Appendix B

Population Forecasts

District General Sewer Plan Update – Population Analysis, Revised Memo

October 7, 2016



MEMORANDUM

Date: Oct 7, 2016

To: Shawn Moore, Clark Regional Wastewater District

CC: Eric Eisemann, E2 Land Use Planning

From: Talia Tittelfitz, Craig Chambers, BHC Consultants

Subject: District General Sewer Plan Update – Population Analysis, Revised Memo

The method used to establish current and future population, employment, and student enrollment estimates for the Clark Regional Wastewater District (District) General Sewer Plan Update (GSP) is presented in this memo. This memo also includes the approach to establishing sewered population and heavier sewer flows associated with wet industries.

1. GENERAL

The results of the population analysis are presented in Table 6.X.

1.1. Background

Previous general sewer plans relied on projections based on historical equivalent residential unit (ERU) connections and TAZ data. These projections have historically overestimated population growth and flow rates, leading to an aggressive CIP. The methodology described in this memo is in alignment with the comprehensive planning efforts of Clark County and the Cities of Vancouver, Battle Ground, and Ridgefield because the same data sources and analytical tools were used. Baseline residential population for the GSP was calculated by Clark County using the same parcel-based assumptions that were used to calculate baseline residential populations for the Clark County Comprehensive Plan. Additionally, the Vacant Buildable Lands Model, used in the County's long range planning process to allocate 20 years of growth to each UGA, was used to allocate 20-year growth forecasts to each basin in the GSP.

1.2. Service Area

The District encompasses 83 basins in three service area tiers, mapped in Figure 1 and Figure 2. Tier 1 includes District customers whose flow is treated by the City of Vancouver. Tier 2, sometimes referred to as the central service area, consists of connections served by the Salmon Creek Wastewater Treatment Plant (WWTP). Tier 3 includes the Ridgefield area. This are historically has been served by the Ridgefield WWTP, but ultimately these flows will be redirected to the Salmon creek WWTP.



Tier 1 includes 5 basins in the unincorporated Vancouver Urban Growth Area (UGA) adjacent to the City of Vancouver.

Tier 2 includes 50 additional basins in the unincorporated Vancouver UGA including the South Ridge School (outside of the UGA), one basin from the Rural Industrial Land Bank adjacent to the Vancouver UGA, one basin that encompasses the Hockinson Rural Center and schools outside the Rural Center boundary, and one basin that includes the Meadow Glade Rural Center as well as some portions of the City of Battle Ground and its unincorporated UGA.

Tier 3 includes 23 basins encompassing the entirety of the City of Ridgefield and its unincorporated UGA and 2 basins in potential Ridgefield UGA expansion study areas.

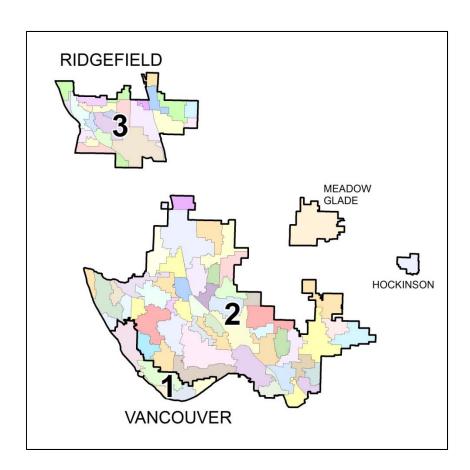


Figure 1. Clark Regional Wastewater District General Sewer Plan Basins divided into Tiers 1, 2, and 3



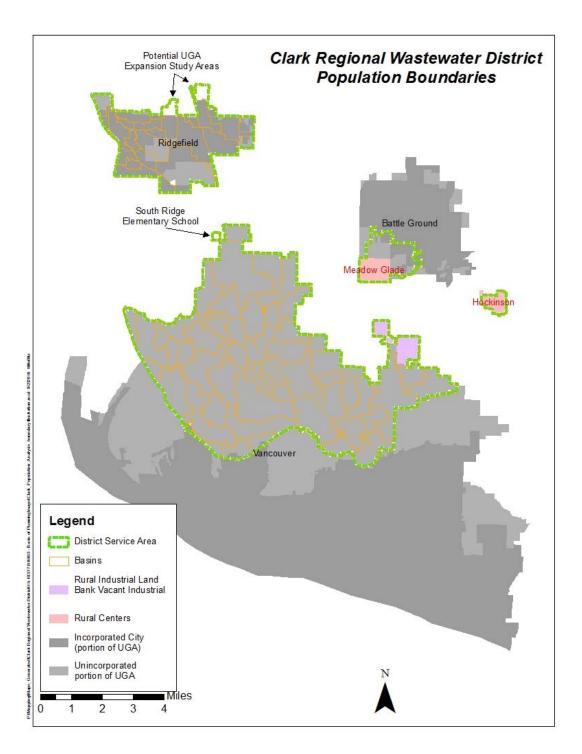


Figure 2. Clark Regional Wastewater District. Relationship between service and basin boundaries, UGA (both incorporated and unincorporated) and Rural Center boundaries, and vacant industrial lands identified by the Rural Industrial Land Bank.



1.3. Data

Infrastructural needs for the collection and conveyance of wastewater flows are modeled using a dynamic hydraulic modeling software. The volume of wastewater flows is significantly influenced by the residential population, employment, and student enrollment for each of the 83 basins and an additional allowance for wet industry. The results of these estimates feed the model with sanitary flow per capita for population, employment, and students and with sanitary flow per acre for wet industrial. The analysis maximizes available data to determine the unit flow contributions:

- Population: an analysis of residential population that counts the number of people living in each basin based on census and county tax assessor data
- Employment: an analysis of commercial and industrial employees in each basin based on State Covered Employment estimates
- Students: an analysis of student enrollment based on discussions with school districts and various other sources
- Industrial: an analysis of heavier sewer flows associated with wet industries

While most sanitary flow is accounted for through population and employment estimates, it is important to include student counts as well. Employment estimates do not account for students. Because of the high student to school employment ratio, it is felt that accounting for schools separately will more accurately capture these flow estimates. Also, some student populations, such as those who attend the WSU campus, for example, come from outside the district during the day, and thus would not be accounted for with residential population estimates.

An additional analysis of wet industry acreage accounts for industrial uses that produce heavier sewer flows that would not be captured by employment estimates for those industries.

1.4. Projection Scenarios

Projections are calculated for four modeled scenarios: current year, 2022, 2036, and build out.

The current year is set as 2016. However, the baseline is the year the most recent data is available at the time of analysis, and the baseline varies for each contributing group. The baseline for the residential population is 2015; the baseline for the employment population is 2014; and the baseline for the student population is 2016.

Future scenarios include 2022 (used for the 6-year CIP), 2036 (used for the 20-year CIP and consistent with the 20-year planning horizon in the 2016 Clark County comprehensive growth management plan), and build out. There is no date associated with the "build out" scenario. In the case of Ridgefield, the 20-year planning horizon is consistent with the City of Ridgefield comprehensive growth management planning activity.



1.5. Vacant Buildable Lands Model

The Vacant Buildable Lands Model (VBLM) is a parcel-based planning tool developed to analyze residential, commercial, and industrial lands within Urban Growth Areas. The result of VBLM, growth capacity is based on the identification of vacant and underutilized parcels and their development potential based on comprehensive plan land use designations, that is, "future zoning" and critical areas. This parcel data can be aggregated to express the capacity of each basin to accept growth.

The County's VBLM capacity estimates include assumptions - such as the "never to convert" factor - in order to realistically depict the phasing of how land is likely to become available for residential, commercial, and industrial development over the 20-year planning horizon. The "never to convert" factor withholds certain development percentages, assuming that in the next 20-years it is likely that 10% of buildable vacant lands and 30% of buildable underutilized lands will not be developed at a higher density, or not "converted". This capacity can be used to estimate each basin's share of the County Comprehensive Plan's 20-year UGA growth allocations.

However, when the GSP models build out scenarios, it is assumed that the planning horizon is extended beyond 20 years, and thus the "never to convert" lands *will* eventually be built out to the maximum allowable density. The "never to convert" factor (which had been removed for the 20-year scenario) is reintroduced to calculate a basin's maximized growth capacity in build out scenarios.

1.6. External Review

The District population analysis was kicked off with an approach meeting held at the Clark County Public Service Center in August, 2015. The purpose of the meeting was to review the proposed methodology for population analysis, and discuss available data and resources. Additional conversations regarding demographic data and local long-range planning activity influenced this analysis and ensured consistency with County and City comprehensive planning efforts. These parties include:

- Clark Regional Wastewater District staff;
- Clark County staff, including Ken Pearrow, Demographer, and Jose Alvarez, Long Range Planner;
- City of Battle Ground staff, including Erin Erdman, City Planner, and Mark Herceg, City Engineer;
- City of Vancouver Staff, including Bryan Snodgrass, Principal Planner;
- Vancouver, Battle Ground, Hockinson, Evergreen and Ridgefield School District staff and facility planners; and,



Washington State University – Vancouver staff.

Eric Eisemann, E2 Land Use Planner, met with County and City planners to review the initial basin distribution based on local knowledge and current planning activity. The results of these discussions are summarized in the May 10, 2016 memo to Shawn Moore, subject: *CRWWD Population, Employment and Enrollment Forecasts*.

Similarly, focus meetings were held for the Ridgefield area to ensure consistency with long range planning efforts. Those participants included the Clark Regional Wastewater District staff, Clark County staff, Ridgefield School District staff and facility planners, and local planners. Eric Eisemann, E2 Land Use Planner, and Jeff Niten, Ridgefield City Planner, reviewed the initial basin distribution and revised estimates based on local knowledge and current planning activity.

1.7. Resources

Data sources utilized throughout the population analysis include:

- Clark County Tax Assessor Parcel Data;
- Clark County Vacant Buildable Land Model (VBLM) Capacity Data;
- Clark County Comprehensive Plan Population Allocations;
- Economic Securities Department (ESD) Covered Employment Estimates, provided by Clark County;
- Southwest Washington Regional Transportation Council (RTC) TAZ Data; and,
- Office of Superintendent Public Instruction (OSPI) Student Enrollment Counts.

2. POPULATION

Population refers to the total residential population, or the number of people living in the service area. Estimates for population in each basin were reviewed for consistency with local planning activities by County and local planners and consultant Eric Eisemann.

Clark County's demographer, Ken Pearrow, used the same parcel-level starting data to calculate population for each basin as was used to calculate baseline population for the Clark County Comprehensive Plan.

The District's model input requires sewered population, a subset of total population, for each of the projection scenarios. Methodology for calculating sewered population is addressed later in this memo.



2.1. Current Year Scenario

Clark County provided baseline population estimates for each sewer basin for the most recent year for which data was available, year 2015. The baseline population estimates are a function of 2015 Clark County Tax Assessor data and the 2010 Census average household size for each Census Block. County Tax Assessor data includes housing unit counts at the parcel level. Using GIS, population estimates were established by multiplying parcel housing unit counts by the average household size for each census block and aggregating by basin.

Once aggregated at the basin level, Clark County demographer Ken Pearrow performed customized adjustments to the initial population calculations basin-by-basin based on local conditions to more accurately reflect recent population counts. Year 2016 population estimates were interpolated between the years 2015 and 2036 and reviewed against local knowledge of planning activities.

The Meadow Glade basin consists of the Meadow Glade Rural Center and portions of the City of Battle Ground and its unincorporated UGA. Population growth is limited by design capacity and service agreements with the City of Battle Ground to cap District service at 1 ERU per acre. This infrastructural limitation means that additional growth in Meadow Glade basin beyond the cap will be served by the City of Battle Ground instead of the District. Calculations for Meadow Glade basin depart from the methodology used for the other basins. The District provided the ERU count and septic count for the end of 2015, and the 2016 residential population for the Meadow Glad basin was calculated by subtracting 2016 employment and student ERUs from that total, and then multiplying by an average household size of 2.66.

2.2. Future Scenarios

Clark County's 20-year growth allocations and Vacant Buildable Lands Model (VBLM) population capacity data were the foundation for the analysis of future population growth. The growth allocations to each UGA are the result of a process negotiated between the County and local jurisdictions. The final growth allocations used in this analysis are presented in *Clark County Comprehensive Plan 2016 Update Issue Paper 7: 17,572 for the Battle Ground UGA, 56,601 for the Vancouver UGA, and 18,919 for the Ridgefield UGA.* Use of the 20-year growth allocations ensures concurrency between infrastructure and land use planning and across longrange planning documents. In order to make use of the 20-year growth allocations, Clark County customized a VBLM capacity estimate for each basin in the District service area. The basin capacity estimates were used to distribute the County growth allocations and to establish a build out scenario. The population of rural centers is assumed to remain largely unchanged over the 20-year planning horizon. Variations to this approach are discussed below.



2.2.1. Vancouver UGA

The District's Tier 1 & 2 boundary exists almost entirely in the unincorporated portion of the Vancouver UGA. To establish 20-year estimates, population allocations were distributed based on the capacity modeled by the VBLM. The 20-year growth estimates in the Clark County Comprehensive Plan allocate 56,601 to the Vancouver UGA. The VBLM estimates that the District service area in the Vancouver UGA could capture almost 66% of that, or 37,214. The VBLM growth capacity for each basin determines the share each basin can accommodate of 37,214. Allocated growth is added to the baseline estimates for the 20-year population estimate.

Population estimates were linearly interpolated for 2016 and 2022 between the 2015 baseline estimates and the 2036 distribution for each basin. The interpolated figures were adjusted by local planners based on known planning and development activity and anticipated zoning revisions.

2.2.2. Meadow Glade

Future scenario population estimates for 2022 and 2036 were based on the assumption, agreed upon through discussions with the District, that Meadow Glade will reach its 1 ERU/Acre cap (mentioned above) by 2036. The following calculations were performed to convert from ERU count to residential population:

- The ERU count for 2022 was interpolated between the 2016 ERU count and the 2036 cap.
- Septic counts for 2022 and 2036 were added based on the assumption that each count represents a household.
- Employment and student ERUs (calculated via methods discussed later) were subtracted.
- Resulting calculations were multiplied by an average household size of 2.66 to calculate residential populations for 2022 and 2036

2.2.3. Hockinson

The Hockinson Rural Center is largely built out, and the County does not assign population allocations to Rural Centers. The best way to forecast growth for this basin is to look at its growth capacity as determined by the VBLM, which estimates population growth of 16 additional total people. Through a discussion with the District, it was decided to add this growth to the baseline to establish the 2036 population estimate. The population was interpolated for 2016 and 2022 between 2015 and 2036.



2.3. Build Out Scenario

The build out scenario assumes that if the planning horizon is extended beyond 20 years, it is likely that "never to convert" lands will eventually be built out to the maximum allowed density. Therefore, infrastructure may be sized for this future "build out" scenario, rather than just 20 years of projected growth.

The methods for establishing build out differed for the Vancouver UGA and Rural Centers and Ridgefield. The same was method was used for the City of Vancouver and the City of Ridgefield with differing vacant to underutilized ratios according to VBLM data. Additional variations are discussed below.

2.3.1. Vancouver UGA

To establish a build out scenario for the portion of the service area located in the Vancouver UGA, the land removed by the "never to convert" factor was reintroduced based on the Vancouver UGA vacant to underutilized split of 53:47 and added to the basin VBLM capacity estimate and baseline population.

2.3.2. Meadow Glade

Septic conversions and growth in the Meadow Glade basin beyond the design cap are assumed to be served by the City of Battle Ground. Thus, the 20-year population estimate minus septic counts is assumed to reflect the ultimate build out scenario.

2.3.3. Hockinson

Since the Hockinson Rural Center is largely built out and there are no "never to convert" reduction factors applied to rural centers, the 20-year population estimate is assumed to reflect the ultimate build out scenario.

2.3.4. Ridgefield

To establish a build out scenario, the land removed by the "never to convert" factor was reintroduced based on the Ridgefield UGA vacant to underutilized split of 40:60 and added to the basin VBLM capacity estimate and baseline population.

3. EMPLOYMENT

Employment refers to the total number of commercial and industrial employees working within the service area. All basin employment estimates were reviewed for consistency with local planning activities by County and local planners and Eric Eisemann. Future employment estimates were also compared to TAZ-level employment forecasts provided by the Southwest WA Regional Transportation Council (RTC). To account for higher flows associated with heavy, wet industrial land uses, a separate analysis of industrial acreage was conducted. An allocation



of wet industrial wastewater flows was added to selected basins that have industrially zoned area. This allocation is discussed at the end of this memo.

3.1. Current Year Scenario

Clark County provided baseline employment estimates for each basin for the most recent year for which data was available, year 2014. Year 2014 Covered Employment estimates were derived from the Washington State Employment Security Department's (ESD) Quarterly Census of Employment and Wages series. This series consists of employment for firms, organizations and individuals whose employees are covered by the Washington Unemployment Insurance Act. Basin-level employment estimates were adjusted by local planners based on current land use activity. Year 2016 population and employment estimates were interpolated between 2014 and 2036, and reviewed against local knowledge of planning activities.

3.2. Future Scenario

Clark County's VBLM employment capacity data was the foundation for the analysis of future employment and establishing a build out scenario. The VBLM capacity data reflects the commercial and industrial development potential of vacant and underutilized land under comprehensive plan land use designations. The County provided custom VBLM capacity estimates per basin. Basin-level capacity estimates were added to the baseline employment to establish the 20-year employment figure. Use of the VBLM-derived employment capacity data ensures concurrency with comprehensive planning activities.

The 20-year estimates were reviewed by local planners and compared to TAZ-level employment forecasts. The basin and TAZ geographies are spatially different; therefore, their areas and boundaries do not necessarily align. Using GIS, District-wide future employment totals derived from both VBLM capacity and TAZ forecasts were compared and found to be consistent with each other.

Employment figures were interpolated for 2016 and 2022 between 2014 baseline estimates and 2036 distribution for each basin. The interpolated figures were reviewed and adjusted by local planners based on known planning and development activity.

3.2.1. Rural Industrial Land Bank (RILB)

Since the RILB was located outside the UGA at the time of analysis, accurate VBLM employment capacity data was not available. Capacity estimates were established by employing the Clark County methodology and using the revised industrial land use designations and industrial employment densities. The revised capacity estimates were added to the existing Land Bank basin current employment estimates provided by the County's VBLM.



3.3. Build Out Scenario

The build out scenario assumes that if the planning horizon is extended beyond 20 years, it is likely that "never to convert" lands will eventually be built out to the maximum allowed density. These adjustments ensure infrastructure is appropriately sized for the future build out scenario.

3.3.1. Vancouver UGA

To establish a build out scenario in the Vancouver UGA, the land removed by the "never to convert" factor for the 20-year estimate was reintroduced based on the vacant to underutilized split of 53:47 and added to the basin VBLM capacity estimate and baseline employment. These adjustments were also applied to the revised RILB employment estimates in the Land Bank basin.

3.3.2. Rural Centers

Since there are no "never to convert" reduction factors applied in the VBLM analysis of rural centers, the 20-year employment estimate is assumed to reflect the ultimate build out scenario for Meadow Glade and Hockinson basins.

4. STUDENT ENROLLMENT

The student enrollment analysis was informed by discussions with the District; Marnie Allen from ESD 112; Eric Hovee from E.D. Hovee and Company, a consultant who previously worked with local school districts on student enrollment forecasts; James Martin with Facilities Operations at Washington State University; and individual public school districts and private schools. There are five school districts within the District service area – Vancouver, Battle Ground, Hockinson, Evergreen, and Ridgefield. Staff was consulted from each of these agencies regarding student enrollment growth.

The Ridgefield School District provided a copy of the 2015-2021 Capital Facilities Plan (CFP) and the Ridgefield School District Student Enrollment Forecast Interim Report (Report). The 2015-2021 CFP provides 6 year student enrollment projections based on the baseline forecasting work presented in the Report. The Report provides enrollment forecasts completed by E.D. Hovee & Company in February, 2015. The forecasts were informed by historical enrollment patterns, birth rate patterns and the County's adopted growth scenario. The Report provided 20-year baseline enrollment forecasts for the 2015-2035 planning horizon and an annualized growth rate for each grade span (elementary, middle and high school).

- Elementary 4.1% annualized growth rate
- Middle 4.2%
- High 3.8%



4.1. This approach assumes that all growth will occur within existing sites, unless future facility expansion is otherwise specified. Following a review of this approach by Jeff Niten and Eric Eisemann, and based on intentions stated by the School District and the City to build a joint school/recreational sports complex, 800 students were added to the 20 year population. Public School Districts

4.1.1. Current Year Scenario

Current student enrollment was obtained for each school from the Office of Superintendent of Public Instruction (OSPI) for the 2015-2016 academic year.

Current student enrollment for Ridgefield was obtained from OSPI for the 2014-2015 academic year. The grade-span specific annualized growth rate was applied to each school to estimate 2016 student enrollment.

4.1.2. Future Scenarios

Each school district has a 6-year capital facilities plan (CFP) that provides district-wide student enrollment forecasts for each grade span – elementary, junior and high school. Coordination with the districts was required to distribute the 6-year district-wide growth to each of the school facilities and determine 20-year enrollment forecasts. In some instances, the school districts had detailed growth models and were able to provide custom growth estimates for each facility. Other school districts extrapolated growth and adjusted based on facility capacity. Final estimates were calculated by working with data provided by each District followed by review and adjustments proposed by E2 and local planners. A summary by School District follows:

Vancouver School District

Jennifer Halleck, Facilities Planning and Conservation Office, provided custom 6 and 20-year student enrollment estimates for each school based on the Vancouver School District's student growth model.

• Battle Ground School District

Mary Beth Lynn, Assistant Superintendent, provided conservative 6 and 20-year student enrollment estimates for each school based on an existing demographic study and the 6-year CFP.

Hockinson School District

Michelle Scott, Business Manager, reviewed OSPI School District 6-year projections, E.D. Hovee and Co. 2030 projections, and the 6-year CFP projections, to establish custom 6 and 20-year student enrollment estimates for each school within the Hockinson School District. The Hockinson basin includes two rural school facilities,



New Hallelujah Christian School and Hockinson Heights located outside the basin area which are served by the District.

Evergreen School District

Susan Steinbrenner, Director of Facilities, provided 6 and 20-year student enrollment estimates based on anticipated housing unit growth and a student generation rate of .168 students per housing unit.

• Ridgefield School District

There is one rural Ridgefield School District facility located within the Tier 2 service area; all other Ridgefield Schools are within Tier 3. Student enrollment estimates were established based on the 6-year CFP and the Student Enrollment Forecast Interim Report, completed by E.D. Hovee & Company in February, 2015. The Interim Report provided 20-year baseline enrollment forecasts and an annualized growth rate for each grade span. The 6 and 20-year estimates were reviewed by Superintendent Dr. Nathan McCann.The school districts recognize that additional facilities will likely be constructed over the 20-year planning horizon as facilities capacities are maximized, but would not comment on the location of potential facilities unless otherwise included in the 6-year capital facilities plan.

4.1.3. Build Out Scenario

The 2036 student enrollment forecast will also be used as the build out figure for modeling purposes.

4.2. Private Schools

There are 9 private schools located within the District service area. Current student enrollment was obtained for each private school from the Office of OSPI for the 2015-2016 academic year. Private schools were assumed to have stable enrollment, meaning no growth, on the 20-year planning horizon and build out scenario.

4.2.1. Washington State University – Vancouver Campus

The Washington State University Vancouver Campus is located in the Mt. Vista basin. Current student enrollment was obtained from Nancy Youlden, Vice Chancellor of Student Affairs. Future student enrollment was informed by conversations with James Martin from Facilities and Operations, and the Campus Master Plan. The Plan anticipates an ultimate build out of 9,000 full time equivalent students by 2022.

5. SEWERED POPULATION

Basin-level septic data was utilized to establish the sewered population for each target year. The sewered population analysis assumes the following: all existing septic systems are



associated with residential land uses, and all commercial and industrial land uses are sewered; one septic data point equals one ERU; and 100-percent of the build out population is sewered.

5.1. Current Year Scenario

The District provided 2016 basin-level septic system counts. The unsewered population in each basin, or the population on septic, was estimated by multiplying the number of septic systems by the average household size of 2.66 (Clark County); sewered population is then calculated by subtracting unsewered population from the total population of each basin. Adjustments were made where necessary based on current land use data.

5.2. Future Scenarios

The 6 and 20-year sewered population estimates were established based on recent septic-to-sewer conversion rates. The previous three years of septic-to-sewer conversion data was provided by the District, and the average number of conversions was found to be 34.3 septic systems each year. Beginning with the current basin-level septic counts, the average annual conversion rate was applied proportionately each year throughout the entire service area based on each basin's capacity for conversion. Each year, basins with a higher ratio of unsewered-to-total ERUs experienced a larger portion of the converted septic systems. The number of converted systems was subtracted from the total septic count of the prior year. The population associated with the remaining septic systems for the 6 and 20-year horizon, was then subtracted from the total population estimate for that year.

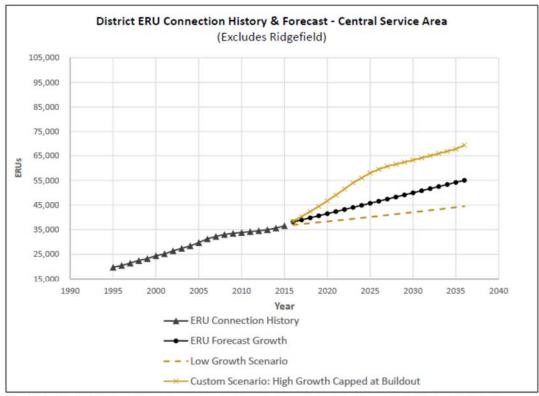
5.3. Build Out Scenario

The build out scenario assumes that 100-percent of the population is sewered. Therefore, the sewered population is equal to the total population.

6. ERU GROWTH

ERU growth for the Central Service Area is shown in Figure 3. The Central Service Area includes the Vancouver, Meadow Glade, and Hockinson portions of the District. ERU Connection History charts recorded ERU connections from 1995-2015. The ERU Forecast Growth forecasts the ERU connections needed to accommodate population growth in the Central Service area based on an average household size of 2.66. It includes residential, employment, and student ERUs, and it adds in existing unsewered populations (as ERUs) based on the septic-to-sewered conversion rate over the 20-year planning horizon. The Low Growth scenario assumes a steady recession-rate growth of 0.94%. The Custom Scenario starts with a high growth rate, 5.01%, but then levels out as the population reaches the build-out capacity of the Central Service Area.



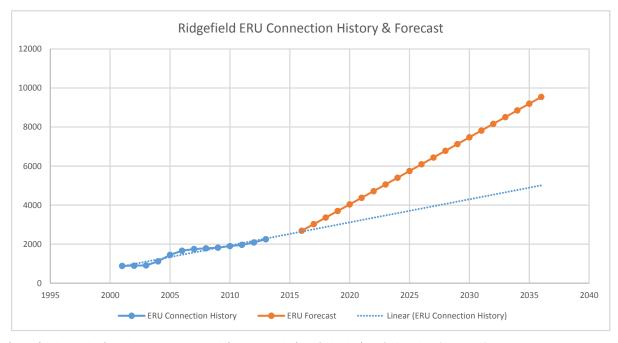


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8/30/2016

Figure 3. Central Service Area ERU Growth.

ERU growth for Ridgefield is shown in Figure 4. ERU Connection History charts recorded ERU connections from 2001-2015. The ERU Forecast Growth forecasts the ERU connections needed to accommodate population growth in the Ridgefield service area based on an average household size of 2.66. It includes residential, employment, and student ERUs, and it adds in existing unsewered populations (as ERUs) based on the septic-to-sewered conversion rate over the 20-year planning horizon.





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November 2015

Figure 4. Ridgefield ERU Growth

7. INDUSTRIAL ACREAGE

The population analysis establishes total commercial and industrial employment. However, current and future employment estimates do not account for heavier sewer flows associated with wet industries. To account for this, the total industrial acreage for each basin located within the identified industrial vicinities was established. Three industrial vicinities were identified that are anticipated to have concentrations of wet industrial activity, including the Rural Industrial Land Bank, Fairgrounds and Ridgefield Interchange, which translates into industrial acreage included in the following basins: Royle Road, Pioneer Corridor, Union Ridge, Boschma, Allen Creek East, Country Meadows, Knoll Ridge, Land Bank, NE 114th St, Whipple Creek East, and Whipple Creek South.

7.1. Current Year Scenario

Current industrial acreage was established using Clark County VBLM data. VBLM data classifies parcels as industrial, commercial or residential, and built, vacant or underutilized. The area of parcels that were classified as built industrial were assumed to reflect current industrial acreage. The acreage was aggregated for each basin within the three industrial vicinities.



7.2. Future Scenarios

Future industrial acreage was also established using Clark County VBLM data. The area of parcels classified as industrial and vacant or underutilized were assumed to reflect 2036 industrial acreage. The future acreage was aggregated for each basin within the three industrial vicinities, and added to current industrial acreage. Industrial acreage was linearly interpolated for 2022 between 2016 and 2036.

7.3. Build Out Scenario

Build out industrial acreage was assumed to equal 2036 industrial acreage.

Table B-1 – Population, Employment, Student and Industrial Forecast (with 50-year Growth)

Table 6.1
Population, Employment, Student and Industrial Forecast (with 50-year Growth)

Urhar					Resi	idential Por	pulation (Pe	rsons)						Fmnlovm	ent Ponulat	tion (Employe	ees)				Stude	ent Enrollr	ment (Studen	ts)					Industri	al Acreage (Acr	es)			
Growt	Treatment	Basin Name	Basin	2016		2022	20:		Build Out	50-year Gr	rowth	2016	20	022	2036			50-year	Growth	2016	2022			Build Out	50-year Growth	2016		2022		2036		uild Out	50-	year Growth
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		HERRON	3-202	1,438 1,420	1,607	1,589	2,135	2,119 2	2,471 2,471	3,180	3,180		-	-	-		-	-	-			-	-			-	-		-					
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		GEE CREEK EAST	3-503	299 184					3,400 3,400		7.052	2 2	2 2		- 30	30 3	- 30	72	- 12			-	-		-	-	-		-					
		HILLHURST NORTH	3-504	521 510			,		723 723	969	969		-		-		-		-			+ :	-			-	-		+ -		-			
프		CEDAR RIDGE	3-505	665 660	_		+		1,196 1,196	1,993	1,993		-	-	-		-	-	-			-	-			-	-		-					
efie		REIMAN ROAD	3-506	271 240					1,250 1,250		2,663		-	-	-		-	-	-			-	-			-	-		-					
g		PIONEER CANYON	3-601	872 850	1,202	1,181	2,216	2,198 2	2,517 2,517	4,233	4,233	41 41	104	104	418	418 41	.8 418	984	984			-	-			-	-		-					
~		ALLEN CREEK WEST	3-602	67 51	135	120	296	282	397 397	640	640		-	-	-		-	-	-			-	-			-	-		-	-		Ì		
		ROYLE ROAD	3-603	493 288	1,984	1,787	5,462	5,282	5,884 5,884	12,915	12,915	354 354	539	539	972	972 1,13	1,134	1,899	1,899	683 683	1,213 1,213	1,497	1,497 1	1,497	2,717 2,717	119 23 -	119	52 52	2 119	119 119	119	119	119 220	220 220
		HILLHURST SOUTH	3-604	29 24	162	157	500	495	563 563	1,207	1,207		-	-	-		-	-	-			800	800	800 800	2,000 2,000	-		-		-		-		
		ALLEN CREEK EAST	3-605	21 5	49		175		195 195	406		29 29				319 42						-	-			82		24 24			82	82	82 169	169 169
		PIONEER CORRIDOR	3-606	182 150	_				935 935	1,916		,099 1,099				2,909 3,38						-	-			207 100 100 *		132 132			207	207	207 320	
		UNION RIDGE	3-607	26 2	26		26		26 26	26		549 549			2,020 2			4,226				-				280 103 103 *	280	156 156	6 280	280 280	280	280	280 466	466 466
		SEVENTH-DAY TRI-MOUNTAIN	3-608 3-609	21 0 3 0	23		685		753 753	1,681		193 193 10 10	_			2,120 2,62		5,010	5,010		1,619 1,619	1,619	1,619 5	5,000 5,000	4,048 4,048	-		-		-	-	-		
		BOSCHMA	3-610	107 8	111				880 880	1,840		148 148	_		1,357 1		0 20 3 1,673					-	-		-	180 20 -	190	68 68	8 180	180 180	180	180	180 348	348 348
		MOUNTAIN VIEW	3-610	56 30	_		_		599 599			22 22	_				5 1,673					+-				- 20 -	100	- 00	- 100	- 180	100	-		J40 J48
		MCCORMICK CREEK	3-612	133 59					1,135 1,135					-	-		- 123	-	-			+ -				1 -	-	-	-	-	-	-		- -
		Ridgefield UGA Subtota										,786 2.786	5 5,434	5,434	11,895 11	,895 13.86	4 13,864	25,560	25,560	1,818 1.818	4,599 4.599	6,908	6,908 10),289 10,289	14,543 14.543	868 245 203			2 868	868 868	868	868	868 1,523	1,523 1.523
				, ,_00	-,	_,	,,,,,	,	,	,			.,	.,			,,	,	,3		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,	-,										
<u>+</u> ≥		Rural Center MEADOW GLADE	2-1801	2,191 1,989	2545	2,350	3,193	3.016 3	3,193 3,193	4,696	4.696	162 162	2 635	625	1 737 1	1,737 1,73	7 1 727	A 100	4,100	731 731	731 731	. 731	731	731 731	731 731									
ja ja		HOCKINSON	2-1801	375 218					391 391			434 434							4,100	3,087 3,087					4,242 4,242	-	-		-		 			
ت ت		Rural Center Subtota		2,566 2,207									_							3,818 3,818					4,973 4,973		-		-		-	-		
				,	,,	,, .	.,	.,	.,	-,			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,,,,,		,	, ,	,, ,	,	.,,.	.,.	,	,	, ,	, , ,									
		Vancouver UGA - SCTP SALMON CREEK	2-101	186 184	425	422	982	979 1	1,510 1,510	2,175	2 175	20 20	20	20	20	20 2	0 20	20	20	-	-		-	-										
		FELIDA	2-101	3,515 2,994		3,240			4,775 4,775			516 516				531 53						-	-		-	-	-		-					
		LAKE RIVER	2-102	412 359		_	_		1,173 1,173	1,556	1,556	6 6	5 6		6		6 6	6				+ -		: 							 			
		SEWARD BRIDGE SOUTH		710 654		_			1.383 1.383			13 13	_		13		3 13		-			+ -					_		+ - +					
		SEWARD BRIDGE NORTH		2,488 2,397		2,489		,	2,981 2,981	3,229		67 67			67		7 67			703 703	710 710	877	877	877 877	1,138 1,138	-	-		-					
		WHIPPLE CREEK WEST	2-203	194 11	+				4,364 4,364			34 34	1 98	98			.0 310					-	-				-		-					
		MTN. VIEW GARDENS	2-301	1,063 962	1,091	. 993	1,155	1,066 1	1,215 1,215		1,292	28 28	3 28	28	28	28 2	8 28	28	28	1,494 1,494	1,436 1,436	1,622	1,622 1	,622 1,622	1,814 1,814	-	-		-					
	품	MUIRWOOD	2-401	1,061 979	1,138	1,058	1,316	1,243 1	1,484 1,484	1,697	1,697	29 29	9 29	29	29	29 2	9 29	29	29			-	-			-	-		-					
	j.	COUGAR CANYON NORTH	1 2-501	2,814 2,402	3,061	2,664	3,636	3,274 4	4,182 4,182	4,869	4,869	109 109	109	109	109	109 10	9 109	109	109	1,209 1,209	1,088 1,088	1,228	1,228 1	,228 1,228	1,257 1,257	-	-		-					
	- E	COUGAR CANYON WEST		2,920 2,894	•	2,898			2,938 2,938			58 58			58		8 58					-	-			-	-		-					
	<u>Ē</u>	COUGAR CANYON EAST	2-503	3,132 3,055		3,100			3,365 3,365	-, -		,210 1,210	_		1,256 1		0 1,270		1,327	560 560	505 505			592 592	640 640	-	-		-					-
	လိ	COUGAR CANYON SOUTH		3,356 3,053		3,241			4,340 4,340			,997 1,997				2,836 3,07			4,094	749 749				749 749	749 749	-	-		-					
		ORO-VEGA WEST	2-601	2,500 2,380		2,539			3,355 3,355			180 180	_	201	251					2,693 2,693	2,359 2,359	2,662	2,662 2	2,662 2,662	2,616 2,616	-	-		-		-			
		ORO-VEGA EAST HAZEL DELL NORTH	2-602 2-701	1,818 1,800 4,621 4,211		1,818 4,288			1,918 1,918 4,963 4,963			967 967 ,526 1,526			1,095 1 1,576 1		1,132			431 431	403 403	446	446	446 446	469 469	-	-		-		-			
		HWY. 99 EAST	2-701	10,118 9,525					2,360 12,360	13,487		709 709	_		1,335 1		4 1,514			765 765	946 946			.005 1.005	1,365 1,365	-	-		-					
		SYLVAN CREEK	2-901	1,062 985					1,295 1,295	1,412		320 320			471		4 514			910 910				,	1,478 1,478	-	-							
		KNOLL RIDGE	2-1001	1,914 1,856					2,103 2,103		2,197	52 52	2 52		52		2 52			512 512	586 586			665 665	895 895	-			1					
		BLUEBERRY HILL	2-1101	2,153 1,996		2,103			2,714 2,714			78 78					8 78					-	-			-	-		-					
		SHERWOOD	2-1201														0 20						-			<u> - </u>	-							
		BARBERTON	2-1301	1,576 1,576	2,031	2,031	3,094	3,094 4	4,102 4,102			88 88	88	88	88	88 8	8 88	88	88				-			-	-		-					
		PLEASANT VALLEY SOUTH		702 617		1,118			2,136 2,136			21 21			85		3 103			1,089 1,089	1,092 1,092	1,109	1,109 1	,109 1,109	1,139 1,139	-	-		-					- -
		CURTIN CREEK NORTH	2-1303	208 0					2,202 2,202			17 17		17			7 17					-	-			-	-		-		$\sqcup \sqcup$			
		NE 134th STREET	2-1401	668 605					860 860			672 672	_			1,121 1,24						1	-			-	-		-					- -
		MT. VISTA	2-1501	23 23					23 23			548 548			548		8 548		548	2,593 2,593						-	-		-		\vdash			- -
		PLEASANT VALLEY NORTH MILL CREEK EAST		106 37		726			3,889 3,889			80 80								92 92	92 92	92	92	92 92	92 92	-	-		-					
		HIGHWAY 99 NORTH	2-1503 2-1601	1,322 1,180 255 85		1,293			2,062 2,062 872 872			83 83 ,131 1,131			120		1 1 221		183			+ -				-	-		-		 			
<u></u>		NE 16th AVE	2-1601	255 85 890 858		_			952 952			910 910										+ -	+ - + -				-		1 -		+ +	-		
n ve		LEGACY	2-1602	3,791 3,700		3,854			4,625 4,625			,648 2,648										+-	+ - + +			-	-		+ - +	-	 	- -	_ -	
2		WHIPPLE CREEK SOUTH	2-1604	222 20					1,897 1,897			192 192										+ -				154 41 -		75 75	5 154	154 154	154	154	154 273	273 273
Na Na		WHIPPLE CREEK EAST	2-1605	3,139 2,381		3,257			1,035 11,035			568 568									799 799	986	986	986 986	1,594 1,594	177 38 -		80 80						322 322
		I-5 CORRIDOR	2-1606	85 21		38	517	473	965 965			101 101											_			277 25 -								544 544
		ST. JOHNS	2-1701	3,341 1,926	3,878	2,515	5,130		6,318 6,318			143 143	184	184	280	280 32	0 320	487	487				-			-	-		-					- 0
		CURTIN CREEK WEST	2-1702	415 0					2,788 2,788			237 237				1,379 1,70						-	-			-	-		-					- 0
		NE 110th STREET	2-1704	706 557		. 597			898 898			140 140										-	-			-	-		-					- 0
		GLENWOOD CREEK	2-1705	2,069 1,813					3,991 3,991			299 299				419 45			600			-	-			-	-		- 1					- 0
		CEDAR 49	2-1706	1,586 1,357		1,476			2,199 2,199			336 336				998 1,18			1,991			-	-			-	-		-					- 0
		SCHULLER	2-1707	1,486 600					1,831 1,831			40 40			135		3 163		278		575 575	_	626	626 626	740 740	-	-		-		\perp			- 0
		COVINGTON NORTH	2-1708	2,336 1,639					2,903 2,903			201 201							551				-			-	-		-		1			i
		NE 86th STREET	2-1709	2,552 1,858					2,682 2,682			38 38			38		8 38		38	479 479				494 494	517 517		- 150		- 450	150 450	150	150		- 0
		COUNTRY MEADOWS NE 114th STREET	2-1710 2-1711	5,936 5,386 841 540		5,879			8,560 8,560 3,509 3,509			,149 2,149 11 11				73 9			5,011	1,702 1,702	1,608	1,647	1,64/ 1	1,04/ 1,64/	1,565 1,565	158 89 89 19 5 -		110 110 9 9		158 158 19 19			158 230 19 34	230 230
		LAND BANK	2-1/11	127 5					291 291			50 50				73 9 2,421 3,04						+ -				19 5 -								568 568
		NE 109th STREET	2-1712	1,465 1,396		3,133			4,816 4,816			107 107										+ -	 			284 13 -	- 284	95 95	284	204 284	284	204		
		ORCHARD CREST NORTH		870 806					1,161 1,161													1 -	-			-	-		-					- 0
			= .	2 2 200			, ,,,,,,		,	, ,	,		,					, ,	, ,			1			-			1 1	1 1					

Table 6.1
Population, Employment, Student and Industrial Forecast (with 50-year Growth)

Urban			D			Resi	dential Pop	pulation	(Persons	5)								Employn	nent Popu	ılation (Eı	mployees							Studer	nt Enrollr	nent (Stud	lents)									Industrial	Acreage (A	cres)				
Growth	reatment	Basin Name	Basin	201	.6	2	022		2036		Build O	ut	50-year 0	Growth	201	.6	20	22	203	36	Build	Out	50-year	Growth	20	16	202	22	20	36	Build	Out	50-year Gr	rowth	20	16		2022	/		2036		Build Ou	ıt	50-ye	ar Growth
Area	Plant	l l	Number	Total	Served	Total	Served	Tota	I Ser	ved 1	Total 5	Served	Total	Served	Total	Served	Total	Served	Total	Served	Total	Served	Total	Served	Total	Served	Total	Served	Total	Served	Total	Served	Total S	Served	Total B	uild Serv	ed Total	Build	Served	Total F	Build Serve	ed Tota	l Build	Served	Total	Build Served
		ORCHARDS CREST SOUTH 2	2-1715	1,666	1,323	1,736	1,406	1,9	00 1	,599	2,055	2,055	2,251	2,251	538	538	560	560	614	614	636	636	728	728	580	580	599	599	640	640	640	640	731	731	-		-		\Box	-				- '	-	- 0
		GREEN MEADOWS EAST 2	2-1716	2,154	2,002	2,234	2,088	2,4	21 2	,288	2,599	2,599	2,822	2,822	111	111	111	111	111	111	111	111	111	111	282	282	282	282	282	282	282	282	282	282	-		-			-				-	-	- 0
		COVINGTON SOUTH 2	2-1717	2,429	1,722	2,502	1,821	2,6	73 2,	,052	2,835	2,835	3,039	3,039	158	158	187	187	256	256	284	284	403	403	-	-	-	-	-	-	-	-	-	-	-		-			-				-	-	- 0
		GREEN MEADOWS WEST 2	2-1718	1,914	1,627	2,058	1,781	. 2,3	93 2	,141	2,710	2,710	3,110	3,110	2,268	2,268	2,596	2,596	3,360	3,360	3,673	3,673	4,997	4,997	260	260	260	260	260	260	260	260	260	260	-		-			-				_	-	- 0
		Vancouver UGA - SCTP Subt	total	91,838	79,210	103,347	91,183	127,8	07 116	,728 15	51,684 1	L51,684	181,760	181,760	22,286	22,286	26,981	26,981	40,241	40,241	45,325	45,325	67,179	67,179	18,235	18,235	24,655	24,655	26,120	26,120	26,120	26,120	37,948 3	37,948	1,069	211 89	1,06	9 469	469	1,069 1	1,069 1,06	9 1,06	9 1,069	1,069	1,971	1,971 1,971
		SCTP Total		102,378	88,626	119,183	105,935	156,9	19 144	,853 18	33,039 1	183,039	238,730	238,730	25,667	25,667	33,486	33,486	54,312	54,312	61,364	61,364	97,282	97,282	23,871	23,871	33,226	33,226	37,308	37,308	40,689	40,689	57,463 5	57,463	1,937	456 292	1,93	7 901	901	1,937 1	,937 1,93	7 1,93	7 1,937	1,937	3,494	3,494 3,494
		Vancouver UGA - WTP																																												
	5		1-101	1 220	1.051	1 252	1.072	1.2	07 1	122	1 210	1 210	1 200	1 200	22	22	22	22	22	22	22	22	22	22										-						-				-		0
	Co		1-101	1,238	1,051	1,252	1,073	+ -	_	620	1,319	1,319	2,007	2,007	690	690	606	696	726	726	752	752	910	819	-		-	-	-	-	-		-	-	-		-		$\overline{}$					\vdash	-	- 0
	е (1-102	702	467	812	1,443	1,7		,020	1,879	1,079	1.606	1,007	70	70	102	103	155	155	177	177	270	270	-		-	-			-	-	-	-	-		_		-+				_	-	-	- 0
	tsid		1-103	2 107	2 002	3,273	3.173	3.4	_	202	2 665	2 665	3,904	3,904	1.653	1.653	1.691	1.691	1.781	1 701	1.818	1.818	1 072	1.973	1,077	1.077	1 165	1 165	1.309	1 200	1 200	1 200	1.657	1.657	-		-		$\overline{}$					\vdash	-	- 0
	est		1-201	3,107	3,003	4 722	4.252	4.9		,303	5,003	5,003	5,304	5,904	1,033	180	1,091	1,091	225	1,701	1,010	227	202	202	411	1,077	1,103	410	1,309	1,309	1,509	1,309	1,037	1,037	-		_		-+				_	-	-	- 0
	3			4,043	4,143	4,733	.,	,-		,504	5,142	5,142	5,393	5,393	180		193	193	225	225	237	237	292	292		411	410	410	451	451	451	451	2460	511	-		_		ightarrow	$\dot{m -}$	—	_		استسا	-	- 0
		Vancouver UGA - WTP Subt	totai	11,237	10,112	11,611	10,527	12,4	82 11	,495 1	13,309	13,309	14,350	14,350	2,623	2,623	2,714	2,/14	2,928	2,928	3,016	3,016	3,387	3,387	1,488	1,488	1,575	1,5/5	1,760	1,760	1,760	1,760	2,168	2,168	-		-	-				-	-	-	-	
		Vancouver UGA Total		103,075	89,322	114,957	101,710	140,2	89 128	,223 16	54,993 1	164,993	196,110	196,110	24,908	24,908	29,695	29,695	43,170	43,170	48,341	48,341	70,566	70,566	19,723	19,723	26,230	26,230	27,880	27,880	27,880	27,880	40,116 4	40,116	1,069	211 89	1,06	469	469	1,069 1	1,069 1,06	9 1,06	9 1,069	1,069	1,971	1,971 1,971
		Central Service Area Total		105,642	91,529	117,883	104,289	143,8	74 131	,493 16	58,578 1	168,578	201,221	201,221	25,504	25,504	30,766	30,766	45,345	45,345	50,516	50,516	75,109	75,109	23,541	23,541	30,203	30,203	32,160	32,160	32,160	32,160	45,089 4	45,089	1,069	211 89	1,06	469	469	1,069 1	1,069 1,06	9 1,06	9 1,069	1,069	1,971	1,971 1,971
		DISTRICT GRAND TOTAL		113,616	98,738	130,794	116,462	169,4	02 156	,349 19	96,348 1	196,348	253,080	253,080	28,290	28,290	36,200	36,200	57,240	57,240	64,380	64,380	100,669	100,669	25,359	25,359	34,801	34,801	39,068	39,068	42,449	42,449	59,631 5	59,631	1,937	456 292	1,93	7 901	901	1,937 1	,937 1,93	7 1,93	7 1,937	1,937	3,494	3,494 3,494

^{*} No Wet Industrial allocation. All industrial component included in employment populations

Table B-2 – Average Annual Flow Projections

Table 6.3
Average Annual Flow Projections

Urhan					R	esidential Ave	erage Annua	al Flow @ 75	gpcd/pers	son		Empl	yment Average An	nual Flow @	15 gpd/emplove	e				Stude	nt Flow at 15 gpd	l/ student				Ind	ustrial @ 1,500 ga	ls/acre/dav	
Growth	Treatment Plant	Basin Name	Basin Number	2016	202	22	2036	6	Build	Out	50-Year	2016	2022	20	36 B	uild Out	50-Ye			2022	2036	Build (50-Year	2016	2022	2036	Build Out	
Area				Served AA (gpd)	Served	AA (gpd) Se	erved A	AA (gpd)	Served	AA (gpd)	Served AA (g	d) Served AA (gpc) Served AA (gp	d) Served	AA (gpd) Serve	d AA (gpd)	Served /	AA (gpd)	Served AA (gpd) Serve	d AA (gpd)	Served AA (gpd	d) Served A	AA (gpd) Serve	ed AA (gpd) Acr	es ¹ AA (gpd) Acr	es ¹ AA (gpd)	Acres ¹ AA (gp	d) Acres ¹ AA (gr	od) Acres ¹ AA (gpd)
		Ridgefield UGA - SC CARTY LAKE	3-101		-	-	-	-	-	-				10	150	150	25	375		-		-				-		-	
		DOWNTOWN	3-201	1,436 107,707	-,000	-, -	,	137,400	,	140,848	2,442 183		2 175 2,62	0 309	4,635 33	13 4,695	529	7,939	, , ,	5 26,496	2,992 44,882	2 2,992	44,882 5,77	78 86,667 -		-		-	
		HERRON MARINA	3-202 3-203	1,420 106,465 81 6.064	,	119,142 6.064	2,119 81	158,896 6.064	2,471 81	185,336 6.064	3,180 238 81 6	510 064 174 2.61		5 1,264	18.960 1.20	- 54 18,960	2,899	- 43 485		-		-				-		-	
		TAVERNER	3-301	436 32,667		37,116	515	38,650	541	40,575	639 47			-		-	-	-		-		-				-		-	
		LOOKOUT CANYON RIDGE	3-302 3-303	22 1,663 377 28,277	155 719	11,638 53,889	466 893	34,913 66,975	503 969	37,739 72,675	1,131 84 1,672 125		 5 12 18	2 33	502	- 11 621	- 79	1.186		-		-				-		-	
		ABRAMS	3-501	31 2,291	37	2,808	45	3,350	47	3,525		077		-		-	-	-		-		-				-		-	
		GEE CREEK WEST GEE CREEK EAST	3-502 3-503	345 25,912 184 13,829	455 970		748 2,900	56,075 217,475	825 3.400	61,875 255,000	1,353 101 7,052 528		2 3	0 30	450	30 450	72	1,080		-		-				-		-	
		HILLHURST NORTH	3-504	510 38,254	611	45,791	691	51,800	723	54,225	969 72			-		-	-	-		-		-				-		-	
ield		CEDAR RIDGE REIMAN ROAD	3-505 3-506	660 49,469 240 17,968	802 528		1,191 1,200	89,356 90,013	1,025 1,250	76,845 93,746	1,993 149 2,663 199			-		-	-	-		-		-				-		-	
idge		PIONEER CANYON	3-506	850 63,785	1,181			164,829	2,688	201,630	4,233 317		5 104 1,56	0 418	6,270 43	18 6,270	984	14,753		-		-				-		-	
~		ALLEN CREEK WEST	3-602	51 3,821	120	9,005	282	21,175	397	29,749	640 48			- 072	14.500 1.11	-	- 1 000	-		- 10 201		- 1 407		 17 40.762 -		- 77 415		- 177	
		ROYLE ROAD HILLHURST SOUTH	3-603 3-604	288 21,629 24 1,775	157	133,994 11,782	5,282 495	396,179 37,150	5,884 563	441,322 42,225	12,915 968 1,207 90		7 539 8,08	9 972	14,580 1,13	17,007	1,899	28,490	683 10,245 1,21	3 18,201	1,497 22,452 800 12,000		22,452 2,71 12,000 2,00			77,415	119 177,9	00 119 177,	900 220 330,000
		ALLEN CREEK EAST	3-605	5 371	34	2,541	161	12,075	195	14,625	406 30					25 6,375		11,309		-		-				36,720	82 122,4		
		PIONEER CORRIDOR UNION RIDGE	3-606 3-607	150 11,262 2 129	359	26,959 195	848	63,586	935 26	70,108 1.924	1,916 143 26 1	733 1,099 16,48 924 549 8.23				32 50,736 05 36.070	5,624 4,226	84,354 63,389		-		-				197,985 66 233.400	207 310,6 280 419.2		
		SEVENTH-DAY ADVENTIST	3-608		3	208	666	49,975	753	56,475	1,681 126		, , , ,	- /		24 39,358		75,151	1,61	9 24,285	1,619 24,28	5 5,000	75,000 4,04			-	- 413,2	- 419,	
		TRI-MOUNTAIN	3-609	0 27		34	1	52	3	227		227 10 15		0 20		20 300		525		-		-				-		-	
		BOSCHMA MOUNTAIN VIEW	3-610 3-611	8 629 30 2,214		1,203 13,544	714 533	53,525 39.981	599	66,000 44,919	1,840 137 1,307 98			7	-,	73 25,092 25 1,875	3,169	47,542 3.820		-		-				101,250	180 269,2	50 180 269,	250 348 522,000
		MCCORMICK CREEK	3-612	59 4,411	339	25,395	991	74,359	1,135	85,145	2,442 183	154		-		-	-	-		-		-				-		-	
		Ridgefield UGA Subto	otal	7,208 540,618	12,173	912,983 2	24,856 1	1,864,201	27,771	2,082,802	51,859 3,889	430 2,786 41,78	3 5,434 81,51	3 11,895	178,429 13,80	207,959	25,560	383,397	1,818 27,271 4,59	68,983	6,908 103,619	9 10,289	154,334 14,54	3 218,142 2	03 - 43	646,770	868 1,299,4	50 868 1,299,	450 1,523 2,284,500
보 호		Rural Center MEADOW GLADE	2-1801	1,989 149,163	2,115	158,646	2,411	180,799	2,411	180,825	4,696 352	200 162 2,43	0 635 9,52	5 1.737	26,060 1,73	37 26,055	4,100	61,504	731 10,965 73	1 10,965	731 10,969	5 731	10,965 73	31 10,965 -					
Cou		HOCKINSON	2-1901	218 16,380	229	17,173	254	19,025	391	29,347	415 31	150 434 6,51	5 435 6,53	1 438	6,567 43	88 6,567	443	6,645	3,087 46,305 3,24	2 48,630	3,549 53,235	5 3,549	53,235 4,24			-			
		Rural Center Subtot		2,207 165,543	2,344	175,820	2,664	199,824	2,802	210,172	5,111 383	350 596 8,94	5 1,070 16,05	6 2,175	32,627 2,17	75 32,622	4,543	68,148	3,818 57,270 3,97	3 59,595	4,280 64,200	0 4,280	64,200 4,97	73 74,595 -		-		-	
		Vancouver UGA - SC SALMON CREEK	2-101	184 13,773	422	31,675	979	73,447	1,510	113,221	2,175 163	- 096 20 30	20 30	0 20	300	20 300	20	300		-						-			
		FELIDA	2-102	2,994 224,551	3,240	243,020	3,815	286,115	4,775	358,100	5,407 405	562 516 7,74			7,960 53	85 8,021	552	8,280		-		-				-			
		LAKE RIVER SEWARD BRIDGE SOUTH	2-103 2-201	359 26,901 654 49.064	498 778	37,343 58.324	1.066	61,707 79.931	1,173	87,988 103.757	1,556 116 1,722 129					6 90 13 195		90 195				-				-			
		SEWARD BRIDGE NORTH	2-202	2,397 179,782		,-	,	202,868	2,981	223,591	3,229 242					7 1,005	67	1,005		10,650	877 13,155	5 877	13,155 1,13	38 17,070 -		-			
		WHIPPLE CREEK WEST MTN. VIEW GARDENS	2-203 2-301	11 810 962 72,170	59 993	, .	2,039 1,066	152,924 79,955	4,364 1,215	327,309 91,155	5,208 390 1,292 96					10 4,652 28 420		8,567 420	 1,494 22,410 1,43	- 5 21,540	1,622 24,330	0 1,622	24,330 1,81	 14 27,210 -		-			
	a e e k	MUIRWOOD	2-401	979 73,414			1,243	93,239	1,484	111,321	1,697 127					29 435		435		-		-				-			
	Ď	COUGAR CANYON NORTH COUGAR CANYON WEST	2-501 2-502	2,402 180,135 2,894 217,042				245,573 218.082	4,182 2,938	313,621 220.359	4,869 365 2,947 221		5 109 1,63	5 109 0 58		9 1,635 8 870		1,635 870	1,209 18,135 1,08	8 16,320	1,228 18,420	0 1,228	18,420 1,25	57 18,848 -		-			
	almo	COUGAR CANYON EAST	2-503	3,055 229,150				240,359	3,365	252,403	3,482 261		5 1,224 18,35			70 19,047	1,327	19,898	560 8,400 50	5 7,575	592 8,880	0 592	8,880 64	9,600 -		-			
	ν,	ORO-VEGA WEST	2-504 2-601	3,053 228,966 2,380 178,533	3,241 2,539			276,111 218,149	4,340 3,355	325,506 251,593	4,835 362 3,784 283					76 46,138 72 4,075	4,094	61,408 5,371		9 11,235	749 11,235 2,662 39,930		11,235 74 39,930 2,61	19 11,235 - 16 39,233 -		-			
		ORO-VEGA EAST	2-602	1,800 134,988	1,818			139,631	1,918	143,825	1,968 147	564 967 14,50	2 1,005 15,07			32 16,974	1,287	19,307		-		-				-			
		HAZEL DELL NORTH HWY. 99 EAST	2-701 2-801	4,211 315,840 9,525 714,381				335,027 820,897	4,963 12,360	372,212 927,010	5,135 385 13,487 1,011					91 23,860 14 22,715		24,775 34,117		6,045 6 14,190	1,005 15,075		6,690 46 15,075 1,36	59 7,028 - 55 20,475 -		-			
		SYLVAN CREEK	2-901	985 73,842	1,029	77,207	1,134	85,058	1,295	97,108	1,412 105	320 4,80		0 471	7,065 53	14 7,713	697		910 13,650 1,08	1 16,215	1,137 17,055	5 1,137	17,055 1,47	78 22,163 -		-			
		KNOLL RIDGE BLUEBERRY HILL	2-1001 2-1101	1,856 139,200 1,996 149,737				148,200 176,471	2,103 2,714	157,725 203,585	2,197 164 2,996 224					78 1,170		780 1,170	512 7,680 58	5 8,790	665 9,975	5 665	9,975 89	95 13,418 -		-			
		SHERWOOD	2-1201	854 64,041	961	72,087	1,211	90,859	1,500	112,472	1,792 134	403 20 30	20 30	0 20	300	20 300	20	300		-		-				-			
		BARBERTON PLEASANT VALLEY SOUTH	2-1301 2-1302	1,576 118,170 617 46,247			3,094 1,724	232,051 129.325	4,102 2,136	307,652 160,174	5,372 402 3,445 258					38 1,320 3 1,546		1,320 2.703	1,089 16,335 1,09	2 16.380	1.109 16.63	- 5 1.109	16.635 1.13	 39 17.085 -		-			
		CURTIN CREEK NORTH	2-1303		368	27,572	1,224	91,819	2,202	165,132	3,204 240	279 17 25	5 17 25	5 17	255	17 255	17	255		-		-				-			
		N.E. 134th STREET MT. VISTA	2-1401 2-1501	605 45,343 23 1,703		48,110 1,703	728	54,564 1,703	860 23	64,495 1,703	956 71 23 1	714 672 10,07 703 548 8.22	8 807 12,09 0 548 8,22						2,593 38,895 9,00	135.000	9.000 135.000	9.000	135.000 18.61			-			
		PLEASANT VALLEY NORTH	2-1502	37 2,785	726	54,450		175,050	3,889	291,675	5,790 434	250 80 1,20	4 321 4,81	5 883	13,245 1,1	16,695	2,086	31,290	92 1,380 9	2 1,380	92 1,380	0 92	1,380	92 1,380 -		-			
		MILL CREEK EAST HIGHWAY 99 NORTH	2-1503 2-1601	1,180 88,500 85 6,386		96,975 15,197		120,525 35,756	2,062 872	154,650 65,414	2,433 182 1,182 88		95 1,42 3 1,177 17,65					2,745 22.796		-		-				-			
Š		NE 16TH AVE.	2-1602	858 64,349	870	65,271	899	67,422	952	71,368	983 73	592 910 13,65	971 14,56	2 1,112	16,682 1,17	70 17,549	1,415	21,226		-		-				-			
no n		LEGACY WHIPPLE CREEK SOUTH	2-1603 2-1604	3,700 277,509 20 1,516			4,213 473	315,951 35,475	4,625 965	346,868 72,375	5,044 378 2,166 162		4 2,694 40,41 5 419 6,28							-		-				'5 112.500	154 231.1	50 154 231,	
Var		WHIPPLE CREEK EAST	2-1605	2,381 178,543	3,257	244,275	6,842	513,150	11,035	827,625	14,042 1,053	150 568 8,52	1,344 20,16	0 3,155	47,325 3,89	58,425	7,033	105,495		9 11,985	986 14,790	0 986	14,790 1,59		88 57,000	120,000	177 265,5	00 177 265,	500 322 483,000
		I-5 CORRIDOR ST. JOHNS	2-1606 2-1701	21 1,588 1,926 144,439		1,765 188,602	29 3,889	2,176 291,650	6,318	6,376 473,834	1,166 87 7,814 586		5 581 8,71 1 184 2,76			32,385 20 4,796		7,300				-			25 37,500 10	150,000	277 415,5	00 277 415,	500 544 816,000
		CURTIN CREEK WEST	2-1702		443	33,235	1,477	110,778	2,788	209,082	3,980 298	512 237 3,55		6 1,379	20,686 1,70	25,590	3,092	46,378				-				-			
		NE 110TH STREET GLENWOOD CREEK	2-1704 2-1705	557 41,795 1,813 136,009		44,796 162,706		51,797 224,999	898 3,991	67,327 299,316	994 74 4,957 371		2 284 4,26 5 335 5,02			59 11,386 54 6,809		9,001				-				-			
		CEDAR 49	2-1706	1,357 101,776	1,476	110,701	1,754	131,526	2,199	164,928	2,507 188	043 336 5,04	3 535 8,02	1 998	14,970 1,18	38 17,813	1,991	29,861		-						-			
		SCHULLER COVINGTON NORTH	2-1707 2-1708	600 44,996 1,639 122,924		52,117 132,521		68,734 154,915	1,831 2,903	137,359 217,747	2,005 150 3,188 239		7 69 1,03 5 243 3,64	_		53 2,440 31 5,717		4,168 8,266	551 8,265 57	8,627	626 9,39	/ 626	9,397 74	11,096 -		-			
		NE 86th STREET	2-1709	1,858 139,314	1,906	142,986	2,021	151,555	2,682	201,117	2,747 206	008 38 57	38 57	0 38	570	38 570	38	570		4 7,260				17 7,759 -		-			
		COUNTRY MEADOWS NE 114th STREET	2-1710 2-1711	5,386 403,927 540 40,503		440,923 158,287		527,245 190,224	8,560 3,509	641,973 263,180	9,878 740 5,739 430	32,24 30 11 16				22 54,331 90 1,355		75,172 2,475	1,702 25,530 1,60	8 24,120	1,647 24,705	5 1,647	24,705 1,56	55 23,468		0 164,310 9 14,010		50 158 237, 00 19 28,	
		LAND BANK	2-1712	5 372	39	2,930	119	8,899	291	21,862	374 28	50 50 74	69 1,03	7 2,421	36,315 3,04	45,600	5,978	89,673		-		-		- -		14,010		00 284 426,	
		NE 109th STREET ORCHARD CREST NORTH		1,396 104,724 806 60,474		235,004 64,582		302,950 74,168	4,816 1,161	361,233 87,069	8,052 603 1,307 98		7 405 6,07 2 580 8,69			33 20,742 59 14,532						-				-			
		ORCHARDS CREST SOUTH	2-1715	1,323 99,201	1,406	105,417	1,599	119,921	2,055	154,155	2,251 168	338 538 8,06	4 560 8,40	7 614	9,207 63	36 9,535	728	10,922	580 8,700 59	9 8,992	640 9,604		9,604 73			-			
		GREEN MEADOWS EAST COVINGTON SOUTH		2,002 150,162 1,722 129,113		156,599 136,560		171,618 153,936	2,599	194,910 212,643	2,822 211 3,039 227		5 111 1,66 7 187 2,80			1,665		1,665 6,042	282 4,230 28		282 4,230	0 282	4,230 28	32 4,230 -		-			
						133,596			2,835			285 2,268 34,02										200	2,000 20	2 2000	 		 		
		GREEN MEADOWS WEST	2-1718	1,627 122,038	1,/81	133,330	2,141	100,304	2,710	203,204	5,110 255	283 2,208 34,02	2,330 38,33	3,300	30,398 3,0.	73 55,088	4,997	74,962	260 3,900 26	3,900	260 3,900	0 200	3,900 26	3,900 -		-			

Table 6.3
Average Annual Flow Projections

Urban _			D				Reside	ntial Av	erage An	nual Flow @	75 gpcd/pe	erson				Employ	ment Avera	ge Annua	l Flow @ 1	L5 gpd/em	ployee						Stud	ent Flow a	t 15 gpd/	student							Indust	ial @ 1,500 g	als/acre/da	зу		
Growth	Freatment	Basin Name	Basin	2	2016		2022		20	036	Bui	ld Out	50)-Year	2	016	202	2	203	36	Build (Out	50-Yea	ir	2016		022	20	36	Buil	d Out	50-	-Year	201	.6	202	2	2036		Build Out		50-Year
Area	Plant		Number	Served	AA (gpd)	Served	AA (g	pd) S	Served	AA (gpd)	Served	AA (gpd)	Served	AA (gpd)	Served	AA (gpd)	Served A	A (gpd)	Served	AA (gpd)	Served A	A (gpd)	Served A	A (gpd)	Served AA (gpc) Served	AA (gpd)	Served	AA (gpd)	Served	AA (gpd)	Served	AA (gpd)	Acres ¹ A	AA (gpd) A	Acres ¹ A	A (gpd) A	res ¹ AA (gr	d) Acres	AA (gpo	l) Acres	AA (gpd)
		SCTP Total		88,625	6,646,889	105,674	7,925	,572 1	143,454	10,759,071	180,445	13,533,360	238,730	17,904,754	25,667	385,012	33,486	502,285	54,312	814,673	61,364	920,461	97,282 1,	459,225	23,871 358,06	6 33,226	498,396	37,308	559,620	40,689	610,335	57,463	861,952	355 9	94,500	900 1,3	349,445 1	,937 2,902,	950 1,93	7 2,902,9	50 3,49	5,241,000
		Vancouver UGA - WT	•																																							
	<u>></u>	OVERLOOK	1-101	1,051	78,860	1,073	80	,474	1,123	84,239	1,319	98,923	1,360	101,987	32	480	32	480	32	480	32	480	32	480		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
	ŭ	HWY. 99 SOUTH	1-102	1,367	102,532	1,445	108	,401	1,628	122,095	1,879	140,956	2,087	156,556	680	10,194	696	10,446	736	11,033	752	11,273	819	12,292		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
	ide	MINNEHAHA	1-103	467	35,007	584	43	,783	857	64,259	1,304	97,807	1,606	120,444	79	1,180	102	1,525	155	2,330	177	2,659	270	4,055		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
	sts	CHICKEN CREEK	1-201	3,083	231,261	3,173	238	,003	3,383	253,733	3,665	274,841	3,904	292,832	1,653	24,792	1,691	25,369	1,781	26,715	1,818	27,265	1,973	29,599	1,077 16,15	5 1,165	17,475	1,309	19,635	1,309	19,635	1,657	24,855	-	-	-	-	-		-	-	-
	Ne.	LAKESHORE	1-202	4,143	310,740	4,252	318	,865	4,504	337,824	5,142	385,649	5,393	404,446	180	2,693	193	2,895	225	3,368	237	3,561	292	4,381	411 6,16	5 410	6,150	451	6,765	451	6,765	511	7,665	-	-	-	-	-		-	-	-
		Vancouver UGA - WTP Su	total	10,112	758,400	10,527	789	,525	11,495	862,149	13,309	998,176	14,350	1,076,264	2,623	39,339	2,714	40,715	2,928	43,926	3,016	45,239	3,387	50,807	1,488 22,32	1,575	23,625	1,760	26,400	1,760	26,400	2,168	32,520	-	-	-	-	-		-	-	-
		Vancouver UGA Tota		89,322	6,699,127	101,684	7,626	,295 1	127,429	9,557,196	163,181	12,238,562	196,110	14,708,238	24,908	373,622	29,695	145,431	43,170	647,544	48,341	725,120	70,566 1,	058,486	19,723 295,84	5 26,230	393,444	27,880	418,201	27,880	418,201	40,116	601,736	152 9	94,500	468	02,675 1	,069 1,603,	500 1,06	1,603,5	00 1,97	2,956,500
		Central Service Area To	tal	91,529	6,864,670	104,028	7,802	,115 1	130,094	9,757,020	165,983	12,448,735	201,221	15,091,589	25,504	382,567	30,766	161,487	45,345	680,171	50,516	757,742	75,109 1,	126,635	23,541 353,11	5 30,203	453,039	32,160	482,401	32,160	482,401	45,089	676,331	152 9	94,500	468	02,675 1	,069 1,603,	500 1,06	1,603,5	00 1,97	2,956,500
		DISTRICT GRAND TOT	AL	98,737	7,405,289	116,201	8,715	,097 1	154,950	11,621,221	193,754	14,531,537	253,080	18,981,019	28,290	424,350	36,200	543,000	57,240	858,599	64,380	965,700	100,669 1,	510,032	25,359 380,38	6 34,801	522,021	39,068	586,020	42,449	636,735	59,631	894,472	355 9	94,500	900 1,3	849,445 1	,937 2,902,	950 1,93	7 2,902,9	50 3,494	5,241,000

1) Served acreage from Table 6.1

2/8/2018

²⁾ No wet industrial allocation. Industrial component included in employment populations.