

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 sewer 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 area 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.

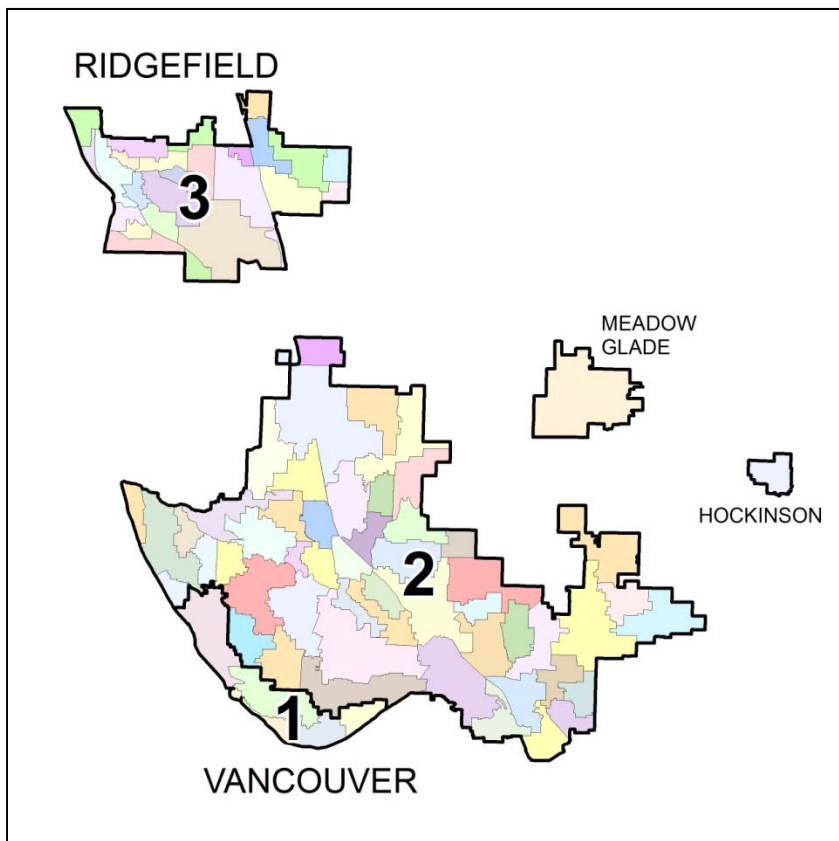


Figure 1. Clark Regional Wastewater District General Sewer Plan Basins divided into Tiers 1, 2, and 3

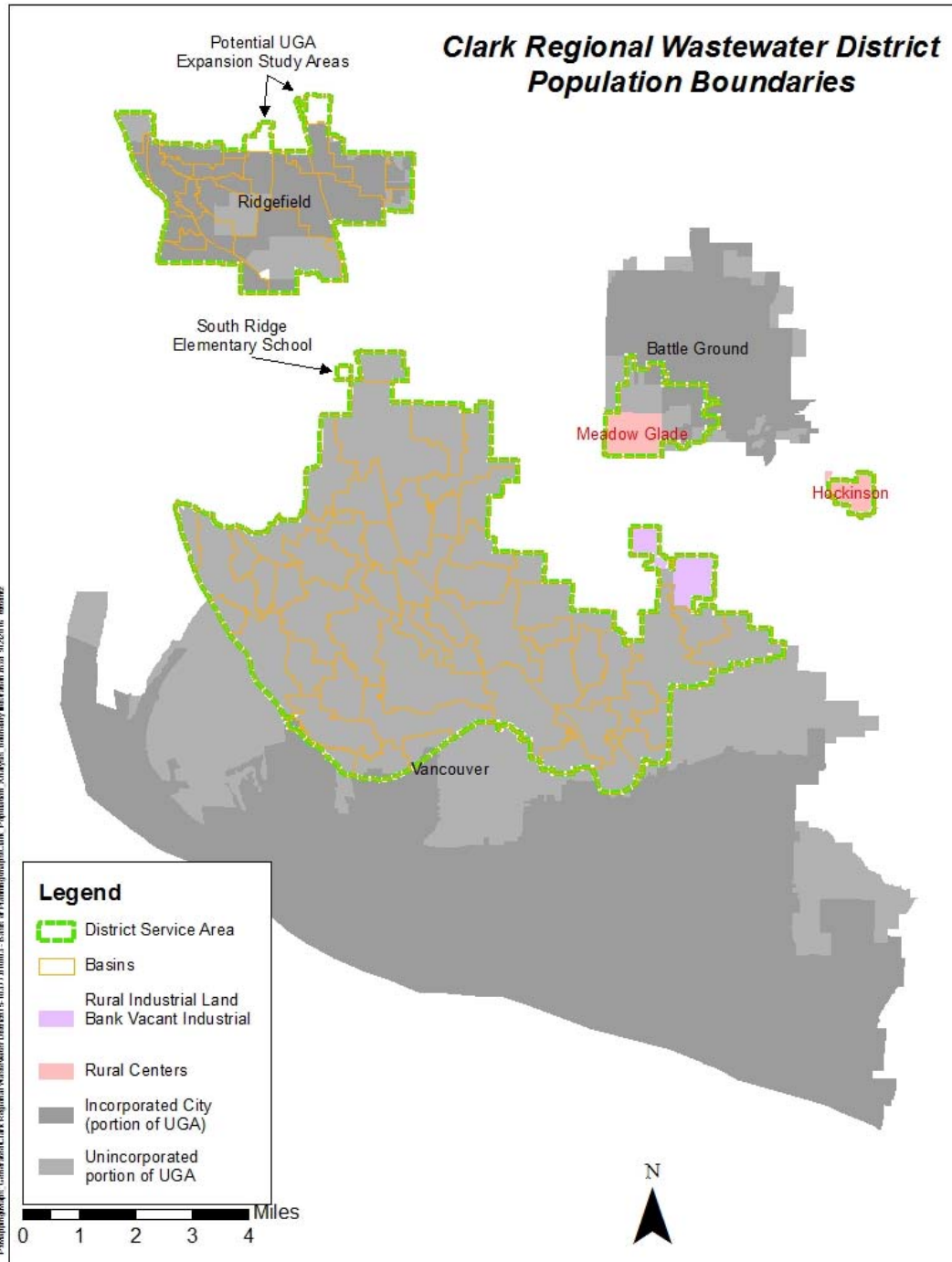


Figure 2. Clark Regional Wastewater District. Relationship between service and basin boundaries, UGA (both incorporated and unincorporated) and Rural Center boundaries, and vacant industrial lands identified by the Rural Industrial Land Bank.



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 sewer population, a subset of total population, for each of the projection scenarios. Methodology for calculating sewer 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 Glade 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 long-range 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

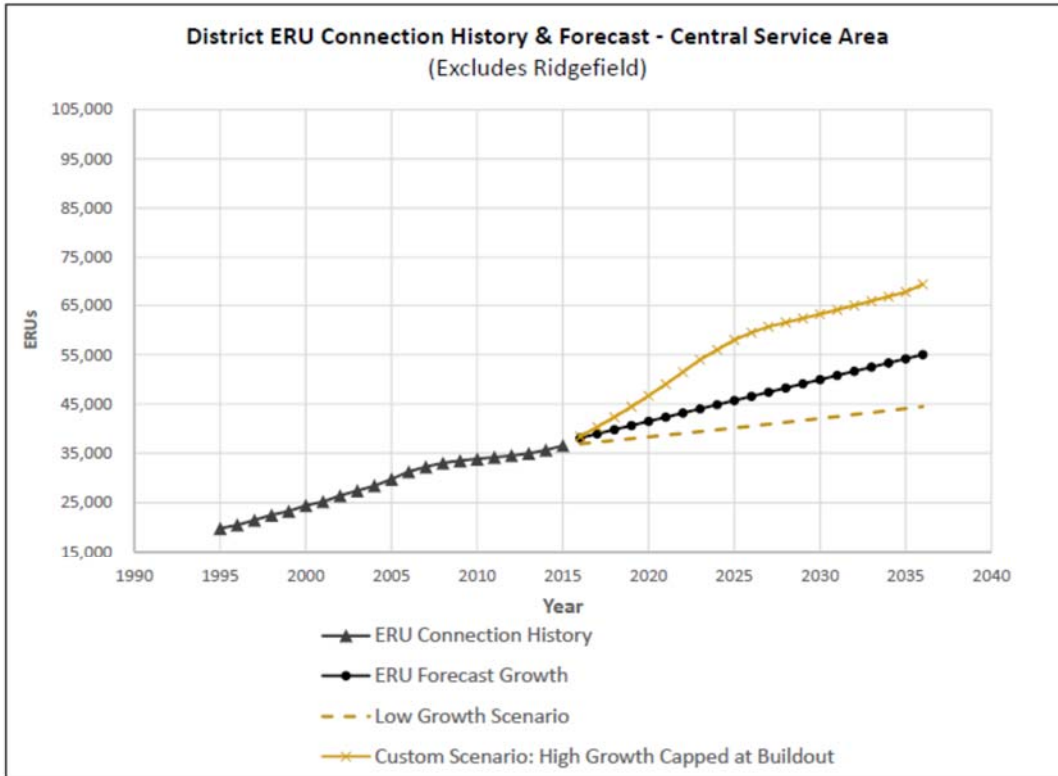
The 6 and 20-year sewered population estimates were established based on recent septic-to-sewer conversion rates. The previous three years of septic-to-sewer conversion data was provided by the District, and the average number of conversions was found to be 34.3 septic systems each year. Beginning with 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

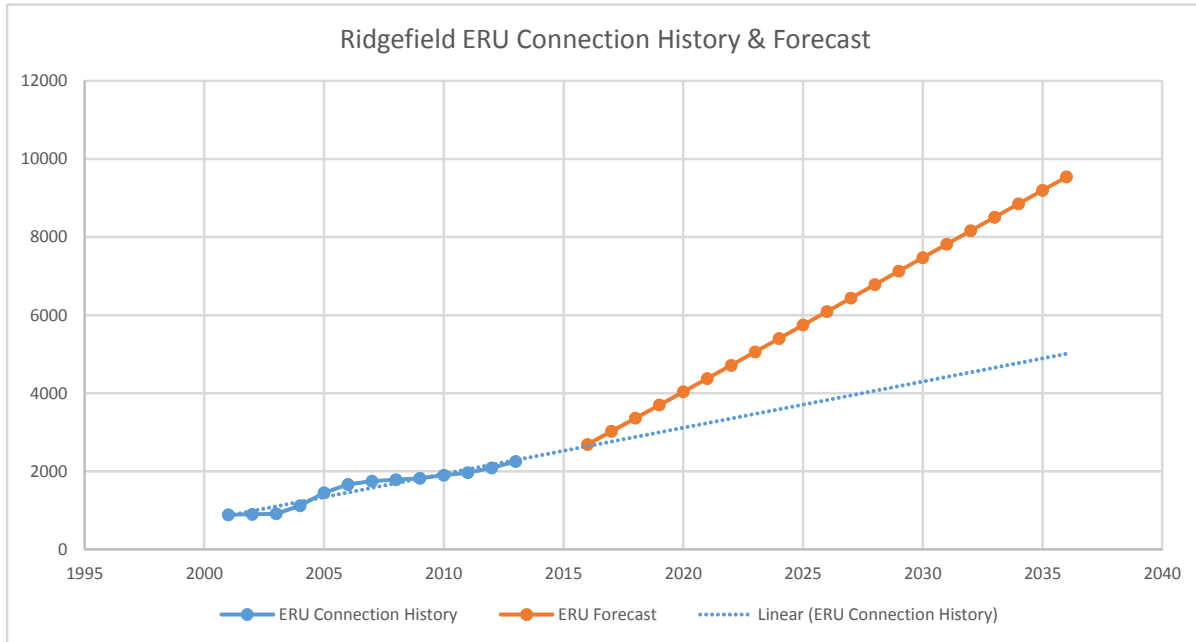
ERU growth for the Central Service Area is shown in Figure 3. The Central Service Area includes the Vancouver, Meadow Glade, and Hockinson portions of the District. ERU Connection History charts recorded ERU connections from 1995-2015. The ERU Forecast Growth forecasts the ERU connections needed to accommodate 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 B-2 – Average Annual Flow Projections

