

8 Capital Facilities

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Capital Facilities Element

I. INTRODUCTION

Purpose of the Capital Facilities Element

This Capital Facilities Element has been prepared in accordance with Section 36.70A.070 of the Growth Management Act (GMA) to address the need for and the financing of capital facilities in the City of Buckley and its Urban Growth Area. The GMA requires all Comprehensive Plans to include a Capital Facilities Element, which analyzes the need for future capital improvements to support the development goals stated in the Land Use Element, as well as the funding mechanisms available for implementation.

The GMA requires cities to have a plan in place to ensure that capital facilities are developed concurrently with future development and the needs of the local population. This Comprehensive Planning effort is a required step of the process to assure the City of Buckley is fully compliant with GMA goals.

Toward this end, the Capital Facilities Element includes the following sections.

- Inventory of existing capital facilities, showing location and capacities of all facilities
- Forecast of future needs (for the next 6 years minimum)
- The proposed locations and capacities of expanded or new capital facilities
- At least a 6-year plan that will finance such facilities within projected funding capacities and identifies sources of public money for such purposes
- Coordinate land use element, capital facilities element, and element plan

The GMA also contains requirements pertaining to the concept of concurrency. Concurrency means that jurisdictions must be able to demonstrate that all utilities, including roads, can be made available for all new development at the time such development is constructed. Plans for making those utilities available when the development is built must include a financing plan. Thus, this Capital Facilities Element represents an important part of the plans needed to meet those requirements.

The Capital Facilities Element also has been developed in accordance with county wide planning policies, and has been integrated with all other planning elements to ensure consistency throughout the Comprehensive Plan. The Capital Facilities Element considers the general location, proposed location, and capacity of existing and proposed utilities, including water, sewer, surface water drainage, natural gas, and other municipal services and facilities, such as fire and police protection services.

Urban Growth Area

The Urban Growth Area (UGA) boundary was selected in order to ensure that urban services, including utilities, can be provided to the residents of each development at an acceptable level of service. This includes the provision of utility and other capital facilities. The UGA is depicted in Figure 1 of the Land Use Element, and on the utility maps in the Utilities Element.

All development requiring urban services will be located in the UGA, and will have these services extended in a timely feasible manner. For that portion of the UGA which is currently located outside City boundaries, annexation would need to occur prior to extension of most City services, with the exception of areas where existing service agreements may apply, or where services may be extended for public health and safety reasons.

II. MUNICIPAL FACILITIES

Existing Facilities

City functions and operations are conducted from six (6) different facilities, with the exception of the Wastewater Treatment Plant, which is headquartered at 600 Hatch Street. These include City Hall at 933 Main Street, Multi-Purpose Center at 811 Main Street, Public Works Office Building at 250 S. River Avenue, Youth Center at 251 S. River Avenue, Fire Station at 611 S. Division and Police Station at 146 Cedar Street. In addition the City also has the Museum Building at 130 North River Avenue, Community Center (Buckley Hall) at 127 N River Avenue, Buckley Cemetery Office at 600 Cemetery Rd, PW Garage/Shop at 243 Pearl Street and three (3) storage outbuildings.

City Hall Building

The City Hall building is a 1,917 square foot one-story facility constructed in 1903 located at 933 Main Street. City administration and finance operations were relocated to this building in 1992. At that time the City had new windows installed and new carpeting installed throughout. Since that time there have been no other improvements, except for a new HVAC system which was installed in 2008.

Multi-Purpose Center

The Multi-Purpose is a 6,350 square foot one-story brick building constructed in 1979. This facility is used for multiple operations including Building/Planning Departments, Municipal Court, Senior Center and Council Chambers. The structure was constructed with grant funding for City purposes so no other activities have utilized this building except for those identified. Since construction there have been no major improvements, except for a new HVAC system which was installed in 2008.

Public Works Facilities

The Public Works Office/Shop Facility consists of multiple structures located at 250 S. River Avenue and 243 Pearl Street. The primary Public Works Office Building is a newly renovated 1,560 square foot one-story wood frame building that functions as the operations center for the City Public Works and Utility Department. This building was totally renovated in 2017 and has no current needs. The second building is a 4,500 square foot Shop/Garage that has been converted at one end into small offices, with open storage bays in the middle and a mechanic shop in the opposite end. This building is an older one and one-half story wood frame building constructed in 1925. The building has been added onto a number of times with the most recent improvement added in 2008 when the west end was converted and improved into office space for the PW staff. In addition the Public Works Facility site contains one (1) storage outbuilding.

Public Works Facilities also includes the City's Wastewater Treatment Plant located at 600 Hatch Street.

Youth Center

The Youth Activities Center is a 2,730 square foot one-story wood frame building located at 251 S. River Avenue. The Center was constructed in 2008 funded in part by a grant from HUD. The Center is a drop-in center; open to teens ages 8-18 from the White River area. It provides a safe and fun environment for teens to hang out. It has everything from video games to a pool , guitar lessons, tutoring and much more. It also provides occasional classes and activities (e.g. dances, camp, plays, cardiopulmonary resuscitation, and arts and crafts). It is a non-profit center that is funded through the City of Buckley, government grants, and donations from various community groups. Since construction there have been no major improvements made to the building.

Fire Station

The City Fire Station is a 21,120 square foot building constructed in 2011 located at 611 S. Division Street. The Station construction was completed early in 2012 and began conducting Fire & EMS operations from there shortly after. No additional improvements were made since construction.

Police Station

The City purchased the building at 146 Cedar Street that is currently used for the Police Station in 2010 from the White River School District. In 2011 the Police Department moved operations from 133 S Cedar St to 146 S Cedar St. purchasing the building and closed the jail and dispatch center, contracting those services with other agencies. Over the past seven years the building that was purchased was painted and remodeled inside to include; new Patrol office space, carpet, kitchen, lobby, BAC Room and new sign mounted on the building front indicating the Buckley Police Dept. In 2018 a garage was built on the property for storage and maintenance of equipment and records.

III. 2018 MUNICIPAL FACILITY EVALUATION

In 2018, an evaluation was conducted with three primary goals; 1) conduct a space needs assessment for all City functions for the present, as well as projections for space needs at six years and 20 years; 2) evaluate existing structures for present and future use in light of the results of the space needs assessment; and 3) develop a long-range plan for the Municipal Facilities in light of both the space needs assessment and the building evaluations. Each aspect of the Municipal Facility Evaluation will be discussed below.

Space Needs Assessment

The Space Needs Assessment was based primarily on information provided by department directors and other key personnel. A series of discussions with City staff, as well as with the Mayor and the City Administrator formed the basis of both present and future space needs. Department directors were asked to provide information on their current staffing levels along with an estimate of future staff needs at 6-year and 20-year intervals. These estimates were based on estimates of the growth of the City while assuming existing service levels will continue into the future.

Each staff position was then allocated an amount of space based primarily on the space needs of that particular position. The criteria used to determine this was based on the following list:

Employees Requiring Offices:

- Mayor (400 square feet)
- Administrator (200 square feet)
- Directors/Managers (150 square feet)

- Employees Requiring Cubicles:
 - Engineers/Planners (175 square feet)
 - Accountants (150 square feet)
 - Clerical (125 square feet)
 - I.T. (125 square feet)
 - *General (125 square feet)

- Employees in an Open Area:
 - Data entry (125 square feet)
 - Clerks (125 square feet)
 - Temps (100 square feet)

- Permanent Rooms and Spaces:
 - File room (100 square feet)
 - Storage room or library (100 square feet)

- Work room (75 square feet)
- Reception area (75 square feet plus 10 square feet per person waiting)
- Lunch or break room (75 square feet plus 25 square feet per person seated)
- Conference room (50 square feet plus 25 square feet per person seated)
- Restrooms (75 square feet each/gender)

*Note: For calculation purposes “General” refers to position categories where a work station is provided, but not a normal full-time function of the position: for example utility workers, police officers, etc.

The need for space in square feet identified through this process is summarized in the CF-1 below.

Table CF-16- and 20-year needs

Six- and Twenty-Year Space Needs			
Facility	Existing	6-year	20-year
City Hall	1,917	2,210	2,830
Multi-Purpose Center	6,350		
Building/Planning	1,005	1,150	1,275
Court Offices	528	615	740
Senior	2,100	2,225	2,225
Council/Court	2,100	2,100	2,100
Public Works Facilities			
PW Office	1,560	1,560	1,560
PW Shop/Garage	4,500	5,000	5,000
PW Storage	800	4,700	4,700
WWTP	N/A	N/A	N/A
Youth Center	2,688	2,688	2,688
Fire Station	21,120	21,120	20,373
Police Station			

Building Evaluations

City Hall Building

The evaluation of the City Hall Building revealed a number of serious problems. The existing building was constructed 115 years ago and has had only minor improvements throughout its long history including but not limited to metal roofing, new siding, carpeting, windows, electrical wiring and HVAC.

The HVAC system was replaced in 2008; however, the duct system was only partially replaced and needs further improvement. Due to the age of the building exterior wall insulation is inadequate which makes it very expensive to heat and cool. The windows were

replaced when City operations moved into the building in 1992, but they were industry standard at that time and are all single-pane, which adds to the difficulty in heating and cooling.

The existing telecommunication hubs are located in the rear mechanical room where there is minimal insulation and a multitude of other equipment. This is an extremely harsh environment for this type of equipment.

The existing electrical system within the City Hall was upgraded at some point in the past with 200 amp service and is in serviceable condition, but due to original exterior wall construction with lathe and plaster interior wall covering its difficult to ascertain whether or not all of the old wires have been replaced. The existing branch circuiting in the City Hall is inadequate, both in number of available circuits and in number of available receptacle outlets.

The existing roof is pitched rafter with metal covering that was installed over preexisting composition 25-30 years ago. Although these are no apparent leaks it is beginning to show its age and will need to be replaced within the next 10 years.

The building currently serves the administration, finance and clerical staff consisting of the Mayor, City Administrator, Finance Director, City Clerk, Finance Assistant and Administrative Assistant. In addition the building contains a small kitchen, conference area, single restroom, mechanical room, waiting area and file storage area.

By utilizing current employee space needs estimates, City Hall has already exceeded capacity by 293 square feet. In addition we know that within the next 6- to 10-year timeframe the existing building will need:

- Roof replacement – (\$40K est)
- Window replacement – (\$30K est)
- Carpet replacement – (\$20K est)
- Kitchen remodel – (\$40K est)
- Restroom remodel – (\$25K est)

Based on the initial assessment staff has identified that to resolve current and short-term 6-year needs City Hall needs to be expanded by 293 square feet. In order to accommodate the 20-year planning horizon an additional 175 square feet expansion needs to occur. The City Hall building is a square 42 feet by 57 feet structure that is placed approximately center on the 0.33 acre lot with room on either the east or west side for expansion. However, the needs for the building and layout of the floor area are more conducive to partial addition on the southern half of the building with a 15' by 30' expansion onto the east side for additional office space and a 23' by 30' expansion on the west side to expand the kitchen, mechanical room and add a 2nd restroom. Completion of this alternative would result in an expansion of 1,140 square feet at an estimated cost of \$230 per square foot for a total cost of \$262,200.

The 6-year planning period identifies a need of 293 square feet with another 175 square feet for the 20-year period. Since expansion and remodeling of the existing building would capture 1,140 square feet of space meeting both the 6-year and 20-year planning horizon, the \$262,200 cost will be used for the 6-year planning projection.

Multi-Purpose Center

The Multi-Purpose identified under existing buildings serves for multiple operations including building/planning, court, senior services and council chambers. Because of the varied uses and needs we'll discuss and evaluate the overall building's condition and structural needs and evaluate and breakdown needs within each department/section area. The building is a 6,350 square foot, one-story brick building constructed in 1979. It is slab on grade with brick walls and minimal insulation. Existing windows are single pane with air gaps along the perimeter of some of the windows. Although the HVAC system was replaced in 2008 through a DOE Energy Grant it is still highly inefficient because of the lack of insulation and type of construction. The roof is a flat roof that has not been replaced since construction.

Short term maintenance of the building will require at a minimum the following:

- Roof replacement – (\$125K est)
- Window replacement – (\$40K est)
- Carpet replacement – (\$30K est)
- Foyer tile replacement – (\$12K est)
- Façade sealing – (\$15K est)
- Main entry door(s) replacement – (\$20K)

Building/Planning

currently operates out of the NW corner of the building in an area approximately 1,005 square feet. This area includes the main reception area with customer counter, a planning office, building office, lunch room, one restroom and a storage closet. The single restroom and kitchen/storage closet serves both the building/planning staff and the court staff because of their location between areas.

By utilizing current employee space needs estimates, the Building/Planning Office currently needs 1,150 square feet and has therefore exceeded capacity by 145 square feet. Based on the initial assessment staff has identified that to resolve current and near term (six years) needs an additional 145 square feet must be added resulting in a total need of 145 square feet.

Municipal Court

the court administration office operates out of the SW corner of the building in an area approximately 528 square feet. This area includes a reception area with shared copy machine and 3 offices. The court staff shares the restroom and kitchen/storage closet with the

building/planning staff. Court is held in the Council Chambers that often experiences over capacity depending upon the size of the court docket for that day.

By utilizing current employee space needs estimates, the Municipal Court Admin. Office currently needs 615 square feet and has therefore exceeded capacity by 87 square feet. Based on the initial assessment staff has identified that to resolve current and a near term (6-year plan) needs an additional 87 square feet must be added resulting in a total need of 87 square feet.

Senior Center

the Senior Center operates out of the NE corner of the building in an area approximately 2,100 square feet. This area includes a reception area, office, store room, storage closet, restroom, dining area and commercial kitchen.

By utilizing current employee space needs estimates, the senior staff needs an additional 125 square feet of office space to resolve current and 6-year needs.

Council/Court Room

the Council Chambers/Court Room encompasses the SE corner of the building and serves as a meeting room for City Council, Planning Commission, Municipal Court, and as an event/game room for the seniors and other City functions. The space is adequate for current and future needs.

Youth Center

The Youth Activities Center is a 2,730 square foot facility that serves as drop-in center for youth ages 8-18 from the White River area. The building includes a conference room, office, storage room, kitchen, counseling room, computer conference room, game room, lobby, storage closet and two restrooms.

By utilizing current employee space needs estimates, the Youth Center currently has adequate space to meet needs. For 6-year needs adequate space is in the building, but minor remodeling may be necessary to add office space for staff.

Short term maintenance of the building will require at a minimum the following:

- Carpet replacement – (\$12K est)
- Floor tile replacement – (\$10K est)
- Roof replacement – (\$15K est)

Public Works Facilities

All of the facilities below are located at 240 River Ave with the exception of the City's Wastewater Treatment Plant located at 600 Hatch Street.

The Public Works Shop Facility, identified under existing buildings, serves as the city's mechanic shop, parks/building maintenance office and storage, equipment storage, utility worker workstations, locker room, lunch room and a bathroom. This 4,500 square foot building was constructed in 1925.

The building was painted and the roof and gutters were completely replaced in 1997 and are still in good condition. As noted above, however, this facility is very old. As a result, it is completely inadequate in terms of space needs. In addition, it is creating significant costs to the City in both service effectiveness and efficiency.

The Public Works Office Building- is a newly renovated 1,560 square foot (sq.ft.) one-story wood framed building that served as a utility storage building and now functions as the operations center for the Public Works and Utility Department. This remodel was constructed in 2017 and the building consists of a small breakroom, shower/locker room, conference room, bathroom, reception area, and four offices for management and clerical staff. This building has no current needs.

Public Works Storage Outbuilding- is an 800-square-foot (sq. ft.) pole barn constructed building with a metal roof, used for storage. This building was constructed at some point and is in need of short term maintenance. Short term maintenance of the building will require the following:

- Pole Replacement- (\$5K)
- Roof replacement- (\$12K)
- Gutter replacement- (\$1K)

Wastewater Treatment Facility- the Buckley WWTP was initially completed in 1981 and in 2006 began a multi-phased upgrade. The first phase completed in 2006 was the addition of a 4000 sq. ft. residual solids handling building and maintenance shop. The solids handling equipment includes blowers for the waste activated sludge holding tanks, and a 2.0 meter Andritz belt filter press.

In 2008, a much larger phase of the upgrade began which included addition of a new 1400 square foot head works building which housed rotary fine screening and grit removal equipment. Two anoxic treatment basins and three anaerobic treatment basins were added to facilitate biological nutrient removal while the existing oxidation ditches were retrofitted with new aeration equipment. Three clarifiers were added along with chemical dosing equipment for chemical phosphorus removal to achieve ultra-low phosphorus levels.

A 1700 Sq. Ft. process building was added to house RAS/WAS pumps, aeration blowers, back-up power generation, and electrical and computer control equipment. The 850 Sq. Ft. effluent disinfection building was built to house ultra-violet disinfection equipment, and a non-potable process water system to provide water for equipment operation and wash-down. The existing 1500 sq. ft. control building was also remodeled to add laboratory space.

The City has identified a potential site for a new Public Works Heated Storage Facility located near the City's Wastewater Treatment Plant at 600 Hatch Street. It is estimated that the purposed 4,700 square foot building includes a concrete slab, rollup garage doors, lights, heater and insulation will cost approximately \$200,000. Construction of the new facility is dependent on budget priorities and financing.

Police Department Services

In 2018 the Buckley Police Department handled 8600 calls for service (CFS) for Wilkeson, Carbonado and Rainier School. These calls do not include daily walk in operations for CPL'S, Fingerprints, Records Request, questions about state or federal laws or Municipal codes, Special events such as presentations at local schools or businesses and Youth Center Activities.

The 8600 calls that were handled are a variety of low, medium and high priority incidents. Currently the Police Department has 10 commissioned Police Officers; this number includes a Chief, Assistant Chief, Patrol Sergeant and one Detective. Also on staff is a full time records/TAC officer, a full time Community Service Officer and a part time Evidence Technician.

The Department has 10 patrol vehicles with a spare patrol vehicle being a 2003 Crown Victoria. The department also has a 2007 Van and a 2016 F150 in the fleet used by the community Service Officer (CSO) for his daily duties of Transports of prisoners and caring for animals in the community such as Dogs. The department also has a utility terrain vehicle (UTV) used for special operations (Log Show) Search and Rescue (SAR) Special Patrol (snow, Ice, difficult patrol areas IE River Area)

The increase in Population and higher traffic volumes has increased some of the low and medium priority calls. With this noted the animal services calls have increased along with some of the service calls during the daytime shifts handled by our records department and patrol officers.

The Buckley Police Department strives to maintain a short response time to in-progress calls. Due to the increase of calls and only having 1 officer on per shift as an average, this makes it difficult to keep the standard we strive for with response times and ongoing mandatory training.

Future Demand

Assuming calls increase such as animal calls, service calls, traffic issues due to growth in the community and school districts; it may have an impact on time response to calls and the ability to train effectively having only 1 officer on duty as an average per shift. This may also impact visitation to the station increasing workload for administrative staff as the community grows. In addition growth and increased call volume could result in slower response times and training opportunities due to staffing levels.

Buckley Police Department Future Needs

One of the most urgent needs for our Department is getting fully staffed by adding one more officer in 2019. This will assist the Department with handling calls for service in a safe and timely manner. This will allow proper coverage while Department staff continues training as required by state laws. Secondly adding civilian personnel to assist with records and evidence will assure a professional standard held by the department.

Additional officers will need to be increased in years to come (see CF-2 below).

Table CF-2 Projected Additions to Police Department Staff

Year	Commissioned Personnel	Civilian Personnel
2019	1	0
2020	0	1
2021	1	0
2022	0	0
2023	1	0
2024	0	0
2025	1	0

Additional police vehicles and 700MHZ radios will be necessary as the size of the department increases. A minimum of one patrol car per one patrol officers is required, as well as administrative vehicles. This will require new purchases consistent with hiring staff in addition to replacement of older vehicles.

The Community service officer is in need of a new shelter for impoundment of dogs this building will require power/water and some fencing. The Police Department is in need of a new pitched roof and parking lot facelift, Along with fencing around Police Department. (See CF-3.)

Table CF-3 Police Department needs

Description	Cost	Funding Source
4 new patrol vehicles	\$200,000.00	107-109
6 replacement patrol vehicle	\$300,000.00	107-109
Dog Shelter	\$15,000	107-109
Computers and Workstations	\$9,500.00	107-109
Police Department Roof	\$125,000.00	107-109
Parking lot Repair	\$135,000.00	107-109
700 MHz Equipment	\$32,000.00	107-109
1 replacement transport van	\$50,000.00	107-109
Total	\$866,500.00	

Fire & EMS Services

The Fire Department provides fire protection and emergency medical services within the City limits of Buckley, and also includes the City's Department of Emergency Management. In addition, the City contracts with the towns of Carbonado and Wilkeson to provide certain fire department functions in their jurisdictions. The City also contracts with the State of Washington Department of Social and Health Services to provide fire protection and emergency medical services to the Rainier School campus and facilities within the city.

The City of Buckley Fire Department through a governmental Interlocal agreement with the Town of Carbonado, Pierce County Fire District No. 25 (Crystal Mountain), and Pierce County Fire District No. 26 (Greenwater) is the lead agency in negotiating and administering a contractual cooperative operating agreement with private ambulance provider American Medical Response, through which contract ambulance transport and Advanced Life Support (ALS) paramedic services are provided within the service areas of the four jurisdictions. This relationship was established in June 2007 and has remained in continuous operation since its inception.

The City is party to numerous formalized governmental Interlocal agreements governing mutual-aid and automatic-aid that allow for the sharing of resources throughout the region.

The fire department E911 calls and fire and emergency medical service dispatching is provided through contract with South Sound 911, the county-wide E911 Law Enforcement and Fire communication dispatch center.

The fire department operates from a single fire station. In 2010 voters in the city approved a \$5 million bond measure to construct a new fire station. Construction began in 2011 and the fire department took occupancy of the new fire station in April 2012.

The Fire Department is predominantly volunteer staffed utilizing a combination fire department structure. Current staffing is:

- 1 full-time 40+ hour per week paid Fire Chief
- 1 full-time 40+ hour per week paid Assistant Fire Chief
- 1 full-time 40 hour per week paid Firefighter/EMT
- 1 full-time 40 hour per week paid Volunteer Recruitment & Retention Coordinator **
- 1 part-time 16 hour per week paid Administrative Assistant
- 8 volunteer Fire Lieutenants
- 72 volunteer Firefighter, Emergency Medical Technicians, and Paramedics

** The Volunteer Recruitment & Retention Coordinator is a 4-year funded position through a DHS/FEMA 2017 SAFER Grant with grant funding ending November 22, 2022.

Level of Service (LOS) in this document means the relationship between fire protection facilities and the provision of fire and emergency medical services within the City, as identified by the LOS goals established by the City.

The City of Buckley Fire Department LOS goals are established based on recommended industry guidelines and standards. While not formally adopted by the City as a level of service standard, the City does base its LOS goals on the nationally recognized Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments developed by the National Fire Protection Association (NFPA) (NFPA Standard 1720, 2004 Edition).

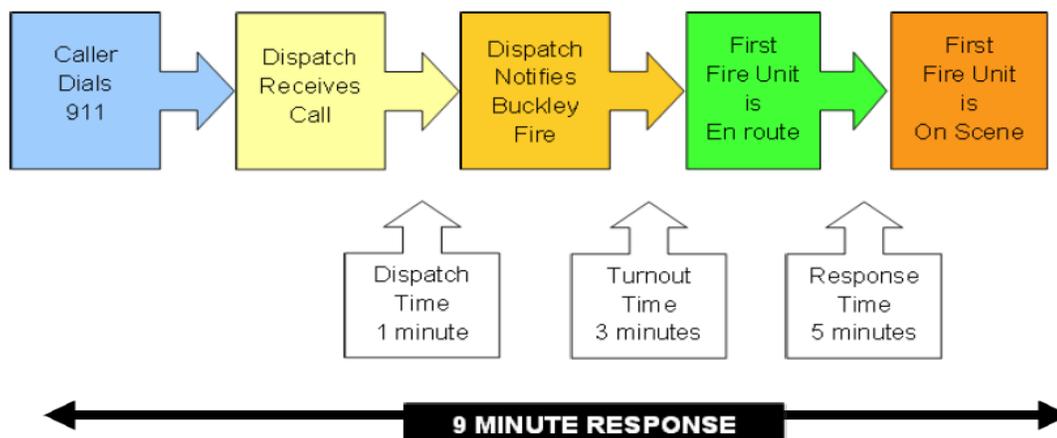
NFPA 1720 defines a Volunteer Fire Department as a fire department having volunteer emergency service personnel comprising 85 percent or greater of its department membership. The personnel composition of the City of Buckley Fire Department consists of 3.0 fulltime career personnel and 80 volunteer personnel (3.6% career and 96.4% volunteer).

NFPA 1720 establishes Areas by defining Remote, Rural, Suburban and Urban Areas. NFPA 1720 defines an Urban Area as an area with at least 1,000 people per square mile. The City of Buckley encompasses an area of approximately 3.9 square miles with a population of approximately 4,765 -- an average of 1,222 people per square mile.

In summary NFPA 1720 provides that a Volunteer Fire Department serving an Urban Area shall ensure that a sufficient number of fire department personnel (15 personnel for a fire suppression operation) and resources are available to operate safely and effectively, and that the fire department achieves a response time of 9 or fewer minutes 90% of the time. This is the LOS goal that the City of Buckley Fire Department has established.

The 9 minute response time begins when a citizen calls 911 and includes a dispatch time of 1 minute, turnout time of 3 minutes, and a response drive time of 5 minutes:

Chart CF-1



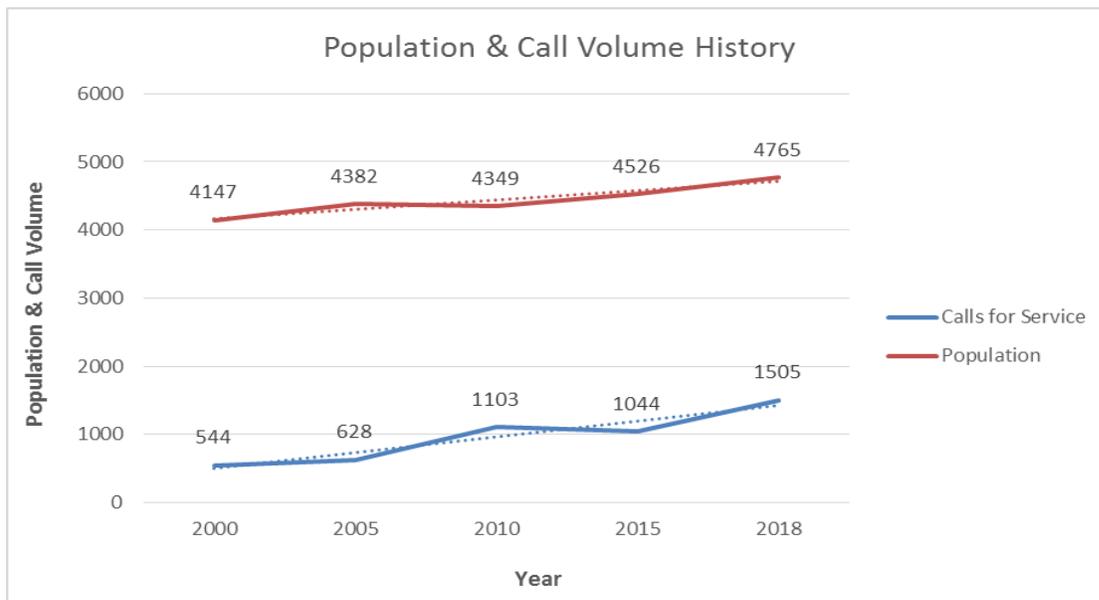
The City of Buckley Fire Department is consistently able to meet today’s LOS goals within the incorporated boundaries of the city as it exists today. In choosing the site for the new fire station

constructed in 2011 the city gave consideration to growth within the existing boundaries of the city as well as the potential for growth in areas adjacent to the city which could be annexed in the future. The location of the newly constructed fire station is such that the city should continue to meet today’s LOS goals for growth and expansion that could occur in the next 30 years.

Each fire district in Washington is reviewed every five years and rated between a high of Class 1 and a low of Class 10. In its last two evaluations by the Washington Surveying and Rating Bureau the City has been issued a Fire Protection Class 3 rating, with the most recent rating being issued in March 2018. The fire department continues to develop and implement strategies and programs in consideration of the City being able to maintain this attractive Fire Protection Class Rating. Maintaining the Fire Protection Class 3 rating is in-part dependent on the fire department having adequate resources in facilities, equipment, and personnel.

In determining the 20-year to 30-year future personnel needs and the need for additional equipment - primarily vehicle apparatus such as fire engines, ambulances, and support vehicles; we have evaluated the population history in comparison to demand for service (call volume). Our statistics demonstrate a disproportionate correlation in population increase to demand for service increase. Therefore, the reliability of such future forecasting is difficult to qualify due to uncertainties, changing technology, expansion of service area, expansion of services, etc.

Chart CF-2, Population & Call Volume History



Forecast Projected Needs

Facilities

With the construction of a new fire station in 2011 and occupancy in 2012, there are no planned or projected major facility additions or improvements anticipated through 2035.

Table CF-4 Fire Department Apparatus/Equipment

<i>Apparatus</i>	<i>Replacement Year</i>	<i>Projected Replacement Cost</i>	<i>Fund</i>	<i>Note(s)</i>
1996 Fire Engine	2019	\$450,000	030	1996 Becomes Reserve Engine
2008 Fire Engine	2030	\$535,000	030	
2019 Fire Engine	2041	\$605,000	030	
1998 Ambulance	2020	-	105	2005 Ambulance moves to reserve states
2001 Ambulance	2020	\$155,000	105 – 030	
2005 Ambulance	2025	\$165,000	105 – 030	
2011 Utility Vehicle	2026	\$42,875	030	
2014 Utility Vehicle	2029	\$44,450	030	
2018 Utility Vehicle	2033	\$45,875	030	
2015 SCBA	2030	\$104,000	030	

Table CF-5 Fire Department Personnel

<i>Apparatus</i>	<i>2019 Pop. 4,765</i>	<i>2024 Pop. 6,556</i>	<i>2035 Pop. 7,888</i>	<i>Note(s)</i>
Fulltime Staff	4*	6	8	*includes SAFER Retention Coordinator
Part-time Staff	1	2	2	
Volunteer Staff	75	90	110	

* SAFER Grant Funded Volunteer Firefighter Program Recruitment & Retention Coordinator Position grant funded November 2018 through November 2022

Level-of-Service Standards

The Growth Management Act states that Level-of-Service (LOS) Standards are required for transportation facilities, (RCW 36.70A.070, Mandatory Elements).

The Act also briefly touches on LOS standards for other types of capital facilities, (WAC 365-195, Growth Management – Procedural Criteria for adopting Comprehensive Plans and Development Regulations).

The City of Buckley has adopted minimum LOS standards for the following capital facilities: parks, potable water, sanitary sewer, and transportation facilities. These standards were adopted in the Comprehensive Plan or by individual comprehensive facility plans that were adopted into the Capital Facilities Element by reference.

Fire Services

As identified in the previous section the Fire Department has adopted an LOS goal of achieving a response time of 9 or fewer minutes 90% of the time.

Parks

The parks LOS standards are primarily population based with complimentary levels of development, for neighborhood and community parks, and are listed in the Parks, Recreation and Open Space Element of the Comprehensive Plan. There are 9 types of facilities that LOS has been established consisting of: softball fields, basketball courts, baseball fields, volleyball courts, tennis courts, neighborhood parks, community parks, urban open space and multi-use trails.

Potable Water

The City has adopted the following minimum LOS for the water system. The water system quality shall be in compliance with Washington Administrative Code (246-290) requirements for water quality. The source capacity shall equal or exceed the design maximum demand rate plus that rate necessary to replace fire suppression storage within 72 hours. Fire flow service shall be provided to insurance services office (ISO) standards for Class 6 fire protection facilities.

Sanitary Sewer

The LOS requirements for the sanitary sewer collection system include the capability of handling peak flow and providing adequate pipeline velocity. Gravity lines must be sized and sloped to provide a minimum velocity of 2 feet per second. Minimum pipeline diameter for gravity service is 8 inches with a slope of 0.004 ft/ft. In addition, gravity lines must be protected with a minimum of 3 feet of cover and provided with manholes spaced about 400 feet apart and located at all the intersections and changes of grade. New construction is required to meet standards to limit infiltration and inflow into the system. These standards include precast manhole sections with gasketed seals, concrete pipe with rubber joints, or heavy duty PVC pipe.

Storm and Surface Water Drainage

The minimum LOS for the City's stormwater conveyance system is to convey the 25-year storm event.

Transportation:

The City has established a minimum LOS standard of "D", except for state highways. State Route 410 and State Route 165 travel through the City of Buckley. The right-of-way for these routes is owned by the City, however, the facilities located between curbtocurb is maintained by the state. The State has set a level of service standard for these routes, and identified SR 410 as a Tier 2, and will need a LOS D, while SR 165 is a Tier 3 and require a LOS C.

IV. WATER SYSTEM

INTRODUCTION

The City of Buckley currently maintains approximately 1,700 water service connections, which consist of both commercial and residential hookups. The existing City water usage charge is based on a monthly service charge for the connection depending on the meter size and a usage fee based on cubic feet of water consumed. The 2017 water usage records indicate that a total volume of just under 200 million gallons was consumed by the City's service population. This total included both residential and commercial usage, the residential usage accounts for 55 percent of the total. The estimated average per capita demand for the six-year period, 2012 through 2017, is 60 gallons per capita per day (gpcd). This average consumption figure established does not include adjustments for commercial and/or public facility usage. This exclusion inflates the average per capita consumption figures.

SOURCE AND SUPPLY

Level of Service

The water system quality shall be in compliance with Washington Administrative Code (246-290) requirements for water quality.

The source capacity shall equal or exceed the design maximum demand rate plus that rate necessary to replace fire suppression storage within 72 hours.

Fire flow service shall be provided to insurance services office (ISO) standards for Class 6 fire protection facilities.

Inventory of System

The water utility currently receives approximately 64 percent of its supply from South Prairie Creek, which is located to the south and east of existing city limits. Water is delivered from the Creek via a 29,200-foot transmission main to the Slow Sand Filter Water Treatment Plant

(WTP) and 2.3 million gallon reservoir. The City and Rainier School jointly own the water transmission main from South Prairie Creek. The City owns the Slow Sand Filter WTP and reservoir, while Rainier School owns the land where the WTP and reservoir are located. The City and Rainier School retain separate ownership of their respective water distribution systems. An agreement was signed in May 1996 between the City and the Department of Social and Health Services delineating the entities retention of ownership of their respective water rights and those facilities specific to the operation of their systems. The City of Buckley and Rainier School have water rights issued by the Washington Department of Ecology (WDOE) for a total instantaneous right of 5.02 cfs (2,252 gpm) for municipal consumption purposes and 3.0 cfs (1,347 gpm) for irrigation. The total annual water right for the City and Rainier School is 1,746 acre-feet for consumption and 400 acre-feet for irrigation. Source production capacity is based upon the limiting factor between water right limits and physical water production limits, such as pumping and treatment capacities. The instantaneous production capacity for the City of Buckley and Rainier School is 1,870 gpm. On an instantaneous basis, the City's existing water system production capacity will be exceeded by maximum day demands by the year 2025. The transmission main from South Prairie Creek to the WTP has a capacity of between 900 and 1,000 gpm. The WTP operated at a filter-loading rate of 0.085 gpm/sq ft has a treatment capacity of 725 gpm. The Prairie Creek watershed is owned by the U.S. Forest Service, Longview Timberlands LLC, Muckleshoot Federal Corporation, Muckleshoot Indian Tribe, Manke Timber Co., Hancock Forest Management, Frank and Marina Wallace, and Edward Hudson. The City has obtained agreements from all of these parties restricting activities that might have adverse impacts on water quality, but does not prohibit use within the watershed. The watershed area is relatively inaccessible except for a few unimproved roads, and the City restricts access along its service road to the headworks.

In addition to South Prairie Creek, the City has several groundwater sources that are utilized to supplement South Prairie Creek or as backup sources. The following groundwater sources provide approximately 36 percent of City's water demands. Inventories of these wells are provided below.

Well No. 2

Well No. 2 located adjacent to and east of the City limits on the east side of Levesque Road, north of Second Avenue. This well has an 8-inch diameter casing and is finished to a depth of 170 feet below ground surface (bgs). The capacity of this well is 130 gpm. Water from this well can be pumped either to the slow sand filter system or directly to the reservoir via a 6-inch water transmission main. The water from this well is available to be chlorinated with gas chlorine on site.

Well No. 3

Well No. 3 also located just east of city limits was drilled with a 6-inch casing alongside Well No. 2 to investigate the production capacity of an upper aquifer encountered at a depth of 60 feet. This well is currently used as an observation well. There are no plans to use this well as a water supply source for the City.

Well No. 4

In order to take advantage of the apparent high production capacity of the upper aquifer encountered by Well No. 3, Well No. 4 was drilled approximately 100 feet away. This well has a 16-inch diameter casing and is finished to a depth of 70 feet bgs. The capacity of this well is 240 gpm. Water from this well can be pumped either to the slow sand filter system or directly to the reservoir via a 6-inch AC water transmission main. The water from this well is available to be chlorinated with gas chlorine on site.

Well No. 1 (Naches Street Well)

The Naches Street Well, located on the west side of Naches Street (just north of Wheeler Street), was placed into service in 1967. This well has a 10-inch diameter casing and is finished to a depth of 130 feet bgs. The capacity of this well is 260 gpm. The water from this well is chlorinated with gas chlorine on site, and pumped directly into the water distribution system.

Well No. 5 (Rainier School Well)

This well is finished to a depth of 180 bgs. The capacity of this well is 215 gpm. Water from this well can be pumped either to the slow sand filter system or directly to the reservoir via a 6-inch AC water transmission main. The water from this well is not available to be chlorinated on site.

Well No. 6 (Trail Well No. 1)

This well was drilled in 2005 as a test well to determine how much water could be available at the site located south of town along SR 165, near the Foothills Trail. The well was drilled to a depth of 197 feet, has a 6-inch casing to 135 feet and a 6-inch telescoping, 30-slot screen, installed from 135 feet to 155 feet. The well was operates at a capacity of 90 gpm. Due to an elevated level of manganese, a filtration system, using pyrolusite material has been installed at the well. The water from this well is chlorinated with gas chlorine on site.

Well No. 7 (Trail Well No. 2)

This well is located approximately 60 feet north of Well No. 6. The well was drilled to a depth of 163 feet, has a 12-inch casing extending to 125, feet and a 12-inch telescoping 100-slot screen extending from 125 to 140 feet. The well was operates at a capacity of 205 gpm. Due to an elevated level of manganese, a filtration system, using pyrolusite material has been installed at the well. The water from this well is chlorinated with gas chlorine on site.

Well System Operations

Water produced from Wells No. 2, 4, and the Rainier School Well can be directed through the slow sand filter or pumped directly into the reservoir. These wells have their own chlorination system prior to entering the reservoir. The Naches Street Well and the two Trail Wells also have their own chlorination systems and water from these wells is pumped directly into the distribution system. Low water levels in the reservoir call the wells sequentially, as the reservoir level decreases. As water level in the reservoir increases, the wells are deactivated in the reverse sequence.

As a part of the above noted source of water, the City currently maintains an emergency intertie with the City of Tacoma. The intertie includes a booster station and is located to along SR-410 near the Post Office.

The locations of these sources are indicated in Figure W1 in the Utilities Element.

Forecast of Future Needs

Based on the above noted supply rates and the anticipated population growth rate within the urban growth area boundaries, maximum day demands will exceed source capacity by 2025. Additional source capacity will be obtained through modifications to the slow sand filter and development of additional groundwater sources.

The City should be cognizant of the fact that future water sources may yet be required and that the securing of additional rights would be beneficial and consistent to their extended growth plans.

The following project descriptions are provided as a brief outline to source water improvements, which will be suggested to support the anticipated future development and maintain adequate water service to existing development within the urban growth area boundary.

- S-1. Slow Sand Filter Re-Sand Pilot Study to test the effectiveness of increasing the loading rate.
- S-2. Re-Sand Slow Sand Filter at the Water Treatment Plant.
- S-3. Expand Slow Sand Filter Water Treatment Plant-construct additional filter bed area; expand filter building, additional inlet and under-drain piping, site piping and controls.
- S-4. Hydro-Geologic Study for a New Well- complete a hydro-geologic study to obtain recommendations of locations that would be most likely to support productive wells.
- S-5. Drill and Test New Well.

TREATMENT

Level of Service

The treatment of potable water shall be provided to comply with the standards as set by the Federal Safe Drinking Water Act (SDWA) and the Surface Water Treatment Rule (SWTR).

Inventory System

The City of Buckley operates a slow sand filter water treatment plant to provide surface water treatment. The filtration plant has an available filter surface area of 8,500 square feet. The plant is currently operated at a treatment capacity of 725 gpm. The water is chlorinated with gas chlorine after filtration and before entering the on-site storage reservoir. Chlorine contact time is provided in the reservoir.

Water produced from Wells 2, 4, and 5 can be directed through the slow sand filter, or they can be pumped directly into the reservoir. Gas chlorination is available at Wells 2 and 4, but is used only when the wells are discharged directly to the reservoir. When water is discharged from the wells directly to the reservoir, the chlorination rates at Wells 2 and 4 is adjusted to provide the target chlorine residual in the combined flow from Wells 2, 4 and 5. When the wells are discharged to the slow sand filter, the water is chlorinated as it leaves the filter system.

The Naches Street Well (Well 1) has its own gas chlorination system, and water from this well is pumped directly into the distribution system. No chlorine contact time is required for this well.

Water from Trail Wells 1 and 2 is treated with pyrolusite filter media to remove dissolved iron and manganese. The Trail Wells Treatment Facility includes five, 3-foot diameter vessels and has a design flowrate of 300 gpm and a design filter loading rate of 8.5 gpm/sq. ft. The raw well water is chlorinated with glass chlorine and sodium permanganate upstream of the filters. The treated water enters the distribution system near the intersection of Ryan Road and SR 165.

Forecast of Future Needs

Future treatment needs include the following improvements at the WTP:

- Increasing filter-loading rate and expand slow sand treatment plant to gain more filtration capacity. Projects under the Source and Supply section will address the slow sand filtration capacity.

The following project descriptions are provided as a brief outline to water treatment plant improvements, which will be required to support the anticipated future development and maintain adequate water service to existing development within the urban growth area boundary.

- TR-1. Upgrade System Telemetry. This will allow the City to maintain more competitive service contracts for maintenance and repairs of its telemetry equipment.

STORAGE

Level of Service

Storage capacities shall be per the Washington State Department of Health's sizing guidelines and requirements as stated within the Ten State Standards.

Inventory of System

The system includes two storage reservoirs. Only one reservoir, located adjacent to the filtration plant is normally used. This reservoir has a capacity of 2.3 million gallons.

Proposed Locations and Future Needs

Based on projected growth rates and required storage volumes, the City will exceed its storage capacity by the year 2029. The City will require an additional 208,000 gallons of storage by the year 2029. This assumes the City increases its source capacity to meet its maximum day demands (from the current 1,870 to a future 2,425 gpm in 2035). Future storage needs include:

- Additional storage will be required by 2029. Approximate reservoir size is anticipated to be 1.0 million gallons to provide redundancy for the existing 2.3 million gallon reservoir.

The following project descriptions are provided as a brief outline to storage improvements, which will be required to support the anticipated future development and maintain adequate water service to existing development within the UGA boundary.

- ST-1. Reservoir Siting Study. Evaluate potential reservoir locations and configurations.
- ST-2. Construct 1.0 MG Reservoir.

TRANSMISSION AND DISTRIBUTION SYSTEM

Level of Service

This supply of water to various areas within the urban growth boundary shall be completed to comply with the Department of Health, Ten State Standards, and City Fire Marshal Standards.

Inventory of System

The existing City water system is shown in Figure W1 in the Utilities Element. The system includes both transmission and distribution components. The transmission main conveying water from South Prairie Creek to the slow sand filtration plant is 29,200 feet in length. The City's distribution system consists of 32 miles of pipes ranging in size from 4 to 12 inches in diameter. The various pipe materials include ductile iron pipe, polyvinyl chloride pipe, cast iron pipe, steel pipe, and HDPE pipe. The age of the existing system varies but a sizable portion of the network was installed over 50 years ago.

Proposed Locations and Future Needs

To determine the future impacts that increasing development may impose upon the City's existing system a hydraulic model analysis was performed. The City's water system was analyzed using MWH Soft's H₂ONet hydraulic modeling software, which operates in an AutoCAD computer-aided design and drafting environment. The H₂ONet model was created using the City's water system basemap. Reservoir elevations and well capacities were determined from existing planning documents and City records. The H₂ONet model is configured with a graphical user interface. Each water system element (sources, pipes, control valves, and reservoir) is assigned a unique graphical representation within the model. Each element is assigned a number of attributes specific to its function in the actual water system. Typical element attributes include spatial coordinates, elevation, water demand, pipe lengths and diameters, and critical water levels for reservoirs. With attributes of each system element as the model input, the software produces the model output in the form of flows and pressures throughout the simulated water system. The following five system demand scenarios were used to hydraulically model the City of Buckley water system:

- 2014 Average Daily Demands: These demands were used while calibrating the model.
- 2020 Peak Hour Demands: These demands were used to verify the system is able to meet the DOH standards to supply domestic water at a minimum system wide pressure of 30 psi.
- 2020 Maximum Day Demands: These demands were used to evaluate the system's ability to meet the maximum day demands plus required fire flows at DOH's requirement of 20 psi.
- 2035 Peak Hour Demands: These demands were used to verify the system is able to meet the DOH standards to supply domestic water at a minimum system wide pressure of 30 psi.
- 2035 Maximum Day Demands: These demands were used to evaluate the system's ability to meet the maximum day demands plus required fire flows at DOH's requirement of 20 psi.

The following project descriptions are provided as a brief outline to improvements, which will be required to support the anticipated future development and maintain adequate water service to existing development within the urban growth area boundary (see Figures W2 and W3 in the Utilities Element). The improvements, which have been noted represent additions

to the existing main line conveyance systems and are presented to allow for the delivery of water, to the estimated development areas, for both potable and fire flow usage. Additional improvements will undoubtedly be required within various communities as the location of growth and the type of developments would dictate. The following projects are listed in order of priority under either, Transmission or Distribution.

Transmission

- T-1. Segment 6, End of Trenchless to North Slope-replace 2,440 LF of Raw Water Transmission Main between Segment 5 and Segment 7 with new 12-inch HDPE Raw Water Transmission Main.
- T-2. Segment 8, Creek Crossing Restoration. The City installed a cable bridge across South Prairie Creek in 2016 to carry a segment of the transmission main. The old pipeline and concrete encasement requires removal and the disturbed banks along the creek require additional restoration.
- T-3. Segment 13, Between Replacement Segments-replace 260 LF of Raw Water Transmission Main between Segment 14 and Segment 16 with new 12-inch HDPE Raw Water Transmission Main.
- T-4. Segment 15, End of Cable Bridge to Replacement Segment-replace 1,135 LF of the Raw Water Transmission Main from the north end of the cable bridge to connect the south end of the Segment 14 with new 12-inch HDPE Raw Water Transmission Main.
- T-5. Annual Transmission Main Leak Detection-continue an annual leak detection program to determine if there are any additional sections of the pipeline in need repair.
- T-6. Segment 16, Existing Cable Bridge. Replace 200 LF cable bridge across a creek gully.
- T-7. Segment 19, Along Cliff Face. Replace 200 LF of transmission main, including a new cliff anchorage system.
- T-8. Segment 21, Creek Bed to Headworks. Replace 1,000 LF of transmission main in the South Prairie Creek streambed near the headworks of the transmission main.

Distribution

- D-1. Edith from Park to Dundass, Balm from 4th to Ewing, Ewing from Dundass to Balm, 3rd from Main to Masin. Install 1,200 LF of 8-inch water main.
- D-2. Heather between Whitmore and Elk Ridge Elementary School. Install 70 LF of 8-inch water main.
- D-3. Mason from A to D, B south of Mason, Rainier from Main to Mason. Install 1,900 LF of 8-inch water main.
- D-4. A from Park to Main. Install 850 LF of 8-inch water main.
- D-5. Division from Ryan to Fire Station. Install 360 LF of 8-inch water main.
- D-6. Jefferson from 3rd to Pearl, Pearl from Perkins to Ryan, Mill from Pearl to Jefferson. Install 2,080 LF of 8-inch water main.

- D-7. Ryan from Spiketon Road to east side of LDS Church. -Install 2,360 LF of 12-inch water main.
- D-8. Fulton and 4th. Install 450 feet of 8-inch water main.
- D-9. Sheets, south of Ryan. Install 600 feet of 8-inch water main.
- D-10. Klink, south of Ryan. Install 1,400 feet of 8-inch water main.
- D-11. SR 410, west to Mundy-Loss. Install 1,100 feet of 8-inch water main.
- D-12. Hinkleman Extension from SR 410 to 112th. Install 700 feet of 8-inch water main.
- D-13. Hinkleman Road from Hinkleman Extension to Mundy-Loss. Install 2,200 feet of 8-inch water main.
- D-14. McNeely, north of Collins. Install 2,200 feet of 8-inch water main.
- D-15. McNeely, south of Collins. Install 750 feet of 8-inch water main.
- D-16. River, north of Dieringer. Install 450 feet of 8-inch water main.
- D-17. Mason from Spruce to McNeely. Install 2,000 feet of 8-inch water main.
- D-18. Dieringer from Sorenson to McNeely. Install 2,200 feet of 8-inch water main.

CAPITAL IMPROVEMENT PLAN

Source and Supply Projects

CF-6 presents a capital improvement plan for source and supply projects. The lists the year of completion and the probable source of funds for each project. The projects are described in more detail in the previous sections. Data for the source and supply projects were taken from the City of Buckley Water System Comprehensive Plan, August 2017.

Table CF-6 Source and Supply Water Projects

Project Number	Year of Completion	Funding Source	Estimated Project Cost (2017)
S-1	2018	20% DSHS, 80% Water Cap. Fund	\$30,000
S-2	2018	20% DSHS, 80% Water Cap. Fund	\$180,000
S-3	2019	20% DSHS, 80% Water Cap. Fund	\$800,000
S-4	2020	Water Capital Project Fund	\$25,000
S-5	2021	Water Capital Project Fund	\$150,000

Water Treatment Projects

CF-7 presents a capital improvement plan for water treatment projects. The lists the year of completion and the probable source of funds for each project. The projects are described in more detail in the previous sections. Data for the water treatment improvements were taken from the City of Buckley Water System Comprehensive Plan, August 2017.

Table CF-7 Treatment System Improvements

Project Number	Year of Completion	Funding Source	Estimated Project Cost (2017)
TR-1	2018	20% DSHS, 80% Water Cap. Fund	\$180,000

Water Storage Projects

CF-8 presents a capital improvement plan for the water storage projects. The lists the year of completion and the probable source of funds for each project. The projects are described in more detail in the previous sections. Data for the water storage projects were taken from the City of Buckley Water System Comprehensive Plan, August 2017.

Table CF-8 Storage Projects

Project Number	Year of Completion	Funding Source	Estimated Project Cost (2017)
ST-1	2021	Water Capital Project Fund	\$25,000
ST-2	2022	70% Loan, 30% Water Cap. Fund	\$2,000,000

Transmission Main Projects

CF-9 presents a capital improvement plan for transmission main projects. The lists the year of completion and the probable source of funds for each project. The projects are described in more detail in the previous sections. Data for the transmission main projects were taken from the City of Buckley Water System Comprehensive Plan, August 2017.

Table CF-9 Transmission Main Projects

Project Number	Year of Completion	Funding Source	Estimated Project Cost (2017)
T-1	2019	70% Loan, 30% Water Cap. Fund	\$830,000
T-2	2018	Water Capital Project Fund	\$50,000
T-3	2020	Water Capital Project Fund	\$105,000
T-4	2020	Water Capital Project Fund	\$390,000
T-5	Annual	Water Operating Fund	\$140,000
T-6	2023	Water Capital Project Fund	\$203,000
T-7	2025	Water Capital Project Fund	\$161,000
T-8	2027	70% Loan, 30% Water Cap. Fund	\$409,000

Distribution Main Projects

CF-10 presents a capital improvement plan for distribution main projects. The lists the year of completion and the probable source of funds for each project. The projects are described in more detail in the previous sections. Data for the distribution main projects were taken from the City of Buckley Water System Comprehensive Plan, August 2017.

Table CF-10 Distribution Main Projects

Project Number	Year of Completion	Funding Source	Estimated Project Cost (2017)
D-1	2018	Water Capital Project Fund	\$354,000
D-2	2019	Water Capital Project Fund	\$29,000
D-3	2018	Water Capital Project Fund	\$510,000
D-4	2019	Water Capital Project Fund	\$250,000
D-5	2021	Water Capital Project Fund	\$99,000
D-6	2020	Water Capital Project Fund	\$583,000
D-7	2021	Water Capital Project Fund	\$643,000
D-8	2021	Water Capital Project Fund	\$211,000
D-9	2023	Water Capital Project Fund	\$146,000
D-10	2023	Water Capital Project Fund	\$334,000
D-11	2024	Water Capital Project Fund	\$251,000
D-12	2025	Water Capital Project Fund	\$158,000
D-13	2026	70% Loan, 30% Water Cap. Fund	\$1,071,000
D-14	2022	Developer Extension	\$523,000
D-15	2022	Developer Extension	\$193,000
D-16	2024	Developer Extension	\$120,000
D-17	2024	Developer Extension	\$475,000
D-18	2025	Developer Extension	\$545,000

RECOMMENDED FINANCING PLAN

The revenue to operate and maintain the City of Buckley's water system is collected through a monthly water rates. Water rates are determined by meter size serving the customer as shown in CF-11.

Table CF-11 Monthly Water System Rates – Base Charge for 200 cubic feet

Meter Size	Cost
Up to 3/4"	\$22.93
1"	\$29.07
1-1/2"	\$41.78
2"	\$62.79

Meter Size	Cost
3"	\$93.23
4"	\$151.23
6"	\$291.73
8"	\$714.74

In addition to the above meter base charges for the first 200 cubic feet per month, residential customers are charged \$2.06 per 100 cubic feet for 200 to 700 cubic feet, \$2.47 per 100 cubic feet for 700 to 1,500 cubic feet, and \$2.94 per 100 cubic feet for over 1,500 cubic feet. In addition to the above meter base charges for the first 200 cubic feet per month, commercial and industrial customers are charged \$2.16 per 100 cubic feet and school customers are charged \$2.04 per 100 cubic feet. The City of Buckley Water Capital Project Fund is funded from revenues including the general facilities charges established by BMC 14.04.320 and the portion of the service charges allocated by the city council in Chapter 14.04 BMC. The water capital project fund shall be used for the purpose of designing and construction improvements to the water system.

The general facilities charge for the City water system is \$6,500 for each single-family residence, \$4,875.00 for each multi-family dwelling, and \$6,500.00 for each equivalent residential unit, for all other uses.

There are four principal ways that the improvements outlined in this water section can be financed aside from setting aside a portion of the monthly service charge. Rates and charges must be maintained at an adequate level to ensure a sufficiency of funds to properly maintain and operate the system and provide funds for construction of the projects identified through a combination of cash contributions and debt financing.

A. Developer Financing

Developers of presently unimproved property will finance many of the new facilities constructed in the City. All of the improvements required for service to property with new plats or commercial developments will be designed and constructed in accordance with the City's developer project policies. In some cases, latecomer's agreements may be executed for any water main serving property other than the property owned by the developer that is financing the project.

B. Combination Financing by the City and Developers

It may be necessary in some cases to require the owner to construct a larger diameter water line than is required by the current development in order to support the comprehensive development of the City's water system. The City may enter into a latecomer's agreement or reimburse the developer for the extra cost of increasing the size of the line over that required to serve the property under development. Oversizing should be considered when it is necessary to construct any pipe over a certain diameter in a single-family residential area to comply with the water comprehensive plan.

C. Revenue Bond / General Obligation Bond

Water treatment plant improvements, water storage facilities, and other major capital improvement projects that are a general benefit to a major portion of the City may be financed by revenue bonds or general obligation bonds. Improvements that will benefit primarily a single developer should be financed by the developer of the property. The City may use whatever funds are available for the payment of the debt service on the revenue bonds. A major source of these funds is from the water rate revenues from the City customers. However, all funds, such as general facility fees, connection charges or latecomer charges, may be used for debt service. Water system improvements that will service many different property owners in areas that are already developed may be financed through the establishment of a local improvement district (LID). The financing is accomplished through the sale of revenue bonds or general obligation bonds. These bonds are retired with income from the assessments and/or other funds of the City.

D. Grant Funds / Loans

State and federal authorities provide funds under various grant programs for the construction of major improvements to or rehabilitation of water systems. Programs available include State Revolving Fund Loan (SRF), United States Department of Agriculture Rural Development (USDA RD), and Public Works Trust Fund Loan Program (PWTF).

V. SEWAGE COLLECTION AND TREATMENT

The City of Buckley owns, operates, and maintains a sanitary collection system within City limits. The City system consists of a collection system, a secondary wastewater treatment plant, and an outfall to the White River. The plant is located north of Park Avenue and currently serves an estimated 4,300 people. Additionally, the City receives wastewater from a school district lift station west of the City, which serves two existing schools of the White River School District. The plant operates under NPDES WA-002336-1, which became effective May 1, 2003 and expired in 2008. However, Ecology administratively extended that permit and requires the City to monitor the influent and effluent and comply with the limitations specified in the expired permit. Under this permit, treated effluent is discharged into an outfall located in a side channel of the mainstream of the White River. The nearest other treatment facility is located at the Enumclaw WWTP located about 2 miles to the northeast of Buckley.

This section of the report first addresses the conditions and needs of the sanitary collection system and then those for the wastewater treatment facility.

COLLECTION SYSTEM

Level of Service-+

The Level of Service (LOS) for the sanitary sewer system was established from the *Criteria for Sewage Works Design*, Department of Ecology, 1998, and construction standards adopted by the City through its municipal codes.

The Level of Service (LOS) requirements for the sanitary sewer collection system include the capability of handling peak flow and providing adequate pipeline velocity. Gravity lines must be sized and sloped to provide a minimum velocity of 2 feet per second. Minimum pipeline diameter for gravity service is 8 inches with a slope of 0.004 ft/ft. In addition, gravity lines must be protected with a minimum of 3 feet of cover and provided with manholes spaced about 400 feet apart and located at all the intersections and changes of grade. New construction is required to meet standards to limit infiltration and inflow into the system. These standards include precast manhole sections with gasketed seals, concrete pipe with rubber joints, or heavy duty PVC pipe.

The City of Buckley system currently has only two pump stations on the west end of the system, which serve two schools. However, it is anticipated that as the City expands to provide service within its GMA boundaries, additional pumping stations will connect to the system. Design criteria for pumping stations are established in detail in the *Criteria for Sewage Works Design*. Among the requirements are ones for duplicate pumps for each station, each capable of handling the station's maximum design flow. Each station shall be protected against the 100-year flood and provide sufficient head to maintain a minimum velocity of 2 feet per second within the force main. Minimum pipe size for sewage force mains shall be 4 inches. In addition, an alarm system shall be provided for all pumping stations as well as provisions for auxiliary power.

Inventory of System

The City's existing sanitary sewer system consists of approximately 123,500 LF of gravity sewers, 10,600 LF of 6-inch and 4-inch force mains, and approximately 270 manholes. The existing sanitary sewer system is shown in Figure S1 in the Utilities Element. The system is more or less divided into two parts by SR 410. Flow on the southeast side of SR 410 is collected, transported under the highway at Wheeler Avenue and Park Avenue, and then conveyed by gravity to the wastewater treatment plant (WWTP) north of Park Avenue. A small volume of flows is conveyed across SR 410 immediately west of the intersection of SR 410 and SR 165. Flows northeast of the highway travel north to the main trunk line on Park Avenue. A summary of this collection system is shown below in CF-12.

Table CF-12 Collection System Inventory

Pipe Diameter	Length (lineal feet)
Gravity System	
4-inch	24,000

Pipe Diameter	Length (lineal feet)
Gravity System	
6-inch	2,100
8-inch	60,300
10-inch	12,000
12-inch	9,100
14-inch	2,000
15-inch	2,100
18-inch	6,200
Subtotal	117,800
Force Main	
4- and 6-inch	7,800

The collection system in Buckley was originally built in the early 1900's as a combined storm and sanitary sewer system. Over the years, extensions and sewer separations have occurred resulting in a total pipeline length exceeding 125,000 feet. The older gravity sewer mains consist of clay pipe with mortared bell-spigot type joints. More recent construction is primarily 8 and 10-inch concrete and PVC pipe with rubber joints. However, only about 1/3 of the system was installed with this type of construction. The depth of the sewer mains typically varies from 2 to 15 feet, with 6 to 7 feet as the average depth. Manholes in the older portion of the system are of brick and mortar construction, while the most recently installed manholes are precast concrete. Due to the age of the system, the depths of the conveyance mains and type of construction, infiltration and inflow (I/I) problems have continued to develop. I/I problems result during storms, when water infiltrates through pipe imperfections such as misaligned joints and cracks in the lines, greatly increasing flows to the plant. The City has replaced most of the downtown core area gravity sewers, resulting in significant reductions in I/I.

Proposed Location and Future Needs

The evaluation of the City's collection system conducted in 2017 identified several needs to serve existing and future customers. These are briefly discussed below. In addition, planning under GMA has identified other future needs.

As has been previously noted, the majority of the City's original sanitary sewer conveyance system consisted of 50 year old clay pipe which had deteriorated considerably and was in need of replacement due to the volumes of infiltration/inflow presently accessing the conveyance network. Furthermore, by the Department of Ecology (DOE) standards several of the existing sewer mains are undersized and/or sloped at less than acceptable grades.

A sewer system rehabilitation program was first developed from an I/I study in 1973. A second I/I analysis and a sewer system evaluation survey were conducted in 1975. Because the WWTP exceeded design flows during wet weather months, a third I/I study was undertaken in 1992 and completed in 1994. This report (Infiltration/Inflow Analysis and Engineering Report) was amended in January 1999. The report indicated that removal of I/I

would be more cost-effective than expansion of the treatment plant, if 45 percent of the I/I were removed. Manhole rehabilitation was also identified in the 1994 plan as another project aimed at reducing I/I. The amendment to the I/I analysis and Engineering Report completed in January 1999 looked at reducing I/I in two of the drainage basins.

As a result of the 1992-94 I/I study, the city of Buckley replaced parts of its sanitary sewer collection system. In 1998, the City applied for approval from the Department of Ecology to increase the capacity of the WWTP by approximately 330 connections, and received approval on condition that the City construct wastewater improvements to remove approximately 45 percent of the inflow and infiltration of stormwater into the City's sewer system and on the condition that the City construct a digester at the treatment plant.

The future improvement projects recommended by this plan are based both on the anticipated maximum or build-out development within the UGA boundary and the existing condition of the sanitary conveyance system as described in the modeling completed in 2015.

The expected future sewage flow rates were developed by applying per capita flow rates and peaking factors to the estimated population figures as have been presented within the land use element section of this plan.

The 2017 Draft Sewer Comprehensive Plan included a hydraulic capacity analysis of the existing sewer collection system using a computer software modeling program called InfoSewer. The entire city was divided into eight sewer basin areas, shown in Figure S2 of the Utilities Element. Interceptors within the eight areas were at least 10 inches in diameter or greater. The eight areas include the existing service areas named as follows: A1, A2, A4, CW, A26, B13, E2A, and F1. The future service areas are named as follows: Nanevicz, North McNeely, Central McNeely, South McNeely, Van Sickle, Shay/Rainier School, TAN-W, TAN-E, Elk Heights, EM, and SE. Currently, approximately 1,100 acres are being served by the City's collection system. The future service area will include an additional 800 acres for a total of approximately 1,900 acres in the City's collection system. The amount of sanitary flow is determined by the contribution per capita and the calculated population. The population density assumes the land is fully developed to the level allowed by the corresponding land use designation. The future peak flow of 2.88 mgd was used in the modeling.

All recommended pipe replacement projects include lowering the pipeline elevation and increasing the pipe's existing slope. These modifications will allow the system to serve outlying areas primarily by gravity.

The following projects address deficiencies to the sewer collection system identified from modeling and studies discussed above and are shown in Figure S3 of the Utilities Element.

Gravity Sewer Main Projects

- G-1. Alley to the East of Edith Street—construct 450 LF of new 8" PVC from Park Avenue to Dundass Street.

- G-2. Spiketon Road-construct 500 LF of new 8" PVC from Ryan Road to A Street.
- G-3. Alley between Cascade Street and Edith Street-construct 450 LF of new 8" PVC from Dundass Avenue to Park Avenue.
- G-4. Near 550 Balm Street- construct 200 LF of new 8" PVC.
- G-5. Spiketon Road-construct 900 LF of new 8" PVC from Ryan Road to 649 Spiketon Road.
- G-6. Alley between Naches Street and Second Street-construct 1,000 LF of new 8" PVC, from Park Avenue to Mason Avenue.

Trunk Sewer Main Projects

- T-1. McNeely Street South, East on Mason to State School Property Line, South to Ryan Road to Klink Street-construct 4,800 LF of new 12" PVC.

AREA LIFT STATIONS

There is presently sewer service to the elementary and middle schools which are located in the most southerly and westerly area of the GMA boundary via a 6-inch force main along SR 410 and a school district maintained lift station. The existing topography of this area would dictate that gravity mains flow towards the most northerly and westerly area of the proposed development limits. To convey flows completely by gravity from the most outlying areas to the treatment plant would require sewer piping installation of depths, over 25 feet. This type of system is not viewed as financially feasible because of these depths and the glacial till underlying most of the area. An alternative is the installation of lift stations sized to serve the developing population.

The following projects address deficiencies to the sewer collection system that are remedied by lift stations and force main projects:

Lift Station and Force Main Projects

- L-1. South Spiketon Road Lift Station - 500 gpm, 2 pumps with Emergency Generator.
- F-1. South Spiketon Road-construct 1,300 LF of new 6" Ductile Iron Force Main.

COMPLETION OF SANITARY SEWER SYSTEM REHABILITATION

The system improvements and/or extensions noted above do not include additional projects that need to be completed for the continued improvement of the older segments of the collection system. The City will complete TV inspection work and disconnection of roof, yard, and cellar drains as previously recommended to City. The City will also analyze and collect additional flow data, conduct limited system evaluation and complete spot repairs,

perform mainline and side sewer rehabilitation of existing sewers as identified in I/I Program and system evaluation.

TREATMENT SYSTEM

Level of Service

The Level of Service (LOS) for the sewage treatment plant was established from the *Criteria for Sewage Works Design*, DOE, 2008. Average design flows were established from an average demand of 108 gallons per day per capita, and the expected service population. Projected wastewater flows in 2035 are 1.07 mgd annual average flow and 1.60 mgd maximum monthly flow.

In addition to hydraulic design criteria, there are also loading criteria for LOS. Typically loading criteria are established for Biological Oxygen Demand (BOD₅) and Total Suspended Solids (TSS). For BOD, 0.2 lbs/day per capita was utilized for design loadings; for TSS, 0.17 lbs/day per capita were utilized. Both values are consistent with Criteria of Sewage Design. Historic phosphorus literature data was used to size the nutrient removal components to be added treatment plant.

The existing sewage treatment plant is permitted NPDES WA-00-2336-1 which was issued May 1, 2003 and expired in 2008. However, Ecology administratively extended that permit and requires the City to monitor the influent and effluent and comply with the limitations specified in the expired permit. This permit establishes reporting requirements and performance criteria for the discharge of treated wastewater and the quality of wastewater sludge. Phosphorus limits are not included in this permit, but are anticipated in the next permit cycle. The values shown below represent the limits on what the treatment plant can discharge to the White River under the existing permit.

Table CF-13 NPDES Permit Limits

Parameter	Monthly Average	Weekly Average
5-day Biochemical Oxygen Demand	30 mg/L 134 lb/day	45 mg/L 201 lb/day
Total Suspended Solids (TSS)	30 mg/L 114 lb/day	45 mg/L 171 lb/day
Fecal Coliform Bacteria	200/100 ml	100/100 ml
pH	Shall not be outside the range of 6.5-8.5	
Total Residual Chlorine	9 ug/L	23 ug/L
Total Ammonia (as N) May1 – Oct.31	2.6 mg/L	7.43 mg/L 62 lbs./day
Total Ammonia (as N) Nov. 1 – Apr. 30	4.5 mg/L	10.5 mg/L
Total Copper	Interim 27 ug/L Final 11.13 ug/L	Interim 38.5 ug/L Final 16.24 ug/L

A review of monthly reports for the period of 2009 to 2017 indicated that the plant did not fail to meet these discharge limits.

Inventory of System

The current plant was designed to accommodate an average flow of 1.0 mgd and has a peak hydraulic capacity of 2.7 mgd.

The system components include headworks/grit removal, two oxidation ditches, two clarifiers, chlorination/dechlorination, and a mechanical building housing sludge pumps and dewatering equipment. The headworks of the facility consists of the influent channel, a bar screen, a degritter, a grinder, an adjustable flow splitter and effluent channels to the oxidation ditches. From the headworks, influent enters the oxidation ditches where the main treatment process occurs. Effluent is then transported to the clarifier units where solids are separated from liquid and either recirculated to the oxidation ditches or wasted to the sludge disposal system. Effluent from the clarifiers enters the dual chlorine contact tanks prior to discharge into the White River via a 14-inch outfall pipe.

Treatment System Improvements

The City of Buckley completed major improvements to the exiting wastewater treatment, effluent disposal, and biosolids processing systems in 2008.

The needs for these improvements are being driven by two factors. The first is the implementation of phosphorous limitations for discharges to the White River. Buckley currently operates a conventional secondary wastewater treatment plant. The White River has been the location of the City's treated wastewater effluent discharge. A Total Maximum Daily Load (TMDL) study was performed on the White River and it was determined that phosphorous loadings were a threat to the health of the river. A subsequent Waste Load Allocation (WLA) has determined that Buckley must reduce its phosphorous loadings to the river. A conventional secondary treatment is not capable of removing phosphorous to the level required by the WLA, so the City proceeded with improvements necessary to remove phosphorous.

The second factor is the need to accommodate additional growth in the Buckley Urban Growth Area (UGA). The current customer base for the wastewater system consists of approximately 4,300 persons. This customer base is expected to increase to 8,000 by the year 2035.

With the substantial treatment plant upgrades completed, the City plans to make a minor revision to one of the plant systems and to evaluate improvements needed for reuse water to be distribute

Wastewater Treatment Plant Projects

- TP-1. WWTP Non-Potable Water System Upgrades
- TP-2. WWTP Wastewater Reuse Feasibility Study

CAPITAL IMPROVEMENT PLAN

Collection System

CF-14 presents a capital improvement plan for collection system requirements. The lists the year of completion and the probable source of funds for each project. The projects are described in more detail in the previous sections. Data for the collection system improvements were taken from the City of Buckley Draft Sewer Comprehensive Plan, August 2017.

Table CF-14 Gravity Sewer and Trunk Sewer Projects

Project Number	Year of Completion	Funding Source	Estimated Project Cost (2017)
G-1	2018	Sewer Capital Project Fund	\$151,000
G-2	2019	Sewer Capital Project Fund	\$180,000
G-3	2018	Sewer Capital Project Fund	\$155,000
G-4	2018	Sewer Capital Project Fund	\$101,000
G-5	2019	Sewer Capital Project Fund	\$284,000
G-6	2019	Sewer Capital Project Fund	\$325,000
T-1	2020	50% Developer Extension, 50% Sewer Cap. Project Fund	\$1,633,000

Lift Station and Force Main Projects

CF-15 presents a capital improvement plan for the area lift station and force main projects. The lists the year of completion and the probable source of funds for each project. The projects are described in more detail in the previous sections. Data for the lift station and force main improvements were taken from the City of Buckley Draft Sewer Comprehensive Plan, August 2017.

Table CF-15 Lift Station and Force Main Projects

Project Number	Year of Completion	Funding Source	Estimated Project Cost (2017)
L-1	2019	Developer Extension	\$866,000
F-1	2019	Developer Extension	\$253,000

Treatment Plant Improvements

CF-16 presents a capital improvement plan for the Treatment Plant Improvements. The lists the year of completion and the probable source of funds for each project. The projects are described in more detail in the previous sections. Data for the treatment plant improvements were taken from the City of Buckley Draft Sewer Comprehensive Plan, August 2017

Table CF-16 Treatment Plant Improvements

Project Number	Year of Completion	Funding Source	Estimated Project Cost (2017)
TP-1	2018	Sewer Capital Fund	\$158,000
TP-2	2019	Sewer Capital Fund	\$100,000

RECOMMENDED FINANCING PLAN

The revenue to operate and maintain the City of Buckley's sewer system is collected through a monthly service charge. Each single family and mobile home sewer account is charged a flat rate of \$77.99 per month. Multi-family residences are charged a flat rate of \$65.89 per month. Non-system sewage disposal within the City is \$275.66 per one hundred-five cubic feet. Commercial sewer accounts are charged \$77.99 plus \$3.05 per 100 cubic feet in excess of nine hundred cubic feet of water per month. Based on the financial analysis in the 2017 Draft Sewer Comprehensive Plan, the rates are not required to increase. The City plans to convert to an alternate rate structure with a base charge and a volume charge.

The general facilities charge for the City sewer system is \$8,100 for each single-family residence, \$6,075 for each multi-family dwelling, and \$8,100 for each equivalent residential unit, for all other uses.

There are four principal ways that the improvements outlined in this sanitary sewer section can be financed aside from setting aside a portion of the monthly service charge. Rates and charges must be maintained at an adequate level to ensure a sufficiency of funds to properly maintain and operate the system and provide funds for construction of the projects identified through a combination of cash contributions and debt financing.

A. Developer Financing

Developers of presently unimproved property will finance many of the new facilities constructed in the City. All of the improvements required for service to property with new plats or commercial developments will be designed and constructed in accordance with the City's developer project policies. In some cases, latecomer's agreements may be executed for any sewer main serving property other than the property owned by the developer that is financing the project.

B. Combination Financing by the City and Developers

It may be necessary in some cases to require the owner to construct a larger diameter line than is required by the current development in order to support the comprehensive development of the City's sewer system. The City may enter into a latecomer's agreement or reimburse the developer for the extra cost of increasing the size of the line over that required to serve the property under development. Oversizing should be considered when it is necessary to construct any pipe over 10 inches in diameter in single-family residential areas to comply with the sewer capital facilities plan. Construction of any pipe in residential, multiple family, or commercial areas that is larger than the size required to serve that development is considered oversizing.

C. Revenue Bond / General Obligation Bond

Interceptor, lift station, force main and treatment plant improvements that are a general benefit to a major portion of the City may be financed by revenue bonds or general obligation bonds. Improvements that will benefit primarily a single developer should be financed by the developer of the property. The City may use whatever funds are available for the payment of the debt service on the revenue bonds. A major source of these funds is from the sewer rate revenues from the City customers. However, all funds, such as general facility fees, connection charges or latecomer charges, may be used for debt service. Sewer system improvements that will service many different property owners in areas that are already developed may be financed through the establishment of a local improvement district (LID). The financing is accomplished through the sale of revenue bonds or general obligation bonds. These bonds are retired with income from the assessments and/or other funds of the City.

D. Grant Funds / Loans

State and federal authorities provide funds under various grant programs for the construction of major improvements to or rehabilitation of sewer systems. Programs available include Centennial Clean Water Grant Fund (CCWF), State Revolving Fund Loan (SRF), United States Department of Agriculture Rural Development (USDA RD), and Public Works Trust Fund Loan Program (PWTF).

VI. STORMWATER COLLECTION AND TREATMENT

The storm and surface water drainage utility is owned, operated and maintained by the City and provides drainage, flood control, and protection of environmentally sensitive areas such as wetlands, steep slopes and stream corridors. For the most part, the original system is somewhat antiquated and consists of piping materials and construction methods, which were employed nearly 60 years ago. The majority of this original drainage network was completed using clay tile piping with open joint construction. Over time, this piping has deteriorated to an extremely poor condition, with several areas needing immediate improvements.

The City utilities department has completed some improvements to the system over the years. The installation of new piping systems and improvements to existing drainage channels has substantially increased the hydraulic performance of the existing system. Current growth and expected growth will require more improvements and additions to the existing system. The existing storm drainage system is shown in Figure D1 of the Utilities Element.

The Level of Service (LOS) for the City's stormwater conveyance system is to convey the 25-year storm event. The City of Buckley has adopted the *Ecology Stormwater Management Manual for Western Washington (2012)*, as the City's technical manual (BMC 14.30.061). The City has also adopted the *Low Impact Development Technical Guidance Manual for Puget Sound (LID Manual)*.

Moving stormwater within the City is difficult, due to the flat topography and minimal natural grade within the City to convey surface water runoff. The area, prior to development, was dominated by wetlands and lies within the flood plain of the White River. Several areas are serviced by open ditches, which convey water into the pipe collection system or into an open, uninhabited area.

TREATMENT

As stated previously, the City has adopted *Ecology's 2012 Stormwater Management Manual*, which describes in detail the methods and practices for mitigating stormwater runoff impacts.

Level of Service

The Washington State Department of Ecology (DOE) has enacted certain guidelines and rules for the management of stormwater. The requirements include provisions for the following: ordinances to control off-site water quality, the use of source Best Management Practices (BMPs), effective water quality treatment for the design storm, use of infiltration where possible, erosion and sediment control, the protection of wetlands and stream channels; operation and maintenance programs for new and existing stormwater systems; record keeping of drainage system facilities; adoption of Ecology's Technical Manual or equivalent; education programs for the general public; coordination with the Growth Management Act; and basin planning.

The City adopted stormwater management regulations are included in Buckley Municipal Code Chapter 14.30. The activities covered under this regulation include land disturbing activities, structural development including construction, installation or expansion of a building or other structure, creation of impervious surfaces, Class IV general forest practices that are conversions from timber land to other uses, subdivision, short subdivision and binding site plans and redevelopment.

The level of service chosen for new conveyance facilities is to provide the conveyance capacity of the 100-year, 24-hour event.

COLLECTION

Level of Service

The Pierce County ordinance requires the City to develop a Storm Drainage Plan that describes how all storm drainage impacts will be mitigated for any existing or future project. This plan is required if the project consists of or results in high housing densities, changes in the drainage patterns, contains wetlands or swales, filling, sensitive areas, is tributary to any pothole off-site, changes to the runoff coefficient, changes in erosion characteristics, or if 25 percent of the surface area becomes impervious.

This plan must include a description of the property prior to development, as it exists now, and how it might be modified in the future; details of the topography, basin, and soils; downstream drainage analysis, and calculations of the runoff rates and volumes that would occur for the 25-year event. In addition, the plan must include recommendations and construction projects necessary to manage any runoff problems.

The importance of a storm drainage plan, and of properly managing storm runoff, is significant step in alleviating potential future drainage issues. By detaining, retaining, or allowing storm runoff to infiltrate, citizens, property and environmentally sensitive areas are better protected from flooding, erosion, depleted groundwater and summer base flows, and pollution.

System Inventory

The City's storm drainage network is comprised of numerous catch basins and storm drain manholes, piping ranging in size from 6 to 36 inches, year and/or area draws, detention ponds/pipes and an extensive network of storm drainage ditches that includes culverts and outlet channels. Several areas are either not currently serviced or are inadequately serviced. Areas slated for development or currently without service will require improvements before any development can continue, in order to mitigate flooding and other impacts.

The City does not currently provide storm drainage for the State of Washington Rainier School. The Rainier School is located along the easterly City limit and encompasses nearly 160 acres. The School directs a majority of its stormwater through a privately maintained system to an outfall in the White River, north of the City. It is believed that the south campus, approximately 70 acres in area, channels storm runoff into the City's drainage system located along and within the Ryan Road corridor.

The collector and drainage infrastructure, as it presently exists, predominantly conveys water to both the north and west areas of the City to ultimately discharge into the Puget Power Flume and the White River Basin. Areas to the south and east part of the City, which are less developed, discharge drainage flows south into the Spiketown Creek Basin area. The City's existing storm drainage system is included as Figure D1 of the Utilities Element.

To analyze the existing and required future storm drainage capacities, the Urban Growth Area was segregated into fourteen individual drainage basins. Some of the basins were divided into smaller sub-basins for the purpose of analysis. This was accomplished based on the present system's configuration and outfall locations as well as the general topography of the Buckley Basin. These individual drainage basins are shown in Figure D2 of the Utilities Element. Existing conveyance piping and stormwater outfall locations were surveyed to estimate the maximum available capacity at discharge points. Previously, City standards relied on the "Yrjanainen and Warren" (Y&W) method of hydraulic analysis. The Ecology Manual uses the "Unit Hydrograph Analysis Methods" for estimating storm run off volumes and rates as the preferred method for estimating runoff. The Comprehensive Flood Hazard Management Plan for Buckley used the Santa Barbara Urban Hydrograph Method to analyze 10, 25, 100, and 500- year storm events. The analysis reflected existing conditions as well as impervious areas that are likely to result from the Comprehensive Plan – designated development. The existing drainage conditions, outfall capacities, and estimated future drainage flows were then reviewed to determine storm sewer improvements necessary to decrease flood potential. There are several basins within the City with inadequate storm drainage. The City lies in a relatively flat area, which makes management of drainage challenging. In addition, previous storm drainage detention standards either did not include detention, or included a 25-year Y&W detention analysis. These standards proved to be inadequate during the 1996 and 1997 floods. Some of the areas needing improvements simply require larger pipes or open channels. For others, increasing conveyance will move existing flooding to another location. In addition to these conveyance system mitigation measures, alternatives including construction of detention facilities and restoration of historic drainage patterns must be considered.

The City currently experiences flooding and ponding in areas which are not provided with adequate storm drainage. Some of the areas needing improvement simply require larger pipes or open channels, while others have no conveyance system in place. Areas now being proposed for development will need upgrades to existing conveyance systems before any development can be completed. Areas of large impervious surfaces will result in flooding and erosion leading to property damage, unless an adequate drainage system is constructed.

The previously completed sanitary sewer infiltration/inflow report recommends that once improvements to the sanitary system have been completed and sewage flows are redirected into the new network, the old sanitary sewer pipe can be used to collect, convey and discharge storm runoff. The stormwater improvements outlined herein have been selected based on the use of the existing storm sewers capacity. Additional drainage capacity could be achieved by the conversion of sanitary piping, and may be completed during sanitary system improvement projects, not included as a part of this analysis.

The City's existing storm drain outfall locations were surveyed and reviewed to estimate existing basin discharge capacities. These estimates were then compared with both the existing drainage flows and future estimated maximum runoff flows to determine the current and future levels of service.

Proposed Locations and Future Needs

The following project descriptions and recommendations for construction projects have been selected based on a review of the City's existing storm drainage conditions. These improvements are targeted to remove existing storm conveyance problems within the City. Each of the selected projects is to be completed with systems that will adequately pass the runoff from the future "build-out" developments that are presently anticipated. The recommended piping has been selected to comply with the City standards, which require commercial and high value areas to convey a 100-year storm event at maximum development expected to occur in each area.

Each of the indicated stormwater system improvement projects indicated in Figure D3 of the Utilities Element, have been proposed based on both future development and existing conditions. Figure D3 indicates capital improvements recommended for the 6-year and 20-year time frames. The main trunk lines of each basin's system have been shown and outfall locations have been selected to take advantage of existing topographic conditions. Improvements to the existing sanitary sewer system or roadways may significantly impact the development of these projects.

The projects are taken from the May 2008 *City of Buckley Comprehensive Stormwater Management Plan (CSMP)* and are listed in order of priority.

Stormwater Capital Improvement Projects

CIP 1 – Spiketon Bridge involves the installation of a 12-foot-wide by 3-foot-tall bridge section at the Spiketon Road crossing. This will replace the two 24-inch concrete pipes at Spiketon Road and will help minimize flooding currently experienced in this area during a 100-year storm event.

CIP 2 – Dundass Avenue is a project that was brought to the attention of City staff by a resident in 2006. This project includes connecting 135 linear feet of new 12-inch pipe between 3rd Street and 4th Street to the existing storm system. The installation of this pipe should alleviate the flooding seen in this area.

CIP 3 – The Sheets Road Diversion project involves the diversion of flow from Spiketon Ditch to the ditch along the east side of Sheets Road. This ditch flows north, under Ryan Road, and then along the west side of the Rainier School property where it crosses Collins Road, and eventually discharges to the PSE Flume. In diverting water north along Sheets Road, flooding will be lessened on the properties surrounding Spiketon Ditch west of Sheets Road. This project involves the upgrade of existing Sheets Road driveway culverts to 36-inch pipes and the replacement of a 36-inch pipe south of Collins Road with 1,025 linear feet of 60-inch pipe. Flow splitters will also be needed to direct flow north along Sheets Road, and then again near Ryan Road where flow will need to be disbursed between the existing 18-inch and 24-inch pipes in this area.

CIP 4 – The Division Street (Ryan Road Diversion) project is a temporary measure to implement prior to the installation of a 48-inch pipe that will connect runoff from Ryan Road to the existing 48-inch pipes in Hinkelman Extension. The purpose of the Division Street project is to divert water from Ryan Road south along Division Street.

By doing so, the first 645 linear feet of pipe will need to be replaced with 24-inch pipe. In addition, 100 linear feet of ditch will need to be rehabilitated near the south end of Division Street.

CIP 5 – The Hinkleman Road East Basin is a 58-acre basin that drains to the north via a ditch across private property midway between the Hinkleman Extension and Mundy Loss Road. The recommended improvements in this basin include the installation of 2,685 linear feet of 36-inch pipe on the south side of Hinkelman Road. The drainage should be directed east, opposite of its current flow direction, to the 48-inch storm sewer system installed in the Hinkleman Road Extension.

CIP 6 – The Hinkelman Extension/Ryan Road Extension project was noted above as the installation of 3,440 linear feet of 48-inch pipe. This pipe will connect the Ryan Road storm system to the existing 48-inch pipes at Hinkelman Extension. The pipes will extend west of the intersection of Ryan Road and Division Street, west toward 112th Street East. This project has been completed as part of the SR410/SR165 Realignment Project. The completed project has improved the flooding seen along Ryan Road and A Street and has helped restore the flow back to its natural discharge location.

CIP 7 – The McNeely basin includes the area between McNeely Road and the WSU Dairy Farm property, and is bounded on the south by Collins Road and the north by the PSE flume. The improvements in this basin are listed as the seventh priority of the CIP plan. The basin is lightly developed at this time. The ditch and driveway culverts that run north through this basin and along McNeely Road are not adequately sized to convey the 100-year event. The ditch should be rehabilitated for 354 linear feet, and 797 linear feet of pipe and culverts will need to be replaced with 24-inch pipes.

CIPs 8 and 9 – Regional Treatment and Detention Feasibility Studies to identify the feasibility of installation of one or more regional stormwater treatment and detention ponds should be prepared. These projects were ranked eighth and ninth. The City will need the results of the feasibility study in order to evaluate alternatives for system improvements. The use of regional stormwater treatment and detention ponds could eliminate the need for multiple treatment and detention facilities located on private property. Regional ponds, because of their size, may provide better opportunities for water quality treatment and more effective maintenance.

CIP 10 – The Elk Meadows Ditch project involves the enhancement of an existing ditch and culverts west of Sheets Road along private property. According to local residents, this area floods from Spiketon Ditch under extreme storm events. This project would involve the upgrade of three driveway culverts to two 3' x 3' box culverts and one 3' x 5' box culvert. In addition, 1,915 linear feet of ditch would need to be rehabilitated to handle the anticipated flow from a 100-year storm.

CIP 11 – The Spiketon Road project is a minor project that resulted from the hydraulic modeling done along Spiketon Road. Under the 100-year storm condition, a 242 linear foot section of ditch was found to have insufficient capacity. Therefore, it is recommended that a 2' x 3' box culvert replace this ditch.

CIP 12 – The Collins Road Basin includes the drainage systems along Collins Road, Sergeant Street, and Spruce Street. The basin has a large number of drainage deficiencies and the continuing development in this basin will continue to exacerbate the problem. The improvements recommended in the Collins Road Basin include pipe and ditch replacement. Approximately 2,150 linear feet of 18-inch pipe and 1,464 linear feet of 24-inch pipe would be installed along Collins Road. South of Collins Road, 1,314 linear feet of parallel 36-inch pipe would be installed, which would then connect to the Collins Road system which continues northerly. From Collins Road north, the existing pipe would be replaced with 3,290 linear feet of 60-inch pipe where it would then discharge into the PSE Flume.

CIP 13 – The Ryan Road project includes the extension of the new 48-inch pipe of the Hinkelman Extension/Ryan Extension project. A 36-inch pipe was placed in Ryan Road during 2006 that extended from the Division Street/Ryan Road intersection east toward Spiketon Road. According to the hydraulic model, this pipe will need to be supplemented with 1,659 linear feet of a parallel 36-inch pipe. In addition, this project includes the installation of 3,175 linear feet of 36-inch pipe and 1,018 linear feet of 48-inch pipe.

CIP 14 – The Downtown area consists of insufficient 18-inch pipes at the downstream end of the system in this basin. The Downtown project consists of replacing these 18-inch pipes with 140 linear feet of 24-inch pipes and 850 linear feet of 36-inch pipe.

CIP 15 – The North Highway 410 project incorporates the replacement of existing pipes with 1,240 linear feet of new 36-inch pipe and 210 linear feet of 48-inch pipe at the downstream end of this basin.

CIP 16 – The River Avenue North project is similar to the Downtown and North Highway 410 projects in that it includes the replacement of existing pipes with 1,720 linear feet of 36-inch pipe at the downstream end of the stormwater system in this area.

CIP 17 – The 112th Street Basin is bounded on the south by the high point in the topography south of 112th Street and Mundy Loss Road to the west. The drainage problems here have been minor in nature, yet the hydraulic model indicated that during a 100-year storm along the west end of 112th Street, the existing pipes and ditch need to be replaced with 1,541 linear feet of parallel 36-inch and 48-inch pipe.

CIPs 18 and 19 – West Highway 410A and 410B are located on the south and north sides of SR 410, respectively. The results of the hydrologic/hydraulic model indicated that the ditch should be replaced with 5,520 linear feet of 24-inch pipe on the south side of SR 410. It was also found that 75 linear feet of 12-inch pipe should be installed on the north side of SR 410 along with 85 linear feet of ditch that should be rehabilitated.

CAPITAL IMPROVEMENT PLAN

Stormwater System

CF-17 presents a capital improvement plan for the stormwater system. The lists the year of completion and the probable source of funds for each project. The projects are described in more detail in the previous sections. Data for the stormwater system improvements were taken from the May 2008 *City of Buckley Comprehensive Stormwater Management Plan*.

Table CF-17 Stormwater Projects

Project Number	Year of Completion	Funding Source	Estimated Project Cost (2018)
CIP-1	2019	Rates	\$700,000
CIP-2	2018	Rates	\$77,500
CIP-3	2019	Rates	\$672,500
CIP-4	2020	Rates	\$277,500
CIP-5	2021+	Rates	\$1,587,500
CIP-6	Complete		
CIP-7	2021	Rates	\$438,750
CIP-8	Complete		
CIP-9	2020		\$10,000
CIP-10	2021+		\$476,250
CIP-11	2021+	Rates	\$173,750
CIP-12	2021+		\$4,797,500
CIP-13	2021+		\$3,771,250
CIP-14	2021+		\$606,250
CIP-15	2021+		\$966,250
CIP-16	2021+		\$958,750
CIP-17	2021+		\$1,786,250
CIP-18	2021+		\$43,750
CIP-19	2021+		\$2,151,250

RECOMMENDED FINANCING PLAN

The current Stormwater Utility rates are \$22.64 per month for a single-family residence, \$14.94 per month for multi-family residential units, and \$22.64 per month per each equivalent service unit (ESU) for all other parcels. An ESU is defined to mean 8,000 square feet of impervious surface area.

In addition to the monthly stormwater utility fee, the City collects a surface water management general facilities charge of \$7,578 per single-family residence or ESU (BMC 14.28.140).

VII. OTHER UTILITIES

NATURAL GAS UTILITY

The natural gas distribution utility is owned, operated, and maintained by the Puget Sound Energy (PSE).

Company Overview: Puget Sound Energy (PSE) is a private utility providing natural gas and electric service to homes and businesses in Puget Sound region of Western Washington and portions of Eastern Washington, covering 10 counties and approximately 6,000 square miles. PSE's regional and local natural gas and electric planning efforts are integrated and centered on providing safe, dependable, and efficient energy service. PSE provides natural gas to more than 770,000 customers, throughout 6 counties, covering approximately 2,900 square-mile area. As of 2017, PSE provides natural gas service to approximately 1,500 customers in the City of Buckley.

Regulatory Environment: PSE's operations and rates are governed by the Washington Utilities and Transportation Commission (WUTC). PSE natural gas utility operations and standards are further regulated by the U.S. Department of Transportation (DOT), including the Pipeline and Hazardous Materials Administration (PHMSA). PHMSA's Pipeline Safety Enforcement Program is designed to monitor and enforce compliance with pipeline safety regulations. This includes confirmation that operators are meeting expectations for safe, reliable, and environmentally sound operation of PSE's pipeline infrastructure. PHMSA and the WUTC update pipeline standards and regulations on an ongoing basis to assure the utmost compliance with standards to ensure public safety. The residents within the City of Buckley rely on the coordinated effort between PSE and the City for the adoption and enforcement of ordinances and/or codes to support on the safe, reliable, and environmentally sound construction, operation and maintenance of PSE's natural gas facilities.

INTEGRATED RESOURCE PLAN

In order for PSE to meet its regulatory requirements, it updates and files an Integrated Resource Plan (IRP) with the WUTC every two years. The IRP identifies methods to provide dependable and cost effective natural gas service that address the needs of retail natural gas customers. Natural gas sales resource need is driven by design peak day demand. The current design standard ensures that supply is planned to meet firm loads on a 13-degree design peak day, which corresponds to a 52 Heating Degree Day (HDD). Currently, PSE's supply/capacity is approximately 970 MDth/Day at peak. This figure will be updated in the fall of 2015. The IRP suggests the use of liquefied natural gas (LNG) for peak day supply and support the needs of emerging local maritime traffic and truck transport transportation markets.

Natural Gas Supply: PSE controls its gas-supply costs by acquiring gas, under contract, from a variety of gas producers and suppliers across the western United States and Canada. PSE purchases 100 percent of its natural-gas supplies needed to serve its customers. About

half the natural gas is obtained from producers and marketers in British Columbia and Alberta, and the rest comes from Rocky Mountain States. All the gas PSE acquires is transported into PSE's service area through large interstate pipelines owned and operated by Williams Northwest Pipeline. PSE buys and stores significant amounts of natural gas during the summer months, when wholesale gas prices and customer demand are low, and stores it in large underground facilities and withdraws it in winter when customer usage is highest; ensuring a reliable supply of gas is available.

System Overview: To provide the City of Buckley and adjacent communities with natural gas, PSE builds, operates, and maintains an extensive system consisting of transmission and distribution natural gas mains, odorizing stations, pressure regulation stations, heaters, corrosion protection systems, above ground appurtenances, and metering systems. When PSE takes possession of the gas from its supplier, it is distributed to customers through more than 21,000 miles of PSE-owned natural gas mains and service lines.

PSE receives natural gas transported by Williams Northwest Pipeline's 36" and 30" high pressure transmission mains at pressures ranging from 500 PSIG to 960 PSIG. The custody change and measurement of the natural gas occurs at locations known as Gate Stations. PSE currently has 39 such locations throughout its service territory. This is also typically where the gas is injected with the odorant mercaptan. Since natural gas is naturally odorless, this odorant is used so that leaks can be detected. The Gate Station is not only a place of custody transfer and measurement but is also a common location of pressure reduction through the use of "pressure regulators". Due to state requirements, the pressure is most commonly reduced to levels at or below 250 PSIG. This reduced pressure gas continues throughout PSE's high pressure supply system in steel mains ranging in diameter of 2" to 20" until it reaches various other pressure reducing locations. PSE currently has 755 pressure regulating stations throughout its service territory. These locations consist of Limiting Stations, Heaters, District Regulators, and/or high pressure Meter Set Assemblies.

The most common of these is the intermediate pressure District Regulator. It is at these locations that pressures are reduced to the most common levels ranging from 25 PSIG to 60 PSIG. This reduced pressure gas continues throughout PSE's intermediate pressure distribution system in mains of various materials consisting of polyethylene and wrapped steel that range in diameters from 1-1/4" to 8" (and in a few cases, larger pipe). The gas flows through the intermediate pressure system until it reaches either a low pressure District Regulator or a customer's Meter Set Assembly.

To safeguard against excessive pressures throughout the supply and distribution systems due to regulator failure, over-pressure protection is installed. This over-pressure protection will release gas to the atmosphere, enact secondary regulation, or completely shut off the supply of gas. To safeguard steel main against corrosion, PSE builds, operates, and maintains corrosion control mitigation systems to prevent damaged pipe as a result of corrosion.

Future Projects: To meet the regional and City of Buckley natural gas demand, PSE's delivery system is modified every year to address new or existing customer growth, load changes that require system reinforcement, rights-of-way improvements, and pipeline integrity issues. The system responds differently year to year and PSE is constantly adding

or modifying infrastructure to meet gas volume and pressures demands. At this time, there are no known major construction projects anticipated in the City of Buckley.

Current and future system integrity work will include ongoing investigations throughout the city to determine the location of where gas lines have been cross bored through sewer lines and make subsequent repairs.

ELECTRICAL UTILITIES

Puget Sound Energy (PSE) serves the City of Buckley.

Company Overview: Puget Sound Energy (PSE) is a private utility providing electric and natural gas service to homes and businesses in Puget Sound region and portions of Eastern Washington, covering 10 counties and approximately 6,000 square miles. PSE's regional and local electric and natural gas planning efforts are integrated and centered on providing safe, dependable, and efficient energy service. PSE provides electrical power to more than 1.2 million electric customers throughout 8 counties. As of 2017, PSE provides electric service to approximately 2,000 customers in the City of Buckley.

Regulatory Environment: PSE's operations and rates are governed by the Washington Utilities and Transportation Commission (WUTC). PSE electric utility operations and standards are further governed by the Federal Energy Regulatory Commission (FERC), the National Electric Reliability Corporation (NERC), and the Western Electricity Coordinating Council (WECC). These respective agencies monitor, assess and enforce compliance and reliability standards for PSE. The residents of the City of Buckley and the region rely on the coordinated effort between PSE and the City for the adoption and enforcement of ordinances and/or codes to protect transmission and distribution line capacity and support federal and state compliance of safe, reliable, and environmentally sound operation of PSE's electric facilities. Routine utility maintenance work, including vegetation management is required to maintain compliance with FERC, NERC, and WECC regulations.

Integrated Resource Plan: In order for PSE to meet regulatory requirements, it updates and files an Integrated Resource Plan (IRP) with the WUTC every two years. The IRP presents a long-term forecast of the lowest reasonable cost combination of resources necessary to meet the needs of PSE's customers to provide dependable and cost effective service over the next 20 years. The current plan, which was filed in May of 2013, details both the energy supply and transmission resources needed to reliably meet customers' wintertime, peak-hour electric demand over the next 20 years. The plan, which will be updated, forecasted that PSE would have to acquire approximately 4,900 megawatts of new power-supply capacity by 2033. This resource need is driven mainly by expiring purchased-power contracts and expected population and economic growth in the Puget Sound region. The IRP suggests that roughly more than half of the utility's long-term electric resource need can be met by energy efficiency and the renewal of transmission contracts. This reduces the need down to 2,200 MW by 2033. The rest of PSE's gap in long-term power resources, the IRP stated is likely to be met most economically with added natural gas-fired resources.

PSE generates approximately 46 percent of the electricity for its customers' from its own generation specifically generation plants; hydro, thermal, solar and wind. PSE currently has about 3,000 megawatts of power-generating capacity, and purchase the rest of its power supply from a variety of other utilities, independent power producers and energy marketers across the western United States and Canada.

System Overview: To provide the City of Buckley with electricity, PSE builds, operates, and maintains an extensive integrated electric system consisting of generating plants, transmission lines, substations, switching stations, sub-systems, overhead and underground distribution systems, attachments, appurtenances, and metering systems.

Electricity provided by PSE to the City of Buckley is often produced elsewhere and is interconnected to the Northwest's regional transmission grid through an extensive network of transmission facilities providing bulk transmission service to meet the demands of electricity customers within the region's eight states. The PSE electric transmission facilities in the City of Buckley are important components of the electric energy delivery grid serving the Puget Sound region. As electricity reaches the City of Buckley the voltage is reduced and redistributed through lower-voltage transmission lines, distribution substations, overhead and underground distribution lines, smaller transformers, and to individual meters.

PSE will be prudently and systematically deploying smart grid technology at each level of infrastructure to enhance and automate monitoring, analysis, control and communications capabilities along its entire grid. Smart grid technologies can impact the electricity delivery chain from a power generating facility all the way to the end-use application of electrical energy inside a residence or place of business. The ultimate goals of smart grid are to enable PSE to offer more reliable and efficient energy service, and to provide customers with more control over their energy usage.

Future Projects: To meet regional and City of Buckley electric demand, PSE is upgrading the existing 55 kilovolt (kV) substations and transmission lines between Electron Heights (vicinity of Kapowsin) and Enumclaw to 115 kV. The multi-year projects began in 2009 and entail converting the voltage of over 20 miles of transmission line between the Electron Heights and Krain Corner (Enumclaw) substations, installing roughly 1.5 miles of new transmission line in Enumclaw, as well as converting, upgrading or completely rebuilding four substations as well as constructing a new substation in Buckley and adding a fiber-optic line to existing transmission facilities between Buckley and Enumclaw.

TELECOMMUNICATION UTILITIES

The City of Buckley is served by CenturyLink. Various facilities are located throughout the County and the City.

Many of the telecommunication facilities are co-located with those of Puget Power. Buckley has digital electronic facilities available through CenturyLink, which allow call forwarding and a number of other features to be available to the customer.

CenturyLink reacts to customer demands, since the telecommunications industry is required to provide service upon demand. CenturyLink has indicated to the City that there is capacity for the City and its Urban Growth Area.

Cellular telephone service is provided in the Buckley area by Comcast. Cable TV is provided to the Buckley area by Comcast for areas surrounding the City.

The provision of telecommunication services is driven by the needs of its customers. As the city grows, telecommunication facilities will be upgraded to ensure adequate service levels. Facilities will be upgraded as technology advances.

SOLID WASTE COLLECTION

The City contracts with D.M. Disposal Company for solid waste collection. Collection is performed once a week. in the unincorporated portion of the Planning Area, solid waste is collected also by D.M. Disposal.

TRANSPORTATION

The transportation system serving the residents of the City of Buckley has been analyzed as part of this initial step in the comprehensive planning process. The detailed inventory and analysis are presented in the Transportation Element, which was adopted by the City in December, 2017. According to the analysis there are significant transportation facilities required to support the growth projected within the UGA.

The City of Buckley 6-year Transportation Improvement Plan, adopted in July, 2018 is included in CF-18. The primary outside funding source for City transportation projects is the Washington State Transportation Improvement Board (TIB). City funding of the local match for TIB funded projects is funded primarily by the street impact fees, which are currently \$6,074 for each single-family home, \$4,243 for each multi-family unit, and \$638 per average daily trip (ADT) for non-residential, based on trip generation in the City's adopted based on the Institute of Transportation Engineers (ITE) Trip Generation Manual.

**Table CF-18 6-year Transportation Improvement Plan
(2020 – 2025)**

Project Number	Project Name	Est Project Date	Funding Source	Estimated Project Cost (2019)
1	Sergeant Street	2020	TIB, Local	\$421,000
2	Cedar Street	2020	TIB, Local	\$280,700
3	Naches Street	2020	TIB, Local	\$224,000
4	River Avenue	2020	TIB, Local	\$352,500
5	112th Street Resurfacing	2021	TIB, Local	\$207,700
6	Spruce Street Reconstruct	2021	TIB, Local	\$319,000
7	Naches Street Resurfacing	2021	TIB, Local	\$90,000

Project Number	Project Name	Est Project Date	Funding Source	Estimated Project Cost (2019)
8	Pearl & Jefferson Int Imp	2021	TIB, Local	\$80,000
9	Mt. View Resurfacing	2021	TIB, Local	\$193,600
10	Division St Imp Project	2022	TIB, Local	\$1,501,500
11	Division Street Overlay	2022	TIB, Local	\$211,900
12	Dundass Street Overlay	2022	TIB, Local	\$233,500
13	Hinkleman Rd Resurfacing (Ph II)	2022	TIB, Local	\$160,200
14	Jefferson Ave Overlay	2023	TIB, Local	\$689,500
15	White River Bridge (Trail)	2023	Multi & Local	\$7,436,100
16	View Place Overlay	2024	TIB, Local	\$29,200
17	Whitmore Way Overlay (Ph II)	2024	TIB, Local	\$185,000
18	Main Street Rehab	2024	TIB, Local	\$326,900
19	River Ave & Main St Int Imp	2024	TIB, Local	\$1,247,100
20	Spiketon Rd Ped Imp	2025	TIB, Local	\$1,258,500
21	"A" Street Overlay	2025	TIB, Local	\$227,200
22	Pearl Street Overlay	2025	TIB, Local	\$661,900
23	Mundy Loss Ped Imp	2025	TIB, Local	\$433,100
24	Ryan Road (Ph II) Reconstruct	2028	TIB, Local	\$3,075,100

PARKS AND RECREATION

The City of Buckley adopted its initial Parks and Recreation Element in December, 1996. The original Element was compiled through the collaborative effort of the Park Board, City Council, citizens and staff and resulted in a basic plan that the City could use to move forward in the development of park and recreation facilities and programs to meet the demands of a growing community. The Park Board updated the Park and Recreation Plan in 2004 and again in 2015 and it is intended to be used both as a “stand-alone” document and as an element of the City of Buckley Comprehensive Plan.

Level of Service

The Parks & Recreation Level of Services Standards included in the 2015 update are as follows:

Table CF-19 Parks & Recreation LOS Standards

Facility	Acres/Units/pop
Mini-Park	0.25 acre:1,000
Neighborhood Park	1.0 acre:1,000
Community Park	5.0 acre:1,000
Sports Complex	
• Softball Fields	1 facility:2,000
• Baseball Fields	1 facility:2,000

Facility	Acres/Units/pop
• Basketball Courts	1 facility:3,500
• Soccer Fields	1 facility:3,500
• Volleyball (Outdoor)	1 facility:4,000
• Tennis Courts	1 facility:4,000
Special Facilities	
• Skate Park	1 facility:7,500
• Splash Park	1 facility:7,500
• Climbing Rock	1 facility:7,500
• Pump/Bicycle Track	1 facility:7,500
Pathways	
• Park Trails	1.0 mile:2,000
• All Terrain Bike Trail	0.5 mile:3,000

In addition to a population based LOS city staff and planning commission recommended that the complimentary levels of development adopted in the 2004 Park and Recreation Plan be retained for neighborhood and community parks, except that the Level of Development for each category 1-3 should be the same for each type of park. While overall features and facilities may be different at the two types of facilities, the needs associated with use of the facilities remain the same. Parking, restrooms and picnic areas are basic amenities that should be provided at each neighborhood or community park facility to support use. So the minimum level of development for neighborhood and community parks should be a Level 2. At Level 3 the facility is expected to be fully developed whether it’s a neighborhood park or a community park. The adopted complimentary levels of development are as follows:

Neighborhood Parks and Community Parks – Level of Development

Level 1 provides rough grading, fencing, fire hazard mowing, and brush/trash removal; it is intended to reduce liability and unsightliness.

Level 2 provides fine grading, seeding, limited parking facilities, playground equipment, restroom, picnic facilities, back stop panel and signage; it is intended to offer a basic level of park improvements and usability.

Level 3 provides sports/tennis courts, asphalt trails, picnic shelters, landscaping, interpretive areas, and irrigation; it is intended to provide a full level of service for a range of intensive uses.

Inventory of System

CF-20 includes the City of Buckley’s existing park and recreational facilities.

Table CF-20 Existing Inventory of Facilities

Existing Facility	Size of Facility
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Existing Facility	Size of Facility
Thunderbird Park	0.4 acres
'A' Street Mini Park	0.25 acres
Mt. View Mini Park	0.25 acres
Elk Heights Mini Park	1.0 acre
River Avenue Park	1.0 acre
Vanhoof Park	2.6 acres
Miller Park	3.5 acres
White River Athletic Fields	8.0 acres
Riverside Park	1.0 acres
Mundy-Loss Passive	5.0 acres
Total	23.0 acres
Sports Complex Facilities	Number
Baseball Fields	1
Softball Fields	4
Basketball Courts	1
Soccer Fields	0
Volleyball (outdoor)	0
Tennis Courts	0
Total	6
Special Facilities	Number
Skate Park	1
Splash Park	0
Climbing Rock	0
Pump/Bicycle Track	0
Pathways	Length
Park Trails	2.37 miles
All Terrain Bike Trail	0.0 miles

Facility Needs

CF-21 includes the Parks and Recreation facility needs based on population projections for years 2015 and 2025.

Table CF-21 Parks and Recreation Facility Needs

Park Facility	Size for 2015 Population	Size for 2025 Population
Mini Park	1.15 acres	1.64 acres
Neighborhood Park	4.62 acres	6.55 acres
Community Park	23.08 acres	32.74 acre
Sports Complex Facilities	Number	Number
Baseball Fields	2.31	3.27
Softball Fields	2.31	3.27
Basketball Courts	1.32	1.387

Park Facility	Size for 2015 Population	Size for 2025 Population
Soccer Fields	1.32	1.87
Volleyball (outdoor)	1.15	1.64
Tennis Courts	1.15	1.64
Special Facilities	Number	Number
Skate Park	0.62	0.87
Splash Park	0.62	0.87
Climbing Rock	0.62	0.87
Pump/Bicycle Track	0.62	0.87
Pathways	Length	Length
Park Trails	2.31 miles	3.27 miles
All Terrain Bike Trail	0.77 miles	1.09 miles

CAPITAL IMPROVEMENT PLAN

Parks and Recreation

CF-22 presents a capital improvement plan for the Parks and Recreation system. The lists the year of completion and the source of funding for each project. The projects are described in more detail in the Parks and Recreation Element of the Comprehensive Plan.

Table CF-22 Parks & Recreation Capital Improvement Schedule

No.	Project	Years	Estimated Project Cost (2018)
P-1	Miller Neighborhood Park	2018–2023	\$823,226
P-2	City Ag-Land Multi-Use Community Park	2019-2025	\$3,741,300
P-3	Lot #19 South of Youth Center	2019-2024	\$765,000
P-4	White River Property west of SR410	2019-2025	\$146,875
	Total		\$5,476,401

RECOMMENDED FINANCING PLAN

The City of Buckley collects revenues for capital improvements, which may be used as a source of funding for park and recreation facilities (when not dedicated for other purposes, i.e. water or sewer). These funds are being deposited into the following three funds:

Fund 135: This fund, otherwise known as the “Park and Construction Fund” (or the “Park and Open Space Fund”), consists of revenues collected from the “Impact Fee for Parks and Recreation Facilities,” which are currently \$1,625 for each single-family home, \$1,332 for each multi-family unit. Collection of this fee is authorized under BMC 3.50.040. These

funds can be used only for the acquisition, construction, improvements, maintenance, and repair of parks, open space, and recreational facilities.

Fund 137: This fund is known as the “Capital Improvements Fund”, and consists of revenues collected from a one-quarter of one percent (0.25%) excise fee levy on real property transaction, authorized under State law. These funds may be spent for capital improvements or facilities provided by State law, such as streets, utility facilities, and parks.

Fund 308: This fund, known as the “Comprehensive Plan Capital Improvements Fund”, and authorized under Section 36 of the Growth Management Act, consists of revenues collected from another one-quarter of one percent (0.25%) excise fee levy on real property transactions. These funds may be spent only on capital facilities identified in a capital facilities element of a Comprehensive Plan, adopted in accordance with the requirements of the Growth Management Act.

CF-23 shows the Parks and Recreation capital improvement projects, year or completion, funding source, and estimated project cost.

Table CF-23 Parks & Recreation Capital Improvement Funding Sources

Project	Year of Completion	Funding Source	Estimated Project Cost (2018)
P-1	2023	RCO Grant / Local / Impact Fees	\$823,226
P-2	2025	RCO Grant / Local / Impact Fees	\$3,741,300
P-3	2024	RCO Grant / Local / Impact Fees	\$765,000
P-4	2025	RCO Grant / Local / Impact Fees	\$146,875

MUNICIPAL FACILITIES

The facilities for public administration including City Hall, library, Public Works, Fire Station and Police Station are currently in good condition. As the population in the City grows, the concomitant growth in City services will require additional facilities. The extent of the need will depend on several key factors including the amount of growth, the pace of new growth, and the level of service expected to be provided.

The inventory collected during this phase of the comprehensive planning process did not include information about the quality of social services provided through the local government, educational facilities, churches, emergency services, and the library. As a result, it is not possible to provide a reasonable estimate of potential future needs beyond a qualitative evaluation that City staff and policy-makers need to address these issues in subsequent iterations of the planning process.

CF-24 includes the planned Public Facilities Project in the City.

Table CF-24 Public Facilities Projects

Project	Year of Completion	Funding Source	Estimated Project Cost (2018)
Building / Planning Remodel	2019	Local	\$105,000
Public Works Admin Bldg Ph. 3	2019	Local	\$130,000
Remodel City Hall	2021	Local	\$100,000
Foothills Trail Parking/Trailhead	2019	RCO Grant/Local	\$200,000
Public Works Storage Facility	2020	Local	\$100,000

FIRE PROTECTION FACILITIES

A new Fire Station was completed in 2012 on Division Street to the south of Ryan Road. The projected was funded via voter approved bond. The facility is roughly 20,000 square feet and should meet the needs of the City for the 20-year horizon and beyond.

POLICE PROTECTION

Although the City of Buckley is a relatively small and rural community, the Buckley Police Department is a full service police agency. The Buckley Police Department delivers the same, if not better, police service to its citizens than larger metropolitan agencies. The City of Buckley Police Department provides the following services.

- Enhanced E-911 Police and Fire emergency dispatching
- 24-hour police patrol coverage
- Part-time police coverage for the Town of Carbonado
- Technical accident investigation
- Specialized Police K-9 Unit
- Crime follow-up investigations
- State certified reserve officer training academy
- Three full-time detention officers
- Assigned patrol vehicles
- State accreditation
- State approved emergency operations plan
- First level supervision training for supervisors
- Computerization of police records
- Narcotics investigations
- Gang resistance education training
- Neighborhood officer assignments (community policing)
- Modern state-of-the-art communications center

Police Facilities

One of the most urgent needs of the Buckley Police Department is the upgrading and expansion of department facilities. The current facility needs to be upgraded as funding becomes available. The Police Department needs to provide its employees with a productive working environment.

VIII. GENERAL CITY FINANCE

As with most cities in Washington, the City of Buckley receives revenue from a variety of sources including: several locally imposed taxes; shared state revenues; service fees, permits and licenses; and fines and other forfeitures. CF-25 shows the distribution of City revenues available for current expenses (i.e. general fund revenues). The largest share of these revenues comes from local taxes such as the property tax, sales tax, utilities taxes, and the gambling tax. The second largest share, comes from other financing sources which primarily derive from transfers from various utility and enterprise accounts for administrative allocations. These categories of income account for approximately 72.58% percent of the general-purpose revenues available to the City annually.

Table CF-25 Distribution of City Revenues Available for Current Expenses

Source of Funds	2012	2013	2014	Percent of Total		
				2012	2013	2014
Beginning fund balance	\$25,109	\$28,426	\$103,716	0.63%	0.81%	2.85%
Property Tax	\$792,651	\$779,087	\$791,402	19.80%	22.18%	21.76%
Sales & Use Tax	\$461,706	\$528,870	\$573,807	11.54%	15.05%	15.78%
Utility Tax	\$814,739	\$825,647	\$804,319	20.36%	23.50%	22.11%
Gambling & Excise Tax	\$9,344	\$8,990	\$14,718	0.23%	0.26%	0.40%
Licenses & Permits	\$113,441	\$157,045	\$143,358	2.83%	4.47%	3.94%
Intergovernmental	\$481,410	\$51,297	\$51,472	12.03%	1.46%	1.42%
Goods & Services	\$268,830	\$270,991	\$329,460	6.72%	7.71%	9.06%
Fines & Penalties	\$156,283	\$142,122	\$117,391	3.90%	4.05%	3.23%
Miscellaneous	\$13,562	\$41,194	\$58,699	0.34%	1.17%	1.61%
Nonrevenues	\$318,701	\$162,094	\$142,111	7.96%	4.61%	3.91%
Other Financing Sources	\$492,820	\$477,477	\$455,465	12.31%	13.59%	12.52%
Community Services	\$54,028	\$40,085	\$51,230	1.35%	1.14%	1.41%
Total general fund revenues	\$4,002,623	\$3,513,325	\$3,637,148	100.00%	100.00%	100.00%
Total general fund expenditures	\$3,974,197	\$3,409,609	\$3,633,850			
Surplus/(deficit)	\$28,426	\$103,716	\$3,297			

Source: City of Buckley, Financial Reports

The total general fund revenues have remained fairly stagnant since the last Comprehensive Plan update in 2005. With the advent of the housing downturn and nationwide recession the City experienced significant loss of revenue to the general fund, as well as population loss that resulted from the number of vacant units within the community. During the last update the Comprehensive Plan identified a trend of 4% gain in total revenue between 2002 and 2004 with a total of \$3.918 million in 2004. Table 25 above which reflect comparisons between 2012 and 2014 illustrates that total revenue actually decreased over the period. In 2012 total revenue was \$4,002,623, but by 2014 had dropped by 9.13% to \$3,637,148.

The downturn and subsequent recession impacted the City beginning in 2008 and the City didn't see any recovery until the 2013 to 2014 period. During this period the City Council had to make some difficult decisions in order to maintain levels of service. Their main goal was to identify core levels of service and eliminate those that were no longer necessary. Their exercise in efficiency resulted in the closure of the City's Jail and 911 Dispatch Center both of which had generated some amount of revenue through outside contracts. This directly correlates to the lower revenue after 2012. In addition the City sold the Natural Gas System Utility to Puget Sound Energy in 2014.

These steps prepared the City to be well positioned financially once the recover was in full swing. At this writing the City ended 2018 with total general fund revenue of \$5,676,856 with a 2019 beginning fund balance of \$813,301.

The City's current expense revenues and expenditures are relevant to a discussion about capital financing, since most of the City's financial resources are general purpose revenues which can be used for operating or capital needs. In most cases, the operating requirements of a jurisdiction will account for virtually all of the available general-purpose funds, forcing cities to look to other ways of financing capital improvements. This is especially true in small jurisdictions, where larger capital projects are relatively infrequent and can amount to a sizable percentage of the operating budget. Therefore, the ability of the City to fund capital improvements will depend in large measure on the relative prosperity and population of Buckley that relates directly to sources of expense revenues.

INTERGOVERNMENTAL FUNDING

One relative indicator of prosperity is the importance of intergovernmental transfers in the funding of the City's expenses. According to data summarized in CF-23, the City is dependent on the County, State and/or Federal Government for approximately 8.47% to 11.84% percent of its expense revenues for the annual comparison. CF-26 presents a tabulation of intergovernmental assistance for the years 2012-2014.

**Table CF-26 Intergovernmental Assistance for the Years 2012
to 2014**

Program	2012	2013	2014
Local vehicle license (TBD)			\$63,617
Equalization - City Assistance	\$14,461	\$9,136	\$4,431
Gas tax street (combined)	\$88,794	\$90,237	\$90,143
Disaster Assistance	\$64,198		
Liquor excise	\$16,003	\$2,924	\$8,212
Liquor board profits	\$43,342	\$39,237	\$38,829
DOT Transportation Grant		\$27,435	\$154,944
Transportation Improve Board (TIB)	\$193,526	\$5,531	\$271,622
Real estate excise tax	\$49,094	\$107,316	\$84,397
Board of prisoners	\$359,447	\$12,642	
Emergency dispatch	\$101,246	\$27,622	
Fire service contracts	\$77,127	\$98,676	\$128,640
Law enforcement services	\$58,562	\$80,640	\$91,836
Dept. of Justice grant	\$5,250		
WASPC grant	\$3,784		
Local sales tax criminal justice	\$55,859	\$61,050	\$64,406
Criminal Justice low population	\$1,002	\$1,050	\$1,151
Crim Justice - Spec Programs	\$3,682	\$3,907	\$4,164
US Fire Administration grant	\$31,721		
Hotel motel excise tax	\$17,726	\$22,371	\$18,507
PWTF Loan (Water Sys Const.)		\$270,579	\$457,969
DOE Stormwater Phase II Grant	\$17,482	\$103,858	\$53,093
DOC Shorelines Grant	\$25,755		
DOC Energy Grant			\$316,923
DOC GMA Grant			\$16,200
FEMA Hazard Mitigation Grant	\$657,411	\$161,335	
DEM Hazard Mitigation Grant	\$152,310	26889.65	
EPA Booster Station Grant	\$29,870	\$106,143	\$225,185
PC Youth Violence Prevention Grant	\$25,481	\$14,076	\$12,500
Pierce County Grant	\$3,500	\$1,008	\$7,956
Total Financial Assistance	\$2,096,629	\$1,273,663	\$2,114,725
Total Citywide Budget	\$17,713,549	\$18,363,739	\$24,953,618

Source: City of Buckley, Financial Reports

CAPITAL FUNDS

Aside from general-purpose revenues, the City also receives revenues that are earmarked for capital expenditures. The primary sources of dedicated capital funds are the combined state motor fuel tax and the real estate excise tax. CF-27 summarizes the income received from these sources in the period 2012 to 2014.

Table CF-27 City of Buckley Capital Funds Sources for the Years 2012 to 2014

Source of Funds	2012	2013	2014
Motor fuel tax	\$88,794	\$90,237	\$90,143
REET	\$49,094	\$107,316	\$84,397
Total revenues	\$137,888	\$197,553	\$174,539

Source: City of Buckley, Financial Reports

These revenues, along with any general-purpose revenues transferred from the current expense fund, are placed in one of several enterprise funds for use in capital facility financing. These funds can accumulate until such time as there is enough revenue to fund a particular improvement. For comparative analysis the City will use the current cash balances “on hand” as of the close of the most recent 2018 fiscal year. CF-28 presents the current 2018 balance in the major capital improvement enterprise funds. The table shows the beginning balance, revenues added, expenditures, and ending balance for the period in question. In all cases, the funds are accumulating surpluses for future expenditures.

Table CF-28 Current 2018 Balance in the Major Capital Improvement Enterprise Funds

	Railroad Row Maint & Devel (008)	Park Construction Fund (035)	Arterial Street Fund (102)	Fire Station Constructio n Fund (134)	Capital Imp Fund (307)	Comp Plan Capital Imp Fund (308)
Beginning cash & investments	\$109,162	\$112,654	\$206,620	\$202,689	\$625,482	\$259,618
Revenues added	\$24,730	\$86,580	\$1,077,365	\$15,309	\$437,566	\$193,374
Total resources	\$133,892	\$199,234	\$1,283,986	\$217,998	\$1,063,048	\$452,993
Expenditures	\$28,702	\$49,225	\$1,058,992	\$9,965	\$496,053	\$205,058
Ending net cash & investments	\$105,190	\$150,009	\$224,994	\$208,032	\$566,995	\$247,935

Source: City of Buckley, Financial Reports

CITY-OWNED UTILITIES

The City of Buckley operates three public utilities, providing water and sewer service, and stormwater management to local residents. These City-owned utilities are self-supported financial entities, financed through the revenues generated by the utility customers and responsible for operations, maintenance, and capital improvements. Capital improvements can be funded, either on a pay-as-you-go basis, or through the issuance of revenue bonds. The pay-as-you-go approach requires that revenues in excess of operating and maintenance costs be held in reserve for capital improvements until enough funding capacity is available for project development. This makes sense for many smaller projects, which can be funded out of cash flow.

Table CF-29 City-Owned Utilities – Water, Sewer, Storm Revenue Generated

	Water System Fund (402)	Sewer System Fund (402)	Stormwater Management Fund (407)
Beginning cash & investments	\$177,453	\$381,631	\$18,563
Revenues added	\$988,900	\$2,073,052	\$558,964
Total resources	\$1,166,353	\$2,454,682	\$577,527
Expenditures	\$1,111,861	\$2,176,728	\$502,862
Excess (deficit)	\$54,492	\$277,954	\$74,665
Ending net cash & investments	\$54,492	\$277,954	\$74,665

Source: City of Buckley, Annual Financial Reports.

For larger projects, where cash requirements are substantially greater than is available, the utility can issue tax-exempt revenue bonds to fund the improvement. This provides the utility with a large capital budget and allows the cost of the facility to be repaid from future operating revenues. One of the advantages of this approach, besides allowing for larger projects, is that the cost of the facility is shared by both the existing ratepayers and future ratepayers. For facilities with lengthy useful lives this provides a more equitable distribution of costs to the beneficiaries of the improvement.

CF-29 presents the most recent financial data for the Water, Sewer and Stormwater Utilities. Capital financing capacity, whether it is pay-as-you-go or debt financed, is determined by the net cash after operations. These figures imply that without a rate increase the utilities face limited capital financing opportunities. As a result, a utility rate study should be undertaken after the Water and Sewer Comprehensive Plan, and Stormwater Management Plan are completed. The study would determine the necessary rate schedule required to fund the improvements called out in these studies.

POTENTIAL SOURCES OF ADDITIONAL REVENUES/FUNDING CAPACITY

There are two methods available to a city to raise revenues: 1) raise the rate of taxation for taxes currently levied; and 2) levy new taxes. The following are some potential new sources of revenue, which the City could tap to increase its financial capacity to fund additional capital improvements.

Real Estate Excise Tax (REET)

The Real Estate Excise Tax (REET) is a transfer tax imposed whenever an interest in real property is transferred, and is due on the date of the transfer. The 1990 Legislature has authorized cities and counties to impose an additional tax on the sale of real estate. This additional tax of 0.25 percent is to use to support capital projects specified in a capital facilities plan element of the City's comprehensive plan. The first 0.25 percent REET imposed by the City of Buckley received approximately \$22,000 in 1992; the City added a second 0.25 percent provided under the Growth Management Act, to raise additional revenue for capital projects. In 2018, the City of Buckley received \$373,892 from the REET.

B&O Tax on General Business

Cities and towns may levy a business and occupation (B&O) tax on general business of up to 0.2 percent of gross receipts. A city may increase the tax rate above this statutory limit, but only if approved by the voters of the jurisdiction. There are only a couple of dozen cities in the State of Washington that collect municipal B&O taxes on general business. The City of Buckley has no longer has a B&O tax on general business within the City limits.

B&O Tax on Utilities

Municipalities are permitted to charge a B&O tax on utilities operating within their jurisdiction. Cities may levy up to 6 percent of gross receipts on electrical, natural gas, steam energy, and telephone businesses. There is no limit in the rate levied on gross receipts for other utilities such as garbage, surface water management, and water and sewer services. Current utility B&O rates for the City of Buckley are shown in CF-30.

Table CF-30 Current Utility and B&O Rates

Utility	City of Buckley
Natural gas	6.0%
Electric	6.0%
Telephone	6.0%
Cellular telephone	6.0%
Garbage (start 3/05)	10.0%
Water	10.0%
Sewer	10.0%
Drainage	10.0%
Cable TV	4.0%

Source: City of Buckley BMC 3.96.050 - Ord. 01-09 § 1, 2009

With the passage of the Growth Management Act, the state gave cities and counties much greater flexibility to charge impact fees on new development. Given the large increments of growth projected for the Buckley area, impact fees assist in providing a mechanism for shifting some of the financial burdens associated with expanding services. Good candidates for impact fee treatment include: schools, fire protection, transportation, and parks and recreation.

Formation of Local Improvement District (LID)

Another mechanism for allocating the costs of growth, to the responsible individuals is through the formation of a Local Improvement District (LID). Where a new development requires some significant improvements, such as a new road or extended water and sewer system, an LID can be formed whereby benefiting properties are each assessed for their fair share of the cost of the improvement. This mechanism provides a dedicated revenue stream that is pledged to the repayment of bonds used to fund the improvement. The bonds are secured by the value of the land. This mechanism can also be used in built-up areas to fund system replacement or expansion, though it is much more difficult if there are numerous property owners, since the formation requires support from benefited property owners accounting for over 50 percent of the proposed assessment. The major difference between issuing General Obligation (GO) bonds and using an LID to finance capital improvements is the GO bonds will be supported by all taxpayers in the community, while the LID bonds will be retired by the beneficiaries of the improvement.

Transportation Benefit Districts

In 1987, the Washington State Legislature approved legislation that allows jurisdictions the ability to establish Transportation Benefit Districts as an option for local governments to fund transportation improvements. Since 2005, the Legislature has amended the TBD statute to expand its uses and revenue authority. More recently, in 2007, the Legislature amended the TBD statute (ESHB 1858).

Engrossed Senate and House Bill 1858 authorized a funding mechanism for cities and counties that could provide necessary resources to help maintain and preserve transportation infrastructure. A TBD can fund transportation improvements contained in any existing state or regional transportation plan that is necessitated by existing or reasonably foreseeable congestion levels. This can include maintenance and improvements to city streets, county roads, state highways, investments in high capacity transportation, public transportation, transportation demand management and other transportation projects identified in a regional transportation planning organization plan or state plan.

In November of 2012, the City created the new Buckley Transportation Benefit District and enacted a \$20 vehicle registration fee (for each eligible vehicle registered in Buckley) for the purpose of supporting street maintenance and transportation projects. In 2015, the City of Buckley received \$84,783 in vehicle fee revenue from the TBD.

Transportation Improvement Board

The Transportation Improvement Board (TIB) is a State agency that funds transportation improvements on state, city and county arterials.

The primary purpose of the TIB is to administer state funding for local government transportation projects. Projects are funded by utilizing TIB revenue in combination with local matching funds and private sector contributions. Revenues for these grant programs are generated from the state fuel tax. Projects seeking TIB funds are submitted to the Board and are prioritized on the basis of several criteria, to determine the eligibility and relative merit of each. The distributions are then determined by going down the prioritized list of projects until the budget is depleted. The City of Buckley's population is approaching a TIB threshold limit that separates small city projects from urban projects. The threshold population is 5,000; those cities below this population are eligible as a small city and those cities over are classified as urban.

PLAN OF FINANCE, CAPITAL FACILITIES FINANCE STRATEGY

In keeping with the incremental approach undertaken in this comprehensive planning effort, this Plan of Finance is not intended to be a detailed six-year capital facilities plan. Since many of the capital facility needs are yet to be identified and prioritized, an attempt to produce a project level CIP was not reasonable at this time. In its place, the following Capital Facilities Finance Strategy will provide the City with a framework strategy to help with capital financing decisions during the next couple of years as the detailed engineering work is completed. It will also allow the City to put into place the requisite capital finance mechanisms, which will fund the identified priority projects as well as address the longer-term growth-driven capital needs.

To ensure that the City of Buckley has the necessary financial capacity to fund current and future capital improvements, while maintaining an equitable balance between the burden of providing new facilities and the beneficiaries of those facilities the City should:

- Expand the existing revenue base where it is deemed practical
- Add new revenue sources primarily for capital funding
- Maintain financial policies which will ensure future population pays its fair share of the cost of capital improvements
- Actively pursue state financial assistance for capital projects which will allow for the leveraging of local funds (i.e., Transportation Improvement Board)

Expanded Revenue Base

The City should explore possible avenues for expanding the current revenue base. Toward this end the following should be analyzed.

Adjust Utility Rate Structure

In keeping with the overall strategy of ensuring that new development is paying a fair share of the costs of development, the utility rates should be structured such that new connections are assessed at a level approximating the marginal cost of infrastructure development.

New Revenue Sources

The other way to expand current financial capacity is to begin to levy new taxes or impose new fees. The following available new taxes or fees should be explored as a means of raising additional funds for capital improvements.

Impact Fees

One of the better mechanisms available to the City is to try to equitably allocate the cost of new infrastructure among the existing residents and the new population is through the establishment of impact fees. The City should explore the reasonableness of setting up impact fee schedules to help defray the costs of transportation improvements, parks and recreation facilities, and fire protection services.

The White River School District No. 416, which serves Buckley and the greater Buckley area, created a capital facilities plan to calculate impact fees for the city to consider charging. This work is attached together with its Resolution Number 18/13 and considered part of this element.

Local Improvement Districts

When a particular improvement will benefit only a portion of the population, the City should consider the formation of an LID to fund the necessary improvements. This is especially relevant in the case where a new development is proposed and seeking to be annexed, the City could require that an LID be in place which funds the appropriate capital improvements. This way the value of the land can support the infrastructure development without affecting the City's ability to use general obligation debt or special levies supported by property tax revenues and the costs will be borne by the beneficiaries of the improvements.