

Memo – Capital Facilities Plan

City of Elk Ridge, Utah
City Council Public Hearing, Discussion and Decision
February 24, 2015

Regarding: Discussion and Decision Adoption of Capital Facility Plan

Background:

In December of 2014 AQUA Engineering provided a draft Capital Facilities Plan and Impact Fee Analysis covering the City's water, sewer, parks and roads. At the meeting the City Council asked AQUA Engineering to reconsider the proportional share for the fees associated with the sewer system. On January 10, 2015 AQUA Engineering presented the revised sewer fees to the City Council. Also at that meeting the City Council considered several other projects that were not necessarily impact fee projects but may need to be listed in the Capital Facilities Plan. The list was not finalized at that time and has not yet been provided for inclusion in the plan at this point.

In order to get the revised impact fees in place at the beginning of the new fiscal year, the Capital Facilities Plan needs to be approved so that the impact fee analysis may be finalized and brought forward for consideration in the next month.

Attached is the revised sewer section with the new sewer project being proportioned 100% to new growth. This replaces Section 4 in the draft plan.

Recommendation:

It is recommended that based upon the results of the public comment and Council discussion, that the Capital Facilities Plan be adopted as presented with the inclusion of additional non-impact fee projects at a later date, and the City Council directing AQUA Engineering to prepare the final impact fee analysis* for public hearing and consideration by the City Council.

*The impact fee analysis is actually complete and is part of the draft document but the impact fees must be considered separately at a future public hearing.

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Attachments: Section 4 of the Elk Ridge City Capital Facilities Plan and Impact Analysis.

SECTION 4 - WASTEWATER SYSTEM

4.1 CAPITAL FACILITIES PLAN

4.1.1 Inventory of Existing Facilities

Elk Ridge City's wastewater collection system consists of interceptor lines, collector lines, and lateral mains. The majority of the City's wastewater is treated by Payson City and is conveyed to Payson City's Wastewater Treatment Facility via an 18-inch trunk line. A small portion of the City's wastewater flows from developments north of 11200 South into a 15-inch trunk link and is conveyed to Salem City's Wastewater Treatment Facility.

The total capital asset value for the wastewater system is shown in the [Elk Ridge City Tax Asset Detail](#) (Appendix P) and is summarized in Table 40.

Table 40: Existing Wastewater System Capital Asset Values

Wastewater System Element	2013 Capital Asset Value (Depreciated Book Value)
All Wastewater System	\$ 75,450.03

* Refer to Appendix P for a list of Capital Assets.

The total capital asset value is small for Elk Ridge City as the majority of the City's wastewater system has either been donated or constructed by developers.

There is also an existing buy-in for the Elk Ridge City Goosenest Drive & 1600 West Sewer Extension Project. The cost for the City of Elk Ridge is \$23,247.97 which consisted of the upside costs between the 12-inch sewer line and an 8-inch sewer line. The total buy-in cost for the City's Wastewater System is \$98,698.00.

4.1.1.1 Pipeline – Major Gravity Pipelines

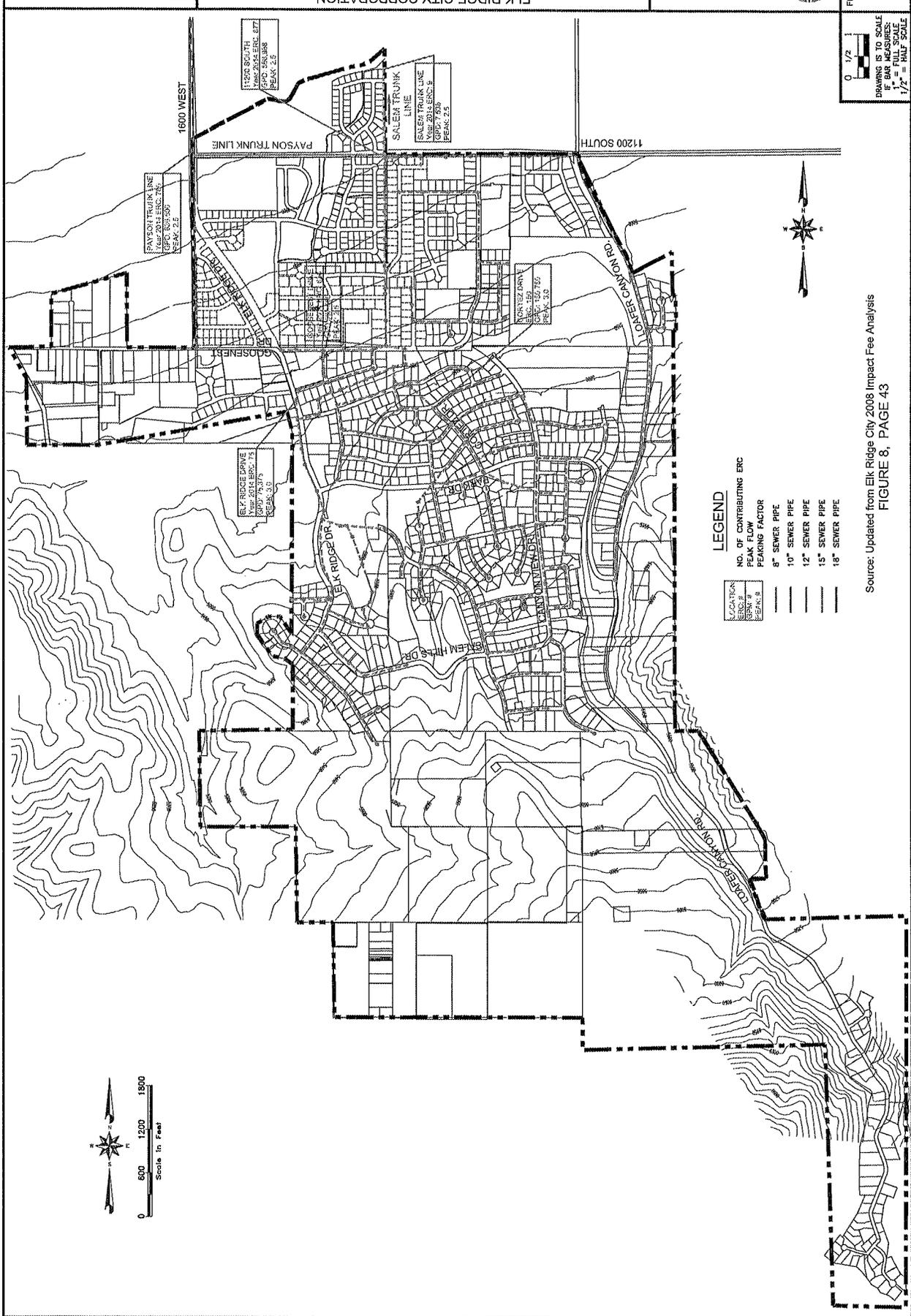
Elk Ridge City's wastewater collection system consists of pipes ranging in size from 8-inch to 18-inch diameter. The major interceptor gravity pipelines are located in 11200 South, Elk Ridge Drive, Cortez Drive, Canyon View Drive, Goosenest Drive. The major trunk gravity pipelines are located in 1600 West (Payson City Trunk Line) and the Salem City Trunk Line running north/south 200 feet east of the intersection of Fox Crossing and 11200 South. Figure 8 displays the City's wastewater collection system. Figure 8 and Table 41 display the existing sewer line capacities.

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REVISIONS				

ELK RIDGE CITY CORPORATION
 CAPITAL FACILITIES PLAN AND IMPACT FEE
 ANALYSIS UPDATE 2014
 EXISTING WASTEWATER COLLECTION SYSTEM

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FIGURE 8
 DRAWING IS TO SCALE
 IF BAR MEASURES
 1/2" = HALF SCALE



- LEGEND**
- NO. OF CONTRIBUTING ERC
 - PEAK FLOW
 - PEAKING FACTOR
 - 8" SEWER PIPE
 - 10" SEWER PIPE
 - 12" SEWER PIPE
 - 15" SEWER PIPE
 - 18" SEWER PIPE

Source: Updated from Elk Ridge City, 2008 Impact Fee Analysis
 FIGURE 8, PAGE 43

Table 41: Current Sewer Collection System Capacity

Component	Size	Slope (%)	Flow Capacity (gpd) ¹	ERC Capacity ²
Elk Ridge Drive	8-inch	3.44	1,143,323	1,138
Cortez Drive (from Amafille Lane)	8-inch	0.37	374,965	373
Goosenest Drive	8-inch	3.32	1,123,204	1,341
Payson Trunk Line ³	18-inch	0.113	2,080,973	2,484
11200 South ³	15-inch	0.144	1,279,724	1,528
Salem Trunk Line ³	15-inch	0.144	1,279,724	1,528

¹ Flow Capacity was determined in the section of sewer line with the flattest slope. D/d=0.67 = 79% flowing pipe for pipe diameters 10-inches and smaller and D/d=0.75=91% flowing pipe for pipe diameters larger than 10-inches.

² Collectors = 1,340 gpd/ ERC (0.93 gpm/ERC), Interceptor/ Outfall = 837.50 gpd/ERC (0.582 gpm/ERC). Refer to Section 4.1.3 for collection system level of service. 1,005 gpd/ERC (0.698 gpm/ERC) was used for interceptors analyzed just south of Goosenest Drive.

³ State minimum slopes were used. These lines also convey flows from Woodland Hills and Payson City.

⁴ Locations are shown on Figure 8.

4.1.1.1 Lift Stations

The City does not currently have any lift stations.

4.1.1.2 Wastewater Treatment Plant

The majority of the City's wastewater is treated by Payson City (approximately 98.03%) with a portion of the City's wastewater north of 11200 South being treated by Salem City.

4.1.2 Method of Financing of Existing Facilities

The City currently finances existing facility projects through its sewer enterprise fund with revenues generated by monthly usage fees, impact fees, grants, and loans. The City does not have any existing long term debt for the wastewater collection system.

4.1.3 Level of Service

Establishing a Level of Service (LOS) was not required under the impact fee law when the previous Impact Fee Analysis was completed in October 2008 by AQUA Engineering.

To determine the level of service for wastewater AQUA reviewed the winter water use data for Elk Ridge City from 2012 to 2013. This yielded a winter usage of 335 gpd/ERC. Refer to Table 15 for additional information. The winter water usage was used as a conservative estimate to determine an average daily flow of 335 gpd/ERC or 87 gpcd. Refer to Appendix B for calculations.

Peaking factors were determined using the State's requirements. Per UAC R317-3-2.2.2, new laterals and collector sewers shall be designed for 400 gallons per capita per day (1,600 GPD per ERU) and interceptor and outfall sewers shall be designed for 250 gallons per capita per day (1,000 GPD per ERU)

or rates of flow established from an approved infiltration/ inflow study. This equates to a peaking factor of 4.0 for laterals and collectors and a peaking factor of 2.5 for interceptor and outfall sewers.

The level of service for the wastewater system is summarized below:

- Average Daily Flow = 335 gpd/ERC
- Peak Flow Factor (Interceptors and Outfall) = 2.5
- Peak Flow (Interceptors and Outfall) = 837.50 gpd/ERC
- Peak Flow Factor (Laterals and Collectors) = 4.0
- Peak Flow (Laterals and Collectors) = 1,340 gpd/ERC

Note: 8-inch wastewater interceptor lines located lower in the system just upstream of Goosenest Drive used a slightly higher 3.0 for a peaking factor. This peaking factor matched peaking factors used in the City's previous Master Plan.

The State and City require the following minimum sewer size, depth to diameter ratio, infiltration velocities, and minimum pipe slopes (based on pipe size).

- Minimum Size= 8-inch diameter
- Depth to diameter (D/d) ratio not to exceed 0.67= 79% full flowing pipe for pipes 10-inches in diameter and smaller. D/d ratio of 0.75= 91% full flowing pipe for pipes larger than 10-inches in diameter.
- Minimum scour velocity= 2 feet per second (manning's n value of 0.013)
- Pipe Infiltration= 200 gallons per mile x day x inch of pipe diameter
- Maximum velocity= 15 feet per second (Velocities greater than 15 feet per second require special provisions to protect against displacement by erosion and shock.)
- Minimum Slopes (Table 42):

Table 42: Minimum Slopes

Sewer Size (inch)	Minimum Slope (ft/ ft)
8	0.00334
9	0.00285
10	0.00248
12	0.00194
14	0.00158
15	0.00144
16	0.00132
18	0.00113
21	0.00092
24	0.0007
27	0.00066
30	0.00057
36	0.00045

Source: UAC R317-3-2.3(D)(4)

4.1.4 Surplus Capacity

Capacity of the system beyond what is required by the current population to meet service standards is considered to be surplus or surplus capacity. The amount of surplus capacity is important because it provides a basis to calculate buy in costs for future development. The capital facilities plan will use flow capacities identified in the Table 41.

4.1.4.1 Collection System

Table 43 list major gravity pipeline flows and surpluses.

Table 43: Present Major Gravity Pipeline Flows and Surpluses

Component	Size	Flow Capacity (gpd) ¹	Present Flow (gpd) ²	Surplus Capacity (gpd)	Surplus ERC ²
Elk Ridge Drive	8-inch	1,143,323	75,375	1,067,948	1,062
Cortez Drive (from Amafille Lane)	8-inch	374,965	150,750	224,215	223
Goosenest Drive	8-inch	1,123,204	532,650	590,554	705
Payson Trunk Line ³	18-inch	2,080,973	636,500	1,444,473	1,724
11200 South ³	15-inch	1,279,724	566,988	712,736	851
Salem Trunk Line ³	15-inch	1,279,724	7,538	1,272,186	1,519

¹ Flow Capacity was determined in the section of sewer line with the flattest slope. $D/d=0.67 = 79\%$ flowing pipe for pipe diameters 10-inches and smaller and $D/d=0.75=91\%$ flowing pipe for pipe diameters larger than 10-inches.

² Collectors = 1,340 gpd/ ERC (0.93 gpm/ERC), Interceptor/ Outfall = 837.50 gpd/ERC (0.582 gpm/ERC). Refer to Section 4.1.3 for collection system level of service. 1,005 gpd/ERC (0.698 gpm/ERC) was used for interceptors analyzed just south of Goosenest Drive. Surplus ERCs were rounded down to the nearest whole number.

³ State minimum slopes were used. The Payson Trunk Line and 11200 South line have contributing flows from Woodland Hills and Payson City which is not shown.

⁴ Locations are shown on Figure 8.

The existing wastewater collection system can be viewed as an interconnected system similar to the water distribution system; therefore, it benefits all residents to some degree including future residents. Surplus capacity of the wastewater collection system benefits future users. Future users should buy in to the existing wastewater collection system at a proportionate share which will be calculated in section 4.1.7.

4.1.5 Additional Facilities Currently Required

Currently, the system does not require any additional improvements to correct capacity shortfalls.

4.1.6 Additional Facilities Required in 6-year, 20-year Planning Period, and prior to Build-out

The City requires the collection system projects shown in Table 44 to provide wastewater collection for future growth and to maintain the existing wastewater collection system.

Table 44: Wastewater Facilities required in 6 and 20-year planning period

6-year planning period facilities required	
Project Number	Project
1	Goosenest Drive 12-inch Sewer Extension (Upsize Costs Only)
2	Elk Ridge Drive 10-inch Sewer Extension
3	Canyon View Drive 8-inch Sewer Extension
4	Canyon View Drive and Amafille Lane Sewer Connection

The City anticipates upsizing a portion of the existing 12-inch sewer line in 11200 South with a 15-inch sewer line. This project would include approximately 400 linear feet of pipe from the intersection of Christley Lane/ 11200 South west to the existing 15-inch sewer line in 11200 South. This project would increase capacity in a section of sewer line which conveys the majority of the City's flows. This project is titled the 11200 South Sewer Main Project and is anticipated to be constructed outside the 20-year planning period prior to build-out. This project is shown in Table 47 and Figure 9 but is not factored into the impact fee calculation.

Year 2034 and Build-out major gravity pipeline flows and surpluses are shown in Table 45.

Table 45: Year 2034 Major Gravity Pipeline Flows and Surpluses

Component	Size	Flow Capacity (gpd) ¹	Year 2034			Build-out		
			Year 2034 Flow (gpd) ²	Surplus Capacity (gpd)	Surplus ERC ²	Build-out Flow (gpd) ²	Surplus Capacity (gpd)	Surplus ERC ²
Elk Ridge Drive	8-inch	1,143,323	190,950	952,373	947	502,500	640,823	637
Cortez Drive (from Amafille Lane)	8-inch	374,965	165,825	209,140	208	201,000	173,965	173
Goosenest Drive	8-inch	1,123,204	482,400	640,804	765	624,775	498,429	595
Payson Trunk Line ³	18-inch	2,080,973	1,201,813	879,160	1,049	1,813,188	267,785	319
11200 South ³	15-inch	1,279,724	783,063	496,661	593	1,027,613	252,111	301
Salem Trunk Line ³	15-inch	1,279,724	42,713	1,237,011	1,477	42,713	1,237,011	1,477

¹ Flow Capacity was determined in the section of sewer line with the flattest slope. D/d=0.67 = 79% flowing pipe for pipe diameters 10-inches and smaller and D/d=0.75=91% flowing pipe for pipe diameters larger than 10-inches.

² Collectors = 1,340 gpd/ ERC (0.93 gpm/ERC), Interceptor/ Outfall = 837.50 gpd/ERC (0.582 gpm/ERC). Refer to Section 4.1.3 for collection system level of service. 1,005 gpd/ERC (0.698 gpm/ERC) was used for interceptors analyzed just south of Goosenest Drive. Surplus ERCs were rounded down to the nearest whole number.

³ State minimum slopes were used. The Payson Trunk Line and 11200 South line have contributing flows from Woodland Hills and Payson City which is not shown.

⁴ Locations are shown on Figure 9.

4.1.7 Project Proportionate Share Analysis and Project Costs

Construction cost and value associated with new development for the 6-year and 20-year planning period wastewater projects are shown in Table 47. The table also shows the proportionate share or share of a project cost that is beneficial to existing users and future development. There are eight (8) items associated with determining the proportionate share as mentioned in the introduction of this plan. These items were carefully examined and each project's proportionate share was determined.

4.1.7.1 Proportionate Share – Collection

The collection projects required in the 6-year and 20-year planning periods benefit future development. The same can be said for the existing collection system buy-in costs. Since these projects and the existing collection system surplus capacity benefit future development, 100% of these costs can be attributed to future development.

4.1.7.2 Proportionate Share – Professional Expenses for Master Plan and Impact Fee Updates

Professional expenses for Master Plan and Impact Fee Updates benefit existing and future developments equally. Therefore, a proportionate share needs to be developed. The demographics section established an increase in ERCs of 697 less churches and schools, see Table 7, for the 20-year planning period. The total ERCs at the end of the 20-year planning period is also shown in Table 7 and is 1,457 ERCs less churches and schools (year 2034). To determine the proportionate share for existing and future development the increase in ERCs for the 20-year planning period was divided by the total ERCs at the end of the 20-year planning period which results in 47.84% of the cost for professional expenses being attributed to new users and 52.16% for existing development. Table 47 contains a summary of projects required in the 6-year and 20-year planning period.

Table 46: New and Existing Development Proportionate Share – Professional Expenses

Collection Project	Total ERCs (Year 2034)	Increase in ERCs in 20-year Planning Period	New Development Proportionate Share	Existing Users Proportionate Share
Future Collection Projects	1,457	697	47.84%	52.16%

Table 47: Future Wastewater Capital Improvement Projects

Priority No.	Construction Year	Project Name and Description	Type *	Cost Estimate	Value Associated with New Development	Proportionate Share Description
6-Year Planning Period						
1	2016	Goosenest Drive 12-inch Sewer Extension Project	C	\$ 168,720.77	\$ 168,720.77	100% of this project is attributable to future growth. Refer to Section 4.1.7.
2	2019	Elk Ridge Drive 10-inch Sewer Extension Project	C	\$ 110,291.88	\$ 110,291.88	100% of this project is attributable to future growth. Refer to Section 4.1.7.
3	2021	Canyon View Drive 8-inch Sewer Extension Project	C	\$54,565.55	\$54,565.55	100% of this project is attributable to future growth. Refer to Section 4.1.7.
4	2025	Canyon View Drive and Amafille Lane Sewer Connection Project	C	\$ 90,335.10	\$ 90,335.10	100% of this project is attributable to future growth. Refer to Section 4.1.7.
6-year Planning Period Project Subtotal				\$ 423,913.30	\$ 423,913.30	N/A
Capital Facility Projects Total				\$ 423,913.30	\$ 423,913.30	N/A
Outside 20-year Planning Period						
N/A	After 2034	11200 South Sewer Main Project	C	\$ 89,281.00	N/A	N/A

* C=Collection LS=Lift Station WWTF=Wastewater Treatment Facility



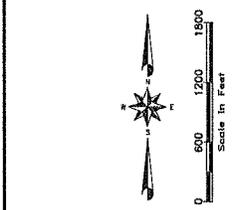
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ELK RIDGE CITY CORPORATION
 CAPITAL FACILITIES PLAN AND IMPACT FEE
 ANALYSIS UPDATE 2014
 FUTURE WASTEWATER COLLECTION PROJECTS

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6
 FIGURE

0 1/2 1
 DRAWING IS TO SCALE
 IF BAR MEASURES:
 1/2" = FULL SCALE
 1/2" = HALF SCALE



LEGEND

LOCATION	NO. OF CONTRIBUTING ERC
ERC #	PEAK FLOW
ERC #	PEAKING FACTOR
ERC #	8" SEWER PIPE
ERC #	10" SEWER PIPE
ERC #	12" SEWER PIPE
ERC #	15" SEWER PIPE
ERC #	18" SEWER PIPE

Source: Updated from Elk Ridge City 2008 Impact Fee Analysis
FIGURE 9, PAGE 50

4.1.8 Method of Financing Required Facilities and Rate Study

There are many methods for financing wastewater facilities including impact fees, monthly usage fees, grants, and loans.

Elk Ridge currently charges a sewer usage fee of \$36.00 a month per each user. The City currently (2014) has 698 connections. Sewer usage fees are used to operate and maintain the current wastewater system. Typical expenditure items for the wastewater system include, but are not limited to; administration, operational costs, maintenance costs, and project construction costs to upgrade the existing system.

As of December 31, 2013, the City had a sewer fund balance of \$376,354.92. Elk Ridge City's 2013-2014 Budget Report dated July 5, 2013 estimated 2013 operating revenues of \$ 277,048.00 and operating expenses of \$ 298,433.00 for a net negative operating loss of (\$ 21,385.00). The City tries to maintain a healthy fund balance to construct projects not identified in the capital facilities projects and for any unforeseen or emergency repairs to the wastewater collection system. To determine if the sewer fund can generate enough revenue to pay for expenses, this analysis will not raise rates. If the sewer fund cannot generate enough revenue to pay for expenses then other options such as raising rates will be explored.

The following are the various items that were adjusted in the rate analysis, see appendix H for a detailed spreadsheet.

- Revenues
 - Sewer User Fees – The base fee was not adjusted.
 - Operating Revenues – Included revenues from User Fees.
 - Non-Operating Revenues – Excluded from analysis as these revenues represent a small amount of the budget.
 - Outside Funding – Excluded from analysis but grants or other funding may be available for future capital projects.
- Expenses
 - Operating Expense – Increased yearly at 3.0%.
 - Future Capital Improvement Project Expense – The construction costs are adjusted for inflation and are the proportionate share attributed to existing development.
 - Current Bond Debt Interest and Principal Expense – There are not any existing bonds associated with the sewer fund.
 - Future Bond Interest and Principal Expense – The sewer fund revenues were sufficient; therefore, there were no future bond expenses.

The rate analysis shown in Appendix H indicates the City's current rate structure is adequate to maintain a positive fund balance. The analysis shows that the fund balance begins to increase each year after 2025. This is due to a decrease in capital improvement project activity. Rates should be reviewed again in the City's next update to this CFP.

4.2 IMPACT FEE ANALYSIS

Impact fees are to be used for expanding existing facilities or construction of new facilities required by new development. Impact fees also cannot be used to raise the established level of service of a public facility serving existing development or used to pay for operation and maintenance costs of public facilities.

4.2.1 Service Area

The collection system is interconnected and benefits both existing and future users. The collection projects proposed help maintain the City's level of service.

4.2.2 Level of Service

The level of service for the wastewater system has already been established in the capital facilities plan. The following table is a summary of the level of service standards for the wastewater collection system.

Table 48: Wastewater Level of Service

Wastewater System Component	Parameter	LOS Requirement
Collection System	Average Daily Flow	335 gpd/ERC

4.2.3 Buy in Component

The purpose of the buy in component is to recover the costs of surplus capacity in existing infrastructure attributable to new development. The collection system buy in and asset values were determined in sections 4.1.1 and 4.1.4. Below is the Cost per New ERC associated with buy in.

Table 49: Wastewater Buy In Component Cost

Component	Value Associated with New Development	Growth Related ERCs Served	Cost per New ERC
Collection System	\$ 98,698.00	697	\$ 141.60
Totals			\$ 141.60

4.2.4 Future Capital Improvement Projects

Future capital improvement projects required for new development were determined and summarized in Section 4.1.6. The construction year and an adjusted cost for inflation must be factored in order for the projects listed in the capital facilities plan to be used in the impact fee analysis. Using an inflation rate of 3%, Table 50 is a summary of future capital improvement projects.

Table 50: Future Wastewater Capital Improvement Projects

Construction Year	Project Name and Description	Type ¹	Current Year (2014) Cost Estimate	Construction Year Cost ²	Proportionate Share Cost Associated with New Development
2015	Goosenest Drive 12-inch Sewer Extension Project ⁴	C	\$ 168,720.77	\$ 178,995.86	\$ 178,995.86
2016	Elk Ridge Drive 10-inch Sewer Extension Project ⁴	C	\$ 110,291.88	\$ 127,858.52	\$ 127,858.52
2017	Canyon View Drive 8-inch Sewer Extension Project ⁴	C	\$ 54,565.55	\$ 67,108.74	\$ 67,108.74
2018	Canyon View Drive and Amafille Lane Sewer Connection Project ⁴	C	\$ 90,335.10	\$ 125,044.91	\$ 125,044.91
6-year Planning Period Project Subtotal			\$ 423,913.30	\$ 499,008.03	\$ 499,008.03
6-year and 20-year Planning Period Project Total			\$ 423,913.30	\$ 499,008.03	\$ 499,008.03

¹ C=Collection LS=Lift Station WWTF=Wastewater Treatment Facility

² Construction year costs were inflated 3% up to the year of construction of the specific project.

Construction Year Cost=Current Year (2014) Cost Estimate x [1 + 3%(inflation rate)]^[Construction Year of Project- Current Year (2014)]

³ Construction Cost Estimates include 12% cost for Professional Services and a 15% Contingency Fee.

⁴ 100% of these projects are attributable to future growth.

Costs are broken down further to calculate the cost per new ERC for each project. The cost per ERC is calculated by dividing the inflation adjusted costs associated with new development by the growth related ERCs (new ERCs within 20-year planning period). Refer to Table 51 for additional information.

Table 51: Wastewater Impact Fee per Project

Project Name and Description	Inflation Adjusted Costs Associated with New Development ¹	Growth Related ERCs Served	Cost per New ERC
Collection System Projects			
Goosenest Drive 12-inch Sewer Extension Project	\$ 178,995.86	697	\$ 256.81
Elk Ridge Drive 10-inch Sewer Extension Project	\$ 127,858.52	697	\$ 183.44
Canyon View Drive 8-inch Sewer Extension Project	\$ 67,108.74	697	\$ 96.28
Canyon View Drive and Amafille Lane Sewer Connection Project	\$ 125,044.91	697	\$ 179.40
Subtotal	\$ 499,008.03	697	\$ 715.94

Project Name and Description	Inflation Adjusted Costs Associated with New Development¹	Growth Related ERCs Served	Cost per New ERC
Totals	\$ 499,008.03	697	\$ 715.94

¹ Inflation adjusted costs are adjusted using a 3% inflation rate for the anticipated construction year of the project. Costs also include professional engineering, design, and construction management expenses associated with the project.

4.2.5 Future Debt Financing

The City has sufficient impact fee balance and will collect enough impact fees to construct the proposed capital improvement projects without financing.

4.2.6 Future Planning Expenses

In the future, areas might be developed that are different than anticipated in this impact fee analysis and latest capital facilities plan; therefore, master plans and impact fee analyses should be updated periodically to coincide with updated capital improvement projects. It is assumed the master plan and impact fee analysis will be updated every five (5) years. A cost for the year 2014 of \$4,066.40 has been included in the proposed impact fees along with updates. The updates include a 3% annual inflation cost, see Table 52.

Table 52: Wastewater Professional Expenses for Master Plan and Impact Fee Updates

Year	Cost	Year	Cost
2014	\$ 4,066.40	2025	\$ -
2015	\$ -	2026	\$ -
2016	\$ -	2027	\$ -
2017	\$ -	2028	\$ -
2018	\$ -	2029	\$ 6,335.32
2019	\$ 4,714.07	2030	\$ -
2020	\$ -	2031	\$ -
2021	\$ -	2032	\$ -
2022	\$ -	2033	\$ -
2023	\$ -	2034	\$ 7,344.37
2024	\$ 5,464.90		
Totals			\$ 27,925.06
Cost Per ERC²			\$ 40.06

¹ Since a portion of the master plan discusses benefits for existing and future users the costs chargeable to future users is 47.84% of the total fee. It was assumed that the City would update their Master Plan and Impact Fees every five (5) years.

² Increase of ERCs in 20-year planning period is 697 ERCs.

4.2.7 Proportionate Share Analysis

The proportionate share of the capital facilities projects was determined in Table 46 and adjusted for inflation to the project construction year in Table 50. The proportionate share items listed above have been covered in section 4.1.7 and will be factored into the Impact Fee calculations.

4.2.8 Impact Fee Calculation

There are two (2) types of fees used in the impact fee calculation. These fees are capital project fees and miscellaneous fees and include the following items listed below.

- Capital Project Fees
 - Buy In Costs – These are typically depreciated capital asset costs.
 - Project Costs
 - Debt Service Costs – The debt service costs includes the principal and interest for the bond as well as the insurance, surety policy, and bond insurance.
 - Bond Proceeds – The bond proceeds is the project cost (principal) associated with the project which is being bonded. This effectively cancels out the project cost that is shown as part of the source project capital improvement cost.
- Miscellaneous Fees
 - Professional Expenses
 - Fee Stabilization Charge (Credit) – This is the payment amount of principal and interest on the revenue bond after the 20-year planning period which should not be charged to new development in the planning period. There will not be any principal and interest after the 20-year planning period so this line item was excluded.

Impact fees have been calculated per new ERC by determining the proportionate cost divided by the ERCs served.

Table 53: Wastewater Impact Fee Cashflows

Wastewater Projects	Total Costs	% Attributed to Growth	Costs Attributable to Growth	Related ERCs Served	Cost per New ERC
Buy-in Costs - Surplus Capacity (Depreciated Costs)					
Wastewater Collection System ¹	\$ 98,698.00	100.00%	\$ 98,698.00	697	\$ 141.60
Project Fees - Apportioned Costs					
Wastewater Collection System Projects	\$ 499,008.03	100.00%	\$ 499,008.03	697	\$ 715.94
Total Capital Projects Fee	\$ 597,706.03		\$ 597,706.03		\$ 857.54
Miscellaneous Fees					
Professional Expenses	\$ 27,925.06	100.00%	\$ 27,925.06	697	\$ 40.06
Total Miscellaneous Fees	\$ 27,925.06		\$ 27,925.06		\$ 40.06

Total Impact Fee Cost per New ERC: \$ 897.61

¹ Refer to Section 4.1.1.

² Refer to Section 4.1.4 for proportionate share analysis.

The proposed wastewater impact fee would charge a flat fee of \$897 per ERC for single family residential, refer to Table 53. Apartment and trailer (multi-family residential) land uses are typically 0.75 ERCs/ Dwelling. Therefore, the fee for multi-family is 75% of the single family residential fee. Commercial/ Industrial (non-residential) land uses vary greatly based on the total fixture units of the commercial/ industrial development and the impact fee should be calculated based on the fixture units. A typical single family residence has 20 fixture units per ERC. Therefore, the single family residential impact fee should be divided by the 20 fixture unit per ERC to determine the non-residential impact fee. Table 54 is a summary of the proposed wastewater impact fees. Note that the proposed wastewater impact fee was rounded to the nearest dollar.

Table 54: Proposed Wastewater Impact Fees

Land Use	Impact Fee
Single Family Residential	\$ 897 per ERC
Multi-Family Residential	\$ 672 per ERC
Non-Residential	\$ 44 per Fixture Unit

4.2.9 Impact Fee Cashflows

The impact account balance and anticipated cashflow for the 20-year planning period is shown in Table 55. Capital improvement project costs are included in the table for each wastewater project disbursed during each expected year of construction. The impact fee cashflow summary shown in Table 56 shows the projected annual ending fund balance, revenues, expenses, excess and shortfalls.

4.2.10 Credits for Past and Future Connections

The City currently has procedures in place for credits, appeals, and exemptions of impact fees, refer to appendix N for the City's current impact fee ordinance.