WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION STAFF AND RAINIER VIEW JOINT RESPONSE TO DATA REQUEST

DATE PREPARED:	June 25, 2012	WITNESS:	Doug Fisher; Gene Eckhardt
DOCKET:	UW-110054	RESPONDER:	Doug Fisher; Gene Eckhardt
REQUESTER:	Bench	TELEPHONE:	(360) 956-7001; 664-1249

BENCH REQUEST NO. 11:

Additional Information:

a. Explain the basis for the Company's estimate that 228 new customers will connect to the system annually, as discussed in paragraph 17 of the Narrative Supporting Settlement Agreement.
b. Explain why a construction loan that is available on a demand basis will provide the "most efficient" source of capital, as discussed in paragraph 18 of the Narrative Supporting Settlement Agreement.
c. Explain why the Settlement Agreement is in the public interest.
d. Explain why the Settlement Agreement serves the Company's interest.
e. Explain why the Settlement Agreement serves Staff's interest.

RESPONSE NO. 11:

a. (Doug Fisher): The number comes from the Company's Department of Health (DOH) approved Comprehensive Water System Plan (Comprehensive Plan). That portion of the DOH approved Comprehensive Plan is attached as Attachment 11.a.-1. One of the requirements of DOH for the Comprehensive Plan is to use growth estimates provided by Pierce County. The growth projection rate for the Comprehensive Plan was compiled from three components. The first component was Pierce County Ordinance 2008-79s. The second component was the Office of Fiscal Management (OFM) high, medium and low projections for growth. The third was Pierce County's Vision 2040, which is a county planning tool. Please note that the projections for Ordinance 2008-79s begin for the year 2008 and go through 2020. The OFM projections are through 2030. The Vision 2040 projections are through 2040. Using these growth projections, the growth projections were then equated to households based on the Vision 2040 household size data that was also weighted from the Forecast Area Zones population data for each individual water service area. These documents were factored into the calculations contained in Attachment 11.a.-2.

b. (Doug Fisher): A construction loan that is available on a demand basis will provide the most efficient source of capital since the money will only be drawn as it is needed. Compared to a non-construction loan, which requires a large sum of money to be borrowed up front and payments to begin on the entire amount immediately, payments are kept at a more reasonable level since the money is drawn as needed and

principal and interest payments are made on the amounts drawn, not the entire face amount of the loan.

c. (Gene Eckhardt): The settlement agreement resolves all issues in dispute between the Parties and enables the dispute to conclude without further expenditure of public resources on protracted litigation. The Settlement Agreement provides for both (a) rates that are fair, just, and reasonable for Rainier View customers, and the Company, and (b) rates that are sufficient for Rainier View to recover costs associated with source, treatment, transmission, pumping and storage infrastructure (as in the case of the General Facilities Charge), and costs associated with the Lakewood Pipeline Project (as in the case of the Lakewood Pipeline Surcharge and the Lakewood Pipeline Facilities Charge). In addition to the points expressed in response to Bench Request 11.d., below, building the pipeline project will be a long-term financial benefit to customers of Rainier View because of the access to lower cost water, which will be passed on to customers in the form of lower rates. Accounting and reporting requirements provided for in the Settlement Agreement are also in the public interest. It is in the public interest that surcharge rates will be adjusted based on actual costs. The rates set forth in the Settlement Agreement (and the projected rates), are based on the best estimates available now. It is in the public interest that, should actual costs vary, the rates will be recalculated, and filed with the Commission for review to ensure that the rates remain fair, just, reasonable and sufficient. For all these reasons, as well as others expressed in the Narrative Supporting Settlement Agreement, paragraphs 10-23, the Settlement Agreement is consistent with the public interest.

d. (Doug Fisher): The Settlement Agreement serves the Company's interests because it provides the Company with the tools necessary to manage capacity issues for the long term. In addition, it provides flexibility in controlling the Company's operating costs by providing an alternative source of water to the City of Tacoma available to the Company. Approval of the Settlement Agreement may put pressure on the City of Tacoma to lower its rates if the Lakewood Water District rates continue to remain well below the City of Tacoma's current rates, which is what is projected to occur given the agreement with the Lakewood Water District. Having competition between water sources can only be in the long run interest of the Company and its customers.

By constructing this pipeline project, the Company's operations become more reliable by having two points of interconnection with two outside water sources. Operating costs are lower than they would otherwise be and those savings result in rates to

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customers that are lower than they would otherwise be if the only source available was the City of Tacoma, or one where Lakewood Water District could only be accessed after exhausting all of the capacity from the City of Tacoma at rates substantially higher than what the Lakewood Water District rates for wholesale water.

Further, the pipeline project will allow Rainier View to maximize its operational choices. This occurs because of the advantageous pricing of the Lakewood Water District water. With the pipeline project in place, given the pricing of Lakewood Water District water, Rainier View can take its own wells offline from time to time for needed maintenance without worrying about affecting customer service or customer rates.

e. (Gene Eckhardt): Staff conducted a complete review of the Company's filing. During the course of the review, Staff conducted numerous phone and in-person conferences with Company representatives. Staff reviewed and analyzed data requests, and completed its analysis of appropriate rates and the structure of those rates. Based on Staff's extensive review of this filing, Staff believes the resolution of this case on the terms described in the Settlement Agreement is consistent with the public interest, satisfies the interests of Staff, and meets the Commission's settlement approval standard.

Attachment 11.a.-1

2.3 Projected Land Use, Future Growth

This section will describe how the total amount of future development within Southwood/Sound was estimated and how the growth rate, at which that development can be expected, is projected. That information will then be used to project the growth rates for the next 6 years and for the next 20 years.

As described in Section 1.4, Southwood/Sound is RVWC's largest water service area. It encompasses 28 distinct zoning designations within Pierce County. These zoning areas were analyzed parcel by parcel to determine a reliable estimate of potential future growth. With this information it becomes possible to see where the zoning code, and therefore, the comprehensive plan, would like future growth to occur and how much development is possible before an area is considered fully developed, in relation to density.

With guidance from Pierce County, **Table 2.3** was created. This table specifies: the zoning, the base density multiplier, the comprehensive plan area, the approximate existing ERUs, the approximate future ERUs, sum of future and existing ERUs, accessory dwelling unit estimate and a total max ERUs. **Table 2.2** below provides the field names and the definition for each to help clarify the meaning of each field.

Table 2.2: Field Name Definitions

Field name	Definition
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Calc_Conn	Allowed number of ERUs based on density. Base density multiplied Net DU_AC if urban, Gross DU_AC if rural
Sum_Fut_Conn	Sum of future total ERUs: Calc Conn-Ex Conn
Sum Conn	Sum of future and existing ERU's
FUT ADU	Future Accessory Dwelling Units
Total Max ERUs	Total maximum number of estimated residential units within each zoning designation

Table 2.3 was completed for each zone within the Southwood/Sound service area. This table resulted in 9,731 future ERUs possible within the system and a total max build-out of 24,522 ERUs. This is how many ERUs could be supplied to the service area if every square foot of property that can be developed, based on density regulations, is actually developed, also assuming and including 291 ADU ERUs. There is a slight modification, in that commercial ERUs are only approximate as there is no way to be certain as to the exact ERUs a commercial development will need.

Table 2.3: Southwood/Sound Zoning Build-out

Zone Cur CD	Base Du_Zon	Comm Plan Area	Sum _Ex _Conn	Calc Conn	Sum Fut_Conn	Sum Conn	Fut ADU	Total Max ERUs
EC	4.55*	Frederickson	7	29	22	29	0	29.00
MHR	18	Frederickson	490	998	508	998	12.3	1010
MSF	4	Frederickson	3616	6284	2668	6284	84.5	6369
ROC	12	Frederickson	1	139	138	139	0	139
ARL	0.1	Graham	1	2	1	2	1	3
CE	4.55*	Graham	12	60	48	60	0	60
MHR	553	Graham	553	686	133	686	0	686
MUD	10	Graham	28	716	688	716	1	717
PR	0.1**	Graham	1	5	4	5	0	5
R10	0.1	Graham	3185	3429	244	3429	46.2	3475
RAC	4.55*	Graham	40	364	324	364	0	364
RF	0.1	Graham	21	32	11	32	1	33
RNC	4.55*	Graham	4	35	31	35	0	35
RSR	0.1	Graham	189	494	305	494	8	502
Rsv 5	0.2	Graham	2530	2750	220	2750	43	2793
SF	4	Graham	882	2102	1220	2102	28	2130
R10	0.1	Outside	358	363	5	363	2.8	366
Rsv5	0.2	Outside	191	193	2	193	2.9	196
CC	20	Parkland Spanaway Midland	4	471	467	471	0	471
CE	4.55*	Parkland Spanaway Midland	24	117	93	117	0	117
CMUD	12	Parkland Spanaway Midland	27	484	457	484	0	484
MHR	20	Parkland Spanaway Midland	19	781	762	781	10.1	791
MSF	5	Parkland Spanaway Midland	474	965	491	965	13.4	978
MUD	20	Parkland Spanaway Midland	1	85	84	85	0	85
SF	4	Parkland Spanaway Midland	127	290	163	290	4.95	295
CC	15	South Hill	7	354	347	354	0	354
HSF	10	South Hill	448	572	129	572	7.7	580
MSF	4	South Hill	1265	1431	166	1431	24.12	1455
			14,500	24,231	9,731	24,231	290.97	24,522

*= Density applied by Pierce County, not specified in code.
**= Density for surrounding property used, density not specified in code.

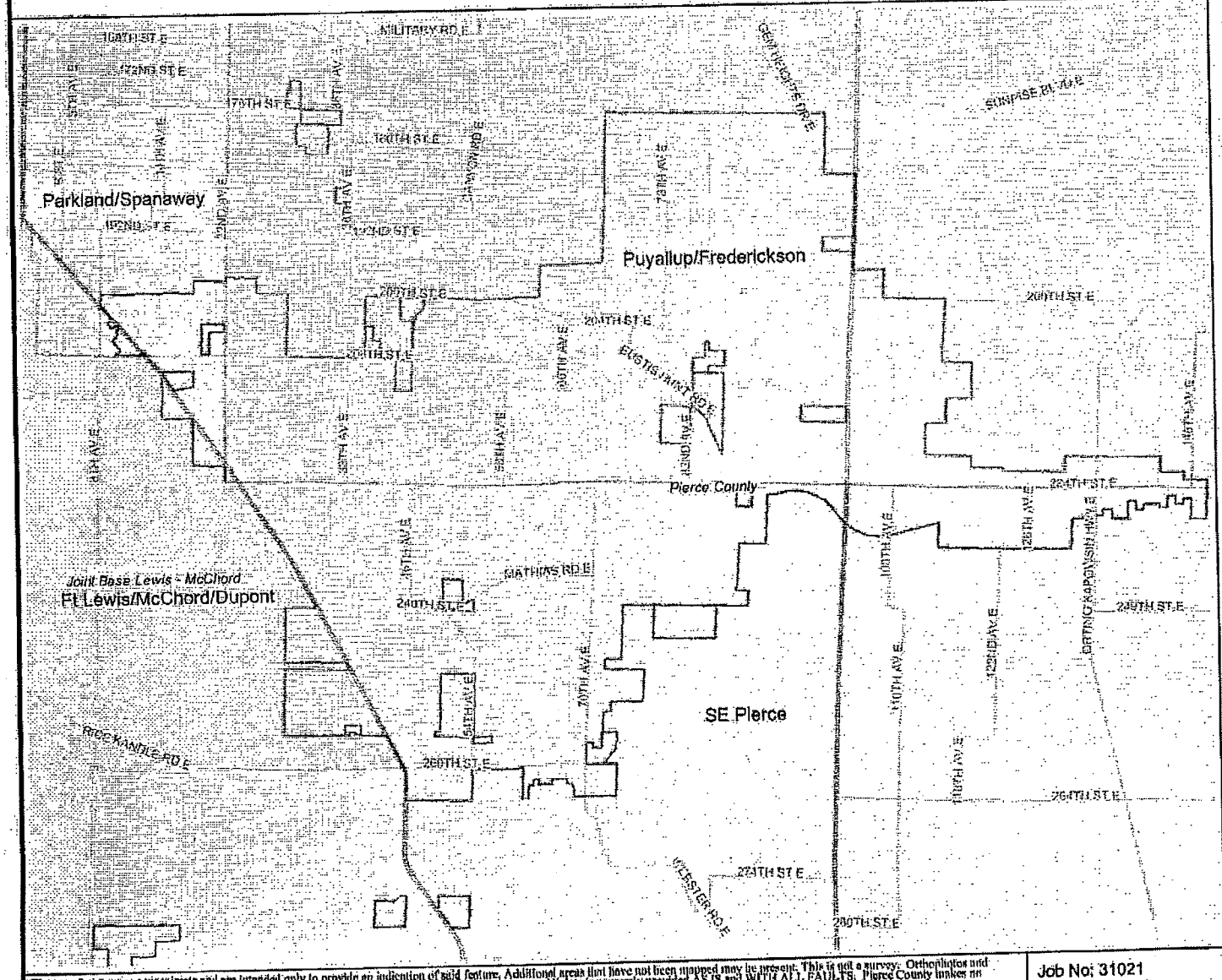
It is also necessary to determine the rate at which these areas are likely to develop. As described in Part A, RVWC utilized two methods to attain a reliable growth estimate projection. First the historic trends of water connections and review of Pierce County permit intake decline over the last year, relating that decline to historic numbers to arrive at a growth rate. Second the population projections from OFM, Pierce County ORD 08-79s, and PSRC Vision 2040 were weighted based on the three FAZ areas that make up the Southwood/Sound service area and the growth rates over 10 year increments were derived.

Starting in 2008 the residential housing market has seen a dramatic decline in Pierce County. Market forces have impacted the amount of growth occurring across the County, including in this Water Company's service areas. According to the Pierce County Building Official, the number of building permits issued annually since 1990 is approximately 2,800. In 2008, just 1,100 building permits were issued. This is 1,700 fewer permits representing a decline of 61% from the average. Since the Southwood/Sound Service Area averaged 700 permits per year it is likely that they would also see a 61% decline. It is anticipated from this data and from RVWC connection data that the number of permits being issued will remain constant for one to two years and then increase at a rate of 1-2% annually. This data is used as an accuracy check to verify that the more involved method below is reliable.

Southwood/Sound service area is split between three FAZ groups; Parkland/Spanaway, Puyallup/Frederickson and SE Pierce, with approximately 56% of the service area within Puyallup/Frederickson FAZ group. Refer to **Figure 2.7** for a depiction of Southwood/Sound service area in relation to the FAZ groups. As Vision 2040 has made population data available for each FAZ group, RVWC was able to derive a weighted population total for each FAZ area in the Southwood/Sound service area and add them together for a total population and growth rate. This was done for every 10 year period to year 2040. When reviewing the data it appeared that the growth rates over each 10 year period was relatively in line with the adjusted historic data. The following table shows the weighted growth rates for each FAZ area within Southwood/Sound, with the total in bold. The table also shows the total growth rate for all of Pierce County under Vision 2040, ORD 08-79s, and OFM low, Med and High.

Vision 2040

FAZ Groups-2000



Map Legend

FAZ Groups
- Ft Lewis/McChord/Dupont
- Gig Harbor/Longbranch
- Parkland/Spanaway
- Puyallup/Frederickson
- SE Pierce
- Sumner/Bonney Lake
- Other

Rainier View Water System Boundaries

FIGURE 2.7

Scale 1:74,206

0 3000 6000 ft.

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Job No: 31021

Table 2.4: Growth Rates

Source/Service Area	Growth Rate 2008-2010	Growth Rate 2010-2020	Growth Rate 2020-2030	Growth Rate 2030-2040
Vision 2040	0.60%	11.62%	9.08%	10.44%
ORD 08-79s All County	2.00%	9.09%	not projected	not projected
OFM low	-2.41%	7.81%	5.61%	not projected
OFM Med	3.74%	6.95%	14.44%	not projected
OFM High	11.32%	14.45%	12.50%	not projected
Parkland/Spanaway	1.22%	9.04%	6.94%	9.31%
Puyallup/ Frederickson	1.7%	15.49%	10.03%	11.17%
SE Pierce	-3.45%	10.43%	8.63%	8.31%
Southwood/Sound	**1.58%**	**14.89%**	**9.77%**	**10.99%**

2.3.1 Data Comparison

To continue the process of checking the GIS data with RVWC data, we have generated anticipated growth from both the existing ERU data as shown in **Table 2.1** and the existing ERU data shown in **Table 2.3**. As the two existing ERU numbers are within 1% of each other, RVWC felt that their existing water ERU numbers are proven to be accurate. Therefore, the growth projections presented in Sections 2.3.2 - 2.3.4 are based on the RVWC data. It should be noted that the committed ERUs as shown in **Table 2.1** were not included as existing ERUs as those committed parcels are actually future growth, and will be used when growth is added in. Due to the land use process RVWC knows that these committed ERUs are likely to develop sometime in the near future based on permit approvals. However, the tax assessor views these parcels as vacant until such time that a home is built, so these committed ERUs are accounted for in the Sum Fut_Conn portion of **Table 2.3** and are therefore included in the total max ERUs of said table.

2.3.2 Anticipated Growth Rates 2011 to 2017

Applying the yearly growth rate derived from the 2010-2020 growth rates for Southwood/Sound, above, RVWC can expect 8.9% growth over the next 6 years. This equates to approximately 228 ERUs per year for a total of approximately 1,365 new ERUs over 6 years. At the end of 2017 then Southwood/Sound is projected to have

approximately 16,729 total ERUs, including 24 ADU ERUs. The growth rates are applied to the total of the existing and committed ERUs. See section 2.3.5 below for ADU estimate explanation.

2.3.3 Projected Growth 2011 to 2031

According to the growth rates shown above, the growth rate is expected to increase 2011 to 2021 by 14.89% and increase by 9.77% to 2031. This would mean that RVWC can expect approximately 228 new ERUs for each of the first 10 years and approximately 173 new ERUs per year to 2031. At the end of 2031 then Southwood/Sound is projected to have approximately 19,460 total ERUs, including 110 ADU ERUs. See Section 2.3.5 below for ADU estimate explanation.

2.3.4 Full Build-out

According to **Table 2.3** Southwood/Sound will have 24,522 ERUs before it is fully built out. Utilizing the growth rate provided above for years 2030-2040 Southwood/Sound can expect approximately 21,780 total ERUs by year 2041. This leaves approximately 3,000 ERUs in the system before maximum build-out is reached. For perspective, this is more than the growth anticipated for years 2011-2031. Please note that this is with the assumption that 291 ADUs will be approved in the service area; see Section 2.3.5 for ADU estimate explanation.

2.3.5 Accessory Dwelling Units

The Pierce County Comprehensive Plan and the Pierce County Zoning Code allows one accessory dwelling unit (ADU) per lot of record regardless of density. However the Tacoma Pierce County Health Department does review the density. Each parcel must meet design standards outlined within the Pierce County Zoning Code, must provide off street parking, environmental review, storm water and erosion control, utilities such as sewer or septic approval and water for fire flow. The design standards, environmental and utility constraints will prevent some parcels from qualifying for an ADU. Parcels within the Southwood/Sound service area will have to deal with these same constraints and lot configuration and size will come into play as well as sewer or septic service. The cost of obtaining a building permit and either paying the sewer capacity charge or installing an upgraded or new septic system are substantial. However, the Pierce County

Comprehensive Plan does list ADUs as a means to provide affordable housing within Pierce County.

To come up with a reliable estimate of ADUs that can be expected within Southwood/Sound's service area, RVWC utilized adjusted historic information on approved ADUs County wide. According to the Pierce County building official, since 2000, a total of 487 ADUs have been approved, averaging approximately 49 ADUs a year, County wide. Since 2000, an average of 2,669 single family home permits were issued each year. As ADUs are accessory to single family homes this is the permit number chosen to relate the ADU data to. Using an average over 10 years accounts for a variety of economic conditions.

Using the historic number of approved ADUs it was determined that on average, since 2000, ADUs account for 1.8% of total building permits. In an effort to account for the fact that Pierce County has revised regulations to encourage ADUs, RVWC has estimated 1.8% of the sum ERUs for single family homes, agricultural current use and vacant parcels within each residential zone to obtain a number of total potential ADU ERUs. Within the MSF, Rsv5 and R10 zones approximately 170 ADUs can be expected, as these are typically larger lots, it is more likely that lots in these zones will be able to comply with all the design requirements and have more privacy between detached ADUs. When looking at all the residential zones, including many lots that may not be able to comply with the regulations, the number of ADUs is approximately 291. This puts the total number of ADUs that can be expected at full build-out, within the Southwood/Sound service area in the range of 170-291.

As we do not have a current estimate of the number of ADU ERUs within Southwood/Sound we did not apply the growth rates described in Sections 2.3.1 and 2.3.2, further it would not be accurate to take 1.8% of all growth projected over the next 20 years as some of that will not be residential. Therefore, we divided the number of ADUs by the number of years of the growth forecasted. This equates to the addition of approximately 4-7 ADUs per year over the next 40 years. We estimated 4 ADU ERUs for each of the next 10 years and 7 ADU ERUs for each of the following 10 years, totaling 110 ADU ERUs by 2031. For Section 2.3.4, future build-out, we showed that even if all the ADUs are in place by 2040 there is still capacity in RVWC's system.

2.3.6 Projection Summary

Table 2.5, below summarizes the growth projection calculations described in Section 2.3.2 through Section 2.3.5. The 10 year projection is included in order to compare the projections for the Southwood/Sound service area to Pierce County's projections.

Table 2.5: Growth Projection Summary

Summary	Existing and Committed Connections	6 year projection	10 year projection	20 year projection	30 year projection	Maximum Build-out
Year	2011	2017	2021	2031	2041	unknown
Additional ERUs		1,365	919	1,726	2,139	2,772
Growth Rate		8.90%	14.89%*	9.77%	10.99%	
Additional ADUs		24	16	70	181	
Total ERUs	15,340	16,729	17,664*	19,460	21,780	24,522

*= derived from 2011 ERUs not 6 year projection; since the 6 year projection is an interim year from the decades

2.4 Projected Water Demand

It is anticipated that as continued water conservation and leak detection continues the water demand will continue to decline as it has over the past several years. Refer to Section 4.1 which documents these trends. Therefore, **Table 2.6** below depicts the anticipated decline in water demand, with an assumption of a 1% decrease per year; refer to the Water Use Efficiency Program in Part A Appendix F.

Table 2.6: Water Savings

Year	Projected ERU	Demand (GPD)	ADD * (GPD)	Water Savings (GPD)	MDD * (GPD)
2011	15,340	4,602,000	300	-	700
2012	15,568	4,623,819	297	21,819	693
2013	15,800	4,645,741	294	21,922	686
2014	16,035	4,667,766	291	22,026	679
2015	16,274	4,689,897	288	22,130	672
2016	16,517	4,712,132	285	22,235	666
2017	16,729	4,725,080	282	12,948	659
2031	19,460	4,774,919	245	49,839	573

* decrease of 1% per year

Attachment 11.a.-2

2.3 Projected Land Use, Future Growth

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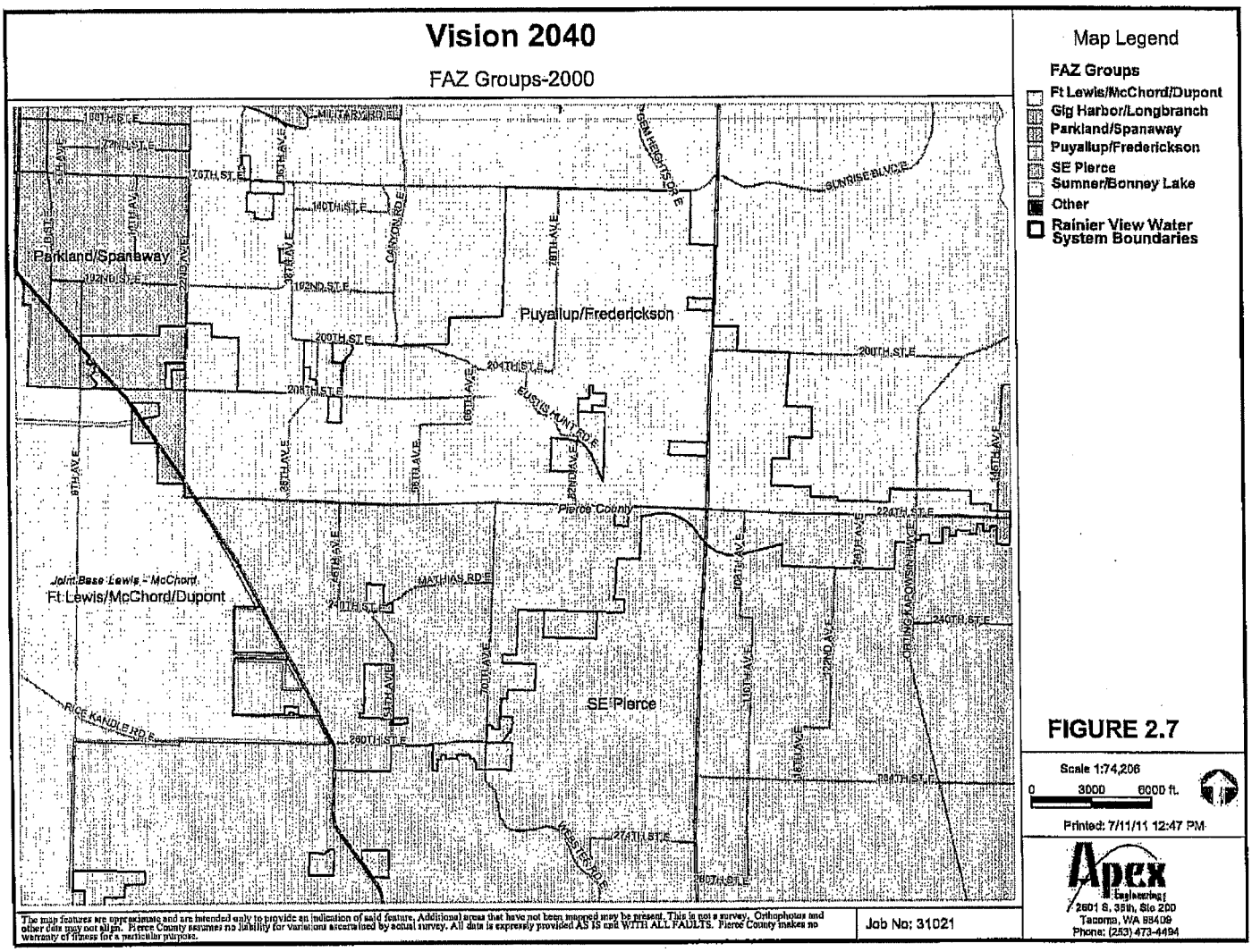
Vision 2040
FAZ Groups-2000
Map Legend
FAZ Groups
Ft Lewis/McChord/Dupont
Gig Harbor/Longbranch
Parkland/Spanaway
Puyallup/Frederickson
SE Pierce
Sumner/Bonney Lake
Other
Rainier View Water System Boundaries
Parkland/Spanaway
Puyallup/Frederickson
SE Pierce
Joint Base Lewis - McChord
Ft Lewis/McChord/Dupont
Pierce County
MILITARY RD E
SUNRISE BLVD E
CANYON RD E
EUSTIS AVE E
MATHIAS RD E
RICE KANDLE RD E
WEST RD E
FIGURE 2.7
Scale 1:74,206
0 3000 6000 ft.
Printed: 7/11/11 12:47 PM
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Table 2.4: Growth Rates

Source/Service Area	Growth Rate 2008-2010	Growth Rate 2010-2020	Growth Rate 2020-2030	Growth Rate 2030-2040
Vision 2040	0.60%	11.62%	9.08%	10.44%
ORD 08-79s All County	2.00%	9.09%	not projected	not projected
OFM low	-2.41%	7.81%	5.61%	not projected
OFM Med	3.74%	6.95%	14.44%	not projected
OFM High	11.32%	14.45%	12.50%	not projected
Parkland/Spanaway	1.22%	9.04%	6.94%	9.31%
Puyallup/ Frederickson	1.7%	15.49%	10.03%	11.17%
SE Pierce	-3.45%	10.43%	8.63%	8.31%
Southwood/Sound	**1.58%**	**14.89%**	**9.77%**	**10.99%**

2.3.1 Data Comparison

To continue the process of checking the GIS data with RVWC data, we have generated anticipated growth from both the existing ERU data as shown in **Table 2.1** and the existing ERU data shown in **Table 2.3.** As the two existing ERU numbers are within 1% of each other, RVWC felt that their existing water ERU numbers are proven to be accurate. Therefore, the growth projections presented in Sections 2.3.2 - 2.3.4 are based on the RVWC data. It should be noted that the committed ERUs as shown in **Table 2.1** were not included as existing ERUs as those committed parcels are actually future growth, and will be used when growth is added in. Due to the land use process RVWC knows that these committed ERUs are likely to develop sometime in the near future based on permit approvals. However, the tax assessor views these parcels as vacant until such time that a home is built, so these committed ERUs are accounted for in the Sum Fut_Conn portion of **Table 2.3** and are therefore included in the total max ERUs of said table.

2.3.2 Anticipated Growth Rates 2011 to 2017

Applying the yearly growth rate derived from the 2010-2020 growth rates for Southwood/Sound, above, RVWC can expect 8.9% growth over the next 6 years. This equates to approximately 228 ERUs per year for a total of approximately 1,365 new ERUs over 6 years. At the end of 2017 then Southwood/Sound is projected to have

approximately 16,729 total ERUs, including 24 ADU ERUs. The growth rates are applied to the total of the existing and committed ERUs. See section 2.3.5 below for ADU estimate explanation.

2.3.3 Projected Growth 2011 to 2031

According to the growth rates shown above, the growth rate is expected to increase 2011 to 2021 by 14.89% and increase by 9.77% to 2031. This would mean that RVWC can expect approximately 228 new ERUs for each of the first 10 years and approximately 173 new ERUs per year to 2031. At the end of 2031 then Southwood/Sound is projected to have approximately 19,460 total ERUs, including 110 ADU ERUs. See Section 2.3.5 below for ADU estimate explanation.

2.3.4 Full Build-out

According to **Table 2.3** Southwood/Sound will have 24,522 ERUs before it is fully built out. Utilizing the growth rate provided above for years 2030-2040 Southwood/Sound can expect approximately 21,780 total ERUs by year 2041. This leaves approximately 3,000 ERUs in the system before maximum build-out is reached. For perspective, this is more than the growth anticipated for years 2011-2031. Please note that this is with the assumption that 291 ADUs will be approved in the service area; see Section 2.3.5 for ADU estimate explanation.

2.3.5 Accessory Dwelling Units

The Pierce County Comprehensive Plan and the Pierce County Zoning Code allows one accessory dwelling unit (ADU) per lot of record regardless of density. However the Tacoma Pierce County Health Department does review the density. Each parcel must meet design standards outlined within the Pierce County Zoning Code, must provide off street parking, environmental review, storm water and erosion control, utilities such as sewer or septic approval and water for fire flow. The design standards, environmental and utility constraints will prevent some parcels from qualifying for an ADU. Parcels within the Southwood/Sound service area will have to deal with these same constraints and lot configuration and size will come into play as well as sewer or septic service. The cost of obtaining a building permit and either paying the sewer capacity charge or installing an upgraded or new septic system are substantial. However, the Pierce County

Comprehensive Plan does list ADUs as a means to provide affordable housing within Pierce County.

To come up with a reliable estimate of ADUs that can be expected within Southwood/Sound's service area, RVWC utilized adjusted historic information on approved ADUs County wide. According to the Pierce County building official, since 2000, a total of 487 ADUs have been approved, averaging approximately 49 ADUs a year, County wide. Since 2000, an average of 2,669 single family home permits were issued each year. As ADUs are accessory to single family homes this is the permit number chosen to relate the ADU data to. Using an average over 10 years accounts for a variety of economic conditions.

Using the historic number of approved ADUs it was determined that on average, since 2000, ADUs account for 1.8% of total building permits. In an effort to account for the fact that Pierce County has revised regulations to encourage ADUs, RVWC has estimated 1.8% of the sum ERUs for single family homes, agricultural current use and vacant parcels within each residential zone to obtain a number of total potential ADU ERUs. Within the MSF, Rsv5 and R10 zones approximately 170 ADUs can be expected, as these are typically larger lots, it is more likely that lots in these zones will be able to comply with all the design requirements and have more privacy between detached ADUs. When looking at all the residential zones, including many lots that may not be able to comply with the regulations, the number of ADUs is approximately 291. This puts the total number of ADUs that can be expected at full build-out, within the Southwood/Sound service area in the range of 170-291.

As we do not have a current estimate of the number of ADU ERUs within Southwood/Sound we did not apply the growth rates described in Sections 2.3.1 and 2.3.2, further it would not be accurate to take 1.8% of all growth projected over the next 20 years as some of that will not be residential. Therefore, we divided the number of ADUs by the number of years of the growth forecasted. This equates to the addition of approximately 4-7 ADUs per year over the next 40 years. We estimated 4 ADU ERUs for each of the next 10 years and 7 ADU ERUs for each of the following 10 years, totaling 110 ADU ERUs by 2031. For Section 2.3.4, future build-out, we showed that even if all the ADUs are in place by 2040 there is still capacity in RVWC's system.

2.3.6 Projection Summary

Table 2.5, below summarizes the growth projection calculations described in Section 2.3.2 through Section 2.3.5. The 10 year projection is included in order to compare the projections for the Southwood/Sound service area to Pierce County's projections.

Table 2.5: Growth Projection Summary

Summary	Existing and Committed Connections	6 year projection	10 year projection	20 year projection	30 year projection	Maximum Build-out
Year	2011	2017	2021	2031	2041	unknown
Additional ERUs		1,365	919	1,726	2,139	2,772
Growth Rate		8.90%	14.89%*	9.77%	10.99%	
Additional ADUs		24	16	70	181	
Total ERUs	15,340	16,729	17,664*	19,460	21,780	24,522

*= derived from 2011 ERUs not 6 year projection; since the 6 year projection is an interim year from the decades

2.4 Projected Water Demand

It is anticipated that as continued water conservation and leak detection continues the water demand will continue to decline as it has over the past several years. Refer to Section 4.1 which documents these trends. Therefore, **Table 2.6** below depicts the anticipated decline in water demand, with an assumption of a 1% decrease per year; refer to the Water Use Efficiency Program in Part A Appendix F.

Table 2.6: Water Savings

Year	Projected ERU	Demand (GPD)	ADD * (GPD)	Water Savings (GPD)	MDD * (GPD)
2011	15,340	4,602,000	300	-	700
2012	15,568	4,623,819	297	21,819	693
2013	15,800	4,645,741	294	21,922	686
2014	16,035	4,667,766	291	22,026	679
2015	16,274	4,689,897	288	22,130	672
2016	16,517	4,712,132	285	22,235	666
2017	16,729	4,725,080	282	12,948	659
2031	19,460	4,774,919	245	49,839	573

* decrease of 1% per year