM ACTIVITIES

Tables 5-1, 5-2, and 5-3 list high priority, lower priority, and future anticipated stormwater program activities, respectively, for the City of Edgewood. High priority activities (Table 5-1) should be completed within 1 year of CSWMP adoption. In most cases they are considered a high priority because they are required by the existing Permit or other regulation. It is assumed that most of the high priority needs would be carried out (or continue to be carried out) by existing staff; in these cases, “0” hours have been allotted for additional staff time. Some tasks, particularly one-time activities or those that require specialized expertise, may more efficiently be performed by an external source such as a consultant; cost estimates have been provided for these activities. In some cases, there are start-up activities associated with a program need, these are identified as one-time costs whether they are slated for completion by staff or external sources. Additional information related to the assumptions for each activity can be found in Appendix A. It is important to understand that an important assumption around staffing is that the Stormwater Program Manager is dedicated to stormwater program activities half of the time. In a small city this can be difficult to achieve; thus, staffing needs are based on optimistic assumptions.

To fully implement these high priority needs would require approximately 0.25 FTEs on a full time permanent basis and another 0.30 FTEs on a temporary basis. External costs are estimated at $71,000. The majority of this ($50,000) is associated with the effort to retrofit existing UICs in high-threat areas. It has been estimated that it would cost approximately $50,000 per well; this reflects an annual somewhat long-term cost for completing one well each year. The high-threat UIC well assessment will need to be completed before determining the duration of this annual need. One additional consideration for planning the UIC well retrofits is that completing the retrofits in batches (i.e., more than one well retrofit per project) could increase efficiency and reduce the cost per well.

Lower priority needs are addressed in Table 5-2. These activities are important to the overall functioning of the City’s stormwater program and to make progress towards achieving the stormwater utility goals in Section 1.3, but they can be implemented more gradually. These
equate to an additional staffing need of approximately 0.20 FTE as well as external costs of $50,000 one-time and $10,000 annually. External costs are primarily associated with creating tools that would aid developers in complying with stormwater regulations and improve efficiency of the development review process. The financial analysis being prepared in support of this Plan will not include the staffing or financial resources required to implement these activities because the anticipated rate impact would not be acceptable at this time; however, this cost information should be considered during future financial analysis.

Anticipated future program needs are addressed in Table 5-3. Each of the activities has been defined based on draft language for the next Permit. Although the City is not currently required to implement these activities immediately, some are relatively easy tasks to perform; and they all make progress towards achieving the stormwater utility goals and positioning the utility for compliance with the next permit cycle which will begin in 2019 (before the next CSWMP update). Full implementation of these tasks would require some new staffing resources and $8,000 in one-time funding; these costs have not been included in the financial analysis for this Plan.

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Activity</th>
<th>One-time Additional Staffing Need (hours)</th>
<th>Annual Additional Staffing Need (hours)</th>
<th>One-time External Cost</th>
<th>Annual External Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Education and Outreach</td>
<td>Measure the understanding and adoption of targeted behaviors</td>
<td>0</td>
<td>80</td>
<td>$10,000</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Develop a plan and schedule for creating or engaging in stewardship opportunities</td>
<td>0</td>
<td>80</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Illicit Discharge Detection and Elimination</td>
<td>Update outfall and discharge point inventory and map the tributary areas associated with each.</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$20,000</td>
</tr>
<tr>
<td></td>
<td>Establish an ongoing IDDE training program for appropriate City staff and a tracking form to document staff training.</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Adopt the IC/ID Field Screening and Source Tracing Guidance Manual and a documented tracking system for field activities.</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Purchase basic equipment to assist with field screening.</td>
<td>0</td>
<td>0</td>
<td>$5,000</td>
<td>$1,000</td>
</tr>
<tr>
<td>Program Area</td>
<td>Activity</td>
<td>One-time Additional Staffing Need (hours)&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Annual Additional Staffing Need (hours)&lt;sup&gt;b&lt;/sup&gt;</td>
<td>One-time External Cost</td>
<td>Annual External Cost</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>------------------------------------------------------</td>
<td>---------------------------------------------------</td>
<td>------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Controlling Runoff from New Development, Redevelopment, and Construction Sites</td>
<td>Develop an inventory of privately owned facilities and implement a plan for inspections as well as procedures for record keeping and enforcement tracking.</td>
<td>320</td>
<td>160</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Update the Surface Water Compliance Application forms to ensure consistency with the 2015 Pierce County Stormwater Management and Site Development Manual (PCM).</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Municipal Operations and Maintenance (O&amp;M)</td>
<td>Request an annual list of maintenance activities completed by Pierce County crews through the ILA.</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Request training records for the Pierce County crews responsible for City O&amp;M activities.</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Develop a template and populate a training tracking log from City and County records.</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Finalize SOPs related to maintenance and operations to document the City’s specific practices, policies and procedures.</td>
<td>0</td>
<td>80</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Compliance with Total Maximum Daily Loads (TMDLs)</td>
<td>Prioritize Jovita Creek Watershed for routine field screening and track activities in this watershed.</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Monitoring and Assessment</td>
<td>Provide summary of Hydrologic Surface Water Analysis for the 108th Avenue East neighborhood to Ecology in the next annual report.</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Underground Injection Control (UICs)</td>
<td>Conduct an inventory of all publicly-owned and operated UIC wells and register them with Ecology.</td>
<td>40</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Determine which UIC wells pose a high threat to groundwater and complete a well assessment for them.</td>
<td>160</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>
Table 5-1 (continued). High Priority Program Activities and Costs.

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Activity</th>
<th>One-time Additional Staffing Need (hours)</th>
<th>Annual Additional Staffing Need (hours)</th>
<th>One-time External Cost</th>
<th>Annual External Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Retrofit wells that are a high threat to groundwater. (No timeline for this is set by Ecology.)</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$50,000</td>
</tr>
<tr>
<td></td>
<td>Design and construct all new UIC wells according to the specifications in the UIC guidance (ongoing).</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>520 hours</td>
<td>400 hours</td>
<td>$15,000</td>
<td>$71,000</td>
</tr>
</tbody>
</table>

a Appendix A includes additional assumptions related to these activities.

b Zero (0) hours indicates the task would be performed by existing staff.

c This cost has been refined since development of the Gap Analysis and Needs Assessment was completed.

d FTE calculation is based on an average of 1,768 working hours per year.

Table 5-2. Lower Priority Programs Activities and Costs.

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Activity</th>
<th>One-time Additional Staffing Need (hours)</th>
<th>Annual Additional Staffing Need (hours)</th>
<th>One-time External Cost</th>
<th>Annual External Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Education and Outreach</td>
<td>Continue hosting community workshops for stormwater issues.</td>
<td>0</td>
<td>120</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Identify regional partners and educational programs and include links to these on the City website (Examples are provided in Appendix A).</td>
<td>0</td>
<td>20</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Implement the following activities as identified in the 2017 SWMP: Work with Puyallup School District to support stormwater education opportunities Work with the Pierce County Parks’ Conservation Futures grant program to preserve sensitive areas.</td>
<td>0</td>
<td>100</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Finalize educational handouts for paving contractors.</td>
<td>0</td>
<td>40</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Program Area</td>
<td>Activity</td>
<td>One-time Additional Staffing Need (hours)</td>
<td>Annual Additional Staffing Need (hours)</td>
<td>One-time External Cost</td>
<td>Annual External Cost</td>
</tr>
<tr>
<td>--------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>------------------------------------------</td>
<td>----------------------------------------</td>
<td>------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Illicit Discharge Detection and Elimination</td>
<td>Request that Pierce County update their catch basin inspection form to allow tracking of non-oil discharges.</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Improve publicity associated with reporting spills; display the spill hotline number prominently on the City’s website and advertise it in City news outlets.</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Provide additional IDDE educational resources and references on the City’s website. (Appendix A lists some example informative links.)</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Controlling Runoff from New Development, Redevelopment, and Construction Sites</td>
<td>Post the SWPPP short form on the City's website.</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Develop additional checklists and/or BMP sizing guidance in support of stormwater manual implementation.</td>
<td>0</td>
<td>0</td>
<td>$25,000</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Create additional training opportunities for plan reviewers and site inspectors and track related training.</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Conduct GIS-based Stormwater BMP Feasibility Assessment and provide maps for use by plan reviewers, developers and engineers.</td>
<td>0</td>
<td>0</td>
<td>$25,000</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Develop a protocol for addressing private property-driven flooding issues.</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>UICs</td>
<td>Develop a targeted outreach program for private UIC well owners in areas found to pose a high threat to groundwater.</td>
<td>0</td>
<td>40</td>
<td>$0</td>
<td>$10,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>0</td>
<td>320 hours</td>
<td>$50,000</td>
<td>$10,000</td>
</tr>
</tbody>
</table>

*a Appendix A includes additional assumptions related to these activities.

*b Zero (0) hours indicates the task would be performed by existing staff.

*c FTE calculation is based on an average of 1,768 working hours per year.
<table>
<thead>
<tr>
<th>Program Area</th>
<th>Activity</th>
<th>One-time Additional Staffing Need (Hours)</th>
<th>Annual Additional Staffing Need (Hours)</th>
<th>One-time External Cost</th>
<th>Annual External Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring and Assessment</td>
<td>A surface water and groundwater monitoring program for the Edgewood potholes has been recommended (Section 3); if implemented the results should be included in the following years' annual report.</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Source Control Program for Existing Development</td>
<td>Create the source control business inventory template and begin populating the inventory focusing on new businesses and adding existing businesses as opportunity allows.</td>
<td>40</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Review existing source control requirements in EMC 13.25 after the new Permit is issued and revise if necessary to meet Permit requirements.</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Begin to develop inspection, enforcement, and training programs for this new Permit requirement.</td>
<td>120</td>
<td>0</td>
<td>$8,000</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Implement a business inspection program by the deadline in the future Permit.</td>
<td>0</td>
<td>120</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Long Term Watershed Planning</td>
<td>Use the basins delineated in this Plan to represent the inventory and characterization requirements and the CIP list to reflect prioritization.</td>
<td>0</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>160 hours</strong></td>
<td><strong>120 hours 0.09 FTE</strong></td>
<td><strong>$8,000</strong></td>
<td><strong>$0</strong></td>
</tr>
</tbody>
</table>

a Appendix A includes additional assumptions related to these activities.

b Zero (0) hours indicates the task would be performed by existing staff.

c FTE calculation is based on an assumption of an average of 1,768 working hours per year.

There were also long-term needs and tasks that were identified that are not current or anticipated permit requirements or regulations but that should eventually be included as part of a comprehensive stormwater management program. These were identified under the subheadings of Asset Management and Preparing for Climate Change. No staffing or budget estimates have been prepared to address these and they are purposely not included as part of
this Implementation Plan because the City is not expected to have the resources to carry these out within the implementation period for this Plan.

5.2. **Staffing and Responsibilities**

Table 5-4 lists staff that are currently funded by stormwater utility fees and identifies where additional staff are needed to fully support the stormwater program. Currently, the stormwater utility funds 2.9 FTEs; an additional 0.29 FTEs are needed on a permanent basis and 0.39 FTEs on a one-time basis. Responsibilities for implementing the stormwater management program are primarily carried out by Public Works department with support from the Planning and Land Use, Administration, and Building departments.

<table>
<thead>
<tr>
<th>Role/Department</th>
<th>Full Time Equivalent (FTE) Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Utility Funded Staff (FTE)</td>
</tr>
<tr>
<td>Administration</td>
<td></td>
</tr>
<tr>
<td>Assistant City Admin.</td>
<td>0.05</td>
</tr>
<tr>
<td>City Clerk</td>
<td>0.02</td>
</tr>
<tr>
<td>Communications Coord.</td>
<td>0.05</td>
</tr>
<tr>
<td>Accounting Mgmt</td>
<td>0.05</td>
</tr>
<tr>
<td>Building</td>
<td></td>
</tr>
<tr>
<td>Permit Coord.</td>
<td>0.03</td>
</tr>
<tr>
<td>Public Works</td>
<td></td>
</tr>
<tr>
<td>Public Works Dir.</td>
<td>0.70</td>
</tr>
<tr>
<td>Roads Superintendent</td>
<td>0.50</td>
</tr>
<tr>
<td>Engineering Technician</td>
<td>0.50</td>
</tr>
<tr>
<td>Maintenance</td>
<td>0.40</td>
</tr>
<tr>
<td>Planning and Land Use</td>
<td></td>
</tr>
<tr>
<td>Community Dev. Dir.</td>
<td>0.30</td>
</tr>
<tr>
<td>Administrative Support</td>
<td>0.30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2.90</strong></td>
</tr>
</tbody>
</table>

a Due to staffing changes during the course of this plan, there are differences between the staffing assignments shown in Appendix A and those on this table.

b FTE calculation is based on 1,768 working hours per year.
5.3. Equipment Resources

The major equipment currently used for the SWMP includes a skid steer and small dump truck, as well as basic equipment for emergency stormwater facility access: flashlight, catch basin hooks, and turbidimeter. While Pierce County is still primarily responsible for inspections and maintenance, some equipment is recommended to allow City staff to assist with field screening and source tracing activities. These represent a one-time cost of $5,000 and a $1,000 annual replacement cost. The following equipment is needed:

- Mirror and pole
- Dye testing supplies
- Sand bags
- Smoke testing equipment
- Ammonia test strips
- pH probe (with temperature probe)
- Surfactant test kit
- Potassium meter

5.4. Capital Improvement Program

The CIP list included in the draft edition of this plan was reviewed by the City Council and the public, and information obtained during that review process was used to refine the list and prioritize the projects. Table 5-5 reflects these decisions and provides the final prioritized list of the CIPs identified in Section 3 with a timeline for their implementation. While there are no low priority projects on the list, the City recognizes that not all of these projects can be funded without a significant increase in stormwater utility fees. Those projects listed as critical are those that are considered the highest priority for more immediate action.

For example, while all of the pothole flood reduction plans address existing flooding, the Edgewood Pothole Pilot Project Feasibility Assessment is the highest priority because the findings will be critical for identifying the suite of tools that may be available for use in developing the pothole flood reduction plans. Completion of the flood reduction plan for Edgewood Pothole is also critical due to the extent of flooding from this pothole. The Lake Chalet project is considered critical because this area is experiencing more development pressure and has more structures already in jeopardy during flood events. The three listed localized flooding projects associated with roadways are considered critical either because they have been on the City’s CIP list for a long time or because they represent significant neighborhood-wide problems that are difficult to resolve under the Spot Improvement Program.
Table 5-5. Capital Improvement Project (CIP) List for Edgewood’s Stormwater Plan.

<table>
<thead>
<tr>
<th>Priority</th>
<th>Project No.</th>
<th>Project Name</th>
<th>Grant Contingent</th>
<th>Critical</th>
<th>Total</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>Future Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SW-6</td>
<td>Surface Water Management Plan Update (including stormwater comprehensive plan update)</td>
<td>No</td>
<td>Critical</td>
<td>200,000</td>
<td>75,000</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000 EA</td>
</tr>
<tr>
<td>2</td>
<td>SW-1</td>
<td>City Drainage Infrastructure Program/Spot Improvements</td>
<td>No</td>
<td>Critical</td>
<td>600,000</td>
<td>100,000</td>
<td>100,000</td>
<td>100,000</td>
<td>100,000</td>
<td>100,000</td>
<td>100,000</td>
<td>100,000 EA</td>
</tr>
<tr>
<td>3</td>
<td>New</td>
<td>Edgewood Pothole Pilot Project Feasibility Assessmenta</td>
<td>No</td>
<td>Critical</td>
<td>460,000</td>
<td>70,000</td>
<td>310,000</td>
<td>80,000</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>4</td>
<td>New</td>
<td>Lake Chalet Pothole Flood Reduction Project (Pump Station to gravity flow option)</td>
<td>No</td>
<td>Critical</td>
<td>500,000</td>
<td>–</td>
<td>500,000</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>5</td>
<td>New</td>
<td>24th/112th Seasonal Ponding</td>
<td>No</td>
<td>Critical</td>
<td>175,000</td>
<td>15,000</td>
<td>160,000</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>6</td>
<td>New</td>
<td>108th Ave E./8th to 16th Flooding</td>
<td>No</td>
<td>Critical</td>
<td>350,000</td>
<td>40,000</td>
<td>250,000</td>
<td>60,000</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>7</td>
<td>SW-5</td>
<td>108th Ave E./36th St. E. Road Flooding</td>
<td>No</td>
<td>Critical</td>
<td>1,000,000</td>
<td>–</td>
<td>–</td>
<td>50,000</td>
<td>800,000</td>
<td>150,000</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>8</td>
<td>New</td>
<td>Flood Reduction Plan for Edgewood Pothole</td>
<td>No</td>
<td>Critical</td>
<td>170,000</td>
<td>–</td>
<td>–</td>
<td>170,000</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>9</td>
<td>New</td>
<td>Infiltration Pilot Project Design and Construction</td>
<td>No</td>
<td>No</td>
<td>1,900,000</td>
<td>–</td>
<td>–</td>
<td>100,000</td>
<td>750,000</td>
<td>1,050,000</td>
<td>–</td>
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</tr>
<tr>
<td>10</td>
<td>New</td>
<td>Flood Reduction Plan for Pinedale Pothole</td>
<td>No</td>
<td>No</td>
<td>170,000</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>170,000</td>
</tr>
<tr>
<td>11</td>
<td>New</td>
<td>Flood Reduction Plan for 122nd Avenue Pothole</td>
<td>No</td>
<td>No</td>
<td>170,000</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>85,000</td>
<td>85,000</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>12</td>
<td>New</td>
<td>Flood Reduction Plan for 108th Avenue Pothole</td>
<td>No</td>
<td>No</td>
<td>170,000</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>170,000</td>
<td>–</td>
</tr>
<tr>
<td>13</td>
<td>New</td>
<td>Flood Reduction Plan for Surprise Lake Pothole</td>
<td>No</td>
<td>No</td>
<td>170,000</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>170,000</td>
</tr>
<tr>
<td>14</td>
<td>SW-11</td>
<td>Jovita Boulevard Rehabilitation</td>
<td>No</td>
<td>No</td>
<td>500,000</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>50,000</td>
<td>300,000</td>
<td>150,000</td>
<td>–</td>
</tr>
<tr>
<td>15</td>
<td>New</td>
<td>Edgewood Drive East Drainage Improvements</td>
<td>No</td>
<td>No</td>
<td>860,000</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>860,000</td>
</tr>
<tr>
<td>16</td>
<td>New</td>
<td>Meridian Ave Corridor Study</td>
<td>No</td>
<td>No</td>
<td>50,000</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<tr>
<td>17</td>
<td>SW-3</td>
<td>Jovita Creek Regional Improvement Feasibility Study</td>
<td>Yes</td>
<td>No</td>
<td>500,000</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>175,000</td>
<td>175,000</td>
<td>150,000</td>
<td>–</td>
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<tr>
<td>18</td>
<td>SW-2</td>
<td>Mortonsen Farm Regional Stormwater Improvements</td>
<td>Yes</td>
<td>No</td>
<td>1,250,000</td>
<td>–</td>
<td>50,000</td>
<td>700,000</td>
<td>500,000</td>
<td>–</td>
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</tr>
<tr>
<td>19</td>
<td>SW-7</td>
<td>25th St. E. Drainage Improvementsb</td>
<td>No</td>
<td>No</td>
<td>200,000</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>200,000</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total Expenditures through 2023 (2017 Dollars)</td>
<td></td>
<td></td>
<td>9,395,000</td>
<td>260,000</td>
<td>1,185,000</td>
<td>1,525,000</td>
<td>2,545,000</td>
<td>2,225,000</td>
<td>1,655,000</td>
<td>125,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expenditures-Critical Projects Only (2017 Dollars)</td>
<td></td>
<td></td>
<td>3,455,000</td>
<td>260,000</td>
<td>1,135,000</td>
<td>675,000</td>
<td>985,000</td>
<td>275,000</td>
<td>125,000</td>
<td>125,000</td>
</tr>
</tbody>
</table>

a Includes cost of Pothole Water Level and Water Quality Monitoring.

b This roadway segment is now closed to traffic, and the City is re-evaluating the design solution for this site.
There are also two large projects that would be unlikely to move forward without substantive support from other agencies and/or grants. The Jovita Creek basin (and therefore the area affected by the Jovita Creek Regional Improvement Feasibility Study) lies primarily within unincorporated King County. While this stream is important to the City and they would be a major stakeholder in any study, they would not likely provide the main funding unless it was through a grant. Similarly, the Mortenson Farm Regional Stormwater Improvement Project is still conceptual and is most likely to be driven by mitigation needs related to the SR 167 highway corridor improvements, rather than representing a high priority need for the City.

Implementation of just the critical projects represents a significant investment of an average of approximately $0.6 million per year over the next 6 years. The City has successfully obtained grant funding for the Feasibility Assessment for the Edgewood Pothole Pilot Study and will continue to look for financial assistance through grant and loan programs for appropriate projects, but ultimately implementation of just the critical needs is well beyond the current budget of the stormwater utility.

There are unique features about the City’s demographics and geography that together create special challenges for stormwater management. First, Edgewood has a comparatively low population density. Figure 5-1 shows population densities for some nearby small cities in Puget Sound. All of the cities have a higher population density than Edgewood; three have more than 2.5 times more people per square mile. Since most of the costs associated with operating a stormwater program are the same no matter the size or population of the city, fewer people in Edgewood simply equates to a higher cost per person. Another related factor is that there are comparatively few commercial businesses. Typically, commercial businesses pay a larger share of stormwater fees because they contribute more to stormwater problems. Figure 5-2 provides a comparison of the amount of revenue generated to stormwater utilities from non-residential properties (primarily commercial properties) in some nearby small cities. As shown, non-residential customers account for only 36 percent of Edgewood’s revenue whereas in other local cities they account for 52 percent to 72 percent. These two factors of low population and fewer commercial accounts together play a significant role in affecting cost per parcel.

Edgewood’s unique geology also causes problems and related costs that other communities do not experience. Thus, in addition to typical storm drainage problems such as the Edgewood Drive improvements included in Table 5-5, there are a series of needs that other cities do not have. The city’s location on the plateau and its geology have resulted in formation of the six potholes with difficult to solve flooding problems. Studies and plans for addressing these problems (including the Lake Chalet pothole project) account for over $3.7 million of the CIP project costs (Table 5-5). In addition, the steep ravines that drain water from the plateau to the valley floor cause extensive erosion, drainage, and roadway problems, which also contribute to capital project costs. A financial analysis and rate study to evaluate stormwater utility finances was completed as part of this planning process and is included as Appendix E.
Figure 5-1. Comparison of Population Densities for Nearby Small Cities.

Figure 5-2. Stormwater Fee Revenue Generated from Non-Residential Customers as a Percent of Total Fee Revenue.
6. REFERENCES


Technical Memorandum: City of Edgewood Stormwater Program Gap Analysis and Needs Assessment
BACKGROUND

The City of Edgewood (City) currently implements its Stormwater Management Program (SWMP) to achieve regulatory compliance and to minimize the adverse impacts of stormwater on the natural and built environments (i.e., managing peak flow volumes to avoid flooding and providing water quality treatment to mitigate impacts on receiving waters). Implementation of the SWMP is primarily the responsibility of the Public Works Department, with support provided by the Operations and Maintenance division of Public Works, Community Development Department, and Parks and Recreation Department.

The current SWMP activities are described in the 2017 SWMP and 2016 annual report that was submitted to the Washington State Department of Ecology (Ecology) in March 2017. The SWMP includes information on planned SWMP activities to meet the requirements of Ecology’s National Pollutant Discharge Elimination System Western Washington Phase II Municipal Stormwater Permit (NPDES Phase II Permit), which is the most significant regulatory requirement driving the City’s stormwater program. The NPDES Phase II Permit, requires that the City prepare annual reports to document activities taken to meet the associated requirements.

In preparation of this report, the City’s SWMP activities and documentation were reviewed to identify gaps in the SWMP. The primary focus of this effort was to evaluate the program against requirements of the NPDES Phase II Permit; however, other program needs have also been included if they were identified by City staff. Appendix A contains a detailed matrix of the City’s activities, provides recommendations for meeting identified data gaps, and includes funding and staffing estimates associated with the recommendations. The purpose of this memorandum is to provide an overview of the gap analysis process and briefly summarize the recommendations from Appendix A. The recommendations will be used by City staff to direct further SWMP activities and to help guide the City’s Stormwater Management Plan update.
**METHODS OF ANALYSIS**

Potential gaps and areas for improvement were identified through a review of available documents, a questionnaire sent to City staff, a project kickoff meeting with City staff, and follow-up discussions.

**Document Review**

Document review included pertinent documents identified and/or provided by the City, including City codes and policies, maps and GIS data, SWMP documents, public education materials, and operations and maintenance (O&M) information. These were reviewed to provide a foundation for characterizing the existing SWMP.

**Questionnaire and Kickoff Meeting**

To examine the components of the City’s SWMP in more detail and to identify gaps and potential issues, City staff members representing various aspects of the City’s stormwater program attended a project kickoff meeting with Herrera staff on May 12, 2017.

A Gap Analysis questionnaire was distributed to participants in advance of the meeting to gather staff input and perspective on key stormwater issues. Questionnaire responses were used to shape and facilitate the meeting discussion, focusing on NPDES Phase II Permit requirements, staffing needs, and other issues of concern to City staff.

**NPDES Phase II Permit Requirements**

The most significant regulatory requirement facing the City’s SWMP is Ecology’s NPDES Phase II Permit, which addresses a variety of issues associated with stormwater runoff and requires the City to develop several distinct SWMP components. The current NPDES Phase II Permit (issued by Ecology on August 1, 2012; effective on August 1, 2013) specifies requirements for the following:

- Public education and outreach
- Public involvement and participation
- Illicit discharge detection and elimination (IDDE)
- Controlling runoff from new development, redevelopment, and construction sites
- Municipal operations and maintenance (O&M)
- Compliance with Total Maximum Daily Load (TMDL) Requirements
• Monitoring and Assessment
• Reporting Requirements

Recommendations associated with each of these components are provided in Appendix A along with additional resources (e.g., staffing and equipment) required to implement these recommendations.

CONCLUSIONS

The City’s SWMP meets a majority of the NPDES Phase II Permit requirements; however, there are two primary areas where additional resources are needed: Public Education and Outreach and Controlling Runoff from New Development, Redevelopment, and Construction Sites. Two additional areas (IDDE and Municipal O&M) could also use a slight increase in funding or staff support to meet existing NPDES Phase II Permit requirements. Based on the recommendations provided in Appendix A, one-time funding needs have been estimated at $50,000; and ongoing funding needs have been estimated at $1,000. One-time funding needs have been identified to support requirements of the City’s IDDE program and to support Controlling Runoff from New Development, Redevelopment, and Construction Sites. Ongoing funding would support the replacement of equipment used for illicit discharge field screening and source tracing as part of the City’s IDDE program.

Additional City staff support needed has been estimated at 840 hours (or 0.48 Full Time Equivalents [FTE]). This additional staff support is needed to support requirements of the City’s Public Education and Outreach program, to Controlling Runoff from New Development, Redevelopment, and Construction Sites, and to support Municipal O&M.

<table>
<thead>
<tr>
<th>Permit Section</th>
<th>Funding</th>
<th>Staff Support</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One-time</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Public Education and Outreach</td>
<td>$10,000</td>
<td>$0</td>
</tr>
<tr>
<td>Public Involvement and Participation</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>IDDE</td>
<td>$15,000</td>
<td>$1,000</td>
</tr>
<tr>
<td>Controlling Runoff from New Development, Redevelopment, and Construction Sites</td>
<td>$25,000</td>
<td>$0</td>
</tr>
<tr>
<td>Municipal O&amp;M</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Compliance with TMDL Requirements</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Monitoring and Assessment</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Reporting</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$50,000</strong></td>
<td><strong>$1,000</strong></td>
</tr>
<tr>
<td>Public Education and Outreach</td>
<td>Current Activities</td>
<td>Recommendations</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>SS.C.1.a - Education and Outreach program</td>
<td>“To build general awareness, Permittees shall select from the following target audiences and subject areas:</td>
<td></td>
</tr>
<tr>
<td>(a) General public (including school age children), and businesses (including home-based and mobile businesses):</td>
<td>• General impacts of stormwater on surface waters.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Impacts from impervious surfaces.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Impacts of illicit discharges and how to report them.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Low impact development (LID) principles and LID BMPs.</td>
<td></td>
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<tr>
<td></td>
<td>• Opportunities to become involved in stewardship activities.”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Based on the City’s website:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Brochures and resources on the City website under the heading “What can you do to help protect the environment?”</td>
<td></td>
</tr>
<tr>
<td></td>
<td><a href="http://www.cityofedgewood.org/government/public_works/surface_water_management">www.cityofedgewood.org/government/public_works/surface_water_management</a>. php</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o “Ten Ways You Can Improve the Quality of Stormwater Runoff” Handout:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o “Fish-Friendly Car Wash” handouts:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Handout that describes the negative impacts of traditional car wash practices.</td>
<td></td>
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<tr>
<td></td>
<td>o Handout with contact information and a description of the car wash kit that can be used for fundraising car washes.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Handout with instructions on how to set up the car wash kit.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Natural Yard Care handouts:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o “Soil and Mulch” Handout: describes soil components, how to amend soils, and how to mulch (Step 1 of the Natural Yard Care program).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o “Planning and Planting a Sustainable Landscape” Handout: describes how to plan landscaping and select appropriate plants (Step 2 of the Natural Yard Care program).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o “Watering Wisely” Handout: describes timing, amounts, and techniques for watering and irrigation (Step 3 of the Natural Yard Care program).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o “Think Twice Before Using Pesticides” Handout: describes alternative approaches to pesticide use for pest management (Step 4 of the Natural Yard Care program).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o “Natural Lawn Care” Handout: describes maintenance practices including mowing, fertilizing, watering, de-thatchering and aerating, and controlling pests and weeds (Step 5 of the Natural Yard Care program).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Link to the Ecology website page for Washington Waters and related programs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Link to the Ecology website for Saving Puget Sound and related programs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Based on the 2017 Stormwater Management Program (SWMP):</td>
<td></td>
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<tr>
<td></td>
<td>• Publish articles in City’s quarterly Edgewood Magazine that are related to stormwater.</td>
<td></td>
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<tr>
<td></td>
<td>• Provide copies of the Rain Garden Handbook for Western Washington at City Hall.</td>
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<tr>
<td></td>
<td>• City has hosted community workshops addressing LID BMPs, conservation, etc., in the past.</td>
<td></td>
</tr>
<tr>
<td>(b) Engineers, contractors, developers and land use planners:</td>
<td>Refer to handouts listed under New Development, Redevelopment, and Construction Sites (see SS.C.4).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Technical standards for stormwater site and erosion control plans.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• LID principles and LID BMPs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Stormwater treatment and flow control BMPs/facilities.”</td>
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### Table A-1 (continued). City of Edgewood Stormwater Management Program Activities and Recommendations.

<table>
<thead>
<tr>
<th>Permit Section</th>
<th>Current Activities</th>
<th>Recommendations</th>
<th>Additional Support Needed (staff/funding)</th>
<th>Support Assumptions</th>
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<td><strong>Public Education and Outreach (continued)</strong></td>
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</table>
| S5.C.1.b – Stewardship opportunities | No specific stewardship opportunities have been identified. | • Develop a plan and a schedule for complying with this permit requirement.  
• Move forward with planned activities in the 2017 SWMP:  
  o Coordinate with Pierce Conservation District Stream Teams for the Puyallup River watershed.  
  o Consider implementing a tree planting community event.  
  o Consider distributing free trees or rain barrels at a community event.  
  • Consider a tree coupon program similar to the City of Tacoma: www.cityoftacoma.org/cms/one.aspx?objectId=66710.  
• Consider implementing a catch basin marking program with local scouts or other community groups. | 80 hours (0.05 FTE) | Assumes 80 hours of outreach needed per year (ongoing). |
| | | | | |
| S5.C.1.c – Measure the understanding and adoption of targeted behaviors | Based on the 2016 Annual Report:  
• City has identified target audience: engineers, contractors, and developers.  
• City has identified subject areas:  
  o Technical standards for stormwater site development  
  o LID techniques  
• Developed “Storm drainage minimum design requirements for small projects” handout. | • Submit a G20 Non-Compliance Notification letter to Ecology with a plan and schedule for complying with the evaluation component of this permit requirement.  
• Develop and conduct a survey for the target audience to follow up on effectiveness of this form.  
• Develop a short report or memorandum summarizing the results of the survey.  
• Update handout based on survey feedback. | 80 hours (0.05 FTE) | $10,000 (one-time) |
| | | | | |
| | | | | |
| **Public Involvement and Participation** | | | | |
| S5.C.2.a – Create opportunities for public participation | Based on 2016 Annual Report:  
• The City provides public notice for review and update of all codes, comprehensive plans, and capital improvement programs. The first stop in the review process for any proposed change is the City’s Planning Commission, where there are both formal and informal public review opportunities.  
• Recommendations of the Planning Commission are forwarded to the City Council for final review and action, which includes another public notice and hearing opportunity.  
• Larger programs and projects, such as comprehensive plan updates, typically include more involved public participation, such as workshops and town halls.  
• Based on Questionnaire:  
  • The Citizen Action Request (CAR) form is available at the counter and on the website. The system allows for complaints to be filed, investigated and resolved by members of City Staff. | • No gaps identified. | NA |

**Public Education and Outreach Subtotal**  440 hours (0.25 FTE) and $10,000 (one-time)
Table A-1 (continued). City of Edgewood Stormwater Management Program Activities and Recommendations.

<table>
<thead>
<tr>
<th>Public Involvement and Participation (continued)</th>
<th>Current Activities</th>
<th>Recommendations</th>
<th>Additional Support Needed (staff/funding)</th>
<th>Support Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>S5.C.2.b – Post the SWMP Plan and annual report on City’s website</strong></td>
<td>Current SWMP annual report, and attachments are posted on the City’s website: <a href="http://www.cityofedgewood.org/government/public_works/surface_water_management.php">www.cityofedgewood.org/government/public_works/surface_water_management.php</a></td>
<td>• No gaps identified.</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

Public Involvement and Participation Subtotal | NA |

Illicit Discharge Detection and Elimination (IDDE) | |

**S5.C.3.a – Ongoing mapping requirements**

“Mapping of the MS4 shall continue on an ongoing basis. MS4 maps shall be periodically updated. Update maps if necessary to meet the requirements of this section no later than February 2, 2018.

At a minimum, maps shall include the following information:

i. Known MS4 outfalls and known MS4 discharge points.

ii. Receiving waters, other than ground water.

iii. Stormwater treatment and flow control BMPs/facilities owned or operated by the Permittee.

iv. Tributary conveyances to all known outfalls and discharge points with a 24 inch nominal diameter or larger, or an equivalent cross-sectional area for non-pipe systems. The following attributes shall be mapped:

   o Tributary conveyance type, material, and size where known.

   o Associated drainage areas.

   o Land use.

v. All connections to the MS4 authorized or allowed by the Permittee after February 16, 2007.

vi. Connections between the MS4 owned or operated by the Permittee and other municipalities or public entities.

vii. Geographic areas served by the Permittee’s MS4 that do not discharge stormwater to surface waters.”

Based on the 2017 SWMP:

• MS4 base map available through Pierce County’s CountyView GIS platform developed in 2009 and updated each year: www.co.pierce.wa.us/2281/GIS-Applications.

  o Pierce County has mapped streams and wetlands as receiving waters.

  o Pierce County has mapped stormwater treatment and flow control structures including catch basins, control structures, dry wells, manholes, and vaults.

  o Pipes and channels mapped by Pierce County include material, type, size, and a description of discharge points. Possible outfalls based on this data are summarized in the table below:

<table>
<thead>
<tr>
<th>Conveyance Structure</th>
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<td>71</td>
<td>86</td>
<td>55</td>
<td>17</td>
<td>18</td>
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<tr>
<td>Pipes over 24-inch diameter</td>
<td>0</td>
<td>17</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>All Channels</td>
<td>18</td>
<td>9</td>
<td>34</td>
<td>8</td>
<td>19</td>
</tr>
<tr>
<td>Channels over 24 inches deep</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
</tbody>
</table>

Based on the May 12, 2017, kickoff meeting:

• The City has identified five known outfalls:

  o At 114th north of Jovita (24-inch diameter)

  o At the pond south of 24th on Meridian (Simon’s Creek) (12-inch diameter)

  o Edgewood Drive (southeast corner into Summer) (12-inch diameter, discharges into a ravine)

  o At the corner of 32nd Street East and 94th Avenue East (Simon’s Creek) (12-inch diameter)

  o At the crossing of the Surprise Lake discharge channel at 92nd Avenue East (south of 20th) (48-inch diameter)

Based on the City’s website:

• The City has mapped land use designations: www.cityofedgewood.org/government/planning_and_land_use/index.php

Based on the 2017 SWMP:

• MS4 base map available through Pierce County’s CountyView GIS platform developed in 2009 and updated each year: www.co.pierce.wa.us/2281/GIS-Applications.

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</table>
| S5.C.3.a – Illicit discharge ordinance | Based on 2016 Annual Report:  
• EMC 13.25 – Illicit Stormwater Discharges updated by Ordinance 16-482 on November 8, 2016. | No gaps identified. | NA | NA |
| | | | | |
| S5.C.3.c – Ongoing program implementation to identify and detect illicit discharges | Based on 5/12/17 kickoff meeting:  
• The City has an interlocal agreement (ILA) with Pierce County to perform catch basin inspections and cleaning.  
• There are boxes on the Pierce County inspection form to check for oil presence, condition, and comments. | • Provide recommendations to Pierce County staff on information that the City would like to track for compliance with this permit requirement.  
○ Consider modifying “oil presence” field to apply to other illicit discharges or adding another field for non-oil discharges. | NA | Complete with current staffing. |
| | Based on 2016 Annual Report:  
• 40 percent of MS4 coverage area screened in 2016. | | | |
| ii. A publicly listed and publicized hotline or other telephone number for public reporting of spills and other illicit discharges. | Based on 2016 Annual Report:  
• City Hall contact information: 253-952-3299.  
• 4 calls received in 2016. | • Spill hotline is the same as the City Hall general information line and is not well publicized.  
• Place hotline more prominently on the City’s website or create a hotline specific to reporting spills. | NA | Complete with current staffing. |
| iii. An ongoing training program for all municipal field staff, who, as part of their normal job responsibilities, might come into contact with or otherwise observe an illicit discharge and/or illicit connection to the MS4, on the identification of an illicit discharge and/or connection, and on the proper procedures for reporting and responding to the illicit discharge and/or connection. Follow-up training shall be provided as needed. | No established training program for IDDE. | • Require applicable City staff to watch Illicit Connection and Illicit Discharge (IC/ID) Field Screening and Source Tracing Guidance Manual videos:  
www.wastormwatercenter.org/illicit-connection-illicit-discharge  
• Attend in-person IC/ID field screening training in late 2018. | NA | Complete with current staffing. |
| iv. Permittees shall inform public employees, businesses, and the general public of hazards associated with illicit discharges and improper disposal of waste. | • General information provided on website (see S5.C.3.a).  
• Property/business owners are educated upon discovery of potential hazards/illicit discharges. | Consider providing the following resources on the City’s website:  
• Dump Smart Program (carpet cleaners, painters, and pressure washers):  
www.wastormwatercenter.org/dump-smart  
• Ecology pollution prevention by business type website:  
www.ecy.wa.gov/pjprograms/hwtr/p2/ja.html  
• Ecology hazardous substances website:  
www.ecy.wa.gov/hchie/index.html  
• City of Seattle resources (restaurants):  
• Clark County dumpster maintenance brochure:  
www.clark.wa.gov/sites/default/files/dep/files/environmentservices/Stormwater/what-you-can-doz/Dumpster%20maintenance%20brochure%2006_2_16.pdf | NA | Complete with current staffing or proposed Public Education and Outreach staff under S5.C.1 above. |
<table>
<thead>
<tr>
<th>IDDE (continued)</th>
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<th>Additional Support Needed (staff/funding)</th>
<th>Support Assumptions</th>
</tr>
</thead>
</table>
| S5.C.3.d – Ongoing program implementation to address illicit discharges | Based on May 12, 2017, kickoff meeting:  
• City staff investigate calls about IDDE issues.  
• Current equipment includes: flashlight, catch basin hooks, turbidimeter.  
• Pierce County can assist with IDDE response if requested as part of the ILA. | • Adopt and/or modify the IC/ID Field Screening and Source Tracing Guidance Manual.  
• Purchase basic equipment to assist with field screening and source tracing:  
  - Mirror and pole  
  - Dye testing supplies  
  - Sand bags  
  - Smoke testing equipment  
  - pH probe (with temperature probe)  
  - Surfactant test kit  
  - Potassium meter | $5,000 (one-time)  
$1,000 (annual replacement/restocking cost) | Adopting and/or modifying the IC/ID Field Screening and Source Tracing Guidance Manual will be completed with current staffing. |
| S5.C.3.e – Ongoing staff training program | No established training program for IDDE. | • Require applicable City staff to watch IC/ID Field Screening and Source Tracing Guidance Manual videos: www.wastormwatercenter.org/illicit-connection-illicit-discharge.  
• Attend in-person IC/ID field screening training in late 2018.  
• Develop a spreadsheet or simple tracking form to document staff training. | NA | Complete with current staffing. |
| S5.C.3.f – Track and maintain records | Based on Questionnaire responses:  
• The City tracks all complaints, including spills, with the Citizen Action Request (CAR) program which includes an online reporting option: http://cityofedgewood.org/government/city_clerk/citizen_action_form.php. | No gaps identified. | NA | NA |
| IDDE Subtotal | | | | $15,000 (one-time) and $1,000 (ongoing) |
### Table A-1 (continued). City of Edgewood Stormwater Management Program Activities and Recommendations.

<table>
<thead>
<tr>
<th>Permit Section</th>
<th>Current Activities</th>
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</tr>
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</table>
| **S5.C.4.a – Ordinance to address runoff from development, redevelopment, and construction sites**

"Implement an ordinance or other enforceable mechanism that addresses runoff from new development, redevelopment, and construction site projects ..."

Based on 2017 SWMP:
- Policy requires that stormwater facilities are owned and maintained by HOAs, property owners, or another private party. The developer is required to execute and record an Agreement to Maintain Stormwater Facilities and Implement a Pollution Source Control Plan:
  - O&M Plan and facility inspection requirements.
  - Requires annual inspection and reporting by responsible party which is an education and outreach opportunity for city staff.
- Contains an O&M facility plan.
- EMC Chapter 13.05 (Stormwater Manual – Site Development Regulations) updated by Ordinance 16-482 on November 8, 2016.
- The City has adopted the 2015 Pierce County Stormwater Management and Site Development Manual (PCM).

No gaps identified. NA NA

| **S5.C.4.b – Permitting process with site plan review, inspection, and enforcement**

i. Review of all stormwater site plans for proposed development activities.

Based on 2016 Annual Report:
- 119 stormwater site plans were reviewed.

Based on Questionnaire:
- Each plan is carefully reviewed for conformance with the adopted manual, including review and verification of calculations, existing conditions, and potential impacts to adjacent areas/property.
- The City has developed the following handouts for project proponents:
  - Surface Water Compliance Application [PDF link]
  - Surface Water Compliance Application Information Sheet [PDF link]
  - Storm Drainage Minimum Design Requirements for Small Projects [PDF link]

Based on the 2017 SWMP:
- Update Surface Water Compliance Application and Surface Water Compliance Application Information Sheet for consistency with the 2015 PCM.
- Post SWPPP short form on City's website.
- Consider developing additional checklist(s) and/or BMP sizing guidance.

$25,000 (one-time)

Minor edits to existing handouts and posting the SWPPP short form can be completed with current staffing.

Development of up to 5 new checklists assumes an external support budget of 150 hours at a rate of $100/hour.

Development of simplified BMP sizing guidance assumes an external support budget of 100 hours at a rate of $100/hour.

| **S5.C.4.b – Permitting process with site plan review, inspection, and enforcement**

ii. Inspect, prior to clearing and construction, all permitted development sites that have a high potential for sediment transport as determined through plan review based on definitions and requirements in Appendix 7 Determining Construction Site Sediment Damage Potential.

iii. Inspect all permitted development sites during construction to verify proper installation and maintenance of required erosion and sediment controls. Enforce as necessary based on the inspection.

iv. Inspect all permitted development sites upon completion of construction and prior to final approval or occupancy to ensure proper installation of permanent stormwater facilities ...

Based on 2016 Annual Report:
- 30 construction sites inspected prior to construction.
- 73 construction sites inspected during construction.
- 1 enforceable action taken.

Based on the 2017 SWMP:
- Staff inspect all permitted development sites prior to clearing and construction activity.
- Staff verify installation and maintenance of temporary erosion and sediment control (TESC) and stormwater BMPs.
- Enforcement actions are based on inspection results and Citizen Action Requests.

Based on 5/12/17 kickoff meeting with City Staff:
- New Engineering tech performs in-house inspection program.

No gaps identified. NA NA

| **S5.C.4.b – Permitting process with site plan review, inspection, and enforcement**

ii. Inspect, prior to clearing and construction, all permitted development sites that have a high potential for sediment transport as determined through plan review based on definitions and requirements in Appendix 7 Determining Construction Site Sediment Damage Potential.

iii. Inspect all permitted development sites during construction to verify proper installation and maintenance of required erosion and sediment controls. Enforce as necessary based on the inspection.

iv. Inspect all permitted development sites upon completion of construction and prior to final approval or occupancy to ensure proper installation of permanent stormwater facilities ...

Based on 2017 SWMP:
- Staff inspect all permitted development sites prior to clearing and construction activity.
- Staff verify installation and maintenance of temporary erosion and sediment control (TESC) and stormwater BMPs.
- Enforcement actions are based on inspection results and Citizen Action Requests.

Based on 5/12/17 kickoff meeting with City Staff:
- New Engineering tech performs in-house inspection program.

No gaps identified. NA NA
### Table A-1 (continued). City of Edgewood Stormwater Management Program Activities and Recommendations.

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| **Controlling Runoff from New Development, Redevelopment, and Construction Sites (continued)** | Based on the 2017 SWMP:  
- EMC Chapter 13.05 (Stormwater Manual – Site Development Regulations) updated by Ordinance 16-482 on November 8, 2016. | No gaps identified. | NA | NA |
| S5.C.4.c – Long term operations and maintenance of stormwater treatment and flow control BMPs/facilities | i. Implementation of an ordinance or other enforceable mechanism that clearly identifies the party responsible for maintenance, requires inspection of facilities ... and establishes enforcement procedures.  
- Policy requires that stormwater facilities are owned and maintained by HOAs, property owners, or another private party. The developer is required to execute and record an Agreement to Maintain Stormwater Facilities and Implement a Pollution Source Control Plan:  
  o O&M Plan and facility inspection requirements.  
  o Requires annual inspection and reporting by responsible party which is an education and outreach opportunity for city staff.  
- The City has adopted the 2015 PCM which includes maintenance standards. | No gaps identified. | NA | NA |
|  | ii. Each Permittee shall establish maintenance standards that are as protective or more protective of facility function than those specified in Chapter 4 of Volume V of the Stormwater Management Manual for Western Washington. For facilities which do not have maintenance standards, the Permittee shall develop a maintenance standard. |  |  |  |
|  | iii. Annual inspections of all stormwater treatment and flow control BMPs/facilities that discharge to the MS4 and were permitted by the Permittee according to S5.C.4.b ... | The City is performing construction inspections (per S5.C.4.c.iv), but is not performing ongoing annual inspections of private stormwater treatment and flow control BMPs/facilities (per S5.C.4.c.iii).  
- Finalize private facility database.  
- Develop a list of private facilities that are required to be inspected.  
- Finalize access easements with landowners to perform private facility inspections.  
- Submit a G20 Non-Compliance Notification letter to Ecology with a plan and a schedule for complying with the private facility inspection requirement.  
- 320 hours (0.18 FTE) | Initial and ongoing effort to keep private facility database, access easements, and mapping up to date is estimated as 160 hours per year. Conducting annual private stormwater facility inspections is estimated as 160 hours per year. |  |
|  | iv. Inspections of all permanent stormwater treatment and flow control BMPs/facilities and catch basins in new residential developments every six months until 90 percent of the lots are constructed ...  
- The program shall include a procedure for keeping records of inspections and enforcement actions by staff, including inspection reports, warning letters, notices of violations, and other enforcement records ... |  |  |  |
|  | vii. The program shall include a procedure for keeping records of inspections and enforcement actions by staff, including inspection reports, warning letters, notices of violations, and other enforcement records ... |  |  |  |
| S5.C.4.d – Notice of Intent copies | “The program shall make available as applicable copies of the “Notice of Intent for Construction Activity” and copies of the “Notice of Intent for Industrial Activity” to representatives of proposed new development and redevelopment.” | Based on 2016 Annual Report:  
- Copies are provided. | No gaps identified. | NA | NA |
|  | | | | |
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| S5.C.4.e – Ongoing staff training program to control stormwater runoff | Based on 2016 Annual Report:  
Two City staff are Construction Erosion and Sediment Control Lead (CESCL) certified.  
Staff currently receive on-the-job training. | • Identify additional off-site trainings related to permitting, plan review, construction site inspections, and enforcement such as:  
  ○ Statewide LID Training Program: www.wastormwatcenter.org/lidswtrainingprogram  
  ○ PCM Training | NA | Complete with current staffing. |
| | | | | |
| S5.C.4.f – LID code related requirements | Based on the 2017 SWMP:  
Revised local development code, rules, and standards to incorporate LID principles and LID BMPs ...  
i. Permittees shall review, revise and make effective their local development-related codes, rules, standards, or other enforceable documents to incorporate and require LID principles and LID BMPs in development-related codes ...  
ii. The summary shall include existing requirements for LID principles and LID BMPs in development-related codes ... | No gaps identified. | NA | NA |
| S5.C.4.g – Watershed-scale stormwater planning | The City is not a participant. | Not applicable to the City because it is not located in any of the proposed Phase I basins. | NA | NA |
| **Municipal Operations and Maintenance (O&M)** | | | | |
| S5.C.5.a – Implement SWMMWW O&M standards or equivalent | The City has adopted the 2015 Pierce County Stormwater Management and Site Development Manual (PCM). | No gaps identified. | NA | NA |
| | | | | |
| S5.C.5.b – Annual inspection of stormwater treatment and flow control facilities/BMPs | Based on questionnaire responses:  
• Annual inspection frequency of city-owned facilities.  
Based on 2016 Annual Report:  
• There are 10 municipally-owned facilities, all of which were inspected and maintained last year. | No gaps identified. | NA | NA |
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| S5.C.5.c – Spot checks of potentially damaged stormwater treatment and flow control facilities/BMPs | Based on questionnaire responses:  
- Both Pierce County staff and City staff are responsible for spot checks.  
- City staff are mostly responsible for spot checks during storm events.  
- Spot checks are performed annually at a minimum.  
- Spot checks are performed before forecasted significant storm events.  
- Spot checks are performed after major storm events. | No gaps identified. | NA | NA |
| S5.C.5.d – Inspection of catch basins and inlets | Based on 2016 Annual Report:  
- 1725 CBs, 767 inspected in 2016, 175 cleaned in 2016.  
Based on questionnaire responses:  
- Based on the ILA, Pierce County staff perform a majority of the catch basin inspections and clean as needed based on inspection results.  
- City staff perform inspections on demand as flooding and other problems arise. | No gaps identified. | NA | NA |
| S5.C.5.f – Practices, policies, and procedures to reduce stormwater impacts | Based on questionnaire responses:  
- Pierce County has a maintenance contract to perform regular street sweeping.  
- The City owns a skid steer and small dump truck for performing small maintenance tasks without County involvement.  
Based on 5/12/17 kickoff meeting:  
- City has adopted Pierce County SOPs with some modifications. | Finalize SOPs documenting City practices, policies, and procedures. | 80 hours (0.05 FTE) | Initial and ongoing effort to finalize SOPs with internal staff; review annually, incorporate necessary updates, and track regional programs that may trigger updates. |
### Table A-1 (continued). City of Edgewood Stormwater Management Program Activities and Recommendations.

<table>
<thead>
<tr>
<th>Permit Section</th>
<th>Current Activities</th>
<th>Recommendations</th>
<th>Additional Support Needed (staff/funding)</th>
<th>Support Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Municipal O&amp;M (continued)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| S5.C.5.g – Ongoing training program to protect water quality | Based on the 2017 SWMP:  
- Two City staff are CESCL certified.  
Based on Pierce County’s 2017 SWMP:  
- Pierce County Maintenance crews receive quarterly Stormwater Pollution Prevention Plan (SWPPP) and BMP trainings from the County’s NPDES Stormwater Permit Training Coordinator.  
- Road Operations provides ongoing CESCL hands-on refreshers and quarterly safety meetings that cover Regional Roads Maintenance Endangered Species Act (ESA) Program Guidelines topics and other stormwater pollution prevention BMP issues, including SWPPP related issues. |  
- Request training records from Pierce County from County crews that perform City’s O&M activities.  
- Develop template and populate training tracking log with City and County training records. | NA | Complete with current staffing. |
| S5.C.5.h – SWMPPP implementation | Based on questionnaire responses:  
- The City does not currently have any City facilities that require a SWPPP. | No gaps identified. | NA | NA |
| S5.C.5.i – Maintain records of inspections and maintenance | Based on questionnaire responses:  
- Pierce County tracks inspections through GIS database and project/activity billing and invoices.  
- City staff track inspections through hardcopy report forms. | No gaps identified. | NA | NA |
| **Municipal O&M Subtotal** | 80 hours (0.05 FTE) | | | |
| **Compliance with Total Maximum Daily Load (TMDL) Requirements** | | | | |
| Implement TMDL requirements. | Based on the 2017 SWMP:  
- The City is part of the Puyallup TMDL for fecal coliform bacteria listed in Appendix 2 of the NPDES Permit.  
- The City is required to track construction activities in the basin and prioritize field screening for illicit discharges. Several permitted construction activities occurred in 2016; however, no illicit discharges were detected from these construction sites. The City also did not detect any illicit discharges during routine field screening. | No gaps identified. | NA | NA |
| Comply with applicable TMDLs not in the permit. | Does not apply. | No gaps identified. | NA | NA |
| Comply with permit modifications and TMDL implementation plans. | Does not apply. | No gaps identified. | NA | NA |
| **Compliance with TMDL Requirements Subtotal** | NA | | | |
### Table A-1 (continued). City of Edgewood Stormwater Management Program Activities and Recommendations.

<table>
<thead>
<tr>
<th>Permit Section</th>
<th>Current Activities</th>
<th>Recommendations</th>
<th>Additional Support Needed (staff/funding)</th>
<th>Support Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Monitoring and Assessment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Description of stormwater monitoring or stormwater-related investigations. | Based on the 2017 SWMP:  
- Hydrologic Surface Water Analysis commissioned for 108th Avenue East neighborhood (not yet complete). | Provide a description of the study (and a summary of the results when available) in the annual report to Ecology. | NA                                        | Complete with current staffing. |
| Regional Stormwater Monitoring Program participation.      | Based on the 2017 SWMP:  
- The City contributes to a collective fund to implement RSMP.                      | No gaps identified.                                                             | NA                                        | NA                       |
| **Monitoring and Assessment Subtotal**                     |                                                                                   |                                                                                   | NA                                        | NA                       |
| **Reporting**                                              |                                                                                   |                                                                                   |                                           |                          |
| Submit annual report.                                      | The City submits annual reports as required by Ecology.                             | No gaps identified.                                                             | NA                                        | NA                       |
| Maintain records for 5 years.                             | Records related to the permit will be kept for at least 5 years as required by the Permit. | No gaps identified.                                                             | NA                                        | NA                       |
| Make records available to the public.                     | The City makes records available to the public upon request.                        | No gaps identified.                                                             | NA                                        | NA                       |
| Internal coordination mechanisms summary.                  | Internal coordination mechanisms summary was submitted with the 2014 Annual Report: www.cityofedgewood.org/Edgewood_Policy_internalCoordination.pdf | No gaps identified.                                                             | NA                                        | NA                       |
| **Reporting Subtotal**                                    |                                                                                   |                                                                                   | NA                                        | NA                       |
| **Total**                                                  |                                                                                   |                                                                                   | $50,000 (one-time)                         | $1,000 (ongoing)          |
|                                                            |                                                                                   |                                                                                   | 840 hours (0.48 FTE) (ongoing)            |                          |
Characteristics of Edgewood’s Closed Depression Basins or Potholes
<table>
<thead>
<tr>
<th>Pothole Name</th>
<th>Size of Catchment (acres)</th>
<th>Storage Volume During Flood (acre-feet)</th>
<th>Flooding Impacts on Private Property</th>
<th>Roadways Impacted</th>
<th>Related 1997 CIP IDs</th>
<th>1997 Flooding Extents</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edgewood Bowl Pothole</td>
<td>648</td>
<td>355 (based on an elevation of 334 feet)</td>
<td>House crawlspace flooding, house septic system flooding, driveway eroded</td>
<td>110th Avenue E, 114th Avenue E, closed due to flooding</td>
<td>EB-1 through EB-10</td>
<td>64-acre flooded area</td>
<td>The Edgewood Pothole has the largest contributing area and is therefore the greatest priority in terms of developing flood reduction plans. The City owns an undeveloped property in this basin near 110th Avenue and 16th Street. There are some wetlands on site that need to be delineated and surveyed, and the site is approximately 4 acres in area.</td>
</tr>
<tr>
<td>Lake Chalet</td>
<td>135</td>
<td>32 (based on an elevation of 358 feet)</td>
<td>Two private properties flooding</td>
<td>29th Street E, 103rd Avenue Court E, flooding</td>
<td>LC-1 through LC-3</td>
<td>13-acre flooded area</td>
<td>Most area around the pothole is not ideal for a UIC wellfield because there are two drinking water source wells near the shore. Additionally, there are many septic systems in close proximity, so water quality concerns are high; but LID could be used to address water quality concerns. The closest stormwater main is 6 feet too high for gravity flow flood relief from the lake. One possible solution may be an inverted siphon to this elevated pipe.</td>
</tr>
<tr>
<td>Pinedale Pond (114th Avenue) Pothole</td>
<td>384</td>
<td>227 (based on an elevation of 382 feet)</td>
<td>House flooded, two private properties flooded, driveway flooded</td>
<td>32nd Street E (at peak flood), 24th Street, and 117th Avenue</td>
<td>114-1 through 114-5</td>
<td>48 acres</td>
<td>The City is pursuing a Conservation Futures grant for property acquisition along the pothole that would include wetland restoration, passive recreation opportunities, and stormwater management.</td>
</tr>
<tr>
<td>108th Avenue Pothole</td>
<td>224</td>
<td>174 (based on an elevation of 382 feet)</td>
<td>Two houses flooded</td>
<td>108th Avenue, 32nd Street, 36th Street flooding</td>
<td>108-1 through 108-5</td>
<td>30 acres</td>
<td>There is no City-owned property in this basin yet, although a potential acquisition opportunity has been identified near the intersection of 110th Avenue and 32nd Street (location of a home that experiences persistent flooding).</td>
</tr>
<tr>
<td>122nd Avenue Pothole</td>
<td>329</td>
<td>160 (based on an elevation of 382 feet)</td>
<td>Meadow Vista tracts flooded, driveway to a home on 122nd Avenue E has flooded, water levels approaching lower homes nearby</td>
<td>No public road impacts</td>
<td>122-1 through 122-2</td>
<td>23 acres</td>
<td>The nearby elementary school site presents a potential infiltration opportunity site.</td>
</tr>
<tr>
<td>Surprise Lake Pothole</td>
<td>49</td>
<td>32 (based on an elevation of 334 feet)</td>
<td>One house flooded, one septic system flooded</td>
<td>No public road impacts</td>
<td>SLP-1, SLP-2</td>
<td>4.3 acres</td>
<td>There is a commercial property owner who is amenable to investigative work.</td>
</tr>
</tbody>
</table>

* Source: 1997 Plan and communications with City staff.
APPENDIX C

Project Summary Sheets
(for projects scheduled for implementation under this plan)
City of Edgewood  
Stormwater Capital  
Improvement Program  

Project Summary Sheet  

PROBLEM DESCRIPTION

The City of Edgewood has six closed depression basins that receive stormwater runoff from surrounding neighborhoods and frequently flood during the winter months. A detailed alternatives assessment for addressing this stormwater problem was performed as part of developing the City’s current surface water management plan in 1997, including options such as: excavating the flood fringe areas within the basins to provide additional storage, and direct conveyance of stormwater into nearby streams, further compounding regional flood control issues. Water elevation and water quality data is needed to determine the volume of water to be controlled as well as treatment needs in each pothole. Geotechnical and groundwater level data will also be collected in coordination with Mt. View - Edgewood Water Company, the local water purveyor, to evaluate subsurface conditions.

PROPOSED SOLUTION

Infiltrating stormwater using a UIC wellfield is one proposed alternative to reduce flooding. This feasibility assessment will evaluate; 1) whether an advanced stormwater treatment and UIC wellfield can adequately treat stormwater and ensure protection of the drinking water supply, and 2) the volume of water that can be controlled (i.e., the flood reduction capacity of the system). First, water elevation, water quality (color, nutrients, bacteria, copper and zinc), and groundwater data will be collected to evaluate infiltration feasibility at the candidate site and confirm subsurface conditions such as aquifer and till layer depths. A conceptual design for the system will be developed based on monitoring and modeling data. The monitoring data will be used to develop an existing conditions hydrologic and hydraulic model of the pothole. The model will be used to size a UIC well field and advanced bioretention treatment facility as part of a preliminary design. Feasibility assessment will be prepared in coordination with Mt. View - Edgewood Water Company, the local water purveyor. Throughout the project, public and advisory group meetings will be held to inform the public and stakeholders about project progress and findings.

COST ESTIMATE ASSUMPTIONS

The cost estimate for initial data collection includes purchase and installation of automated pressure transducers and staff gauges for continuous water level monitoring in each of the 6 main potholes and 3 subpotholes, cost for laboratory analysis water samples (4 monthly samples and 3 storm samples), development of a rating curve for each pothole, and costs for field visits to calibrate equipment and collect data and samples. Data collection also includes groundwater level monitoring with 4 borings (3 to 100 ft, 1 up to 300 ft). Selection of boring locations will be coordinated with MTVE.

The cost estimate for the feasibility analysis using the collected data (including community engagement, modeling, and feasibility analysis) is based on recent and ongoing similar work on stormwater treatment facility and UIC design, modeling, and community engagement projects in Western Washington, as well as ongoing research related to treatment media.
Legend
- Edgewood city limits
- Pothole flood elevations
- Pothole catchment areas
- Wetlands

Monitoring Locations*
- Water level and water quality
- Stormwater quality
- Water level

* Subject to change depending on access and field investigation

Pothole Water Level and Water Quality Monitoring

0 600 1,200 2,400

Feet

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
<table>
<thead>
<tr>
<th>Tasks</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task 1 – Project Management</td>
<td>$50,000</td>
</tr>
<tr>
<td>Task 2 – Community Engagement</td>
<td>$50,000</td>
</tr>
<tr>
<td>Task 3 – Baseline Characterization Monitoring</td>
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</tr>
<tr>
<td>Task 4 – Hydrologic and Hydraulic Modeling</td>
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</tr>
<tr>
<td>Task 5 – Feasibility Assessment and Conceptual Design</td>
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</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td><strong>$460,000</strong></td>
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</table>
### Itemized Costs By Task

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<th>Tasks</th>
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<th>Subtask Cost</th>
</tr>
</thead>
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<td><strong>Task 1 - Project Management</strong></td>
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<td></td>
</tr>
<tr>
<td>Records Maintenance</td>
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<tr>
<td>Requests for Reimbursement</td>
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<td>Quarterly Progress Reports</td>
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<tr>
<td>Project Oversight and Coordination</td>
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</tr>
<tr>
<td>Project Outcome Summary Report</td>
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<td></td>
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<tr>
<td><strong>Task 1 Total</strong></td>
<td><strong>$50,000</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Task 2 - Community Engagement</strong></td>
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<td>Advisory Group Meeting 1</td>
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<td>Advisory Group Meeting 2</td>
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<tr>
<td>Advisory Group Meeting 3</td>
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<td></td>
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<tr>
<td>Advisory Group Meeting 4</td>
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<td>Public Meeting 1</td>
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<tr>
<td>Public Meeting 2</td>
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<td></td>
</tr>
<tr>
<td>Public Meeting 3</td>
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<tr>
<td><strong>Task 2 Total</strong></td>
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<tr>
<td><strong>Task 3 - Baseline Conditions Monitoring</strong></td>
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<td>$200,000</td>
</tr>
<tr>
<td>See Baseline Conditions Monitoring Scope and Budget Upload Document</td>
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</tr>
<tr>
<td><strong>Task 4 - Hydrologic and Hydraulic Modeling</strong></td>
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<tr>
<td>Draft Modeling QAPP</td>
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<tr>
<td>Final Modeling QAPP</td>
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<td>Develop Existing Conditions Model</td>
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<tr>
<td>Calibrate Existing Conditions Model</td>
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<tr>
<td>Model Facility Performance</td>
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<tr>
<td>Draft Modeling Results Technical Memorandum</td>
<td>$10,000</td>
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<tr>
<td>Final Modeling Results Technical Memorandum</td>
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<tr>
<td><strong>Task 4 Total</strong></td>
<td><strong>$75,000</strong></td>
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</tr>
<tr>
<td><strong>Task 5 - Feasibility Assessment and Conceptual Design and Cost Estimating</strong></td>
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<tr>
<td>Feasibility Assessment</td>
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<tr>
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<td>Final Feasibility Assessment Technical Memorandum</td>
<td>$5,000</td>
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</tr>
<tr>
<td>Facility Sizing and Configuration</td>
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<tr>
<td>Cost Estimating</td>
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<tr>
<td>Draft Predesign Report and Cost Estimate</td>
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</tr>
<tr>
<td>Final Predesign Report and Cost Estimate</td>
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<tr>
<td><strong>Task 5 Total</strong></td>
<td><strong>$80,000</strong></td>
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</table>
### Water Level and Water Quality Monitoring

- **Number of Tasks**: 5

#### COST SUMMARY

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<thead>
<tr>
<th>Category</th>
<th>Task 1.0</th>
<th>Task 2.0</th>
<th>Task 3.0</th>
<th>Task 4.0</th>
<th>Task 5.0</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor</td>
<td>$7,585</td>
<td>$2,442</td>
<td>$24,153</td>
<td>$5,844</td>
<td>$17,911</td>
<td>$57,935</td>
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<tr>
<td>Travel and per diem</td>
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<td>$0</td>
<td>$514</td>
<td>$32</td>
<td>$0</td>
<td>$546</td>
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<tr>
<td>Other direct costs (ODCs)</td>
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<td>$0</td>
<td>$7,386</td>
<td>$0</td>
<td>$0</td>
<td>$7,386</td>
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<tr>
<td>Subconsultants</td>
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<td>$5,250</td>
<td>$0</td>
<td>$0</td>
<td>$120,750</td>
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<tr>
<td>Analytical laboratory</td>
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<td>$0</td>
<td>$11,340</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td><strong>GRAND TOTAL</strong></td>
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<td><strong>$117,942</strong></td>
<td><strong>$37,302</strong></td>
<td><strong>$17,216</strong></td>
<td><strong>$17,911</strong></td>
<td><strong>$197,957</strong></td>
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</table>

#### COST ITEMIZATION

**Labor** (2017 rates)

<table>
<thead>
<tr>
<th>Personnel</th>
<th>Rate/Hour</th>
<th>Hours</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal</td>
<td>$224.35</td>
<td>28</td>
<td>$6,282</td>
</tr>
<tr>
<td>Sr. Engineer</td>
<td>$161.73</td>
<td>4</td>
<td>$647</td>
</tr>
<tr>
<td>Scientist</td>
<td>$129.28</td>
<td>166</td>
<td>$21,460</td>
</tr>
<tr>
<td>Engineer</td>
<td>$95.63</td>
<td>10</td>
<td>$956</td>
</tr>
<tr>
<td>Administrative Coordinator</td>
<td>$108.63</td>
<td>12</td>
<td>$1,304</td>
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<tr>
<td><strong>SUBTOTAL LABOR (Burdened Labor)</strong></td>
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<td>40</td>
<td>$7,585</td>
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**Travel and Per Diem Costs**

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<th>Units Cost</th>
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</thead>
<tbody>
<tr>
<td>Auto Use</td>
<td>$0.535</td>
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<tr>
<td><strong>SUBTOTAL TRAVEL AND PER DIEM</strong></td>
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</table>

**Other Direct Costs (ODCs)**

<table>
<thead>
<tr>
<th>Unit Cost</th>
<th>Units Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Equipment and Supplies</td>
<td></td>
</tr>
<tr>
<td>Computer, laptop</td>
<td>$50</td>
</tr>
<tr>
<td>In-Situ RuggedTroll 100's (0-30 feet)</td>
<td>$420</td>
</tr>
<tr>
<td>Docking Station</td>
<td>$225</td>
</tr>
<tr>
<td>2-inch well dock (stainless steel ring)</td>
<td>$21</td>
</tr>
<tr>
<td>Screened sch 40 (0.0100) 10-foot PVC</td>
<td>$24</td>
</tr>
<tr>
<td>2-inch caps (well ends)</td>
<td>$7</td>
</tr>
<tr>
<td>Well locking cap (2-inch gripLock)</td>
<td>$20</td>
</tr>
<tr>
<td>Green Vinyl-coated cable</td>
<td>$100</td>
</tr>
<tr>
<td>Ferrules</td>
<td>$2</td>
</tr>
<tr>
<td>Combination Lock</td>
<td>$16</td>
</tr>
<tr>
<td>Staff Gauge</td>
<td>$100</td>
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<tr>
<td><strong>SUBTOTAL ODCs</strong></td>
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**Subconsultant Costs**

<table>
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<th>Units Cost</th>
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<tbody>
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</tr>
<tr>
<td>Driller</td>
<td>$60,000</td>
</tr>
<tr>
<td>AASI</td>
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<tr>
<td>Fee on Subconsultants @ x%</td>
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<tr>
<td><strong>SUBTOTAL SUBCONSULTANT</strong></td>
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**Analytical Laboratory Costs**

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<tr>
<td><strong>SUBTOTAL LABORATORY</strong></td>
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</tr>
</tbody>
</table>

---

City of Edgewood Stormwater Management Plan

CIP Cost Estimate

1 of 1

08/21/18 Study Session

Page 148 of 260
Historically, Lake Chalet overflowed to Simon’s Creek; however, development has blocked that overflow pathway. As a result, even minor rainfall events lead to flooding of public streets and private property adjacent to Lake Chalet, including flooding of 29th Street E. The proximity to drinking water wells presents a challenge for infiltration for flood reduction at this pothole.

PROPOSED SOLUTION

Three options to convey water from Lake Chalet to nearby Simon’s Creek have been considered. The least expensive option, from a capital cost standpoint, is to pump water west from Lake Chalet to the intersection of 29th Street E and Meridian Avenue E, and then use gravity flow north along Meridian to a discharge point in the Simon’s Creek ravine. This option would require long term pump station operations and maintenance, which is not accounted for in the capital project cost estimates. The second option, gravity flow along the same alignment, is more expensive to construct that the first option, but requires less long term operations and maintenance. The most expensive, but potentially least disruptive option, is a siphon through a horizontal directional drilled (HDD) tunnel, which may also require the least long term O&M. Any option selected would require a quantitative evaluation of potential impacts to streams or groundwater supply.

COST ESTIMATE ASSUMPTIONS

The pump and gravity flow option assumes 1 duplex pump station, electrical work, 600 LF of 4” force main, and connection to the existing storm sewer pipe. The gravity flow option assumes 1,800 LF of 18” storm sewer pipe. The siphon option assumes 1,200 LF of directional boring and associated 18” HDPE Pipe. All projects include an inlet structure and pavement, utility, and vegetation protection and restoration. The estimates do not account for the cost of easements, land acquisition, or mitigation in Simon’s Creek. The estimates also do not include allied costs (design, modeling, permitting, City project management, etc.). A more detailed alternatives assessment may be necessary to select the preferred option.
Legend

- Contours (10-foot)
- Stream or waterbody
- Flooded area at 358 ft

Conveyance Options

- Pump and gravity flow pipeline (open trench excavation)
- Dashed line for pumped flow
- Gravity flow pipeline (open trench excavation)
- Gravity flow / siphon pipeline (HDD installation)

Lake Chalet Pothole Flooding

08/21/18 Study Session
Page 151 of 260
# Engineering Construction Cost Estimate for "Conceptual Design and Order of Magnitude"

**Project Name:** Lake Chalet - Pump Station to Gravity Sewer Option  
**Project Number:** 17-06504-000  
**Client:** City of Edgewood

**QA Review**  
Completed/Updated By: Kyle Johnson  
Last Updated On: 7/30/2017  
Reviewed By: Kevin Houck  
Reviewed On: 7/30/2017  
Approved By: Matt Fontaine  
Approved On: 8/9/2017  
Revised By: Meghan Mullen  
Revised On: 8/28/2017  
Reviewed/Approved On: 8/28/2017

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<th>Item No.</th>
<th>Spec Section</th>
<th>Item Description</th>
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<th>Unit</th>
<th>Unit Cost</th>
<th>Total Cost</th>
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## Engineering Construction Cost Estimate for "Conceptual Design and Order of Magnitude"

**Project Name:**  Lake Chalet - Gravity Sewer Option  
**Project Number:**  17-06504-000  
**Client:**  City of Edgewood

**QA Review**  
Completed/Updated By: Kyle Johnson  
Last Updated On: 7/30/2017  
Approved By: Matt Fontaine  
Approved On: 8/9/2017  
Revised By: Meghan Mullen  
Revised On: 8/28/2017  
Reviewed/Approved On: Matt Fontaine  
Reviewed/Approved On: 8/28/2017

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<th>Item No.</th>
<th>Spec Section</th>
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## Engineering Construction Cost Estimate for "Conceptual Design and Order of Magnitude"

**Project Name:** Lake Chalet - Siphon HDD Option  
**Project Number:** 17-06504-000  
**Client:** City of Edgewood

**QA Review**  
Completed/Updated By: Kyle Johnson  
Last Updated On: 7/30/2017  
Approved By: Matt Fontaine  
Approved On.: 8/9/2017

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More information is needed to select the best solution to flooding problems in the Edgewood potholes. Pothole specific flood reduction plans need to be developed for five potholes: Edgewood Bowl, Pinedale Pond, 108th Street E, Surprise Lake, and 122nd Avenue E. Each of these potholes has individual characteristics that will need to be understood before developing a flood control plan, (eg., flood elevation, available storage volume, stormwater conveyance network, basin characteristics). Water level monitoring done via a separate CIP project as well as the findings from the feasibility assessment for the Edgewood Bowl pothole will inform these projects.

PROPOSED SOLUTION

Basin characteristics, hydrologic data, and other information from the water level and water quality monitoring project will be used to develop a continuous hydrologic and hydraulic model of the existing conditions in each pothole and then used to develop and evaluate different solution alternatives, starting with the Edgewood Bowl pothole. An initial report will be developed describing the pothole characteristics, modeling results and the alternatives. At least one meeting will be held with the public to discuss results, alternatives considered and recommendations. The solutions will be compared, and the best alternative will be selected. The models will also be used as the basis for a flood study to update FEMA maps of the potholes and potentially result in a letter of map revision (LOMR) for each pothole. The total cost assumes development of five individual flood reduction plans at approximately $170,000 each.

COST ESTIMATE ASSUMPTIONS

Cost estimate assumptions are based on consultant experience with similar projects and includes public involvement, existing conditions assessment, modeling, development and prioritization of alternatives, a FEMA letter of map revision and development of a plan. The Mountain View Edgewood Water Company (MTVE) has offered to participate financially in raising roads to move their water mains out of flooded areas, if this is one or part of a solution.
<table>
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*Cost rounded to two significant figures.*
## PROBLEM DESCRIPTION

The City has six closed depression basins or potholes that flood during wet winters. One potential solution to the flooding from these potholes is to convey the stormwater to the uppermost aquifer through use of underground injection control (UIC) wells. The purpose of this project is to design and construct a stormwater treatment facility and associated UIC wellfield and to conduct testing and evaluate facility performance, but only if the associated feasibility assessment yields positive results. This pilot study would be conducted on the Edgewood Bowl pothole and include an assessment of the volume of water managed with the system and the impact of the system on pothole water elevations.

## PROPOSED SOLUTION

A conveyance system will be constructed to convey water from the Edgewood Bowl pothole to a flow control structure that will direct water to one of two media filters containing specialized treatment media. Treated water would be discharged to the upper aquifer (as determined during the feasibility assessment project) through a UIC wellfield. This project would be done in coordination with Mt. View - Edgewood Water Company, the local water purveyor.

## COST ESTIMATE ASSUMPTIONS

Cost estimates are based on using the 4 acre City-owned parcel at 16th Street E and 110th Avenue E. The cost includes construction of the conveyance system that includes piping and control structures, a treatment facility system that includes 2 media filters, a well field of 5 UIC wells, excavation, mitigation, and administration. Allowances and a contingency are included to allow for wetland mitigation or additional costs for inlet structures, pump stations, or alternate property purchases. Costs for city project management, design, geotechnical evaluation, permitting, and construction management are also included. The cost estimate does not include the cost for a long term water quality monitoring program to assess treatment performance, and hydrologic monitoring to track the volume of water treated and the effect on pothole water levels. It is assumed that monitoring would be conducted under a separate project.
Multiple media filtration chambers with level spreaders and elevated underdrains

Flow control structure

Inlet structure

Legend

- Blue: Water bodies
- Orange: Pilot project structure
- Yellow: City-owned parcel (4.0 acres)
- Green: Edgewood Bowl flood elevations
- Light green: Wetlands
- Black: Edgewood city limits

Edgewood Closed Depression
UIC Pilot Project Concept

Legend

- Blue: Water bodies
- Orange: Pilot project structure
- Yellow: City-owned parcel (4.0 acres)
- Green: Edgewood Bowl flood elevations
- Light green: Wetlands
- Black: Edgewood city limits

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
### Engineering Construction Cost Estimate for "Conceptual Design and Order of Magnitude"

**Project Name:** Infiltration Pilot Project Design and Construction  
**Project Number:** 17-06504-000  
**Client:** City of Edgewood

#### QA Review
- Completed/Updated By: M. Mullen & M. Fontaine  
- Last Updated On: 10/23/2017  
- Approved By: B. Busiek  
- Approved On: 10/24/2017

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Spec Section</th>
<th>Item Description</th>
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<td><strong>Div 1</strong></td>
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<td>$137</td>
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**Construction Subtotal**  
$1,105,380

**Tax**  
9.4%  
$103,906

**Contingency**  
30%  
$331,814

**Construction Total** (with tax and Contingency; 2 sig figs)  
$1,500,000

**Allied Costs**
- City Project Administration / Management: 5%  
- Design Engineering: 10%  
- Geotechnical: 3%  
- Permitting: 3%  
- Construction Management: 5%

**Project Total** (Includes Allied Costs, Contingency, and Tax; 2 sig figs)  
$1,900,000
Edgewood Drive is a narrow roadway with substandard alignment complicated by its partial location on a bench within a steep slope. Inadequate roadway drainage has led to runoff flowing down the hill and off the roadway onto properties located on the west side of the road. Existing ditches are undersized and existing piped conveyance overtops in large storm events resulting in water on the roadway and property flooding. Ice also develops on the roadway during the winter months due to the poor drainage resulting in unsafe driving conditions.

Construct conveyance improvements to alleviate drainage problems as an interim repair until complete road reconstruction can be completed. Improvements include ditch restoration, inclusion of flow restrictors in the conveyance, installation and replacement of driveway and intersection culverts, and installation of a thickened edge and catch basins opposite the open ditch. Existing conveyance in the receiving system must be evaluated for adequate capacity and energy dissipation.

The total project cost was calculated by escalating the 2009 CIP cost to account for inflation. The 2009 estimate includes installation of 15 catch basins, 1,380 LF of 8 to 12-inch diameter storm sewer, and 2,000 LF of thickened edge along the roadway. Additional costs include 2,000 LF of ditch restoration, adjusting existing catch basins, repairing the road, city administration and engineering, and a 30 percent project contingency.
Where it flows through Edgewood, Jovita Creek is a narrow, steep stream corridor that leads to the valley floor with ravine side slopes that range from 10% to 70%. Increased urbanization and impervious area throughout the basin have led to increased flow rates in the creek compared to natural conditions, triggering landslides and severe erosion in the stream bed. Problems identified in the stream corridor include: road closures, debris clogged culverts, stream down cutting, marginal slope stability of the over steepened canyon walls, erosion caused by stormwater outfalls, and inadequate stream capacity. These problems require a regional approach because the basin spans four jurisdictions: King County, Pacific, Milton, and Edgewood.

The purpose of this project is to develop a plan for the Jovita Creek basin that will prioritize short and long term actions to improve the overall health of the basin. The plan will include evaluation of flooding, slope stability, erosion, water quality, and fish and wildlife habitat problems in the basin under existing and future conditions and will address TMDL requirements. The plan will define and prioritize solutions and include planning level cost estimates for capital projects. The plan will also include maintenance and operations activities, and programmatic measures including education and outreach to correct, mitigate, or avoid these problems. This may require survey of key drainage system components, use of GIS tools, flow monitoring, water quality sampling, or hydrologic and hydraulic modeling. Potential water quality impacts and environmental regulations will also need to be factored into the analyses.

The cost estimate is based on consultant experience with similar interjurisdictional projects and includes public involvement, field assessment, modeling, development and prioritization of alternatives, and development of a plan.
Erosion of the ravine has resulted in the plugging of culverts carrying Jovita Creek, leading to stream down-cutting and reduced slope stability.

Landslides resulting in road closures.

Concerns regarding private storage pond near steep slopes.

City of Pacific: 63 acres

Unincorporated King County: 1,320 acres

City of Edgewood: 621 acres

City of Milton: 5 acres

Jovita Creek Regional Improvement Feasibility Study

Legend

- **Blue**: Jovita Creek and tributary channels
- **Orange**: Jovita Creek watershed
- **Black**: City and county boundaries

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
## Cost Estimate for Jovita Creek Regional Feasibility Study.

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Estimated Cost</th>
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<td>Task 1 – Project Management and Coordination</td>
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<tr>
<td>Task 2 – Public and Stakeholder Outreach</td>
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<tr>
<td>Task 3 – Field Survey/Opportunity Assessment</td>
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<tr>
<td>Task 4 – Modeling of Existing and Future Conditions</td>
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<tr>
<td>Task 4 – Existing Conditions Assessment and Modeling Report</td>
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<tr>
<td>Task 5 – Scenario Development, Cost Estimating, and Analysis</td>
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<td>Task 6 – Prioritization of Alternatives</td>
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<td>Task 8 – Development of CIPs</td>
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<tr>
<td>Task 9 – Development of Regional Plan</td>
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<tr>
<td>City Administration and Management</td>
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<tr>
<td><strong>Total Cost</strong></td>
<td><strong>$500,000</strong></td>
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*a Cost rounded to two significant figures.*
Subbasin Inventory Data for Edgewood
### Northern Slopes
- Jovita Creek Basin
- Puyallup River Basin
- Moultonville River Basin
- Hylebos Creek Basin

### Central Slopes
- Simons Creek Basin
- Tributary to Simons Creek
- Surprise Lake Creek
- Surprise Lake
- Hylebos Creek

### Southern Slopes
- Edgewood Bowl Pothole
- Lake Chalet Pothole
- Pine Dale Pond/114th Ave Pothole
- 108th Ave Pothole
- 122nd Ave Pothole
- Surprise Lake Pothole

### Surplus Lake Pothole

### Subbasin Inventory Data for Edgewood

#### Basin Group
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<th>Subbasin</th>
<th>White River Basin</th>
<th>Jovita Creek Basin</th>
<th>Puyallup River Basin</th>
<th>Wapato Creek Basin</th>
<th>Simons Creek Basin</th>
<th>Tributary to Simons Creek</th>
<th>Surprise Lake Creek</th>
<th>Surprise Lake</th>
<th>Hylebos Creek</th>
<th>Edgewood Bowl Pothole</th>
<th>Lake Chalet Pothole</th>
<th>Pine Dale Pond/114th Ave Pothole</th>
<th>108th Ave Pothole</th>
<th>122nd Ave Pothole</th>
<th>Surprise Lake Pothole</th>
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<td>136.0</td>
<td>36.5</td>
<td>83.5</td>
<td>49.2</td>
<td>60.5</td>
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#### Zoning

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<th>I</th>
<th>MR-1</th>
<th>MR-2</th>
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<th>WHIPA</th>
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<tr>
<td>Vulnerable ARA</td>
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#### Flood Hazard Areas

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<th>FEMA 100-year floodplain</th>
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#### Steep slopes (>20%)

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<td>Steep slopes (&gt;20%)</td>
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<td>Steep slopes (&gt;40%)</td>
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<td>Stream Corridor</td>
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<tr>
<td>Wetland area</td>
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<td>1.2</td>
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City of Edgewood Surface Water Management Plan

July 2018

08/21/18 Study Session Appendix D

Page 172 of 260
August 13, 2018

Jeremy Metzler, P.E.
Public Works Director
City of Edgewood
2224 104th Avenue East
Edgewood, WA 98372

Subject: Surface Water Utility Financial Analysis

Dear Jeremy:

FCS GROUP is pleased to submit this draft report summarizing the results of the utility rate analysis for the City’s surface water management utility. The summary-level rate increases are shown below. The methodology used to arrive at these results is covered in the report. The rate increases are projected to meet the utility’s annual operating and maintenance expenditures, fund approximately $3.8 million in new capital investment, and generate funding for the utility’s operating and capital financial reserves.

<table>
<thead>
<tr>
<th>Summary of Results</th>
<th>Existing 2018</th>
<th>Projected 2019</th>
<th>Projected 2020</th>
<th>Projected 2021</th>
<th>Projected 2022</th>
<th>Projected 2023</th>
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<td>Systemwide Revenue Increase Needs</td>
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<td>15.00%</td>
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<td>2.50%</td>
<td>2.50%</td>
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<td>$6.40</td>
<td>$6.56</td>
<td>$6.72</td>
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</table>

The report also provides the results and documentation for the utility’s system development charge.

It has been a pleasure to work with you and other City staff on this effort. Please let me know if you have any questions or need additional information on this report. I can be reached at (425) 867-1802 ext 225.

Yours very truly,

John Ghilarducci
Principal

Tage Aaker
Project Manager

Matt Hobson
Project Consultant
# Table of Contents

Table of Contents .................................................................................................................. i

Section I. Introduction ........................................................................................................... 1

Background ............................................................................................................................. 1

Methodology .......................................................................................................................... 1

Section II. Policy Framework ................................................................................................. 2

Fiscal Policies ......................................................................................................................... 2

Reserves .................................................................................................................................. 2

Capital Funding ....................................................................................................................... 3

Debt Management .................................................................................................................. 4

Section III. Revenue Requirement Analysis .......................................................................... 5

Background ............................................................................................................................. 5

Beginning Fund Balances ....................................................................................................... 5

Economic Assumptions .......................................................................................................... 5

Existing Debt Obligations ....................................................................................................... 6

Capital Expenditure Forecast ................................................................................................. 6

Revenue Requirement Forecast ............................................................................................. 8

Section IV. System Development Charge Analysis .................................................................. 15

Introduction ............................................................................................................................ 15

Legal Basis for SDC .............................................................................................................. 15

Methodology .......................................................................................................................... 16

Section V. Conclusion ............................................................................................................ 20

Section VI. Rate Model Summary .......................................................................................... 21
Section I. INTRODUCTION

BACKGROUND

The City of Edgewood contracted with FCS GROUP through Herrera Environmental Consultants to perform a rate and system development charge study for its surface water management (stormwater) utility.

METHODOLOGY

The basis for the utility rate study is a revenue requirement evaluation to establish a long-range financial plan and multi-year rate management strategy. Exhibit 1 illustrates the key components for the utility rate analysis.

Exhibit 1
Utility Rate Analysis Methodology

In simple terms, the revenue requirement forecast tells us the level of rate revenue needed to fund the utility’s financial obligations and goals. The rate design element tells us the rates that need to be assessed to the utility’s customer classes to equitably meet the revenue requirement on an annual basis.
Section II. POLICY FRAMEWORK

FISCAL POLICIES

The financial plan is based on a framework of fiscal policies that promotes the financial integrity and stability of the surface water utility. The ensuing discussion provides a brief summary of the key policies addressed by the City and incorporated in this analysis in the following areas: Financial Reserves (Operating Reserve and Capital Reserve), Capital Funding, and Debt Management.

FINANCIAL RESERVES

Like a business, a municipal utility requires certain minimum levels of cash reserves to efficiently operate. These reserves address the variability and timing of revenues and expenses as well as occasional disturbances in activities. Given the City’s responsibility to provide essential services to its customers at a certain standard, protection against financial disruption is even more important than it would be for private-sector or non-essential counterparts. A defined reserve structure serves to both maintain appropriate segregation of funds and promote the use of resources for their intended purposes.

When evaluating fund reserve levels and objectives, it is important to recognize that the value of reserves lies in their potential use. A reserve strategy that deliberately avoids any use of reserves negates their purpose. Fluctuation of reserve levels may indicate that the system is working, while lack of variation over many years strongly suggests that the reserves are, in fact, unnecessary.

Operating Reserve

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. Like other types of reserves, operating reserves also serve another purpose: they can help smooth rate increases over time. Target funding levels for an operating reserve are generally expressed as a certain number of days of operating and maintenance (O&M) expenses, with the minimum day requirement varying with the expected revenue volatility of each utility.

Industry practice for utility operating reserves typically range from 30 days (8%) to 120 days (33%) of O&M expenses, with the lower end more appropriate for utilities with stable revenue streams and the higher end of the range more appropriate for utilities with significant seasonal or consumption-based fluctuations. This study assumes a minimum operating reserve target of 120 days, or approximately $315,000 in 2018.

Surface water utility customers are charged once per year, on their property tax bill from Pierce County. This billing method creates a cash flow surplus after the April and October payment
deadlines and corresponding cash flow deficits in other months. For this reason, the operating reserve target for the City’s surface water program is set at a high level relative to other public utilities.

**Recommended Policy:** Achieve a year-end minimum balance target of 120 days (33%) of total annual operating expenditures. The City’s surface water charges are annual and revenue is infrequent, so a higher minimum target balance is used. This equates to a capital reserve of approximately $315,000, based on the 2018 operating budget of nearly $1.0 million.

### Capital Reserve

In addition to protecting against variations in the timing of operating costs and revenues, it is prudent to maintain a capital contingency reserve to meet unexpected emergency capital outlays. There are several methods used in the industry to set the level of these types of reserves, including:

- **Most costly piece of equipment or infrastructure:** A utility may predict the cost of replacing its most expensive piece of equipment or infrastructure.
- **Average annual cost of capital program:** A utility may use a percentage of its projected capital program, or set the reserve equal to the average annual cost of its capital program.
- **Percentage of fixed assets:** The most common method is for a capital contingency to be a percentage of the cost of fixed assets, usually 1-2% of the original cost of total assets. Alternatively, a percentage of replacement value can also be used, with the percentage adjusted downward to reflect the fact that replacement value is higher than original cost.

This analysis establishes a capital reserve following the third method described above (percentage of utility plant) and assumes a minimum capital reserve of 0.5 percent of the replacement cost of the utility’s fixed assets, or approximately $92,000 in 2018.

**Recommended Policy:** Achieve a minimum year-end target of 0.5 percent of the replacement cost of the utility’s fixed assets. This equates to a capital reserve of approximately $92,000 in 2018 and is based on the estimated replacement cost of assets in service of $18 million.

### CAPITAL FUNDING

Utilities typically fund capital improvement projects from a variety of sources, such as grants, developer extensions (e.g., privately-funded improvements), facility charges, utility rates, and debt. While grants and developer contributions would logically be applied to project costs first, the next choice in the funding “hierarchy” is not necessarily apparent.

**Rate-Funded System Reinvestment**

In order to avoid excessive reliance on debt, it is prudent to have a policy that commits a certain amount of annual rate revenue to the replacement of system assets. A common approach is to establish a planning target for rate-funded capital funding. This planning target, in combination with excess operating reserves swept into the capital account, mitigates the system’s reliance on debt.

The level of planned rate-funded capital reinvestment is often set as a percentage of depreciation expense each year, where depreciation data is available. Conceptually, basing rate-funded capital funding on total depreciation expense addresses the following criteria for reasonable rates:
- Financial integrity: Funding depreciation expense from current rates avoids a decline in system asset value; and
- Adequacy of capital funding: Funding depreciation expense from current rates provides a stable funding source for capital expenditures, especially those related to the repair and replacement of existing infrastructure.

This analysis evaluated a series of rate-funded and debt-funded capital funding options along with the corresponding revenue requirement impact for each option. Based on this evaluation and discussions with the Public Works Department, this analysis does not include a rate-funded system reinvestment target. Instead, future annual fund balances in excess of the operating reserve target are transferred to the utility’s capital fund. A more detailed description of this transfer is included in the Capital Forecast in the following section.

**Recommended Policy:** Transfer funds in excess of the operating reserve target to the utility’s capital fund.

## DEBT MANAGEMENT

Debt financing is one appropriate tool for capital funding. Compared with pay-as-you-go funding, debt smooths out the rate impact of a capital program by spreading costs over time. It also creates intergenerational equity—it is sometimes called “pay-as-you-use” because future customers who use the assets are the ones paying for them. However, debt cannot be relied on too much because it carries the risk of default. Debt also reduces budget flexibility—cash-funded capital projects can be delayed if there is a revenue shortfall, but once the utility has sold debt, the debt service needs to be paid in good times or bad. So while debt is a useful option in the toolbox, it needs to be monitored to ensure that the system does not become too heavily dependent on it. To evaluate the City’s debt level, we will discuss a measurement called debt service coverage.

### Debt Service Coverage

Debt service coverage is a requirement typically 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. A typical minimum coverage requirement for utility revenue bonds is 1.25. The coverage requirement is a ratio of available revenues for debt service and debt service. For example, if the City were to sell bonds, it agrees to collect enough revenue to meet operating expenses and not only pay debt service, but collect an additional 25% increment above bonded debt service. The extra revenue is a cushion that makes bondholders more confident that debt service will be paid on time. To provide a conservative financial estimate of debt coverage costs, this analysis assumes a coverage requirement ratio of 1.50. The extra revenue can be used for capital expenditures, to build system reinvestment reserves, 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 City goes to the market for revenue bonds.

**Recommended Policy:** Policy should be dictated by terms outlined in contracts for debt obligations. For planning purposes, the debt service coverage requirement is estimated at 1.50 times bonded debt service.
Section III. REVENUE REQUIREMENT 
ANALYSIS

BACKGROUND

The revenue requirement is the amount of revenue that a utility’s rates must generate to enable it to meet its various financial obligations. This analysis has two main purposes – it serves as a means of evaluating the utility’s fiscal health and adequacy of current rate levels, and it sets the revenue basis for near-term and long-term rate planning. The rate revenue requirement is defined as the net difference between total revenue needs and the revenue generated through non-rate sources. Hence, the revenue requirement analysis involves defining and forecasting both needs and resources.

BEGINNING FUND BALANCES

The 2018 beginning fund balance for the surface water utility (Fund #410) is $235,000.

ECONOMIC ASSUMPTIONS

Operating costs are initially based on the 2018 budget, with adjustments for inflation and any anticipated future changes such as changes to programs or staffing levels. Additionally, actual financial expenses were analyzed over the three year period from 2015 to 2017 to identify any adjustments to the 2018 budget based on historical expense patterns. The key assumptions and inputs used to develop the operating expense forecast are described in further detail below.

- General Cost Inflation – assumed to be 2.50% per year based on historical data from the Consumer Price Index Urban Consumers - Seattle / Tacoma / Bremerton (CPI - U).
- Construction Cost Inflation – assumed to be 3.00% per year based on historical data from the ENR Construction Cost Index (CCI) - 20 City Average index.
- B&O State Taxes – assumed at 1.50 percent of all operating revenue
- Personnel Cost Inflation
  - Labor Cost Inflation: assumed to be 3.00% per year as provided by City staff
  - Benefits Cost Inflation: assumed to be 7.00% in 2019 and 5.00% per year after 2019 as provided by City staff
- Fund Earnings – 1.00% per year based on the Local Government Investment Pool (LGIP) yields in 2017, at the time of analysis.
Customer Growth – Based on a review of projected growth within the service area with City staff, the following was assumed:

- Residential Customer Account Growth: 10.00% in 2018, 5.00% in 2019, and 2.00% annually thereafter. Residential customer classes include single-family residential, duplexes, and condominium units in the city. The projected growth rates in 2018 and 2019 are attributed to recent and anticipated residential development.

- All Other Customer Account Growth: 0.25% annually.

Revenue Bonds: 20 year maturity, 4.00% interest, 1.00% issuance cost, 1.50 legal minimum for debt service coverage. The interest rate assumption is based upon relevant Bond Buyer Indices.

EXISTING DEBT OBLIGATIONS

The City does not have any existing debt obligations related to the surface water utility.

CAPITAL EXPENDITURE FORECAST

The capital forecast involves projecting annual capital expenditures and then developing a strategy to fund those expenditures. The 2018-23 capital spending plan was provided by the City, as described in the updated Surface Water Management Plan. Costs were provided by project, by year, and are in 2017 dollars. The City also categorized the capital projects based on priority by identifying each project as critical or non-critical. To estimate the actual spending by year, costs are inflated to the year of construction. Exhibit 2 shows the planned annual capital spending, with inflation.

Exhibit 2
Annual Capital Expenditures (inflated), 2018 – 2023

A few summary notes related to the capital plan are provided below:

- The uninflated 2018-2023 capital costs total $9.4 million; with inflation the total cost is $10.6 million
The largest capital project in the six-year schedule is an infiltration pilot project. The design and construction costs of the project are contingent on the results of a pending feasibility analysis. The total project cost is estimated at $2.2 million.

Critical projects comprise 36 percent of total costs or $3.8 million from 2018-2023. Over the first three years of the capital plan, critical projects make up approximately 70 percent of all capital spending.

Exhibit 3 lists the projects and the cost estimates provided by the City and its consulting engineer along with the estimated year(s) of construction for each project. Cost estimates are inflated to the planned year of construction.

### Exhibit 3

**2018 – 2023 Capital Projects from the updated Surface Water Management Plan**

<table>
<thead>
<tr>
<th>Capital Projects (inflated)</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Critical Projects</strong></td>
<td>2018</td>
<td>2019</td>
<td>2020</td>
<td>2021</td>
<td>2022</td>
<td>2023</td>
<td>2018</td>
</tr>
<tr>
<td>City Drainage Infrastructure</td>
<td>103,000</td>
<td>106,090</td>
<td>109,273</td>
<td>112,551</td>
<td>115,927</td>
<td>119,405</td>
<td>666,246</td>
</tr>
<tr>
<td>Edgewood Pothole Pilot Project</td>
<td>72,100</td>
<td>328,879</td>
<td>87,418</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>488,397</td>
</tr>
<tr>
<td>Lake Chalet Pothole Flood Reduction Project (Pump to Ex-Gravity opt)</td>
<td>-</td>
<td>530,450</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>530,450</td>
</tr>
<tr>
<td>24th/112th Seasonal Ponding</td>
<td>15,450</td>
<td>169,744</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>185,194</td>
</tr>
<tr>
<td>108th Avenue East Neighborhood (6th to 16th)</td>
<td>-</td>
<td>42,436</td>
<td>273,162</td>
<td>67,531</td>
<td>-</td>
<td>-</td>
<td>383,146</td>
</tr>
<tr>
<td>108th Avenue E./36th St. E. Road Flooding</td>
<td>-</td>
<td>-</td>
<td>54,636</td>
<td>900,407</td>
<td>173,891</td>
<td>-</td>
<td>1,128,335</td>
</tr>
<tr>
<td>Flood Reduction Plan for Edgewood Pothole</td>
<td>-</td>
<td>-</td>
<td>185,764</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>185,764</td>
</tr>
<tr>
<td>Total Critical Projects</td>
<td>267,800</td>
<td>1,204,122</td>
<td>737,591</td>
<td>1,108,626</td>
<td>318,800</td>
<td>149,257</td>
<td>3,786,195</td>
</tr>
<tr>
<td><strong>Non-Critical Projects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infiltration Pilot Project Design and Construction</td>
<td>-</td>
<td>-</td>
<td>109,273</td>
<td>844,132</td>
<td>1,217,238</td>
<td>-</td>
<td>2,170,842</td>
</tr>
<tr>
<td>Flood Reduction Plan for Pine Dale Pothole</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>197,077</td>
<td>-</td>
<td>197,077</td>
</tr>
<tr>
<td>Flood Reduction Plan for 122nd Avenue Pothole</td>
<td>-</td>
<td>-</td>
<td>95,668</td>
<td>98,538</td>
<td>-</td>
<td>-</td>
<td>194,207</td>
</tr>
<tr>
<td>Flood Reduction Plan for 108th Avenue Pothole</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>197,077</td>
<td>-</td>
<td>197,077</td>
</tr>
<tr>
<td>Flood Reduction Plan for Surprise Lake Pothole</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>202,989</td>
</tr>
<tr>
<td>Jovita Boulevard Rehabilitation</td>
<td>-</td>
<td>-</td>
<td>56,275</td>
<td>347,782</td>
<td>179,108</td>
<td>-</td>
<td>583,166</td>
</tr>
<tr>
<td>Edgewood Drive East Drainage Improvements</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1,026,885</td>
</tr>
<tr>
<td>Meridian Ave. Corridor Study</td>
<td>-</td>
<td>-</td>
<td>54,636</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>54,636</td>
</tr>
<tr>
<td>Jovita Creek Regional Improvement Feasibility Study</td>
<td>-</td>
<td>-</td>
<td>196,964</td>
<td>202,873</td>
<td>179,108</td>
<td>-</td>
<td>578,945</td>
</tr>
<tr>
<td>Mortenson Farm Regional Stormwater Improvements</td>
<td>-</td>
<td>53,045</td>
<td>764,909</td>
<td>562,754</td>
<td>-</td>
<td>-</td>
<td>1,380,708</td>
</tr>
<tr>
<td>25th St. E. Drainage Improvements</td>
<td>-</td>
<td>53,045</td>
<td>928,818</td>
<td>1,755,794</td>
<td>2,260,584</td>
<td>1,826,900</td>
<td>6,025,141</td>
</tr>
<tr>
<td>Total Non-Critical Projects</td>
<td>-</td>
<td>53,045</td>
<td>928,818</td>
<td>1,755,794</td>
<td>2,260,584</td>
<td>1,826,900</td>
<td>6,025,141</td>
</tr>
<tr>
<td><strong>Total Projects</strong></td>
<td>267,800</td>
<td>1,257,167</td>
<td>1,666,409</td>
<td>2,864,420</td>
<td>2,579,385</td>
<td>1,976,157</td>
<td>10,611,336</td>
</tr>
</tbody>
</table>
REVENUE REQUIREMENT FORECAST

Methodology

The revenue requirement analysis evaluates the sufficiency of the utility’s revenues against its financial obligations, in the context of two sufficiency tests, detailed below. In determining the annual revenue requirement, the test with the greatest deficiency generally drives the rate adjustment in any given year. It is worth noting that the City can temporarily waive the requirements of the cash flow sufficiency 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. If 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.

- **Cash Flow Sufficiency 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 planning period. These cash requirements typically include O&M expenses, debt service payments, rate-funded capital outlays, and any additions to reserve balances.

- **Coverage Test.** The coverage test evaluates the utility’s ability to meet applicable bond coverage requirements, as specified by typical bond covenants. For any debt issues assumed in the forecast, this analysis assumes a bond coverage requirement of 1.50 times annual debt service. In other words, the City must have enough revenue to cover all expenses plus 1.50 times debt service as a minimum legal level. As this test focuses on annual financial performance, it precludes the use of reserves to cover shortfalls.

Capital Funding Strategy

As mentioned previously, uninflated 2018-23 capital spending totals $9.4 million. After applying inflation, the spending through 2023 totals $10.6 million. Critical projects comprise approximately $3.4 million of total uninflated capital spending over the six-year period — $3.8 million when adjusted for inflation. The capital funding strategy and revenue requirement results are based on funding only the critical projects in the capital plan. The financial and customer rate impacts of funding the entire capital plan are summarized in the “Other Capital Funding Options” section of this chapter.

The anticipated funding sources for the critical projects and the capital contingency reserve include the following items, as summarized in **Exhibit 4**.

- Revenue bond debt: $2.8 million;
- Transfers from operating fund (above operating reserve target): $1.0 million; and
- Grants: $0.3 million (including a $149,000 feasibility study grant and $150,000 in Department of Ecology capacity grants)

Capital funding totals $4.1 million which exceeds the inflated cost of the capital projects ($3.8 million). The remaining $0.3 million provides initial funding for the utility’s capital reserve.
Revenue Requirement Forecast

Exhibit 5 summarizes the annual rate increases needed to cover the forecasted obligations of the utility.

Exhibit 5
Annual Rate Increase Needs

<table>
<thead>
<tr>
<th>Summary of Results</th>
<th>Existing 2018</th>
<th>Projected 2019</th>
<th>Projected 2020</th>
<th>Projected 2021</th>
<th>Projected 2022</th>
<th>Projected 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systemwide Revenue Increase Needs</td>
<td>40.00%</td>
<td>15.00%</td>
<td>2.50%</td>
<td>2.50%</td>
<td>2.50%</td>
<td>2.50%</td>
</tr>
<tr>
<td>Projected Monthly Single-Family Charge Increase from Prior Year</td>
<td>$13.25</td>
<td>$18.55</td>
<td>$21.33</td>
<td>$21.87</td>
<td>$22.41</td>
<td>$22.97</td>
</tr>
<tr>
<td>Projected Annual Single-Family Charge Increase from Prior Year</td>
<td>$159.00</td>
<td>$222.60</td>
<td>$255.99</td>
<td>$262.39</td>
<td>$268.95</td>
<td>$275.67</td>
</tr>
</tbody>
</table>

Exhibit 6 graphically represents the operating forecast through 2023. The bars represent costs of the utility: operating expenses, new debt service and debt coverage related to the revenue bonds, and rate-funded capital costs. The solid black line represents revenue at the existing 2018 rates—without future rate increases. The existing rate revenue includes the rate adjustment to the “All Other” customer class that was approved by City Council in 2017. The dashed black line shows the revenue corresponding to the recommended rate increases of the study.
Observations about the revenue requirement forecast are provided below:

- **Dark blue bar:** Existing cash operating expenses exceed revenue at existing rates.
  - Operating expenses are projected to outpace current revenues by $65,000 in 2018. The annual financial gap between operating expenses and revenue is projected to grow to $162,000 by 2023.
  - An additional 0.68 FTE is planned in 2019 for an Engineering Technician to support the capital improvement program. The compensation cost for the additional staffing is estimated at $71,000 in 2019. Beginning in 2020, the position would be reduced to 0.29 FTE.

- **Purple bar:** New annual debt service projected to increase to $225,000 by 2023.
  - The capital forecast assumes two revenue bonds: $1.8 million in 2019 and $1.0 million in 2021 to offset a portion of the $3.8 million needed for the critical capital projects.

- **Gold bar:** Rate increases allow the utility to cash fund a portion of the capital plan.
  - As mentioned in the Policy Framework chapter, a rate-funded system reinvestment target was not included in the study. Instead, future annual fund balances in excess of the operating reserve are transferred to the utility’s capital fund.
  - This strategy allows the utility to fund approximately $1.0 million of the 2018-2023 capital plan with rate revenue. Without these rate increases, the utility would need to reduce the scope of the capital plan or increase revenue bond debt.
Red bar: Debt service coverage costs projected at $0.1 million by 2023. Debt service coverage on bonded debt is forecasted at 1.56 in 2019 and increases to 2.41 in 2023 (compared to the minimum requirement of 1.50). As mentioned in the Policy Framework chapter, the extra revenue generated to meet debt service coverage requirements can be used for capital expenditures, to build system reinvestment reserves, or for debt service on subordinate debt.

Forecasted Reserve Levels

Operating Reserve: As mentioned previously, the target operating reserve is 120 days of operating expenditures. The operating reserve in 2018 is estimated at $76,000 or approximately 29 days. The annual rate increases allow the utility to increase the operating reserve each year, achieving the 120 day target by 2020. After 2020, annual ending balances that exceed the operating reserve requirement are assumed to be available for capital projects.

Exhibit 7 illustrates the projected operating reserves from 2018 to 2023 compared to the 120 day target reserve policy.

Capital Reserve: The recommended policy for the capital reserve is to achieve a minimum year-end target of 0.5% of the replacement cost of fixed assets or $92,000 in 2018. As discussed earlier, one purpose of a financial reserve is to provide a funding source for fluctuating expenses. This purpose is illustrated in the utility’s capital reserve strategy in 2020: the capital reserve is projected to be drawn down in 2020 as capital spending is projected to exceed funding sources. By 2023, the ending capital reserve is forecasted to be roughly $356,000, which exceeds the minimum target balance of $110,000 in that same year.

Exhibit 8 summarizes the projected capital reserve from 2018 to 2023 compared to the target reserve policy.
Projected Rate Schedule

**Exhibit 9** shows the projected rates resulting from across-the-board rate increases. “Across-the-board” (ATB) means that all stated rates increase by the same percentage (both the account and impervious square feet charges), which maintains the existing rate structure. Rates for customer classes like Residential-Single Family and Duplex are assessed on a per parcel basis. For other classes like Multifamily and All Other, rates are based on square feet of impervious surface area (abbreviated as ISF). The rate increases for the All Other customer class are based on the revised rate schedule adopted by the City Council in 2017.

**Exhibit 9**

**Rate Schedule Forecast**

<table>
<thead>
<tr>
<th>Recommended Rate Schedule</th>
<th>Existing 2018</th>
<th>Projected 2019</th>
<th>Projected 2020</th>
<th>Projected 2021</th>
<th>Projected 2022</th>
<th>Projected 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual System-Wide Rate Increase</td>
<td>40.00%</td>
<td>15.00%</td>
<td>2.50%</td>
<td>2.50%</td>
<td>2.50%</td>
<td></td>
</tr>
<tr>
<td>Residential - Single Family</td>
<td>$159.00</td>
<td>$222.60</td>
<td>$255.99</td>
<td>$262.39</td>
<td>$268.95</td>
<td>$275.67</td>
</tr>
<tr>
<td>Duplex</td>
<td>$205.10</td>
<td>$287.14</td>
<td>$330.21</td>
<td>$338.47</td>
<td>$346.93</td>
<td>$355.60</td>
</tr>
<tr>
<td>Multifamily per ISF</td>
<td>$0.06022</td>
<td>$0.08431</td>
<td>$0.09695</td>
<td>$0.09938</td>
<td>$0.10186</td>
<td>$0.10441</td>
</tr>
<tr>
<td>Mobile Homes</td>
<td>$87.45</td>
<td>$122.43</td>
<td>$140.79</td>
<td>$144.31</td>
<td>$147.92</td>
<td>$151.62</td>
</tr>
<tr>
<td>Vacant/Undeveloped per parcel</td>
<td>$40.00</td>
<td>$56.00</td>
<td>$64.40</td>
<td>$66.01</td>
<td>$67.66</td>
<td>$69.35</td>
</tr>
<tr>
<td>Each acre above 50 acres</td>
<td>$0.80000</td>
<td>$1.12000</td>
<td>$1.28800</td>
<td>$1.32020</td>
<td>$1.35321</td>
<td>$1.38704</td>
</tr>
<tr>
<td>Forest and Timber Land per parcel</td>
<td>$40.00</td>
<td>$56.00</td>
<td>$64.40</td>
<td>$66.01</td>
<td>$67.66</td>
<td>$69.35</td>
</tr>
<tr>
<td>State, county and federal public highways per ISF</td>
<td>$0.01805</td>
<td>$0.02527</td>
<td>$0.02906</td>
<td>$0.02979</td>
<td>$0.03053</td>
<td>$0.03129</td>
</tr>
<tr>
<td>All Other Parcels per ISF</td>
<td>$0.06022</td>
<td>$0.08431</td>
<td>$0.09695</td>
<td>$0.09938</td>
<td>$0.10186</td>
<td>$0.10441</td>
</tr>
</tbody>
</table>

**info:** Residential - Single Family ($ per month) $13.25 $18.55 $21.33 $21.87 $22.41 $22.97
Other Capital Funding Options

Revenue requirement analyses for two additional capital funding options were tested to determine the relative impact to customer rates and new debt. These two options include:

- **Scenario B**: Critical capital projects and the infiltration pilot project: $6.0 million (inflated)
- **Scenario C**: All capital projects: $10.6 million (inflated)

**Exhibit 10** compares the projected rate increases, single-family residential monthly rate, capital costs (inflated), and revenue bonds for these two scenarios and the baseline scenario (critical projects only).

### Exhibit 10
Comparison of Capital Funding Scenarios

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scenario A: Critical Projects Only</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Rate Increase</td>
<td>0.00%</td>
<td>40.00%</td>
<td>15.00%</td>
<td>2.50%</td>
<td>2.50%</td>
<td>2.50%</td>
<td></td>
</tr>
<tr>
<td>Capital Spending (inflated)</td>
<td>$267,800</td>
<td>$1,204,122</td>
<td>$737,591</td>
<td>$1,108,626</td>
<td>$318,800</td>
<td>$149,257</td>
<td>$3,786,195</td>
</tr>
<tr>
<td>New Debt</td>
<td>$0</td>
<td>$1,800,000</td>
<td>$0</td>
<td>$1,000,000</td>
<td>$0</td>
<td>$0</td>
<td>$2,800,000</td>
</tr>
<tr>
<td><strong>Scenario B: Critical Projects + Infiltration Pilot</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Rate Increase</td>
<td>0.00%</td>
<td>40.00%</td>
<td>25.00%</td>
<td>2.50%</td>
<td>2.50%</td>
<td>2.50%</td>
<td></td>
</tr>
<tr>
<td>Capital Spending (inflated)</td>
<td>$267,800</td>
<td>$1,204,122</td>
<td>$846,863</td>
<td>$1,952,758</td>
<td>$1,536,038</td>
<td>$149,257</td>
<td>$5,956,837</td>
</tr>
<tr>
<td>New Debt</td>
<td>$0</td>
<td>$1,800,000</td>
<td>$1,000,000</td>
<td>$2,200,000</td>
<td>$0</td>
<td>$0</td>
<td>$5,000,000</td>
</tr>
<tr>
<td><strong>Scenario C: All Projects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Rate Increase</td>
<td>0.00%</td>
<td>55.00%</td>
<td>15.00%</td>
<td>15.00%</td>
<td>2.50%</td>
<td>2.50%</td>
<td></td>
</tr>
<tr>
<td>Single-Family Monthly Bill</td>
<td>$13.25</td>
<td>$20.54</td>
<td>$23.62</td>
<td>$27.16</td>
<td>$27.84</td>
<td>$28.54</td>
<td></td>
</tr>
<tr>
<td>Capital Spending (inflated)</td>
<td>$267,800</td>
<td>$1,257,167</td>
<td>$1,666,409</td>
<td>$2,864,420</td>
<td>$2,579,385</td>
<td>$1,976,157</td>
<td>$10,611,336</td>
</tr>
<tr>
<td>New Debt</td>
<td>$0</td>
<td>$2,250,000</td>
<td>$0</td>
<td>$3,700,000</td>
<td>$0</td>
<td>$1,300,000</td>
<td>$7,250,000</td>
</tr>
</tbody>
</table>

A few observations of the comparative results are summarized below:

- **Rate Increases**:
  - Scenario B would require a 25% rate increase in 2020 compared to the 15% rate increase required in 2019 for Scenario A. The rate increases for all other years would be the same for Scenarios A and B.
  - Scenario C (all projects) would require a 55% increase in 2019 — compared to a 40% increase for Scenarios A and B. Additionally, a 15% rate increase in 2021 would be needed for Scenario C compared to a 2.5% increase for the other two scenarios in 2021.

- **Single-Family Residential Monthly Bill**: The monthly residential bill is projected to be $22.97 in 2023 for Scenario A (critical projects only). The projected monthly residential bill in 2023 would increase to $24.97 and $28.54 for Scenario B and Scenario C respectively.

- **New Debt**:
  - Scenario B (critical projects and infiltration pilot project) would require $5.0 million in revenue bonds or $2.2 million more than Scenario A.
Scenario C (all projects) would require $7.25 million in revenue bonds or $4.45 million more than Scenario A. The revenue bond needs for this scenario are net of the $1.9 million in grant funding assumed for the capital projects in Scenario C.

Rate Survey

Exhibit 11 compares the City’s 2018 and 2019 (projected) monthly rates with the 2017 or 2018 rates of other jurisdictions (year based on data available on websites). Note that each jurisdiction has a unique set of geographic traits, customers, and system characteristics, each of which can have a significant impact on rates.

### Exhibit 11
Single-Family Monthly Surface Water Survey

<table>
<thead>
<tr>
<th>Location</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tacoma</td>
<td>$23.28</td>
</tr>
<tr>
<td>Auburn</td>
<td>$20.22</td>
</tr>
<tr>
<td>King County</td>
<td>$20.04</td>
</tr>
<tr>
<td>Edgewood (2019)</td>
<td>$18.55</td>
</tr>
<tr>
<td>Milton</td>
<td>$15.50</td>
</tr>
<tr>
<td>Sumner</td>
<td>$15.20</td>
</tr>
<tr>
<td>Pacific</td>
<td>$15.00</td>
</tr>
<tr>
<td>Edgewood (2018)</td>
<td>$13.25</td>
</tr>
<tr>
<td>Puyallup</td>
<td>$11.92</td>
</tr>
<tr>
<td>Pierce County</td>
<td>$10.30</td>
</tr>
</tbody>
</table>
Section IV. SYSTEM DEVELOPMENT CHARGE ANALYSIS

INTRODUCTION

System Development Charges (SDCs) are imposed on newly connecting customers and are intended to recover a proportionate share of the utility’s investment in capital capacity — both the historical cost of existing capital assets and the planned cost of future capital improvements. SDCs serve two main purposes: to provide equity between existing and new customers, and to provide a source of utility capital funding. In addition, SDCs help ensure that growth helps pay for the cost of growth. The charge is imposed on both new development and redevelopment that increases demand for system capacity (net of any existing developed area).

LEGAL BASIS FOR SDC

There are a variety of approaches that are used in the industry to establish a defensible SDC. The development of such charges always occurs in the context of state law. The City is authorized to assess such charges under Section 35.92.025 of the Revised Code of Washington (RCW).

“Cities and towns are authorized to charge property owners seeking to connect to the water or sewerage system of the city or town as a condition to granting the right to so connect, in addition to the cost of such connection, such reasonable connection charge as the legislative body of the city or town shall determine proper in order that such property owners shall bear their equitable share of the cost of such system.”

Under RCW 35.67.010, “system of sewerage” is defined as including surface water facilities.

While the City has some flexibility to define an equitable share of system costs, it is important that the City follows a rational approach to consistently determine and implement cost-based connection charges. The RCW is silent regarding a specific methodology to be used in the charge calculation, therefore, FCS GROUP uses the more specific language contained in the Special District RCW 57.08.005 (11) as guidance for calculation of connection charges as it is likely to be used as a reference if connection charges are challenged. Since the calculated charges represent the maximum allowable charge, the City may choose to implement a charge at any level up to the calculated charge.
METHODOLOGY

General Overview

The basic approach to the SDC calculation is shown in Exhibit 12.

Exhibit 12
System Development Charge Methodology

The capital costs used in the SDC calculation can be separated into two major categories:

- **Existing system:** These costs represent the net investment in assets that currently provide service to customers (and that presumably have some amount of capacity to serve growth).
- **Future capital projects:** These costs refer to capital improvement projects that the utility plans to undertake within a period of time specified in the system planning documents, but not more than twenty years. A provision for capital retirement — a calculation to account for the original value of the assets any new capital projects are repairing or replacing — is deducted from the total future capital projects.

The applicable customer base is measured in equivalent services units (ESUs) for surface water utilities. One ESU is equal to 2,640 square feet of impervious surface area (see City municipal code 13.10.020 and Pierce County code 11.02.030).

Assumptions

Using the methodology described above, all capital costs (existing assets and future projects net of provisions for retirement) are divided by the total customer base, including customer growth. The main policy emphasis here is on intergenerational equity — there is no cost advantage for either existing or new customers. This calculation is like a simple buy-in charge (which consists of existing costs divided by existing customers), except that it is projected into a future year, after the planned capital projects are completed. The resulting SDC is generally stable over time, and we recommend this methodology for the City.

Defining Existing System Costs

The existing cost basis is intended to recognize the current ratepayers’ net investment in the original cost of system assets. The main provisions of the calculation include:

- **Utility Plant-in-Service:** The existing cost basis is typically comprised of the original cost of plant-in-service, as documented in the fixed asset schedules of the utility. However, original cost
data was not available for the City’s fixed assets. As an alternative, City staff provided replacement cost data for utility assets and original costs were estimated assuming a 50-year useful life and historical construction inflation rates based on Engineering News-Record’s construction cost index. Using this methodology, the original cost of the utility’s assets is estimated at $1.8 million.

- **Plus: Construction Work In Progress:** The cost of construction work in progress is added to the existing cost basis to recognize investments that a utility has made in capital projects that are currently underway, despite the fact that these projects have not yet been placed into service. The City did not have any construction in progress as of the end of 2017.

- **Less: Contributed Capital:** Assets funded by developers or grants are excluded from the cost basis on the premise that the SDC should only recover costs actually incurred by the City. As of the end of 2017, no utility assets were provided by developers or grants.

- **Plus: Interest on Utility-Funded Assets:** The RCW and subsequent legal interpretations provide such charges can include interest on an asset at the rate applicable at the time of construction. Using the historical Bond Buyer Index for 20-year term bonds, interest can accumulate for a maximum of ten years from the date of construction for any particular asset. Conceptually, this interest provision attempts to account for the opportunity costs that the City’s customers incurred by supporting investments in infrastructure rather than having it available for other needs. The interest that the City would have earned from the original cost of utility assets is estimated at $722,000.

- **Less: Net Debt Principal Outstanding:** Another adjustment to the existing system cost basis is to deduct the net liability of outstanding utility debt, recognizing that new customers will bear a proportionate share of annual debt service through ongoing utility rates. Outstanding debt represents assets that have been placed into service but that today’s ratepayers have not yet paid for. However, cash reserves represent money that today’s ratepayers have paid for, and that cash could be substituted for indebtedness if needed. So in calculating the amount that should be subtracted from the SDC cost basis, we first deduct cash reserves from the outstanding debt. If the amount of cash reserves is greater than the amount of outstanding debt, the deduction for net debt principal outstanding is zero — it cannot be positive (The term “cash reserves” includes both cash and investments). As referenced in the Revenue Requirement Analysis chapter, the utility does not have any existing debt.

**Exhibit 13** summarizes the existing system costs included in the system development charge.

<table>
<thead>
<tr>
<th>Existing System Cost Basis</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original Cost of Utility Assets</td>
<td>$1,832,314</td>
</tr>
<tr>
<td>less: Contributed Capital</td>
<td>-</td>
</tr>
<tr>
<td>plus: Interest on Non-Contributed Plant</td>
<td>721,932</td>
</tr>
<tr>
<td>plus: Construction Work-in-Progress</td>
<td>-</td>
</tr>
<tr>
<td>less: Net Debt Principal Outstanding</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total Existing System Cost Basis</strong></td>
<td>$2,554,246</td>
</tr>
</tbody>
</table>

**Defining Future System Costs**

A utility capital improvement program (CIP) includes projects that address many needs, including system expansion, upgrades and the repair and replacement of infrastructure. In some cases, a single CIP project can serve more than one of these purposes.
Future Capital Assets: The basis for future system costs is the utility’s 2018-2023 capital improvement plan for all projects with the assumption that the capital improvement plan would support 20 years of customer growth. The SDC calculation covers a longer planning period than the rate analysis (twenty years compared to five years) and assumes that while only critical projects would be funded in the first five years, all of the projects in the capital plan would be completed within the next twenty years. As such, SDC revenue would offset a portion of those capital costs related to expanding system capacity. The uninflated cost of the plan totals $9.4 million with an additional $68,000 for the purchase of a skid-steer loader. Total future system costs are estimated at $9.5 million.

Less: Developer Contributions/Grants: Similar to the methodology for establishing the existing cost basis, future system costs anticipated to be recovered by developer contributions or grants are not included in the system development charge. City staff anticipate $1.9 million in grant funding for the capital improvement plan, including: $149,000 for the feasibility study for the pothole pilot project, $150,000 from Department of Ecology capacity grants, $450,000 for the Jovita Creek Regional Improvement Feasibility Study, and $1,175,000 for the Mortenson Farm Regional Stormwater Improvements.

Less: Provision for Capital Retirement: Many capital projects are repairing or replacing existing assets. To avoid including the value of these projects twice – in the existing assets and the capital plan – a provision for capital retirement is used on projects that are deemed repair and replacement (R&R). The provision for capital retirement determines the approximate original cost of the asset the R&R project is replacing, using the useful life of the new project and the historic ENR Construction Cost Index. The sum of the provision for capital retirement calculations are then removed from the future capital project total. In simple terms, if a retention pond expected to last 50 years is being installed in 2018, the provision for retirement determines how much that asset cost in 1968 and removes that portion of the project cost from the calculation. The estimated provision for capital retirement is estimated at $85,000 and is based on original cost estimates for spot improvements for repair and replacement included in the 2018-2023 capital improvement plan.

Exhibit 14 summarizes the future system costs included in the system development charge. All costs included in the calculations are in estimated 2017 dollars.

**Exhibit 14**

**Future System Costs**

<table>
<thead>
<tr>
<th>Future System Cost Basis</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Improvement Plan (2018-2023)</td>
<td>$ 9,395,000</td>
</tr>
<tr>
<td>plus: new Skid-Steer Loader</td>
<td>68,000</td>
</tr>
<tr>
<td>Total Future Capital Assets</td>
<td>$ 9,463,000</td>
</tr>
<tr>
<td>less: Developer Contribution/Grants</td>
<td>(1,924,000)</td>
</tr>
<tr>
<td>less: Provision for Capital Retirement</td>
<td>(84,586)</td>
</tr>
<tr>
<td><strong>Total Future System Cost Basis</strong></td>
<td><strong>$ 7,454,414</strong></td>
</tr>
</tbody>
</table>

Defining the Customer Base

A key objective in defining the customer base is to determine the number of “customer units” the system can support. In other words, “How many customer equivalents can the system serve, once the capital plan has been fully executed?”
Based on discussions with City staff, it was estimated that the 2018-2023 year CIP would support twenty years of customer growth.

There are a total of 6,010 ESUs in the existing system (2018). To determine the future customer base, the customer growth rates described in the Revenue Requirement Analysis chapter are applied, for a 20-year growth of 2,037 additional ESUs. The total future customer base is 8,047 ESUs.

**Exhibit 15** details the applicable customer base for the system development charge calculation.

### Exhibit 15

**Applicable Customer Base for SDC**

<table>
<thead>
<tr>
<th>Residential Single-Family Units (2018)</th>
<th>3,416</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiplied by Impervious Surface Area per ESU</td>
<td>2,640</td>
</tr>
<tr>
<td>Residential Single-Family Impervious Surface Area</td>
<td>9,018,240</td>
</tr>
<tr>
<td>plus: Impervious Surface Area from Other Classes</td>
<td>6,847,322</td>
</tr>
<tr>
<td>Total Impervious Surface Area</td>
<td>15,865,562</td>
</tr>
<tr>
<td>Divided by Impervious Surface Area per ESU</td>
<td>2,640</td>
</tr>
<tr>
<td><strong>Existing Customer Base (ESUs)</strong></td>
<td>6,010</td>
</tr>
<tr>
<td>plus: New ESUs from Customer Growth (2019-2037)</td>
<td>2,037</td>
</tr>
<tr>
<td><strong>Applicable Customer Base</strong></td>
<td>8,047</td>
</tr>
</tbody>
</table>

### SDC Calculation

**Exhibit 16** shows the summary calculation for the surface water SDC. The total existing cost basis is $2.6 million plus $7.5 million in net capital projects, for a total cost basis of approximately $10 million.

This is then divided by the estimated total future customer base of 8,047 ESUs.

This results in a charge of $1,244 per ESU, as of 2018.

### Exhibit 16

**System Development Charge**

\[
\text{System Development Charge} = \frac{\text{Allocable Existing Capital Cost}}{\text{Applicable Customer Base (2037)}} + \frac{\text{Allocable Future Capital Cost}}{\text{Applicable Customer Base (2037)}}
\]

\[
\text{System Development Charge} = \frac{\$2,554,246}{8,047} + \frac{\$7,454,414}{8,047}
\]

\[
= \$1,244
\]
Section V. CONCLUSION

To cover the forecasted financial obligations of the surface water utility, customer rate increases of 40.00% in 2019 and 15.00% in 2020 are needed. After those years, inflationary level increases of 2.50% per year are forecasted to be sufficient through 2023. The rate increase strategy is shown in Exhibit 17.

Exhibit 17
Annual Rate Increase Needs

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Systemwide Revenue Increase Needs</td>
<td>40.00%</td>
<td>15.00%</td>
<td>2.50%</td>
<td>2.50%</td>
<td>2.50%</td>
<td></td>
</tr>
<tr>
<td>Increase from Prior Year</td>
<td>$5.30</td>
<td>$2.78</td>
<td>$0.53</td>
<td>$0.55</td>
<td>$0.56</td>
<td></td>
</tr>
<tr>
<td>Projected Annual Single-Family Charge</td>
<td>$159.00</td>
<td>$222.60</td>
<td>$255.99</td>
<td>$262.39</td>
<td>$268.95</td>
<td>$275.67</td>
</tr>
<tr>
<td>Increase from Prior Year</td>
<td>$63.60</td>
<td>$33.39</td>
<td>$6.40</td>
<td>$6.56</td>
<td>$6.72</td>
<td></td>
</tr>
</tbody>
</table>

These rate increases will allow the utility to cover the following obligations:

- All operating and maintenance expenditures, including cost increases related to inflation
- Critical capital projects as identified by the City (totaling $3.8 million from 2018 to 2023)
- Reaching and maintaining a 120-day operating reserve by 2020
- Achieving a minimum capital reserve equivalent to 0.5 percent of the utility’s fixed assets by 2021 (approximately $100,000)
- Funding debt service and debt coverage requirements for $2.8 million in new debt.
- Generating approximately $115,000 in rate revenue for future capital projects beginning in 2020. By 2023, rate revenue would support approximately $300,000 for capital projects.

It is recommended that the City revisit the study findings during the forecast period to check that the assumptions used are still appropriate and 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 will require adjustments to the rate strategy proposed in this report.
## Section VI. RATE MODEL SUMMARY

### Combined Operating and Capital Activity

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Rate Increases: Above Currently Adopted Rates</td>
<td>0.00%</td>
<td>40.00%</td>
<td>15.00%</td>
<td>2.50%</td>
<td>2.50%</td>
<td>2.50%</td>
</tr>
<tr>
<td>Single-Family Residential Bill ($ per month)</td>
<td>$13.25</td>
<td>$18.55</td>
<td>$21.33</td>
<td>$21.87</td>
<td>$22.41</td>
<td>$22.97</td>
</tr>
<tr>
<td>Combined Beginning Fund Balance</td>
<td>$235,176</td>
<td>$76,342</td>
<td>$777,584</td>
<td>$376,207</td>
<td>$547,593</td>
<td>$540,857</td>
</tr>
<tr>
<td>Rate Revenues (Before Rate Increases)</td>
<td>891,126</td>
<td>920,605</td>
<td>933,448</td>
<td>946,535</td>
<td>959,869</td>
<td>973,455</td>
</tr>
<tr>
<td>System Development Charge Revenue</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other Revenues</td>
<td>2,352</td>
<td>763</td>
<td>9,221</td>
<td>5,207</td>
<td>7,724</td>
<td>7,657</td>
</tr>
<tr>
<td>Rate Revenues: Additional from Rate Increases</td>
<td>368,242</td>
<td>569,404</td>
<td>615,484</td>
<td>663,755</td>
<td>714,316</td>
<td></td>
</tr>
<tr>
<td>Grants</td>
<td>174,000</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
</tr>
<tr>
<td>Other Debt Proceeds</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Revenue Bond Net Proceeds</td>
<td>-</td>
<td>1,800,000</td>
<td>-</td>
<td>1,000,000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total Resources</td>
<td>1,302,654</td>
<td>3,190,952</td>
<td>2,314,657</td>
<td>2,968,433</td>
<td>2,203,941</td>
<td>2,261,285</td>
</tr>
<tr>
<td>Baseline Operating Expenditures</td>
<td>(958,512)</td>
<td>(1,064,720)</td>
<td>(1,056,332)</td>
<td>(1,087,395)</td>
<td>(1,119,463)</td>
<td>(1,152,574)</td>
</tr>
<tr>
<td>Existing Debt Service</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>New Debt Service</td>
<td>-</td>
<td>(144,527)</td>
<td>(224,829)</td>
<td>(224,829)</td>
<td>(224,829)</td>
<td>(224,829)</td>
</tr>
<tr>
<td>Additions to Reserve Requirement</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Capital Projects</td>
<td>(267,800)</td>
<td>(1,204,122)</td>
<td>(737,591)</td>
<td>(1,108,626)</td>
<td>(318,800)</td>
<td>(149,257)</td>
</tr>
<tr>
<td>Total Expenditures</td>
<td>(1,226,312)</td>
<td>(2,413,368)</td>
<td>(1,938,450)</td>
<td>(2,420,841)</td>
<td>(1,663,083)</td>
<td>(1,526,651)</td>
</tr>
<tr>
<td>Ending Fund Balance</td>
<td>76,342</td>
<td>$777,584</td>
<td>376,207</td>
<td>$547,593</td>
<td>$540,857</td>
<td>$734,635</td>
</tr>
<tr>
<td>Combined Minimum Target Balance</td>
<td>407,573</td>
<td>446,695</td>
<td>448,449</td>
<td>464,970</td>
<td>477,096</td>
<td>488,717</td>
</tr>
<tr>
<td>Ending Total Days of Operating Expenditures</td>
<td>29</td>
<td>267</td>
<td>130</td>
<td>184</td>
<td>176</td>
<td>233</td>
</tr>
</tbody>
</table>

### Capital Projects (inflated)

<table>
<thead>
<tr>
<th>Project Description</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water Management Plan Update (including stormwater comprehensive plan update)</td>
<td>$77,250</td>
<td>$26,523</td>
<td>$27,318</td>
<td>$28,138</td>
<td>$28,982</td>
<td>$29,851</td>
</tr>
<tr>
<td>City Drainage Infrastructure Program/Spot Improvements</td>
<td>103,000</td>
<td>106,090</td>
<td>109,273</td>
<td>112,551</td>
<td>115,927</td>
<td>119,405</td>
</tr>
<tr>
<td>Edgewood Pothole Pilot Project Feasibility Assessment</td>
<td>72,100</td>
<td>328,879</td>
<td>87,418</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lake Chalet Pothole Flood Reduction Project (Pump to Ex-Gravity opt)</td>
<td>-</td>
<td>530,450</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>24th/112th Seasonal Ponding</td>
<td>15,450</td>
<td>169,744</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>108th Avenue East Neighborhood (8th to 16th)</td>
<td>-</td>
<td>42,436</td>
<td>273,182</td>
<td>67,531</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>108th Avenue E./36th St. E. Road Flooding</td>
<td>-</td>
<td>54,636</td>
<td>900,407</td>
<td>173,891</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Flood Reduction Plan for Edgewood Pothole</td>
<td>-</td>
<td>-</td>
<td>186,764</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>$267,800</td>
<td>$1,204,122</td>
<td>$737,591</td>
<td>$1,108,626</td>
<td>$318,800</td>
<td>$149,257</td>
</tr>
</tbody>
</table>

Notes:
- Highlighted rows in the table above are for emphasis only
## Operating Reserve

<table>
<thead>
<tr>
<th>Funds</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning Balance</td>
<td>$223,176</td>
<td>$70,342</td>
<td>$126,705</td>
<td>$346,295</td>
<td>$357,272</td>
</tr>
<tr>
<td>plus: Net Cash Flow after Rate Increase</td>
<td>(65,034)</td>
<td>80,384</td>
<td>305,005</td>
<td>254,713</td>
<td>285,182</td>
</tr>
<tr>
<td>less: Transfer of Surplus to Capital Reserve</td>
<td>(53,800)</td>
<td>-</td>
<td>(115,415)</td>
<td>(243,736)</td>
<td>(274,629)</td>
</tr>
<tr>
<td>Ending Balance</td>
<td>$163,342</td>
<td>$156,715</td>
<td>$346,295</td>
<td>$357,272</td>
<td>$367,805</td>
</tr>
</tbody>
</table>

- Minimum Target Balance: 120 days
  - $315,127 | $348,209 | $346,295 | $357,272 | $367,805 |

- Maximum Funds to be Kept as Operating Reserves: 120 days
  - $315,127 | $348,209 | $346,295 | $357,272 | $367,805 |

- Actual Days of Cash Operating Expenses Achieved
  - 29 days | 54 days | 120 days |

### Capital Reserve

<table>
<thead>
<tr>
<th>Funds</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning Balance</td>
<td>$-</td>
<td>$-</td>
<td>$620,879</td>
<td>$39,912</td>
<td>$190,320</td>
</tr>
<tr>
<td>plus: System Investment Funding</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>plus: Transfers from Operating Fund</td>
<td>53,800</td>
<td>-</td>
<td>115,415</td>
<td>247,736</td>
<td>274,629</td>
</tr>
<tr>
<td>plus: Capital Grants / Contributions / Other Resources</td>
<td>174,000</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
</tr>
<tr>
<td>plus: GDC Revenue Towards Capital Reserve</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>plus: Revenue Bond Proceeds</td>
<td>-</td>
<td>1,000,000</td>
<td>-</td>
<td>1,000,000</td>
<td>-</td>
</tr>
<tr>
<td>plus: Other Loans 1 Proceeds</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>plus: Other Loans 2 Proceeds</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>plus: DWYDF Loan Proceeds</td>
<td>-</td>
<td>-</td>
<td>6,208</td>
<td>299</td>
<td>1,903</td>
</tr>
<tr>
<td>plus: Interest Earnings</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total Funding Sources</td>
<td>$267,800</td>
<td>$1,825,000</td>
<td>$767,503</td>
<td>$1,294,947</td>
<td>$491,835</td>
</tr>
<tr>
<td>less: Capital Expenditures</td>
<td>(267,800)</td>
<td>(1,204,122)</td>
<td>(737,591)</td>
<td>(1,108,626)</td>
<td>(318,803)</td>
</tr>
<tr>
<td>Ending Capital Fund Balance</td>
<td>$-</td>
<td>$620,879</td>
<td>$29,912</td>
<td>$190,320</td>
<td>$173,053</td>
</tr>
</tbody>
</table>

### Debt Reserve

<table>
<thead>
<tr>
<th>Funds</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning Balance</td>
<td>$-</td>
<td>$-</td>
<td>$144,527</td>
<td>$144,527</td>
<td>$224,820</td>
</tr>
<tr>
<td>plus: Reserve Funding from Operations</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>plus: Reserve Funding from New Debt</td>
<td>-</td>
<td>-</td>
<td>144,527</td>
<td>-</td>
<td>86,293</td>
</tr>
<tr>
<td>less: Use of Reserves for Debt Service</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ending Balance</td>
<td>$-</td>
<td>$144,527</td>
<td>$144,527</td>
<td>$224,820</td>
<td>$224,820</td>
</tr>
</tbody>
</table>

### Summary

**Combined Beginning Balance**

<table>
<thead>
<tr>
<th>Year</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>$223,176</td>
<td>$76,342</td>
<td>$922,111</td>
<td>$526,734</td>
<td>$772,412</td>
</tr>
<tr>
<td>Plus: Inflows</td>
<td>$202,766</td>
<td>$2,049,831</td>
<td>$451,629</td>
<td>$1,604,040</td>
</tr>
<tr>
<td>Less: Outflows</td>
<td>$361,600</td>
<td>$1,204,122</td>
<td>$853,006</td>
<td>$1,352,362</td>
</tr>
<tr>
<td>Combined Ending Balance</td>
<td>$76,342</td>
<td>$922,111</td>
<td>$520,734</td>
<td>$772,412</td>
</tr>
</tbody>
</table>

**Net Change in Reserves**

<table>
<thead>
<tr>
<th>Year</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>$158,834</td>
<td>$845,799</td>
<td>$401,377</td>
<td>$251,678</td>
<td>$6,735</td>
</tr>
</tbody>
</table>

**Total Available Cash Test: Days of O&M**

**Actual Operating & Capital Endings**

<table>
<thead>
<tr>
<th>Days</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>29 days</td>
<td>29 days</td>
<td>130 days</td>
<td>184 days</td>
<td>176 days</td>
</tr>
</tbody>
</table>

**Target: 150 Days of O&M**

<table>
<thead>
<tr>
<th>Days</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>$393,909</td>
<td>$437,596</td>
<td>$434,109</td>
<td>$446,874</td>
<td>$460,053</td>
</tr>
</tbody>
</table>

**Notes:**

- Cells highlighted in red denote ending fund balances that are below financial policy targets.
SUBJECT: SW Rates

Agenda Item #: 2D
For Agenda of: August 21, 2018
Prepared by: Jeremy Metzler

ATTACHMENTS (list): ☒ DRAFT Ordinance 18-0xxx
☒ DRAFT Exhibit A – REDLINE EMC Chapter 13.10

Approval of Materials:

<table>
<thead>
<tr>
<th>Mayor, Daryl Eidinger</th>
<th>Expenditure Required:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asst. City Administrator, Dave Gray</td>
<td>Amount Budgeted:</td>
<td>N/A</td>
</tr>
<tr>
<td>City Attorney, Carol Morris</td>
<td>Appropriation Required:</td>
<td>N/A</td>
</tr>
</tbody>
</table>
| City Clerk, Rachel Pitzel | Timeline: | Public Hearing – August 28, 2018
| Community Development Director, Darren Groth | Ord. Adoption – Sept. 11, 2018 |
| Public Works, Jeremy Metzler | ☒ |

Fiscal Note/Consideration:
Based on analysis performed last year, the current surface water fee rate results in a fee-to-expense deficit annually of nearly $40,000. By increasing the rates as recommended in the Surface Water Management Plan update, the operating deficit will be resolved and critical capital improvements will be funded.

SUMMARY STATEMENT:
The Edgewood City Council establishes storm water rates charged for various land use classifications according to factors set forth in RCW 35.67.020(2) and (3), which are then adopted in the Edgewood Municipal Code. The City is required to impose uniform charges for the same class of customers or service and facilities furnished [RCW 35.67.020(2)]. In classifying customers served or service and facilities furnished by the storm water utility, the City may consider “the difference in cost of maintenance, operation, repair and replacement of various parts of the system,” and “any other matters which present a reasonable difference as a ground for distinction.” Id.

As discussed last fall, our Municipal Stormwater Permit requires significantly more inspection and maintenance work than in prior years (pre-2014), and we satisfy this requirement through our current Interlocal Agreement with Pierce County Public Works. The resulting costs to Edgewood’s Surface Water Utility have increased from $25,000 in 2013 to over $400,000 in 2015, and totaled more than $630,000 in 2017. This increase is largely due to infrastructure improvements along the Meridian Avenue corridor. Here is a table comparing operating expenditures to revenues in recent years (excluding capital expenditures):

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017*</th>
<th>2018* (est)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Expenditures</td>
<td>$834,626</td>
<td>$570,852</td>
<td>$1,091,513</td>
<td>$930,145</td>
</tr>
<tr>
<td>Revenues</td>
<td>$708,068</td>
<td>$659,084</td>
<td>$724,436</td>
<td>$890,000</td>
</tr>
<tr>
<td>Net Revenue / (Deficit)</td>
<td>($126,558)</td>
<td>$88,232</td>
<td>($367,077)</td>
<td>($40,145)</td>
</tr>
</tbody>
</table>

*Note: 2017 & 2018 Operating Expenditures also exclude consultant fees for the Comprehensive SWMP Update

After reviewing existing storm water rates, anticipated operating budget, and proposed capital projects, the City’s consultant has recommended rate increases in the SWMP Update, and those rates are reflected in the attached draft ordinance. If the storm water rates are increased as recommended in this ordinance, the new rates will be in effect starting January 1, 2019, and the operating budget deficit will be eliminated in 2019. This ordinance also amends the procedures in Edgewood Municipal Code to administer the surface water utility rates, no longer relying on Pierce County’s code by reference.
**COUNCIL COMMITTEE REVIEW AND RECOMMENDATION:** N/A

**RECOMMENDED ACTION:**
Discuss and provide feedback on the ordinance as presented, prior to public hearing consideration at the next Regular Council Meeting.

**ALTERNATIVES TO RECOMMENDED ACTION:** 1) Forward to Study Session for further review
ORDINANCE NO. 18-0xxx

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF EDGECWOOD, WASHINGTON, ADJUSTING THE STORM DRAINAGE AND SURFACE WATER UTILITY ANNUAL SERVICE CHARGE FOR ALL CLASSIFICATIONS OF SERVICE CONSISTENT WITH THE SURFACE WATER MANAGEMENT PLAN, IN ORDER TO IMPLEMENT THE CAPITAL IMPROVEMENT PLAN BUDGET FOR THE UTILITY, TO BE EFFECTIVE AS OF JANUARY 1, 2019, ADDING NEW DEFINITIONS, ADDING ADDITIONAL QUALIFICATIONS ON CREDITS FOR PROPERTIES UTILIZING RAINWATER COLLECTION SYSTEMS, AND MAKING OTHER HOUSEKEEPING CHANGES, AMENDING EDGECWOOD MUNICIPAL CODE SECTIONS 13.10.010, 13.10.020, 13.10.030, 13.10.050, 13.10.060, 13.10.070, 13.10.080, REPEALING SECTION 13.10.040, ADDING SECTIONS 13.10.090, 13.10.100, 13.10.110, 13.10.120, 13.10.130, 13.10.140, AND ESTABLISHING AN EFFECTIVE DATE.

WHEREAS, the City of Edgewood has “full jurisdiction and authority to manage, regulate and control” its storm water utility (RCW 35.67.020(1)); and

WHEREAS, the City has the authority to fix, alter, regulate and control the rates and charges associated with the storm water utility, which charges must be uniform for the same class of customers of service and facilities furnished, taking into account the factors identified in state law (RCW 35.67.020(2)); and

WHEREAS, the City has established a storm drainage and surface water management utility, and has codified regulations pertaining thereto at Chapter 13.10 EMC; and

WHEREAS, Pierce County collects storm water charges for the City, as directed and authorized by the mayor through an established interlocal agreement, and designates each property by one of the eight (8) categories defined in EMC 13.10.070; and

WHEREAS, the City is updating its capital improvement and comprehensive plans for the maintenance, repair, replacement, and new construction of storm water projects which are paid for by the revenue from storm water charges; and

WHEREAS, in review of said plan updates, the City has determined additional funding is necessary to support the proposed capital improvement budget for its surface water management utility; and

WHEREAS, the City desires to adjust the annual storm drainage and surface water service charge to fund said capital improvement budget; and

WHEREAS, the City’s SEPA Responsible Official has determined that this procedural action is categorically exempt from SEPA threshold determination and EIS requirements pursuant to WAC 197-11-800(19); and
WHEREAS, on August 21, 2018 and September 4, 2018, the City Council considered this ordinance during study sessions; and

WHEREAS, on August 28, 2018, the City Council held a first reading of this ordinance during its regular City Council meeting; and

WHEREAS, on August 28, 2018, the City Council held a public hearing on this ordinance, after proper notice was sent out to the public; and

WHEREAS, on September 11, 2018, the City Council considered the adoption of this ordinance during a second reading, which was held during a regular City Council meeting;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, DOES ORDAIN AS FOLLOWS:

Section 1. Findings. The recitals above are hereby adopted as legislative findings in support of this ordinance. The City Council further adopts by reference the staff report dated September 4, 2018, and agenda bill dated September 11, 2018 as additional findings.

Section 2. Chapter 13.10 amended. Chapter 13.10 of the Edgewood Municipal Code is hereby amended to read as presented in Exhibit ‘A’, which is incorporated by reference herein and attached hereto.

Section 3. Rates Effective. The rates described herein shall take effect and be in full force for fees collected beginning January 1, 2019.

Section 4. Severability. Should any section, paragraph, sentence, clause or phrase of this Code, or its application to any person or circumstance, be declared unconstitutional or otherwise invalid for any reason or should any portion of this Code be pre-empted by state or federal law or regulation, such decision or preemption shall not affect the validity of the remaining portions of this Code or its application to other persons or circumstances.

Section 5. Effective Date. A summary of this Ordinance consisting of its title shall be published in the official newspaper of the City, and shall take effect and be in full force five (5) days after the date of publication.


_________________________________
Daryl Eidinger, Mayor

ATTEST:
Rachel Pitzel, City Clerk

APPROVED AS TO FORM:

______________________________
Carol Morris, City Attorney

Date Published:
Ordinance Effective Date:
Chapter 13.10
STORM DRAINAGE AND SURFACE WATER MANAGEMENT UTILITY

Sections:
13.10.010 Established Purpose.
13.10.020 Fund created Creation and Authority.
13.10.030 Powers authorized Definitions.
13.10.040 Limitation of liability.
13.10.050 Interlocal agreement.
13.10.060 Applicability and Exemptions Fees.
13.10.070 Method of calculating service Storm Water Drainage Charges.
13.10.080 Council approval.
13.10.090 Deposit of funds.
13.10.100 Lien for delinquent charges.
13.10.110 Overpayment refund requests.
13.10.120 Administrative refunds or adjustments.
13.10.130 Amount of refund limited.
13.10.140 Appeals.

13.10.010 Established Purpose.
This Chapter creates a funding methodology which provides resources to plan, manage, design, construct, maintain, revise, and upgrade the storm drainage and surface water runoff systems within the corporate limits of the City of Edgewood, as specified in and pursuant to Chapters 35.67 and 39.34 of the Revised Code of Washington (RCW). This authority is invoked to minimize property damage, promote and protect the public health, safety and welfare, minimize water quality degradation by preventing siltation, contamination and erosion of the City's waterways, protect aquifers, insure the safety of City streets, roads and rights-of-way, assure compliance with federal and state storm drainage, surface water management, and water quality regulations and legislation, increase educational and recreational opportunities, encourage the preservation of natural drainage systems, and foster other beneficial public uses. The city of Edgewood hereby establishes a storm drainage and surface water management utility to provide for the future operation and control of storm drainage and surface water management within the city and hereby exercises jurisdiction and control thereof. (Ord. 96-15 § 1).

13.10.020 Fund created Creation and Authority.
There was created a Storm Drainage and Surface Water Management Utility and corresponding Surface Water Management Fund for the City of Edgewood in 1996, as adopted under Ordinance 96-15. Said Storm Drainage and Surface Water Management Utility shall be administered by the mayor or designee. The city of Edgewood hereby establishes a surface water management fund and adopts by reference Chapter 11.02 PCC, Storm Drainage and Surface Water Management, and as may be subsequently amended, and hereby exercises the authority to receive all those fees relating to the operation of said storm drainage and surface water management utility which are due or are being collected or are to be collected. (Ord. 96-15 § 2).

13.10.030 Powers authorized.
The city of Edgewood hereby elects to exercise all lawful powers and authority for the construction, acquisition, and condemnation of property rights, maintenance, management, operations and regulation of storm drainage and surface water runoff systems including, without limitation, all lawful powers to fix, alter, regulate, and control the charges and conditions of the use thereof. (Ord. 96-15 § 3).

13.10.030 Definitions.
A. “City” shall mean the City of Edgewood, Washington, or as indicated by the context, may mean the appropriate department, official, employee, or agent representing the City in the discharge of his or her duties.
B. “Detention Facility”: An above or below ground facility, such as a pond or tank, that temporarily stores stormwater runoff and subsequently releases it at a slower rate than it is collected by the drainage facility system. There is little or no infiltration of stored stormwater.

C. “Duplex” shall mean one two-family dwelling, either wholly or partially located on a parcel or contiguous parcels, consisting of a building containing not more than two (2) complete living units, designated and/or used to house not more than two families living independently of each other and including all necessary household functions of each such family. For Storm Water Drainage Charge purposes, each Duplex unit shall be equivalent to 3406 square feet of impervious area.

D. “Engineer” shall mean a professional civil engineer, currently licensed by the State of Washington, retained by and acting on behalf of the parcel owner.

E. “Gravel” shall mean all graveled surfaces available for use as roads, driveways, or other access ways for vehicular traffic, parking, production, storage, staging, and holding areas.

F. “Highway” shall mean all impervious ways, lanes, roads, streets, boulevards, and/or places in the City open as a matter of right to public vehicular travel both inside and outside the limits of incorporated cities and towns.

G. “Impervious Area” shall mean the horizontally projected surface area of all non-vertical “Impervious Surface”.

H. “Impervious Surface”: A non-vegetated surface area that either: (a) prevents or retards the entry of water into the soil mantle as under natural conditions prior to development, or (b) causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, rooftops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam or other surfaces that similarly impede the natural infiltration of stormwater. Open, uncovered retention and/or detention facilities shall not be considered as impervious surfaces for the purposes of this chapter.

I. “Infiltration”: The downward movement of water from the surface to the subsoil.

J. “Interlocal Agreement” shall mean that contract between the City and Pierce County (or other entities) pursuant to RCW Chapter 39.34, which delineates the terms, conditions and relationships of the parties regarding the plan, design, construction, operation, maintenance and funding of storm drainage systems within the incorporated area.

K. “Master Plan” shall mean the Surface Water Management Plan adopted by City Ordinance for managing storm drainage and surface water runoff facilities and features within the City.

L. “Mobile Home Site” shall mean a space within an existing mobile home park for installation of a mobile home, regardless of it being occupied or vacant. For Storm Water Drainage Charge purposes, each Mobile Home Site unit shall be equivalent to 55 percent of a Residential unit, or 1452 square feet of impervious area.

M. “Multifamily” shall mean a dwelling, either wholly or partially located on an individual parcel, consisting of a building containing more than two complete living units, designated and/or used to house more than two families living independently of each other and including all necessary household functions of each such family.

N. “Owner” or “Owner of Record” shall mean the holder of title by recorded deed or the purchaser under a recorded real estate contract.

O. “Parcel” shall mean any portion, piece, or division of land; fractional part or subdivision of block, according to plat or survey; portion of platted territory measured and set apart for individual and private use and occupancy.

P. “Residential” shall mean a parcel or contiguous parcels with one single family home or single-family residential condominium or modular home designed and/or used to house a single family, either wholly or partially located on it or them. For Storm Water Drainage Charge purposes, each Residential unit shall be equivalent to 2640 square feet of impervious area.

Q. “Retention Facility”: An above or below ground facility, such as a pond or tank, that temporarily stores stormwater runoff and subsequently releases it at a slower rate than it is collected by the drainage facility system. With no surface outflow, discharge is through infiltration and evaporation.

R. “Service Charge” means the charge levied on parcels within the City as authorized by EMC 13.10.070.
S. “System” shall mean the entire system of storm drainage and surface water runoff facilities owned by
the City or over which the City has right of use and responsibility for the movement and control of
storm drainage and surface water runoff, including both naturally occurring and man-made facilities.
A. “Vacant/Undeveloped” shall mean a parcel of land that has no impervious area.
B. 13.10.040 Limitation of liability.
C. The city does not assume responsibility or control over past actions for loss or damages which have
occurred and which may occur as a result of the operation of the existing storm drainage and
surface water management system by Pierce County and disclaims any responsibility therefor. (Ord.
96-15 § 4).

13.10.050 Interlocal agreement.
The mayor is hereby directed and authorized to develop an interlocal agreement with Pierce County
for the transfer of all assets and fund balances pertaining to said stormwater utility now lying
within the city of Edgewood or those which are necessarily part of the system, to take such action as is
necessary and/or appropriate to carry out the provisions of this Chapter or alternatively, to develop an
interlocal agreement for the mutual operation and support of the storm drainage and surface water
management utility by the city of Edgewood and Pierce County lying within the drainage basins. (Ord. 15-
447 § 1 (Exh. A); Ord. 96-15 § 5).

13.10.060 Applicability and Exemptions Fees – Collection authority.
The mayor is hereby directed and authorized to collect the storm drainage and surface water
management fees imposed hereunder in an orderly manner, by an agreement with Pierce County or the
Pierce County assessor. (Ord. 15-447 § 1 (Exh. A); Ord. 96-15 § 6). The City shall apply a rate structure
as a utility Service Charge to all parcels within the City, as authorized by EMC 13.10.070. All parcels are
subject to a service charge except the following exempt parcels:
A. All vacant/undeveloped parcels less than two-tenths (2/10ths) of an acre (8,712 square feet) in total
area.
B. Tax title parcels which the County has offered for public sale but no willing buyer came forward to bid
on the property.

13.10.070 Method of calculating service charges.
An annual service charge schedule is hereby established for all areas of the city.
A. Annual service charges for all parcels within the city are as follows:

1. Residential: $159.00.
2. Duplex: $205.10.
3. Multifamily: $0.06022 per square foot of impervious area.
4. All mobile homes other than subsection (A)(1) of this section: "$159.00 x 55 percent" ($87.45) per
vacant or occupied mobile home site (mobile home equivalent).
5. Vacant/undeveloped: $0.80/acre, but in no case shall the minimum service charge be less than
$40.00/parcel.
6. Forest and timber land: $40.00 per parcel on lands classified as forest lands under
Chapters 84.33 and 84.34 RCW.
7. State, county and federal public highways: $0.01805 per square foot of impervious area.
8. All parcels other than subsections (A)(1) through (7) of this section: $0.06022 per square foot of impervious area.

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<tr>
<th>Rate Classification</th>
<th>2019</th>
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<td>All Others (per sq. ft. impervious area)</td>
<td>$0.08431</td>
<td>$0.09695</td>
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B. Credit Program. Sites that utilize rainwater harvesting systems, which retain stormwater on site for later nonpotable use, are eligible for a 10 percent credit. To qualify for a service charge credit, the following must be completed before June 1st of the year preceding the year for which the owner is requesting credit:

1. Credit may be applied to all Rate Classification categories listed in subsection (A) of this section, except for the following: Vacant / Undeveloped, and State, County & Federal Public Highways items 5, 6, and 7. Newly developed properties must fully complete the development process in accordance with Chapter 13.05 EMC before applying for a credit.

2. To qualify for a credit, the owner of record shall provide the city the following documentation, each stamped and signed by the owner’s engineer, that all storm drainage systems serving the entire site are fully compliant with the current requirements for storm water control, both water quantity and water quality, in Chapter 13.05 EMC:
   a. Engineering calculations, demonstrating they are properly sized for their intended use and have a capacity of at least 1,500 gallons per structure; and
   b. “As constructed plans”; and
   c. Maintenance and operations manual for all drainage facilities, including applicable source control BMPs.

3. Only systems determined by the City to meet or exceed current requirements for operations, maintenance and source control for the site will continue to receive a credit. The Owner will be notified of any maintenance deficiencies no later than July 1 to allow for corrective action before October 1. Systems that are not adequately maintained by October 1 will be dropped from the credit program and will need to submit a new application for readmission into the program.

4. Each Owner of Record shall provide a "hold harmless" statement on a form provided by the City that indemnifies the City from any loss incurred arising from the construction and maintenance and operation of the Owner's drainage facilities for both water quantity and quality runoff from the owner's property. This statement shall be signed by the Owner and will be recorded with the County Auditor by the Owner of Record. The Owner of Record shall provide the City a copy of the recorded agreement, with the County Auditor's recording number stamped on it, before the application will be deemed completed.

5. Each Owner of Record must provide documentation that the City has legal access to the property for the purpose of inspecting the storm control system. New developments are required to record a maintenance covenant for this purpose, and a copy of this recorded document will suffice.
If no such documentation is available, the Owner shall enter into an agreement with the City that allows the City to enter onto the Owner's parcel to inspect the drainage facility and verify all information submitted by the owner and his/her Engineer. The agreement form will be provided by the City. This agreement will be recorded with the County Auditor by the Owner of Record. The Owner of Record shall provide the City a copy of the recorded agreement, with the County Auditor’s recording number stamped on it, before the credit application will be deemed completed.

Once accepted into the credit program, a system will remain eligible for a credit for a period of five years, even if the requirements in this title change, assuming the system is not modified, continues to function as designed, and is adequately maintained. Credit may be reapplied for following this five-year period if the system is still in proper working order.

C. The annual service charge credit will be calculated by multiplying the annual service charge by the applicable credit percentage when all of the conditions established for a service charge credit have been met.

D. The annual service charge shall be calculated and collected as described in PCC 11.02.050(E), as adopted by Pierce County Ordinance 2016-72s. (Ord. 17-509 § 2; Ord. 15-435 § 2; Ord. 11-374 § 2; Ord. 09-327 § 1; Ord. 98-119 § 1; Ord. 97-99 § 1; Ord. 96-15).

E. Parcel characteristics affecting the service charge which are altered after January 1 of any year shall not be the basis for recalculation of the service charge until the next year.

13.10.080 Council approval.
The mayor is hereby directed to present to the city council for their final approval the agreements for the continued operation of the storm drainage and surface water management utility within the city of Edgewood and for the collection of the fees thereof. (Ord. 15-447 § 1 (Exh. A); Ord. 15-15 § 7).

13.10.090 Deposit of funds.
All Storm Drainage and Surface Water Management Utility funds from service charges, grant funds, or any other revenue received shall be deposited in the Surface Water Management Fund of the City, identified as fund #410, as a special revenue fund. All revenue in the Surface Water Management Fund shall be deposited in interest-bearing or income earning accounts.

13.10.100 Lien for delinquent charges.
A. The City shall place a lien on any parcel with a delinquent service charge, including interest thereon. Such liens shall be effective and shall be enforced and foreclosed in the same manner as provided for sewerage liens of cities and towns by RCW 35.67.200 through 35.67.290, except that the service charge lien shall be effective for a total not to exceed one year's delinquent service charges without the necessity of any writing or recording of the lien with the Pierce County Auditor.

B. Delinquent service charges shall bear interest provided in RCW 35.67.200 at the rate of eight percent (8%) per annum, or such rate as may hereafter be authorized by law, computed on a monthly basis from the date of delinquency until paid. Interest shall be calculated at the rate in effect at the time of payment of the charges regardless of when the charges were first delinquent.

13.10.110 Overpayment refund requests.
Any person may request the refund of service charge overpayment(s) by doing so in writing to the Mayor or designee. The basis of the request explaining the nature of the overpayment should be clearly stated. The Mayor or designee shall investigate the overpayment to have occurred. The Mayor or designee will use best efforts within sixty (60) days of receipt of the request. The Mayor or designee shall specify in the written decision the basis for authorizing or denying the refund request. No refund may be authorized for overpayment paid or levied more than one (1) year prior to the date the written request is received.

13.10.120 Administrative refunds or adjustments.
The Mayor or designee may authorize in writing, a refund, credit, or adjustment of any amounts when he/she determines that an error, miscalculation, or mistake has occurred which affects any ratepayer(s). The nature of the error, miscalculation, or mistake should be documented together with the steps taken to prevent future occurrences. No refunds, credits or service charge adjustments may be authorized pursuant to this Section unless brought to the attention of the Mayor or designee within one (1) year of the occurrence of the error, miscalculation or mistake.

13.10.130 Amount of refund limited.
In any instance where a refund or credit is authorized by the Mayor or designee, the amount shall not include any interest.

13.10.140 Appeals.
Any decision of the Mayor or designee made pursuant to this Chapter may be appealed to the City of Edgewood Hearing Examiner upon payment of the fees under protest and pursuant to Chapter 2.40 EMC.
**SUBJECT:**
Adopting procedures for the vacation of City streets, as provided in chapter 35.79 RCW

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<td>August 21, 2018</td>
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<tr>
<td>Prepared by:</td>
<td>Jeremy Metzler / Carol Morris</td>
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**EXHIBITS (list):** ☒ DRAFT Ordinance 18-0xxx

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<td>Asst. City Administrator, Dave Gray</td>
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**Fiscal Note/Consideration:**
If a person petitions for the vacation of a City street, state law establishes the compensation that the petitioner will pay to the City for the street or portion of a street, in exchange for the vacation. The petitioner must pay the cost of an appraisal, and depending on how long the street has been a part of the dedicated public right of way, this compensation varies from the full appraised value to one-half of the appraised value. In other words, the City will receive compensation from the petitioner upon vacation in practically all instances. (Proposed Section 12.14.070.)

**SUMMARY STATEMENT:**
The general procedure for street vacations is in chapter 35.79 RCW. In the attached ordinance, this procedure has been modified to provide a chronological outline of each step in the process, describe the two types of street vacations (property owner-initiated and Council-initiated), and to set forth a process for the staff to follow, in order to develop an administrative record. In this administrative record, the staff provides a history of the City’s acquisition of the street (or portion thereof) proposed to be vacated, together with the staff’s recommendation as to whether, given the City’s existing Transportation Plan, the street will be needed in the future as part of the City’s transportation system (pedestrian, bicycle, or vehicular) or for utility access, etc. The staff also provides a recommendation on the compensation that should be paid to the City upon vacation, based on the length of time that the street has been part of the dedicated public right of way. Finally, the ordinance allows vacations under an old law (1889-90) that merely remove a cloud on the title. Nothing in the ordinance is inconsistent with chapter 35.79 RCW, this ordinance merely elaborates on state law to provide a coherent administrative procedure for processing street vacations.

**COUNCIL COMMITTEE REVIEW AND RECOMMENDATION:** N/A

**RECOMMENDED ACTION:** Consider in Study Session.

**Alternatives to Recommended Action:** The City could continue to process street vacations under chapter 35.79 RCW, without this ordinance.
CITY OF EDGECWOOD, WASHINGTON
ORDINANCE NO. 18-0xxx

AN ORDINANCE OF EDGECWOOD, WASHINGTON, RELATING TO VACATION OF STREETS, ALLEYS, PUBLIC PLACES OR PORTIONS THEREOF, DESCRIBING THE PETITIONING AND PUBLIC NOTICING PROCESS FOR A STREET VACATION, REQUIRING AN APPRAISAL, LISTING THE FACTORS TO BE CONSIDERED BY THE COUNCIL IN THE DECISION TO VACATE, DESCRIBING THE PROCEDURE FOR THE PUBLIC HEARING, THE CONDITIONS THAT MAY BE PLACED ON A VACATION, THE METHOD OF DETERMINING COMPENSATION FOR VACATIONS, DESCRIBING THE LIMITATIONS ASSOCIATED WITH VACATIONS OF WATERFRONT STREETS, RECORDING OF THE VACATION ORDINANCE, INCLUDING A PROCESS FOR VACATIONS OF STREETS SUBJECT TO THE NON-USER STATUTE, REPEALING SECTION 12.05.015 AND ADDING A NEW CHAPTER 12.14 TO THE EDGECWOOD MUNICIPAL CODE.

WHEREAS, the effect of the dedication to the public of street in plats is to grant an easement for purposes of public travel (RCW 58.08.050, 58.08.015, Burmeister v. Howard, 1 Wash. Terr. 207 (1867)); and

WHEREAS, owners of an interest in real estate abutting a street or alley that has been dedicated in this manner may petition the City Council to vacate the easement for public travel (chapter 35.79 RCW); and

WHEREAS, streets platted in a county between 1890 and 1904, but not opened or improved by 1904 may be subject to the “non-user statute” (Laws of 1889, Ch. 19, Sec. 32, p. 603 (1890); Laws of 1909, Ch. 90, Sec. 1, p. 189, repealed in 1937 by Laws of 1937, Ch. 1987, Sec. 52, p. 761) which, in some instances, vacates the street by operation of law; and

WHEREAS, the City desires to establish a process for street vacations to conform with state law and also to include a procedure to remove the cloud on title for streets subject to the Non-user Statute; and

WHEREAS, the City’s existing code adopts the general provisions in state law applicable to street vacations for cities (EMC Section 12.05.015), but without any procedures for implementation; and

WHEREAS, the City adopted “any and all implementing administrative rules and enforcement remedies now in effect” in Pierce County Title 12, which are no longer
necessary for the vacation of streets, alleys, public places or portions thereof upon the adoption of this code amendment; and

WHEREAS, the SEPA Responsible Official has determined that this Ordinance is categorically exempt under SEPA, WAC 197-11-800(19) as relating solely to governmental procedures and containing no substantive standards respecting use or modification of the environment; and

WHEREAS, the City Council considered this ordinance during its regular meeting of August 28, 2018; Now, Therefore,

IT IS HEREBY ORDAINED BY THE EDGEWOOD CITY COUNCIL AS FOLLOWS:

Section 1. Edgewood Municipal Code (EMC) Section 12.05.015 is hereby repealed.

Section 2. A new Chapter 12.14 is hereby added to the EMC, which shall read as follows:

CHAPTER 12.14
STREET AND ALLEY VACATIONS.

Sections:

12.14.050 Processing of Petition or Council Resolution
12.14.100 Use of Proceeds.


A. Who may file. The owners of an interest in real estate abutting upon any street, alley, public place or portion thereof created by easement may petition the City Council for a vacation of such area.
B. **Elements of Petition.** The petition shall include a description of the property to be vacated, as prepared by a licensed surveyor. In addition, the petitioners shall provide evidence that the public has an easement upon such street or alley (and that the property is not owned in fee by the City). A nonrefundable fee, as established by the City Council (in its fee resolution) must also be submitted for the purpose of defraying the administrative costs associated with the processing of the vacation petitions. This fee is also applicable to petitions under the Non-user Statute (Section 12.14.050(B)).

C. **Where to file Petition.** The petition shall be filed with the City Clerk, who shall confirm that it is signed by the owners of more than two-thirds of the property abutting upon the part of the street or alley to be vacated.

D. **Date set for hearing.** If the petition meets the requirements of Subsection 12.14.010(B) and (C) above, it shall be placed on the Council Agenda. The City Council shall adopt a Resolution fixing a time for a public hearing, when the petition will be considered by the Council in a public hearing, as described in Section 12.14.060. The date set for the public hearing shall not be more than sixty (60) days nor less than twenty (20) days after the date of the passage of the Resolution.

E. **Notice to Public of Public Hearing.**

1. **Posting of Notice.** After the Council passes the Resolution, the City Clerk shall post written notice of the public hearing on the City website and in three of the most public places in the City. In addition, this notice shall be posted in a conspicuous place on the street or alley sought to be vacated.

2. **Content of Notice.** The notice shall contain: (1) a statement that a petition has been filed to vacate the street or alley (or portion thereof) described in the notice; (2) a description of the part of the street or alley to be vacated; (3) identification of the petitioners; (4) a statement of the time and place fixed for the hearing of the petition; (5) a statement that public testimony is allowed at the hearing and that anyone objecting to the proposed vacation should attend the public hearing or submit written testimony to the City Council indicating his or her objection prior to the hearing; (6) a statement that the vacation and hearing will proceed in the manner described in this Chapter 12.14; and (7) a statement that the area proposed for vacation is public access.


A. **Council Initiated.** The City Council may propose a vacation of a street, alley, public place or portion thereof, by Council Resolution.

B. **Elements of Resolution.** The Council’s Resolution shall describe the purpose for the proposed vacation, the date fixed for the public hearing on the proposed vacation and shall state whether the abutting property owners shall be required to make payment to the City for the vacation.

1 RCW 35.79.020.
C. Fees and Compensation. The Council may initiate a vacation that does not require the abutting property owners to make payment to the City for the City’s administrative costs and/or compensation for the area vacated, where:

1. The street, alley or public place was not acquired at public expense;

2. After a review of the Transportation Element of the City’s Comprehensive Plan, the City Council determines that the street, alley or public place is not needed for public travel now or in the foreseeable future; and

3. The City’s maintenance or upkeep of the street, alley or public place is unrelated to any use of the street, alley, or public place for public travel.

D. Date of Public Hearing. The date set for hearing on the proposed vacation shall not be more than sixty (60) days nor less than twenty (20) days after the date of the passage of the Resolution.

E. Notice to Public of Public Hearing. After the Council passes the Resolution, the City Clerk shall provide notice of the public hearing as described in Section 12.05.010(D). In addition, the City Clerk shall send out mailed notice at least fifteen (15) days prior to the date fixed for the hearing. This mailed notice shall be sent to the owners or reputed owners of all lots, tracts or parcels of land or other property abutting upon any street or alley or any part thereof sought to be vacated, as these property owners are identified and their addresses are shown on the rolls of the county treasurer.

12.14.030 Appraisals. This Section applies when the Council passes a Resolution under the circumstances described in Section 12.14.010 and when the Council initiates a street vacation by Resolution under Section 12.14.020 (and does not require the payment of fees or compensation, pursuant to Section 12.14.020(C)). It does not apply to vacation petitions that have been determined to be subject to the Non-user Statute (Section 12.14.050(B) and 12.14.070(E).

A. Appraisal fee. After the City Council passes the Resolution setting the date for a public hearing, the petitioner(s) or abutting property owner(s) shall deposit sufficient funds to cover the City’s estimated cost of a full appraisal of the street, alley, public place or portion thereof to be vacated. The appraisal shall determine the value of the property after vacation (or after the removal of the public’s easement for travel, taking into account any easement that the City may require under Section 12.14.060(B)(3) as a condition of the vacation).

B. Difference in Appraisal Cost. In the event that the appraisal cost is less than the amount deposited, the compensation paid by the petitioner to the City shall be reduced by the difference between the deposit and the actual cost, or, in the alternative,
such difference shall be refunded. In the event the actual cost of the appraisal is more than the amount deposited, the compensation payable to the City by the petitioner shall be increased by the difference between the deposit and the actual appraisal cost.

C. Exchanges of Right-of-way. The City is also authorized to obtain appraisals from qualified, independent real estate appraisers for the fair market value of alternate right-of-way land proposed by petitioners to be granted or dedicated to the City in lieu of a cash payment, as described in Section 12.14.070. For appraisals of alternate right-of-way land, an additional appraisal deposit fee shall be paid for the appraisal of such property.

12.14.040 Objections – Prohibition on Further Proceedings. If, prior to the public hearing, written objections are filed with the City by fifty (50) percent of the owners of property abutting the street, alley, public place or portion thereof subject to the vacation petition or Council Resolution for vacation, the City is prohibited from proceeding with the vacation.


A. Staff Report. Prior to the public hearing, the staff shall prepare a report and recommendation on the proposed vacation to the City Council, which shall include:

1. The history of private and public use of the area sought to be vacated, including the type of use (pedestrian, vehicular, etc.) and length of time such use has occurred;

2. A description of the manner in which the area sought to be vacated was acquired (whether by dedication, public expense, etc.);

3. A physical description of the street or alley area sought to be vacated, whether the right-of-way is improved, whether there are sidewalks, curbs, gutters, etc.

4. A description of all utilities or other public services that currently utilize the area sought to be vacated, whether by easement or otherwise;

5. The staff’s recommendation on the functionality of the area sought to be vacated for public purposes;

6. Identification of any references to any planning document, such as the City’s Comprehensive Plan, the Transportation Element of the Comprehensive plan, the 6-Year Road Plan or the Capital Facilities Element of the Comprehensive Plan that mention the area sought to be vacated for any purpose;

7. The staff’s recommendation whether the area sought to be vacated will be needed in the future as part of the City’s transportation system (pedestrian,
bicycle or vehicular) or for utility access, and any other matters pertinent to future use;

8. The staff’s recommendation on the compensation to be paid to the City, considering the factors identified in Section 12.14.070; and

9. A statement that the street vacation is exempt from SEPA under WAC 197-11-800(2)(i).

10. If the area proposed to be vacated abuts a body of fresh or salt water, the procedures in Section 12.14.080 shall be followed.

B. Non-user Statute. For those petitions involving a vacation of a portion or all of a street or alley subject to 1889-90 Laws of Washington, Chapter 19, Section 32 (non-user statute), the City staff report shall include an analysis of the pertinent facts to demonstrate that the street or alley is subject to the non-user statute, as well as a description of the use(s) that has been made of the street or alley since operation of the statute. The City Attorney shall identify any annexation, adverse possession or prescriptive easement issues that may prevent the Council’s granting of the proposed street vacation.

C. No Deadline for Council Decision. Street vacations are not subject to project permit processing requirement in RCW 36.70B.080 which imposes a deadline on the issuance of a final decision. RCW 36.70B.140(1).


A. City Clerk. The City Clerk shall enter all of the written comments received on the proposed vacation into the record, and shall specifically identify any objections received from abutting property owners.

B. Council action. The City Council shall hold a public hearing on the proposed vacation and shall:

1. Consider the written recommendations of staff, abutters, the public and all testimony provided at the hearing;

2. Determine whether compensation must be paid to the City under the factors set forth in Section 12.14.070, and the amount of such compensation;

3. Decide whether any conditions should be imposed on the vacation, such as the retention of an easement or the right to exercise and grant easements with respect to the vacated land for the construction, repair and maintenance of public utilities and services; and

4. Determine whether the public interest is served by such vacation.
C. **Findings and Conclusions.** The City Council shall adopt written findings and conclusions in support of its decision to either grant the vacation, grant it with conditions or deny it.

D. **Final Decision/Ordinance.** If the City Council decides to grant a vacation petition, the Ordinance granting such vacation shall provide that it shall not become effective until the owners of property abutting upon the street or alley, or part thereof so vacated, shall compensate the City for such vacation as calculated under Section 12.14.070 or 12.14.080(C). There is no administrative appeal of the City Council’s decision.

**12.14.070 Compensation.** Ordinances vacating any street, alley, public place or portion thereof shall not be adopted by the City Council until the Council determines the amount of compensation to be paid to the City based on the factors set forth below:

A. If the street, alley, public place or portion thereof has **not** been part of a dedicated public right-of-way for twenty-five years or more, or if the subject property to be vacated was **not** acquired at public expense, the owners of property abutting the street shall compensate the City in an amount that does not exceed one-half of the appraised value of the street.

B. If the street, alley, public place or portion thereof has been part of a dedicated public right-of-way for twenty-five years or more, or if the subject property to be vacated was acquired at public expense, the City may require the owners of the property abutting the street to compensate the City in an amount that does not exceed the full appraised value of the area vacated.

C. The full fair market value, as shown on the appraisal, shall be paid upon vacation of any streets, alleys or public places abutting upon bodies of water, as provided in Section 12.14.080.

D. **In-Lieu Transfers of Property.** Conveyances of other property acceptable to the City may be made in lieu of the payment required by this Section, whether required to mitigate adverse impacts of the vacation or otherwise. When such a transfer is proposed for street purposes, the value of the property (as determined in subsections A, B or C above) shall be credited to the required payment. When the value of the in-lieu parcel is less than the payment required by subsection A, B or C of this Section, the petition shall pay the difference to the City. When the value of the in-lieu parcel exceeds the payment required by subsections A, B or C of this Section, the City shall pay the difference to the petitioner. In addition, the petitioner shall be responsible for all costs associated with this transfer, in the same manner as a property purchase, including but not limited to, title insurance, attorney review of the title, hazardous materials/waste testing, etc.
E. **Vacations of Streets subject to 1889-90 Laws of Washington, Chapter 19, Section 32 (non-user statute).** The City Council’s adoption of a vacation ordinance for those streets and alleys subject to the 1889-1890 Laws of Washington, Chapter 19, Section 32 (non-user statute) shall not require compensation by the abutting owners. However, the property owners initiating such vacation shall pay the City’s administrative fees relating to research and processing of the vacation request.

12.14.080 **Vacation of waterfront streets.**

A. The City shall not vacate any street or alley if any portion of the street or alley abuts a body of fresh or salt water unless:

1. The vacation is sought to enable the City to acquire the property for port purposes, beach or water access purposes, boat moorage or launching sites, park, public view, recreation, or educational purposes, or other public uses;

2. The City Council adopts an Ordinance which declares that the street or alley is not presently being used as a street or alley and that the street or alley is not suitable for any of the following purposes: Port, beach or water access, boat moorage, launching sites, park, public view, recreation or education; or

3. The vacation is sought to enable the City to implement a plan, adopted by resolution or ordinance, that provides a comparable or improved public access to the same shoreline area to which the streets or alleys sought to be vacated abut, had the properties included in the plan not been vacated.

B. Before adopting an Ordinance vacating a street or alley under subsection (A)(2) of this Section, the City shall:

1. Compile an inventory of all rights-of-way within the City that abut the same body of water that is abutted by the street or alley sought to be vacated;

2. Conduct a study to determine if the street or alley to be vacated is suitable for use by the City for any of the following purposes: Port, boat moorage, launching sites, beach or water access, park, public view, recreation or education;

3. Notice the public hearing as required by Section 12.14.010(E), and hold a public hearing on the proposed vacation in the manner required by Section 12.14.060; and

4. Make a finding that the street or alley sought to be vacated is not suitable for any of the purposes listed under B(2) of this subsection, and that the vacation is in the public interest.
C. No vacation shall be effective until the fair market value has been paid for the street or alley or portion thereof to be vacated.

12.14.090 Recording. Posting and mailing of the notices described in this Chapter shall be the responsibility of the City Clerk. As required by RCW 35.79.030, a certified copy of the Ordinance vacating the street, alley, public place or portion thereof shall be recorded by the City Clerk with the Office of the Pierce County Records and Elections (or County Auditor), after all fees and the compensation for the value of the property, as determined by the Council in the vacation Ordinance, have been paid to the City.

12.14.100 Use of Proceeds.

A. Non-waterfront streets and alleys. One-half of the revenue received by the City as compensation for the area vacated must be dedicated to the acquisition, improvement, development and related maintenance of public open space or transportation capital improvements in the City.

B. Waterfront streets and alleys. Monies received from the vacation may be used by the City only for acquiring additional beach or water access, acquiring additional public view sites to a body of water, or acquiring additional moorage or launching sites.

Section 3. Severability. If any section, sentence, clause or phrase of this Ordinance should be held to be unconstitutional or unlawful by a court of competent jurisdiction, such invalidity or unconstitutionality shall not affect the validity or constitutionality of any other section, sentence, clause or phrase of this Ordinance.

Section 4. Publication. This Ordinance shall be published by an approved summary consisting of the title.

Section 5. Effective Date. This Ordinance shall take effect and be in full force and effect five days after publication, as provided by law.

PASSED by the City Council of Edgewood this 28th day of August, 2018.

Mayor

AUTHENTICATED:

City Clerk.
APPROVED AS TO FORM:
Office of the City Attorney

Carol Morris, City Attorney

PUBLISHED:
EFFECTIVE DATE:
### Subject: City Credit Card Policy Update

**Agenda Item #:** 2G  
**For Agenda of:** August 21, 2018  
**Prepared by:** Stephanie Goff

#### Attachments (List):  
- ☒ Resolution No. 18-0xxx  
- ☒ Exhibit A - City Credit Card Policy Document

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<td>Public Works, Jeremy Metzler</td>
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**Fiscal Note/Consideration:** N/A

### Summary Statement:  
Amendment to the City Credit Card Policy previously adopted by Agenda Bill 15-024, specifically improvements identifying use, controls of use, and adding an annual disclosure to the City Council to ensure a more transparent oversight by the City’s legislative branch.

### Council Committee Review and Recommendation:  
N/A

### Recommended Action:  
MOTION to adopt Resolution 18-xxx, amending the existing purchase card (State Sponsored Visa) policy to improve internal controls, acknowledge the increasing the utilization of “online” purchase by municipal governments, and to provide increased transparency to the city council and public.

### Alternatives to Recommended Action:  
1) Do not adopt  
2) Forward to Study Session for further review
RESOLUTION NO. 18-XXX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, AMENDING THE EXISTING PURCHASE CARD (STATE SPONSORED VISA) POLICY TO IMPROVE INTERNAL CONTROLS, ACKNOWLEDGE THE INCREASING UTILIZATION OF “ON-LINE” PURCHASES BY MUNICIPAL GOVERNMENTS, AND TO PROVIDE INCREASED TRANSPARENCY TO THE CITY COUNCIL AND PUBLIC

WHEREAS, the City of Edgewood has been utilizing the Washington State Enterprise Services Purchase Card Program, that operates as a governmental credit card system since 2015; and

WHEREAS, the Purchase Card Program provides State level operational efficiency and security that protects all governments participating, including the City of Edgewood, the highest level of credit card purchasing protection as well as a small source of shared program revenue; and

WHEREAS, municipal government use of credit card purchase has been a usual and customary form of payment for government travel, training, and supplies that has expanded greatly in recent years with the proliferation of “on-line” internet purchases for goods and services; and

WHEREAS, the Mayor has recently reviewed the City of Edgewood Internal Accounting and Administrative Control Policy for Purchase Card Use and recommended several improvements more specifically identifying use, controls of use, and adding an annual disclosure to the City Council to ensure a more transparent oversight by the City’s legislative branch;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, HEREBY RESOLVES AS FOLLOWS:

Section 1. Move to adopt the amended Purchase Card Policy hereto attached as Exhibit A.

Section 2. Effective Date. This resolution will take effect immediately upon passage by the City Council.

ADOPTED this 14th day of August, 2018

______________________________
Daryl Eidinger, Mayor

ATTEST:

______________________________
Rachel Pitzel, City Clerk
Exhibit A
The implementation of a City credit card program is recognized by the State of Washington as usual and customary for official government purchases as provided in RCW 43.09.2855. The State of Washington WSCA-NASPO Program, administered by the State Department of Enterprise Services, contracts with US Bank to provide local governments a Purchase Card program. The US Bank Visa Card is this current product and operates much as a commercial credit card with the exception that no debt balance may accrue as the outstanding balance must be paid monthly in total.

The City of Edgewood City Council recognizes the use of credit cards is a customary and economical business practice to improve cash management, reduce costs, and increase efficiency and authorized the Mayor to enroll the City in the WSCA-NASPO Purchase Card Program in the Regular Council Session of April 14, 2015 (AB15-0015).

The City of Edgewood also recognizes the use of credit cards to be an appropriate and useful means of making payment for a variety of types of purchases; some examples may include travel expenses, departmental supplies, subscriptions, on-line purchases and recurring vendor
payments (where appropriate).

The Mayor shall implement and administer the following procedures and processes related to the use of credit cards by City officials and employees.

2.0 Distribution

City credit cards may will be directly issued to those all non-probationary City officials and of Edgewood employees, who, in the opinion of the Mayor, have job responsibilities, which could be more easily facilitated by the use of a credit card and the credit card use would benefit the City. The exception is the Finance Director/Card Administrator, who is not eligible to receive a city credit card due to the access given in order to administer the credit card program.

3.0 Application

Those employees deemed eligible to be issued a City of Edgewood US Bank VISA Card shall make application for a card as follows.

1. Employee completes the City of Edgewood US Bank VISA Card Application Form (see Exhibit A) and signs the City of Edgewood Credit Card User Agreement (see Exhibit B).

2. Mayor approves the application and forwards it along with the signed user agreement to the City Credit Card Administrator.

3. The Administrator will process the application with the issuing bank, and setup training online for the employee.

4. Once online training is completed by the employee, the card is received and given to the employee to activate and retain, or return to the Administrator for safekeeping until the card is needed by the employee, they will receive their new, activated procurement card from the Administrator.

4.0 Authorization & Control

Issuing Bank

US Bank is the issuer of the City of Edgewood VISA Credit Card. They provide an on-line portal at: https://access.usbank.com/cpsApp1/index.jsp in which authorized users may review their credit card transactions within 2 days after the purchase is made. City Credit Card holders will also use this portal to print and reconcile their monthly statements. (Review Exhibit C for detailed how-to instructions)

Finance Director

The Finance Director will be the responsible authority acting as the City Credit Card Administrator who will set up and maintain each credit card account(s) with the banking facility.
The Finance Director shall be responsible to perform the audit required under RCW 42.24.080.1.

City Credit Card Administrator
The City Credit Card Administrator will be responsible for the overall administration of the procurement card program by reviewing, reporting and coordinating all aspects of the program. This administrator will act as the liaison between US Bank and the individual city credit cardholders.

Employee (Cardholder)
Before being issued a City of Edgewood US Bank VISA Credit Card each employee will be required to sign a City of Edgewood Credit Card User Agreement (see Exhibit B) acknowledging that they have read and understand this policy, that they understand violation of the policy will subject them to disciplinary action, and that in the event they make any unauthorized charges they expressly authorize the City to deduct the same from any wages or other sums due or to become due to the employee from the City.

State and Local Compliance
The Use of Purchase Cards shall fully comply with all applicable State and Local requirements governing purchase of goods and services, specifically including without limitation the City’s adopted Purchasing Policy.

Annual Control & Disclosure
The Finance Director will conduct an annual physical card inventory test to verify all city issued cards have been accounted for.

The Finance Director will also prepare an annual disclosure for city council that includes a review of credit limits, past year spending pattern, number of unauthorized expenditures (i.e. fraudulent charges), number of employee errors reimbursed (cards mistakenly used for personal purchases), any losses to the City, amount of PCard Revenue (rebates), and results of the physical inventory test.

5.0

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1. This statute requires that every credit card invoice presented to the City by an employee for the furnishing of materials, rendering of services or performing labor, or for any other contractual purpose, shall be audited before payment. The invoice shall be submitted to the City Credit Card Administrator and allow the Finance Director to authenticate and certify that the materials have been furnished, the services rendered, the labor performed as described, or that any advance payment is due and payable pursuant to a contract, and that the invoice represents a just, due and unpaid obligation against the City. No credit card invoice will be paid without such authentication and certification.
Approved Uses for Credit Card Purchases

The use of the City of Edgewood US Bank Visa Credit Cards is a facilitating process for purchases pursuant to the City of Edgewood Purchasing and Personnel Policies and the City of Edgewood City Council Rules. All credit card purchases shall only be made for budgeted expenditures authorized by the City Council at the time of the purchase (current year budget).

Examples of allowable purchases may include advance payment of airline fares, lodging, registration fees, and tuition, conferences, on-line training, internet purchases, emergency purchases in the field, and specialized office/field equipment and supplies not ordered on a schedule. Authorized users may use their card for pre-approved one-time or recurring purchases from vendors. The use of the card for these purchases will be for timeliness and/or online access to goods and services not available through existing purchase policy processes (warrants checks). These credit cards may be used anywhere that VISA is accepted.

Authorized users may use the credit card to purchase meals while in travel status. Those meals must fall within the per diem—normal and customary rates set within the Personnel Manual Travel Expense and Reimbursement Policy for City Staff or the Council Rules for Councilmembers. If less than three meals a day are to be paid, the user must limit the meal to the applicable rate. All meals charged must have the original detailed receipt showing what was specifically purchased. Receipts that only have the total paid for meals are not acceptable. If the receipt does not show the detail or if the meal is over the normal and customary rate, the user will be responsible to reimburse the City for this purchase.

When considering use of the city credit card:

1. Can I make the purchase through the existing warrant check issue process.
2. Identify goods and services required to perform job-related task.
3. Determine if purchase is within your credit card limits.
4. Ensure that the items are not on the disallowed charges list (following page).
5. Obtain pricing and in-stock availability and only order items that are immediately available.
6. Ensure that the vendor immediately authorizes the purchase with VISA and provides you a detailed copy of the credit card purchase receipt.
7. Retain all receipts, packing lists and backup authorizing documents and forward attach to your the Department Contact for reconciliation of the monthly pcard expense statement form (shared/forms/employee forms/purchase card expenditure report template.xls).

It is required that all credit card receipts and/or other documents identifying the credit card expenditures be in complete detail. These must be delivered timely. Your pcard expense form(s) is due by the 5th of each month to the Credit Card Administrator or designee for review and
preparation for the month vendor payment cycle.

Keep in mind that when involved in any aspect of purchasing, you are acting as an agent of the City of Edgewood. Therefore, you are responsible to act in the best interest of the City. Your actions must NOT show, or appear to show, personal favoritism to a vendor at the expense of the City.

6.0 Disallowed Charges

A. Types of Disallowed Charges. The following uses are not authorized credit card purchases:

- Capital Equipment (unless approved by the Mayor)
- Personal Items and Services
- Cash Advances of any kind
- Alcoholic Beverages
- Money Orders/Travelers Checks/Gift Cards
- Charges made without pre-approval

B. Procedure to be used when Disallowed Charges Have Been Incurred.

Any charges against the credit card that are not properly identified as required by this Policy on the expense voucher/invoice, or not allowed following the audit of the invoice by the Finance Director, shall be paid by the official or employee by check, U.S. currency or salary deduction. If, for any reason, disallowed charges are not repaid before the charge card billing is due and payable, the City has a right to withhold any and all funds payable or to become payable to the official or employee, in an amount up to the amount of the disallowed charges and interest, at the same rate as charged by the credit card company.

Any official or employee who has been issued a charge card by the City shall not use the card if any disallowed charges are outstanding and shall surrender the card upon demand by the Finance Director. The City shall have unlimited authority, as provided in RCW 42.24.115(3), to revoke the use of any issued charge card, and once notice of this revocation has been delivered to the charge card company, the City shall not be liable for any costs.

No employee shall use the City-issued credit card for non-City business or personal use. Any employee using a City-issued credit card for unauthorized non-City business or personal use may be subject to disciplinary action and shall be billed by the City for all such unauthorized charges. Disallowed charges, or charges not properly identified, will be paid by the employee before the charge card billing is due. If a situation arises where an employee is responsible for charges and the timing of the payment may result in interest and/or late fees, the Mayor must be informed immediately. These charges are considered liens against any amount owed by the City to the employee. The City may withhold any amounts from funds owed to the employee in default.
Any employee with a demonstrated history of charge card defaults may be barred from using any City credit cards by the Mayor as appropriate.

### 7.0 Credit Limits

There are two types of transaction limits:

- **Dollars per Transaction** = $1,500
- **Total Transaction Dollars per Month** = $2,500

Credit limits are set to match field needs and are generally set at $1500 for employees and $2500 for Directors and Supervisors. Card limits can be temporarily raised for travel or a specific authorized purchase.

If an increase or decrease to these transaction limits is deemed necessary by the Mayor, the request must be submitted in writing to the City Credit Card Administrator. Please specify within this increase request whether this is a temporary or permanent request.

There also may be limitations on acceptable merchant category codes (MCC). In other words, some vendors may be disallowed and thus will cause a decline of any attempted purchase with them (allowable or not). If after adhering to the proper guidelines and limits stated above, you feel that your purchase has been mistakenly declined, contact your City Credit Card Administrator for assistance.

### 8.0 Receipt of Goods & Services

The cardholder is responsible for ensuring the receipt of the goods and services as ordered and any follow-up with the vendor to resolve any delivery problems, discrepancies or damaged goods. Should any item(s) need to be returned to the vendor, the cardholder will follow the vendors return policy and also be responsible to ensure that proper credit is posted for said return item(s). In most cases, returns and errors can be resolved directly between the cardholder and the vendor.

If for any reason the cardholder is unable to reach agreement with the vendor, the cardholder must contact US Bank and explain the dispute and the reason behind it. In addition to contacting US Bank, the reporting cardholder will also contact the City Credit Card Administrator and apprise them of the situation. We will follow US Bank procedures in relation to the dispute and its process.

### 9.0 Payment of Bills

Monthly Billing statements will be retrieved on the first business day of the month by each cardholder via the on-line portal provided. Each cardholder will sign the statement complete a pcard expense form and attach appropriate receipts and proper account coding, for the total amount of the
monthly billing and submit to the City Credit Card Administrator or designee by the 5th of the month following the charges.

The City Credit Card Administrator will be responsible for reconciling the complete combined City card statement each month. The City of Edgewood will not pay interest and/or penalties on any credit card. The City of Edgewood is responsible for the VISA card payment and liability and it will not affect any City cardholder’s personal credit in any way.

10.0 Card Security

Your City of Edgewood VISA Card should always be treated with great care and should be kept in a secured location. You are the only person authorized to use the card and it should not be lent to another person.

Be sure not to write the credit card number(s) down in any location and do not allow any vendor to write down your credit card number.

It is the responsibility of the cardholder to immediately report a lost or stolen City credit card. The City of Edgewood is liable for all transactions until the card is reported lost or stolen, and only to the extent expressly required by law. A cardholder must report a lost or stolen credit card by phone directly to US Bank Customer Service at 1-800-344-5696 and also to the City Credit Card Administrator. Verbal reports of lost or stolen credit cards must be followed up in writing to the City Credit Card Administrator. A replacement card will be sent within 10 days after report is filed.

11.0 Renewal of an Existing Credit Card

A renewal credit card will be sent automatically to the City Credit Card Administrator by the issuing bank approximately 30 days prior to the expiration date of the card. This renewed card will in turn be forwarded to the cardholder.

12.0 Extended Absence

If you will be absent from the City for an extended period, please seek assistance from the City Credit Card Administrator to determine the best options to cover your procurement responsibilities.

13.0 Audits & Enforcement

To ensure the continued success of the City Credit Card Program, as well as adherence to the policies as outlined, all individual credit card accounts will be open to internal audit requirements.

Statement Reconciliations not received by due date or without complete receipt detail – Your credit card limits may be set to ZERO until reconciliation is received. For continual offenders, your credit card may be cancelled at the discretion of the Mayor. See also, Section 6 on Disallowed Charges.

Personal Use – Personal use of a city credit card will NOT be tolerated and will result in:
Disciplinary measures that may include termination and/or legal action
• Permanent revocation of the card
• Direct payroll deductions for any unauthorized or personal charges made on the city credit card

**Termination** – You must return your credit card to the City Credit Card Administrator when you leave/terminate your employment with the City of Edgewood

### 14.0 Resources

**Who to Call: City of Edgewood**

- **Mayor** – name here
  - Phone: 253-952-3299
  - Email: nameMayor@cityofedgewood.org

- **City Credit Card Administrator** – Dave Gray
  - Phone: 253-952-3299
  - Email: dave@cityofedgewood.org

**VISA – US Bank**

General account inquiries including:
- Statements, transactions, and balances
- Lost or stolen cards
- PINs
- Address changes

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<tr>
<td>1-800-344-5696 or 701-461-2010</td>
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<td><strong>Password Resets &amp; General Navigation</strong></td>
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<td>1-877-887-9260 or 701-461-2042</td>
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**Cardholders needing further Access Online support should contact their Program Administrator**

Documents

- **City Credit Card Application** – see Exhibit A City Credit Card
- **User Agreement** – see Exhibit B
- **US Bank Web Portal How-To Instructions** – see Exhibit C
City Credit Card Application - Exhibit A

CITY OF EDGEWOOD
PURCHASE CARD APPLICATION

Please forward application to: City of Edgewood- Credit Card Administrator

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<th>EMPLOYEE INFORMATION</th>
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<tbody>
<tr>
<td>First Name</td>
</tr>
<tr>
<td>Business Address</td>
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<td>City</td>
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CITY OF EDGEWOOD INFORMATION

City of Edgewood
Company Name

2224 104th Avenue East Edgewood, WA 98372-1513

APPROVAL INFORMATION

Monthly Credit Limit
Single Transaction Limit

EMPLOYEE / APPROVAL SIGNATURE

Printed Applicant Name
Signature of Applicant / Date

Printed Mayor Name
Signature of Mayor
CITY OF EDGEWOOD CREDIT CARD USER AGREEMENT

Your signature below verifies that you have read and understand the City of Edgewood Credit Card Program guidelines listed below and agree to comply with them.

1. I understand the City Credit Card is intended to facilitate the purchase of business-related goods and services for the conduct of City business and is not for my personal use.

2. I understand that my card may be revoked at any time based on change of assignment or location and that use of this card is not an entitlement nor reflective of title or position.

3. I understand that if I am issued a card with my name specifically, I am the only person authorized to use the card and I am responsible for all charges made against the card.

4. I understand that improper use of the card can be considered misappropriation of City funds, which may result in disciplinary action, up to and including termination.

5. I understand that all charges are billed directly to and paid directly by the City of Edgewood and any personal charges on the card could be considered misappropriation of funds since VISA/US Bank cannot accept any payment from me directly.

6. I understand that I will be required to provide detailed receipts, to reconcile monthly statements and to comply with internal control procedures designed to protect the City assets. This may include being asked to produce the credit card to verify its existence and providing assistance in an audit review of its use.

7. I understand that I am responsible for resolving any discrepancies that may occur by contacting the vendor and/or US Bank directly.

8. I will safeguard use of the issued credit card and use appropriate security whenever and wherever I use the card. If my card is lost or stolen, I agree to immediately notify VISA as well as the City Credit Card Administrator.

9. I understand that the VISA card is the property of the City of Edgewood and it must be surrendered upon termination of employment or demand of surrender by the City Credit Card Administrator and/or the Mayor. At that point, no further use of the account will be authorized.

I hereby acknowledge receipt of the City Credit Card (ending in last 4 digits) _________

As a Corporate Cardholder, I agree to comply with the terms and conditions of the agreement, including the City of Edgewood’s City Credit Card Program.

I HAVE READ AND UNDERSTAND THE ABOVE CONDITIONS.

Card Holder: __________________________ Date: __________________

Signature: __________________________
US Bank Web Portal How-To Instructions - Exhibit C

- Log onto: [https://access.usbank.com/cpsApp1/index.jsp](https://access.usbank.com/cpsApp1/index.jsp)
- Type in where indicated the following Organization
  - Short Name = _______________________
  - User ID = specific to the user
  - Password = specific to the user

- To Review Transactions:
  - Choose Transaction Management on the left side of screen
  - Choose Transaction Listing
  - Enter in Last Name of Account you are reviewing

- To Review/Print Statements:
  - Choose Account Information on the left side of screen
  - Choose Cardholder Account Statement
  - View
**SUBJECT**: Meridian Avenue Lighting Takeover Agreement

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<td>August 21, 2018</td>
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<tr>
<td>Prepared by:</td>
<td>Jeremy Metzler</td>
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**ATTACHMENTS (list):**
- ☒ Resolution 18-0xxx
- ☒ Cover Letter from Puget Sound Energy
- ☒ Master Service Agreement
- ☒ Custom Street Lighting Order, Bill of Sale, and Attachments

**Approval of Materials:**

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<td>Amount Budgeted:</td>
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**Fiscal Note/Consideration:**
As proposed herein, the City would be required to pay Puget Sound Energy (PSE) $29,217.70 for the initial transfer of the City’s existing street lighting fixtures along Meridian to PSE. This cost includes replacing a pole that was damaged and removed due to a traffic accident last fall, and converting existing high-pressure sodium bulbs to LED. After the transfer, PSE’s annual charge to the City is expected to be $12,531.84 using current utility rates.

The City’s general fund has sufficient revenues to pay the $29,217.70, and current revenues are sufficient to pay PSE’s annual charge of $12,531.84 ($1,500 annual increase).

**SUMMARY STATEMENT:**
Currently the City is responsible for any and all costs related to the street lighting installed along Meridian Avenue (SR-161) as a part of the WSDOT widening project, including replacement of damaged and defective components. We currently do not have any funds allocated for maintenance or replacement of these fixtures, and annual energy charges currently exceed $11,000 per year.

Staff has been in communication with PSE over the last several months regarding operations and maintenance costs for the street lighting throughout the City. Through these conversations, Staff learned that PSE is willing to take over operation and maintenance responsibility for the lights along Meridian Avenue (SR-161). In order to assume said responsibility, PSE has provided the attached documents for review and execution.

**COUNCIL COMMITTEE REVIEW AND RECOMMENDATION:** N/A

**RECOMMENDED ACTION:** Direct Staff to bring forward a resolution authorizing the mayor to execute the attached agreement and order at the next Regular Council Meeting

**ALTERNATIVES TO RECOMMENDED ACTION:**
1) Forward to Study Session for further review
RESOLUTION NO. 18-0XXX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF EDGEWOOD, PIERCE COUNTY, WASHINGTON AUTHORIZING THE MAYOR TO EXECUTE A CONTRACT WITH PUGET SOUND ENERGY FOR THE SALE OF 53 EXISTING LIGHT STANDARDS ALONG MERIDIAN TO PSE IN THE AMOUNT OF $29,217.70 WITH A BILL OF SALE, INCLUDING REPLACEMENT OF 1 DAMAGED LIGHT STANDARD, AND FOR PSE TO PROVIDE LIGHTING SERVICES TO THE CITY.

WHEREAS, Puget Sound Energy (PSE) is willing to purchase the City’s existing street lighting equipment installed along Meridian Avenue for $29,217.70; and

WHEREAS, PSE’s purchase of the City’s existing street lighting equipment means that the City is not required to operate and maintain it, a cost that is not currently included in the City’s general fund; and

WHEREAS, PSE and the City have negotiated a contract for the sale of the street lighting equipment, as well as PSE’s provision of lighting services to the City for an annual charges as set forth in the contract;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, DOES RESOLVE AS FOLLOWS:

Section 1. The Mayor is hereby authorized to execute the Master Lighting Services Agreement and the Bill of Sale with Puget Sound Energy, which are attached hereto and incorporated herein by this reference.

PASSED BY THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, AT A REGULAR MEETING THEREOF, THIS 28TH DAY OF AUGUST, 2018

____________________________
Daryl Eidinger, Mayor

ATTEST:

____________________________
Rachel Pitzel, City Clerk
August 15th, 2018

City of Edgewood
Jeremy Metzler
2224 104th Ave E
Edgewood, WA  98372

Meridian Ave S street lighting takeover paperwork

Mr. Metzler

Attached is the requested documentation to have PSE take over and assume ownership and responsibility for the street lighting system on Meridian Ave. There are 4 attachments in total:

1. Master Service Agreement which is the umbrella terms and conditions for PSE street lighting services
2. Custom Street Lighting Order which explains the value of the system and monthly flat costs
3. Bill of Sale to transfer the goods from the city to PSE
4. Appendix B which lists the lights and “as built” construction documents

There is a total cost of $29,217.70 for PSE, as a part of this takeover process, to change out the existing 53 roadway cobraheads to LED fixtures and to replace the damaged pedestrian pole that was hit by a vehicle at the Safeway entrance.

Once we have these documents signed and returned to us, we will begin the takeover process, to include: Tag, inventory, and GPS street lights; Engineer the street light system for mapping, Install bypasses for the existing 4 meters in the current system, and get the LED cobraheads and replacement pole ordered. PSE will bill the city post construction for these costs ($29,217.70)

If you have any questions, please call me at 425-456-2701.

Sincerely,

Lars Larson
Account Manager, Lighting Services from PSE
MASTER LIGHTING SERVICES AGREEMENT  
NO. 0002  

This Master Lighting Services Agreement (this “Agreement”) is made effective as of August 15, 2018 (the “Effective Date”), by and between Puget Sound Energy, Inc. (“PSE”), and City of Edgewood (“Customer”) (each a “Party,” and collectively the “Parties”).

RECITALS

A. PSE is in the business of, among other things, providing custom lighting services (“Lighting Services”) under and pursuant to Schedule 51, Schedule 52, Schedule 53 and/or any other applicable schedule included in PSE’s Electric Tariff G (each, a “Schedule”) on file with the Washington Utilities and Transportation Commission (“WUTC”).

B. The Customer desires PSE to provide certain Lighting Services to the Customer as set forth in each Custom Street Lighting Order, substantially in the form attached hereto as Exhibit A to this Agreement, entered into by the Parties from time to time during the term of this Agreement that references this Agreement and is signed by both Parties (each, an “Order”).

C. PSE is willing to provide such Lighting Services to the Customer subject to and in accordance with the terms and conditions set forth in this Agreement, in the applicable Order and in the associated Schedule.

AGREEMENT

The Parties, therefore, agree as follows:

Section 1. Lighting Services

1.1 Products and Services. PSE will provide to the Customer the Lighting Services set forth in each Order and the most current version of the Schedule applicable to the Lighting Services covered by such Order (the “Services”). Each Order will describe and identify the Lighting Services and the associated Schedule applicable to the Lighting Services covered by the Order and set forth all materials, information, property and other items provided for, used or incorporated into the Services (collectively, the “Facilities”). Each such Order and associated Schedule are hereby incorporated into and made a part of this Agreement by this reference.

1.2 Performance of Services. Subject to the terms and conditions of this Agreement and any applicable tariffs on file with the WUTC, including the applicable Schedule(s), PSE shall use reasonable efforts to perform the Services. PSE shall perform the Services in accordance with the schedule provided in the applicable Order or associated Schedule with reasonable diligence in the ordinary course of its business and in light of any operational issues as to the remainder of its utility systems that may be influenced by the Services.

1.3 Adjustments to the Services. PSE shall notify the Customer in writing of any reasonably anticipated adjustments to the Services that result from delays in PSE’s performance of the Services caused by the Customer (or its agents, servants, employees, contractors, subcontractors, or representatives), or any conditions beyond PSE’s control. The Parties
acknowledge that additional requirements not contemplated by the Parties may arise during the performance of the Services. In the event such additional requirements arise, the Parties shall provide written notice thereof and shall use reasonable efforts to promptly respond to such requirements.

1.4 Performance by Customer. The Customer shall pay PSE for the Services in accordance with the applicable Order and the associated Schedule. In the event the Customer is unable to perform any of its obligations under this Agreement to PSE’s satisfaction, the Parties shall use reasonable efforts to adjust the Services to allow additional time for the Customer to perform such obligations. If the Parties cannot reasonably agree upon such a schedule adjustment, PSE may, at its option, terminate this Agreement by giving written notice to the Customer, and the Customer shall promptly pay PSE the amounts payable to PSE in connection with such termination under Section 1.5.

1.5 Term and Termination. The term of this Agreement will commence on the Effective Date and will end thirty (30) days after the expiration or termination of all Orders entered into by the Parties under this Agreement, unless earlier terminated by mutual written agreement of the Parties. Service under each Order is effective for as long as such Order remains in effect, as specified in the Order and/or in the then-current version of the Schedule applicable to the Lighting Services covered by the Order. The effect of termination of any given Order, including the Parties’ respective responsibilities for the costs of removal or salvage of any Facilities associated with the Services, will be as set forth in the Order or associated Schedule.

Section 2. Permits.

The Customer shall be solely responsible for any costs related to the acquisition of any and all operating rights, permits, licenses, certificates, inspections, reviews, impact statements, determinations, authorizations, exemptions or any other form of review or approval necessary or convenient for the Services (collectively, “Permits”). The Permits shall be on such terms and conditions as PSE shall, in its sole discretion, determine to be appropriate to its needs. PSE shall not be obligated to commence construction for the Services, or otherwise in any way change, limit, curtail, impair or otherwise affect the normal and reliable operation of the Facilities, unless and until PSE is in possession of all Permits necessary for the Services and all rights of appeal with respect to the Permits shall have been exhausted. The Customer shall be responsible for performance of and any costs associated with any mitigation required by the Permits.

Section 3. Easements.

The Customer shall be solely responsible for any costs related to the acquisition of any and all easements, right-of-ways, or any other property rights necessary or convenient for the Services (collectively, “Easements”). The Easements shall be on such terms and conditions as PSE shall, in its sole discretion, determine to be appropriate to its needs. PSE shall not be obligated to commence performance of the Services, or otherwise in any way change, limit, curtail, impair or otherwise affect the normal and reliable operation of the Facilities, unless and until PSE is in possession of all Easements necessary for the Services and all rights of appeal with respect to the Easements shall have been exhausted. The Customer shall be responsible for performance of and any costs associated with any mitigation required by the Easements.
Section 4. Construction Services

4.1 Construction Services. The Customer shall be solely responsible for, or shall reimburse PSE for, all costs and expenses for any construction or installation services necessary to perform the Services as set forth in each Order (“Construction Services”), which may include any restoration costs and/or the removal of excavated materials; costs and expenses to relocate or rebury Facilities if the area is not within grade; costs and expenses for trenching and backfilling of pole holes; costs and expenses associated with any unforeseen soil or pavement conditions that would increase the cost of service; and all costs and expenses associated with any other unforeseen Construction Services that would increase the cost of service. The costs for the Construction Services (“Construction Costs”) shall include, without limitation, any and all direct and indirect costs incurred by PSE in connection with the costs enumerated in this Section, including, but not limited to, labor, personnel, supplies, materials, overheads, contractors, consultants, attorneys and other professionals, administration and general expenses and taxes.

4.2 Payment. The Customer shall pay PSE for the Construction Costs in accordance with the applicable Order.

Section 5. Transfer of Assets

If the Customer and PSE have agreed that, as part of any Order, the Customer shall transfer certain assets to PSE, Customer shall, contemporaneously with the execution of the applicable Order, duly execute and deliver to PSE a Bill of Sale in form and content as mutually agreed upon between the Parties and, pursuant to the terms of the Bill of Sale, sell, transfer, assign, convey and deliver to PSE all right, title and interest in the assets set forth or otherwise described in the Bill of Sale.

Section 6. Disclaimers and Limitation of Liability

6.1 Disclaimer. Without limiting any express obligations PSE has under this Agreement or under the applicable Order or associated Schedule (or other applicable tariff on file with the WUTC), PSE makes no representations or warranties of any kind, express or implied, with respect to the Services or other items or services provided under this Agreement including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose or implied warranty arising out of course of performance, course of dealing or usage of trade.

6.2 Limitation of Liability. In no event shall either party be liable, whether in contract, warranty, tort or otherwise, to any other party or to any other person for any indirect, incidental, special or consequential damages arising out of the performance or nonperformance of the Services or this Agreement, provided that the foregoing does not limit any indemnification obligations owed by either party in connection with this Agreement, and will not limit PSE liability to any third party arising out of the negligent acts of PSE, its employees, agents, officers, successors or assigns.

Section 7. Miscellaneous

7.1 Tariffs Control. This Agreement is in all respects subject to all applicable tariffs of PSE now or hereafter in effect and on file with the WUTC, including the applicable
Schedule(s). In the event of any conflict or inconsistency between any provision of this Agreement and any such tariff, the terms of the tariff shall govern and control.

7.2 **Survival.** Sections 1.5, 4.2, 5, 6 and 7 shall survive any expiration or termination of this Agreement. Except as otherwise provided herein, following expiration or termination of this Agreement neither Party shall have any further obligations arising under this Agreement.

7.3 **Waiver.** The failure of any Party to enforce or insist upon strict performance of any provision of this Agreement shall not be construed to be a waiver or relinquishment of any such provision.

7.4 **Entire Agreement.** This Agreement, including any exhibits hereto, sets forth the complete and integrated agreement of the Parties. This Agreement cannot be amended or changed except by written instrument signed by both Parties.

7.5 **Force Majeure.** In the event that either Party is prevented or delayed in the performance of any of its obligations under this Agreement by reason beyond its reasonable control (a “Force Majeure Event”), then that Party’s performance shall be excused during the Force Majeure Event. Force Majeure Events shall include, without limitation, war; civil disturbance; storm, flood, earthquake or other Act of God; storm, earthquake or other condition which necessitates the mobilization of the personnel of a Party or its contractors to restore utility service to customers; laws, regulations, rules or orders of any governmental agency; sabotage; strikes or similar labor disputes involving personnel of a Party, its contractors or a third party; or any failure or delay in the performance by the other Party, or a third party who is not an employee, agent or contractor of the Party claiming a Force Majeure Event, in connection with the Services or this Agreement. Upon removal or termination of the Force Majeure Event, the Party claiming a Force Majeure Event shall promptly perform the affected obligation in an orderly and expedited manner under this Agreement or procure a substitute for such obligation. The Parties shall use all commercially reasonable efforts to eliminate or minimize any delay cause by a Force Majeure Event.

7.6 **Enforceability.** The invalidity or unenforceability of any provision of this Agreement shall not affect the other provisions hereof, and this Agreement shall be construed in all respects as if such invalid or unenforceable provisions were omitted.

7.7 **Notice.** Any notice or other communication under this Agreement given by either Party to the other Party shall be in writing and shall be delivered in person or mailed to the attention of the signatories below. Either Party may change such address or contact by written notice to the other Party.

7.8 **Governing Law.** This Agreement shall be interpreted, construed and enforced in accordance with the laws of the State of Washington without reference to its choice of law provisions. This Agreement shall be fully binding upon the Parties and their respective successors, assigns and legal representatives.

In witness whereof, the Parties have executed this Agreement as of the date set forth above.
This Custom Street Lighting Order (this “Order”), dated August 15, 2018, is made and entered into by and between PUGET SOUND ENERGY, INC. (“PSE”) and City of Edgewood (“Customer”) (each a “Party,” and collectively the “Parties”) under and pursuant to the terms of that certain Master Lighting Services Agreement No. 0002, dated August 15, 2018, between the Parties (the “Agreement”). This Order covers certain Lighting and Construction Services authorized by this Order and is, along with the associated Schedule, incorporated into and made a part of the Agreement. Unless specifically defined otherwise herein, terms used in this Order with initial letters capitalized have the meanings given them in the Agreement. The Parties agree as follows:

**ASSOCIATED SCHEDULE:**

This Order is also entered into between the Parties in accordance with PSE’s Schedule 51, Electric Tariff G, and any future modifications of or changes to such Schedule as may be approved by the WUTC.

**LIGHTING SERVICES DESCRIPTION:**

The installation charge of the listed lighting units was estimated to be $883,241.50. Value of the system used to determine the monthly facilities charge is the estimated cost less applicable taxes.

\[ \text{VOS} = \$797,797.40 \]

Description:

Per rate schedule 51, the monthly facility charge is equal to 0.007% of the VOS $ = $558.46

**CONSTRUCTION SERVICES DESCRIPTION:**

There are construction costs of $29,217.7 for this takeover, for PSE to convert the 53 existing HPS roadway cobraheads to 214W LED cobraheads, and install a matching replacement pedestrian pole and 50W LED fixture for the destroyed/missing pole at the Safeway shopping center entrance (Pole 9 on the as builts page IL8C)

**BILLING:**

Billing under this Order will be in accordance with the terms and conditions contained in the terms & conditions of Schedule 51, Electric Tariff G, and the Agreement, and any future modifications of or changes to such Schedule as may be approved by the WUTC.

The basis of the monthly energy charge for the Lighting Services as currently constituted under Rate Schedule 51 is as follows:
53 - 214W LED units x $7.38 ea  =$ 391.14
64 – 50W LED units x $1.48 ea  =$ 94.72
Total monthly energy charge  $ 485.86

The total monthly charge for this installation is
Monthly facilities charge  $ 558.46
Monthly energy charge  $ 485.86

Total monthly charge:  $ 1,044.32

For Construction Services and Costs, these costs will be billed as follows:

Upon completion of the Construction Services, PSE shall provide the Customer with an invoice for the Construction Costs incurred by PSE. Customer shall remit payment to PSE for the Construction Costs within thirty (30) days of receiving the invoice.

SERVICE TERM/REMOVAL AND SALVAGE COSTS:

Service under this Order is effective for a minimum of fifteen (15) years from the date of this Order (the “Base Term”) unless earlier terminated as provided for in the Agreement. If this Order is terminated for any reason during the Base Term, the Customer shall be responsible for all costs of removal of any Facilities associated with the Services, as well as any costs associated with PSE’s efforts to salvage the removed Facilities, as set forth in the applicable Schedule. After the expiration of the Base Term, this Order shall continue on a year-to-year basis until terminated by either Party upon at least one (1) year’s notice in writing (each, an “Extended Term” and, together with the Base Term, the “Term”) unless earlier terminated as provided for elsewhere in this Agreement. The Term may be adjusted by PSE in writing for existing systems purchased by PSE, based on the estimated remaining life and purchase price. If this Order is terminated during any Extended Term, the Customer shall not be responsible for the costs of removal of any Facilities associated with the Services, or any costs associated with PSE’s efforts to salvage the removed Facilities.

BILL OF SALE:

As part of this Order, the Parties have agreed that Customer shall transfer certain assets to PSE, pursuant to the terms of a Bill of Sale, in form and content as mutually agreed upon between the Parties and as attached hereto.

ADDITIONAL TERMS:

1. To transfer the energy and maintenance monthly billing, the new billing party must contact PSE in writing.

2. Non-standard facilities are not kept in PSE inventory for the purpose of maintenance; therefore replacement of non-standard components may not be within the same time as replacement of standard components.

   If non-standard components are included in this Order, enter “X” here x.
3. The monthly billing party for the energy and maintenance will be: City of Edgewood

This Order, executed by Customer’s duly authorized representative as of the date first written above, is for the Lighting Services described above delivered under PSE’s Schedule 51.

Customer:

By: ________________________________  Date: _____________________________

______________________________
Print Name

Title: ______________________________

Company: Puget Sound Energy, Inc.

By: ________________________________  Date: _____________________________

Title: ______________________________

Account Manager____________________
BILL OF SALE

August 15, 2018

For good and valuable consideration, the receipt, adequacy and legal sufficiency of which are hereby acknowledged, and as contemplated by that certain Services Agreement, dated as of August 15, 2018, by and between The City of Edgewood (“Seller”), and Puget Sound Energy, Inc. (“Buyer”), Seller hereby sells, transfers, assigns, conveys and delivers to Buyer, effective as of the date set forth above, all right, title and interest in and to the assets set forth on Appendix A and Appendix B attached hereto and incorporated herein (“Assets”).

Seller hereby represents and warrants to Buyer that Seller is the legal and beneficial owner of the Assets and hereby sells, transfers, assigns, conveys and delivers to Buyer good and marketable title to the Assets, free and clear of all liens, security interests, liabilities, encumbrances and rights of others, subject in all events to all terms, conditions and exceptions contained in the Services Agreement, which is incorporated herein by this reference, and that Seller will warrant and defend such title forever against all claims and demands whatsoever.

Buyer does not assume and shall not be or become liable for, and Seller shall retain, be responsible for and indemnify and hold harmless Buyer against, any and all debts, liabilities or obligations arising from or relating to the Assets prior to the date set forth above.

This Bill of Sale is delivered pursuant to the terms of the Services Agreement and is delivered subject to certain representations and warranties contained therein, each of which shall survive as and to the extent set forth in the Services Agreement. Notwithstanding the foregoing, this Bill of Sale is in all respects subject to the provisions of the Services Agreement and is not intended in any way to supersede, expand, limit or qualify any provision of the Services Agreement.

Seller does hereby agree, from time to time as and when reasonably requested by Buyer, to execute and deliver (or cause to be executed and delivered) such documents or instruments and to take (or cause to be taken) such further or other actions, as may be reasonably necessary to carry out the purposes of this Bill of Sale.

This Bill of Sale shall be construed, interpreted and the rights of the parties hereto determined in accordance with the laws of the State of Washington without reference to its choice of law provisions.

[SIGNATURE PAGE FOLLOWS]
IN WITNESS WHEREOF, Seller has caused this Bill of Sale to be duly executed on its behalf by its representative thereunto duly authorized, all as of the day and year set forth above.

The City of Edgewood

By: ______________________________
Name: __________________________
Title: ___________________________
### APPENDIX A

**TO BILL OF SALE**

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<th>Type</th>
<th>Description</th>
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</tr>
<tr>
<td>Luminaire</td>
<td>Garmire 12' GRTS decorative arm, black</td>
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<td>Luminaire</td>
<td>King #1 Spike Finial, black</td>
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<td>400W HPS cobrahead, black</td>
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<td>Luminaire</td>
<td>Cyclone 50W LED Prairie Fixture, black</td>
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<td>Luminaire</td>
<td>Cyclone PV40 16' round pole, black with BM13 decorative base</td>
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<td>Luminaire</td>
<td>Meter service cabinet</td>
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<td>Luminaire</td>
<td>Circuitry and wire</td>
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### APPENDIX B

**LOCATION DETAILS OR MAP**
### LUMINAIRE SCHEDULE

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<tr>
<th>LUMINAIRE</th>
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<th>LOCATION</th>
<th>TYPE - DISTRIBUTION - WATTAGE</th>
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### PEDESTRIAN LUMINAIRE SCHEDULE

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<th>TYPE - DISTRIBUTION - WATTAGE</th>
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<th>FOUNDATION STANDARD PLAN &amp; CASE</th>
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### CONSTRUCTION NOTES ILLUMINATION SYSTEM 2 - SCX 2959

**DESCRIPTION**

1. **CONSTRUCT TYPE A LUMINAIRE FOUNDATION PER STANDARD PLAN J-28.32. TOP OF FOUNDATION SHALL BE 3 FOOT BY 3 FOOT SQUARE (SEE DETAIL SHEET LD3). INSTALL TYPE 1 LUMINAIRE PER SCHEDULE THIS SHEET.**

2. **CONSTRUCT TYPE A LUMINAIRE FOUNDATION PER STANDARD PLAN J-28.36. TOP OF FOUNDATION SHALL BE FLUSH WITH SIDEWALK (SEE DETAIL SHEET LD3). INSTALL TYPE 1 LUMINAIRE PER SCHEDULE THIS SHEET.**

3. **CONSTRUCT TYPE A LUMINAIRE FOUNDATION PER STANDARD PLAN J-28.36. TOP OF FOUNDATION SHALL BE 3 FOOT BY 3 FOOT SQUARE (SEE DETAIL SHEET LD3). INSTALL PEDESTRIAN LUMINAIRE PER SCHEDULE THIS SHEET.**

4. **CONSTRUCT PEDESTRIAN FOUNDATION PER STANDARD PLAN J-36. OMIT CONTROLLER CABINET AREA, INSTALL DURASTRUCT MOUNT MODIFIED TYPE B FOUNDATION SERVICE CABINET SCX 2015 PER.**

5. **SOURCE OF POWER IS A NEW PSE VAULT INSTALL CONDUIT AND CONDUCTORS PER SERVING UTILITY REQUIREMENTS CONTRACTOR SHALL ARRANGE FOR CONNECTION OF UTILITY THROUGH THE ENGINEER.**

6. **INSTALL IDENTITY SIGN ON LUMINAIRE PER SHEET LD2.**

7. **PROTECT ENDS OF CIRCUIT CONDUCTORS UNTIL SPliced TO UPLIGHTING, SEE 24TH STREET INTERSECTION NEW CORNER DETAIL PLAN SHEET LD1.**

8. **CONSTRUCT TYPE B LUMINAIRE FOUNDATION PER STANDARD PLAN J-28.36 METHOD 2. TOP OF FOUNDATION SHALL BE FLUSH WITH SIDEWALK INSTALL TYPE 1 LUMINAIRE PER SCHEDULE THIS SHEET. CIRCUIT SHOULDN'T BE INSTALLED DURING CONSTRUCTION OF DRAINAGE RUN (24-32).**

### ALTERNATE A3

**FILE NAME**: 08/21/18 Study Session

**DATE**: 08/21/18

**DESIGNER**: Robert Elliott

**CHECKED BY**: Bruce Crumley

**REVISION DATE**: 08/21/18

---

**FOR THIS "CONSTRUCTED PLANS" ONLY**

---

**WASHINGTON STATE**

**DEPARTMENT OF TRANSPORTATION**

**ILLUMINATION PLANS (ALT A3) - SYSTEM 2**
### LUMINAIRE SCHEDULE

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<tr>
<th>LUMINAIRE NUMBER</th>
<th>CIRCUIT</th>
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Appendix B  105078579

Takeover list of assets:

Roadway Poles – Quantity 53

40’ Steel fixed base poles with 10LC Cast Aluminum Base, Black
12’ Garmire GRTS arm, black
King #1 spike finial, black
285W LED Cobrahead, type 3, Black

Pedestrian Poles – Quantity 64

16’ Cyclone PV40 round pole with BM13 decorative base
50W LED Cyclone Prairie fixture, black

All wire and associated circuitry