STORM DRAIN IMPACT FEE FACILITY PLAN AND IMPACT FEE ANALYSIS

(HAL Project No.: 406.06.100)

May 2023

CITY OF SALEM

STORM DRAIN
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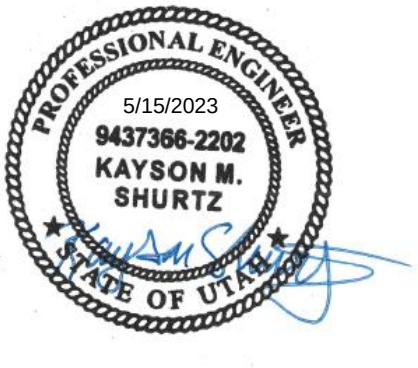

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May 2023

IMPACT FEE CERTIFICATION

The Utah Impact Fee Act requires certifications for the Impact Fee Facilities Plan (IFFP) and the Impact Fee Analysis (IFA). Hansen, Allen & Luce provides these certifications with the understanding that the recommendations in the IFFP and IFA are followed by City Staff and elected officials. If all or a portion of the IFFP or IFA are modified or amended, or if assumptions presented in this analysis change substantially, this certification is no longer valid. All information provided to Hansen, Allen & Luce, Inc. is assumed to be correct, complete, and accurate.

IFFP Certification

Hansen, Allen & Luce, Inc. certifies that the Impact Fee Facilities Plan (IFFP) prepared for the storm water system:

1. includes only the costs of public facilities that are:
    a. allowed under the Impact Fees Act; and
    b. actually incurred; or
    c. projected to be incurred or encumbered within six years after the day on which each impact fee is paid;
2. does not include:
    a. costs of operation and maintenance of public facilities;
    b. costs for qualifying public facilities that will raise the level of service for the facilities, through impact fees, above the level of service that is supported by existing residents;
    c. an expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally accepted cost accounting practices and the methodological standards set forth by the federal Office of Management and Budget for federal grant reimbursement; and
3. complies in each and every relevant respect with the Impact Fees Act.

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IFA Certification

Hansen, Allen & Luce, Inc. certifies that the Impact Fee Analysis (IFA) prepared for the storm water system:

1. includes only the costs of public facilities that are:
    a. allowed under the Impact Fees Act; and
    b. actually incurred; or
    c. projected to be incurred or encumbered within six years after the day on which each impact fee is paid;
2. does not include:
    a. costs of operation and maintenance of public facilities;
    b. costs for qualifying public facilities that will raise the level of service for the facilities, through impact fees, above the level of service that is supported by existing residents;
    c. an expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally accepted cost accounting practices and the methodological standards set forth by the federal Office of Management and Budget for federal grant reimbursement;
    d. cost offsets from grants or other alternate sources of payment; and
3. complies in each and every relevant respect with the Impact Fees Act.

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IMPACT FEE SUMMARY

The **purpose** of the Impact Fee Facilities Plan (IFFP) and the Impact Fee Analysis (IFA) is to comply with the requirements of the Utah Impact Fees Act by identifying demands placed on the existing storm water system by new development and by identifying how the City will meet these new demands. This is the City's first Storm Water System IFFP and IFA. The Storm Drain Master Plan and Capital Facility Plan have also been updated to support this analysis.

The significant **driver** for this IFA and IFFP is the City will complete projects costing over $46 million to increase the capacity of the storm water system. These projects will add excess capacity to the storm drain system available to new development. This cost must be borne by those who will benefit from the added capacity. Additionally, development is beginning to occur in areas of the City which have low infiltration capacities which require upfront conveyance projects that contribute to an overall increase in cost to convey storm water and lower flood risk for the residents of Salem City.

The impact fee **service area** is the storm water system service area, which includes the current city boundary and future areas anticipated to be annexed into the city.

The three **components** of the storm water impact fee are regional detention, conveyance, and planning. All capacities and costs are summarized into these components. Each project from the Capital Facility Plan is categorized into either detention or conveyance; planning is provided herein as a separate estimate.

Prior to granting a building permit for new development, the City reviews impervious area in square feet. Impervious square feet are the recommended **fee unit** for calculating the impact fee for developments that are non-single family and larger than $1/8^{th}$ acre lots. The typical single-family residential storm water use does not include road impervious area but does include sidewalks, park strips, roofs, driveways, patios, and all other impervious areas within the lot. The measured typical impervious area for single family residential lot of 0.25 acres or less is 5,400 square feet; for lots between 0.26 and 0.49 acres, it is 7,800 square feet; for lots between 0.5 and 1.0 acres, it is 12,500 square feet, and for lots between 1.01 and 2 acres, it is approximately 20,400 square feet. One equivalent residential unit (ERU) is defined as 5,400 square feet of impervious area.

The **level of service** for the storm water system is that it should handle the 25-year storm for the initial drainage system and the 100-year storm for detention/retention basins, culverts, and major conveyance facilities or where flooding of homes may occur. The initial drainage system includes inlets, laterals, minor trunk lines, gutters, and roadside ditches. The design distribution is the 3-hour Farmer Fletcher distribution. This design standard has been modeled in the CIP and design flows and volumes can be found in Salem's Storm Drain Master Plan (SDMP) in Figure 5-1.

The existing system has approximately 1,331 impervious acres (10,737 ERUs) according to a multispectral imagery analysis based on the National Agricultural Imagery Program (NAIP) imagery flown in the summer and fall of 2021. Projected **growth** based on zoning assumptions adds 2,345 impervious acres (18,917 ERUs) through buildout for a total of 3,676 impervious acres (29,654 ERUs). This means approximately 35% of the built-out impervious area is currently installed.

The existing storm water system has few existing deficiencies. The costs calculated for the capacity required for growth comes from the proportional costs of new projects required to provide capacity for the new development. The following table is a summary of the projected costs associated with providing capacity for growth through buildout.

STORM WATER IMPACT FEE COSTS

COMPONENT	EXISTING COSTS	IMPACT FEE COSTS	PROJECT FEE COSTS
CONVEYANCE	$7,331,259	$28,941,715	$36,272,974
DETENTION	$1,744,128	$7,745,296	$9,489,424
PLANNING	$50,000	$200,000	$250,000
TOTAL COST	**$9,125,387**	**$36,887,010**	**$46,012,398**

The **storm water impact fee** is calculated by dividing the $36,887,010 cost for capacity for growth through buildout by the projected 18,917 ERUs. This total cost includes cost for available “buy in” capacity. An ERU is defined as 5,400 square feet of impervious area. This aligns with the average impervious surface for lots of 0.25 acre or less. The following table is a summary of the proposed impact fee for various size single-family residential units.

PROPOSED IMPACT FEE PER IMPERVIOUS ACRE AND TYPICAL SINGLE FAMILY CONNECTION

COMPONENT	Per Impervious Acre	Per Residential Lot Size			
		<= 0.25 ac	0.26 ac – 0.49 ac	0.5 ac – 1.0 ac	1.01 ac – 2.0 ac
Conveyance	$12,342	$1,530	$2,210	$3,565	$5,783
Detention	$3,303	$409	$592	$953	$1,546
Planning	$85	$11	$15	$26	$42
Total	**$15,730**	**$1,950**	**$2,817**	**$4,544**	**$7,371**

SECTION 1
INTRODUCTION

1.1 Background

The City of Salem has experienced steady growth and as this growth continues additional storm water facilities will be required to provide an adequate drainage system that meets the City's current level of service for storm drainage.

The City has recognized the importance to plan for increased burden on its Storm Drain System from new development as a result of the rapid growth. The Storm Drain Master Plan and Capital Facility Plan have also been updated to support this analysis.

1.2 Purpose

The purpose of the IFFP and IFA is to comply with the requirements of the Utah Impact Fees Act by identifying demands placed on the existing Storm Drain System by new development and by identifying how the City will meet these new demands. This analysis was necessary due to significant growth in the City and increases in project costs. Typically, IFFPs and IFAs project the need for new growth-related facilities for the 6 to 10-year planning range; to be conservative, this IFFP and IFA projects the need for facilities through buildout. To ensure equitable cost sharing, both the capital costs and future growth are estimated through buildout; while not all projects may be completed within 10 years, required projects will be funded by new growth.

This report identifies those items that the Utah Impact Fees Act specifically requires including demands placed upon existing facilities by new development activity and the proposed means by which the municipality will meet those demands. In preparing this report a systematic approach was utilized to evaluate the existing and planned storm water facilities identified in the City's master planning efforts. Each facility's capacity was evaluated in accordance with the selected level of service to determine the appropriate share between existing demand and future demands. The system was evaluated and found to have no excess capacity for "buy-in". This approach was taken in order to determine the "proportional share" of improvement costs between existing users and future development users. The basis for this report was to provide proposed project costs and the fractional cost associated with future development to be used within the impact fee analysis.

1.3 Impact Fee Collection

Impact fees enable local governments to finance public facility improvements necessary to service new developments without burdening existing development with capital facility construction costs that are exclusively attributable to growth.

An impact fee is a one-time charge on new development to pay for that portion of a public facility that is required to support that new development.

To determine the appropriate impact fee, the cost of the facilities associated with future development must be proportionately distributed. As a guideline in determining the "proportionate share", the fee must be found to be roughly proportionate and reasonably related to the impact caused by the new development.

1.4 Master Planning

The Storm Drain Master Plan and Capital Facility Plan have been developed to support this analysis. The master plan for the City's storm water system is more comprehensive than the IFFP and IFA. It provides the basis for the IFFP and IFA as well as identifies all Capital Facilities required of the Storm Drain System for the buildout planning range including maintenance, repair, replacement, as well as growth related project recommendations. The recommendations made within the master plan report are in compliance with current City policies and standard engineering practices.

A hydrologic and hydraulic model of the storm system was prepared to aid in the analyses performed to complete the Storm Drain Master Plan. The model was used to assess existing performance, level of service, and to develop the flows used to size the proposed capital facility projects to maintain the proposed level of service.

SECTION 2
EXISTING STORM DRAIN SYSTEM

2.1 General

The purpose of this section is to provide information regarding the existing Storm Drain System, identify the current level of service, and determine the remaining capacity of the existing system's facilities.

Salem's existing Storm Drain System is comprised of a pipe network, sumps, retention and detention ponds, streams, canals, and surface drains. While some of the projects in the Capital Facility Plan have shared cost between existing and future users, most of the projects will be completely funded by future growth. **Figure 2-1** illustrates the existing storm water system.

2.2 Existing Impervious Area

Storm runoff in urban areas is primarily generated by rain falling on impervious area. The unit used for the Storm Water Impact Fee is per equivalent residential unit. Multispectral imagery analysis shows that development type and lot size are the two most significant influences in how much impervious area exists for a given lot. The typical amount of impervious square footage for single-family residential developments is shown below in **Table 2-1**.

Table 2-1 Typical Percent Impervious and Impervious Area for Single Family Residential

Lot Size	**<= 0.25 ac**	**0.26 ac – 0.49 ac**	**0.5 - 1.0 ac**	**1.01 ac – 2.0 ac**
Average Percent Impervious	**49%**	**36%**	**29%**	**16%**
Typical Impervious Area (sf)	5,400	7,800	12,500	20,400

For residential developments between the typical impervious area for the lot size groupings provided should be applied rather than requiring an exact measurement. The number of ERUs for multi-family and non-residential developments should be based on the impervious square footage shown on the development plans. It is the City's policy to receive impact fees at plat recordation for the storm water system.

Data in this report is presented by impact fee unit (impervious acre) and by typical single-family residential connection of three different lot sizes. A typical single-family is defined in this report as 5,400 impervious square feet. This does not include the amount of impervious area outside of the parcel such as park strips or roads.

The total number of existing impervious acres (without roads) as of the 2021 NAIP imagery is 1,274 acres or 10,274 ERUs.

2.3 Level of Service

The level of service for the storm water system is that it should handle the 3-hour 25-year storm (approximately 1.4 inches) for the initial drainage system and the 3-hour 100-year storm (approximately 2 inches) for detention/retention basins, culverts, and major conveyance facilities or where flooding of homes may occur. The initial drainage system includes inlets, laterals, minor trunk lines, gutters, and roadside ditches. The design distribution for both storm frequencies is the 3-hour Farmer Fletcher distribution which can be seen in Figure 2-2. Individual developments should use the NOAA's Atlas 14 to establish specific point precipitation estimates for their development. This design standard has been modeled in the CIP and design flows and volumes can be found in Salem's SDMP (Figure 5-1).

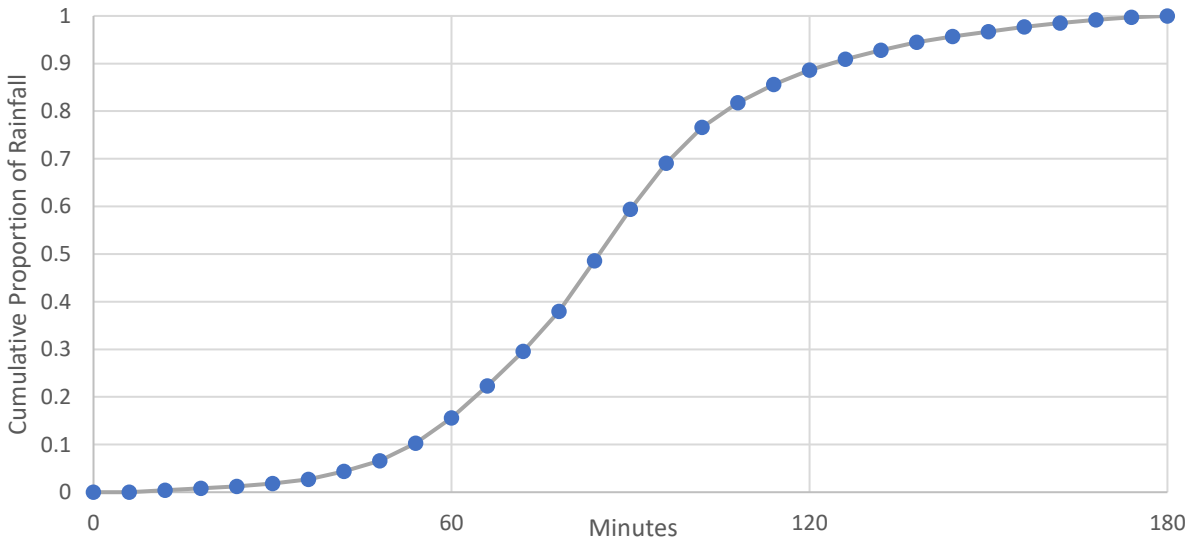
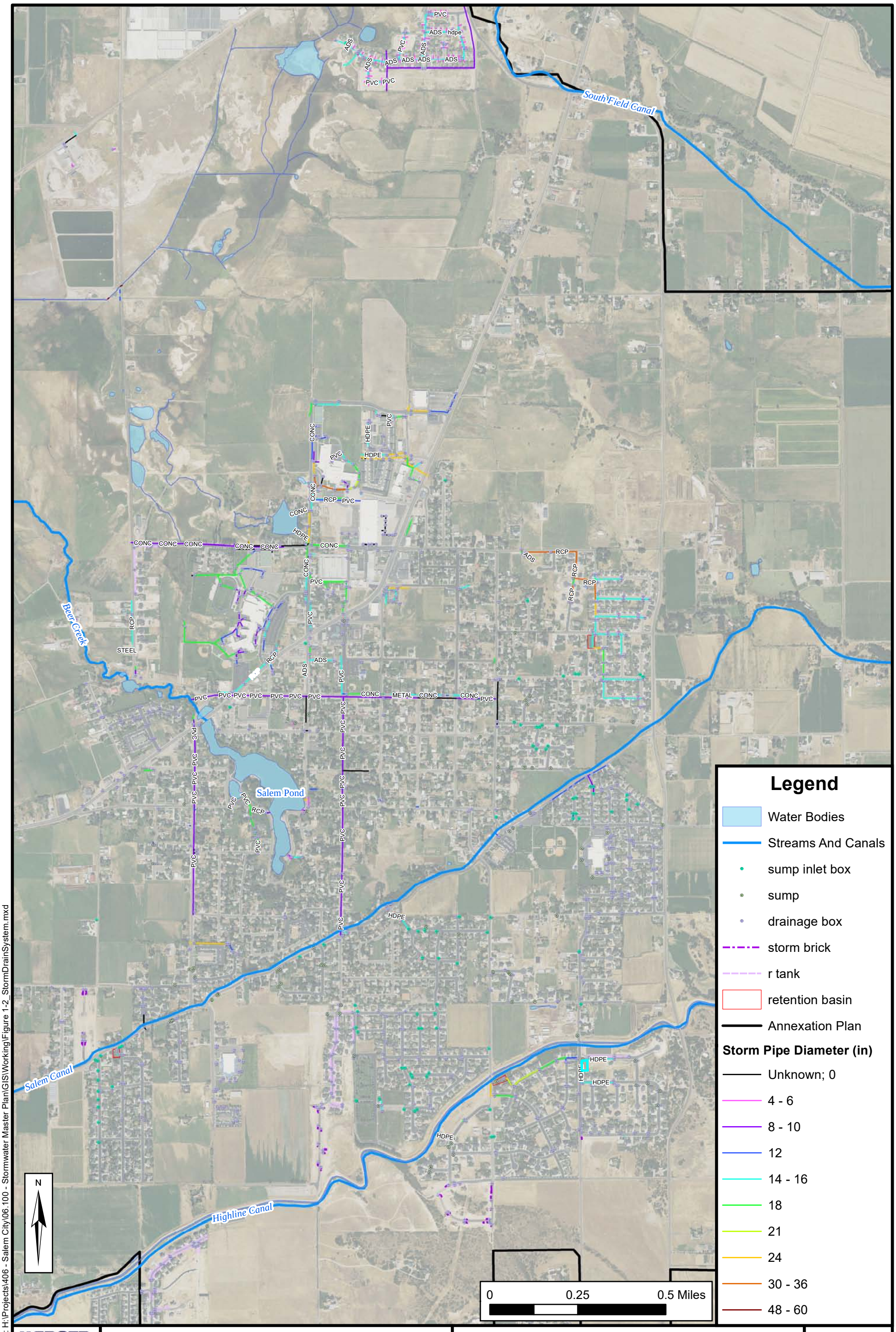


Figure 2-2 Dimensionless Cumulative Farmer Fletcher 3-hour Distribution

2.4 Methodology Used to Determine Existing System Capacity

The method for determining the remaining capacity in the system was based on the proposed level of service in terms of runoff versus pipe capacity. Each pipe in the storm water system was assessed a capacity in terms of size and slope and was compared with the design runoff. However, excess capacity in a storm system is limited by the lowest excess capacity in a connected system. The City of Salem does not have a well-connected storm system, therefore, excess capacity is inaccessible and assumed to be zero. There is no excess capacity available in either detention or conveyance for buy-in.



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CITY OF SALEM

STORM SEWER SYSTEM

FIGURE 2-1

2.5 Capital Facilities to Meet System Deficiencies

The City has several capital projects planned to improve existing system operation and provide capacity for future growth. The capital projects presented in the Master Plan will create a system that will meet the proposed level of service and provide capacity for future growth. Only projects that add capacity for future growth in the next 10 years are eligible to be included in the calculation of the impact fee.

SECTION 3
IMPACT FEE CALCULATION

3.1 General

This section relies on the data presented in the previous sections to present a proposed impact fee based on the appropriate proportion of cost of projects planned in the next 10 years to increase capacity for new growth.

The storm water system facility projects planned in the next 10 years to increase capacity for new growth included within the impact fee are presented. Also included in this section are the possible revenue sources that the City may consider to fund the recommended projects. The impact fee components are then presented with the proposed fee.

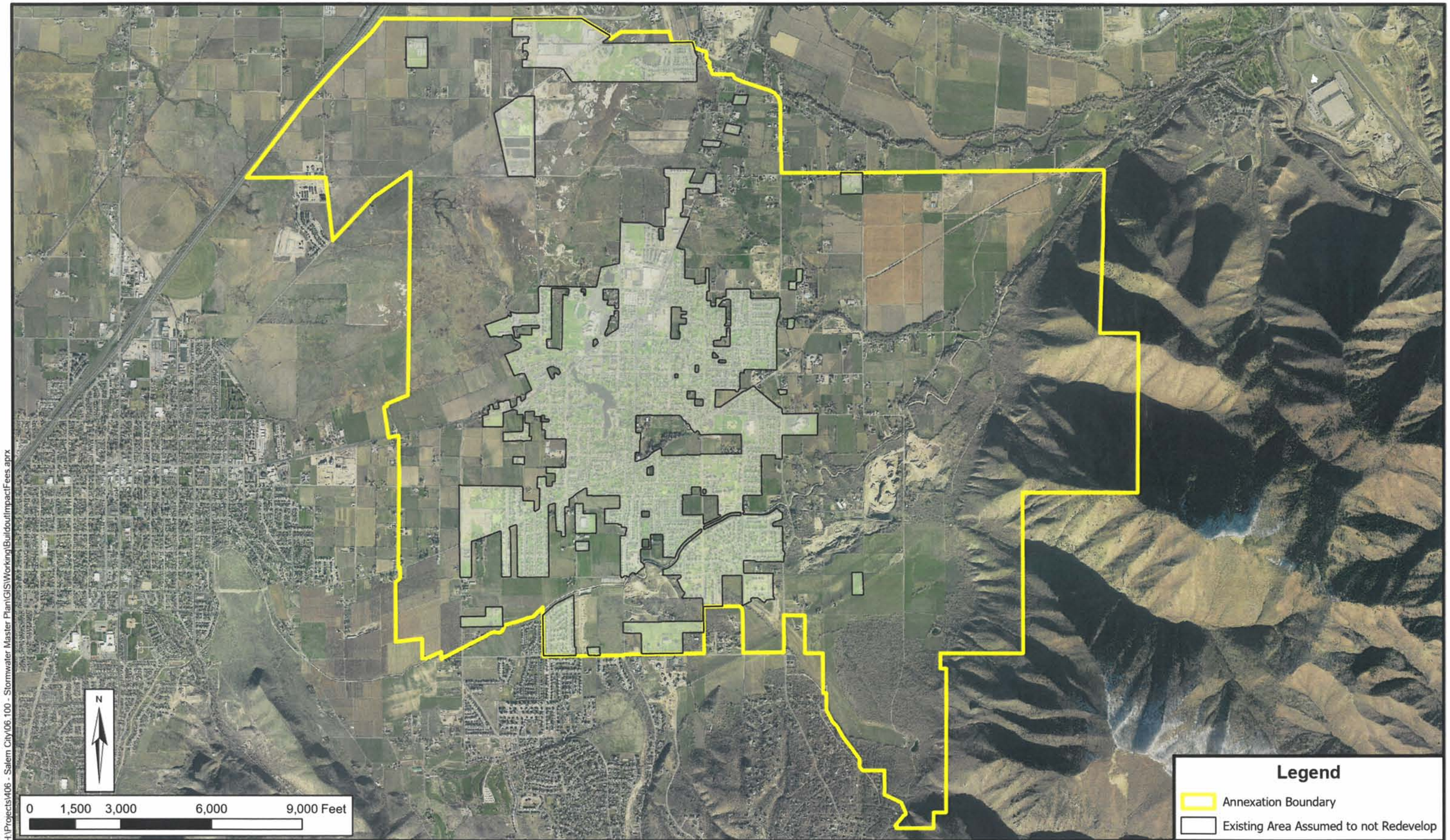
3.2 Growth Projections

Urban runoff occurs because impervious areas (such as roofs and pavement) do not allow water to soak into the ground. Future impervious area was calculated by isolating the area which is not expected to redevelop (see Figure 3-1) from the area which is expected to develop according to the City's General Plan. Impervious areas associated with roads was assigned to existing impervious total if the road currently has existing development adjacent to it; all other roads (existing and planned) were assigned to the future impervious total. Build-out projections for impervious area were based on the City's future land use plan and Table 3-1.

TABLE 3-1
PERCENT IMPERVIOUS FOR VARIOUS ZONING DISTRICTS

Zoning District	No Development (zoning located in Foothills)	East Transition to Foothills	Historic Salem	West Transition to I-15	Mixed Density Southeast	Mixed Density Northeast	Historic Salem Extension	Low Density	Medium Density	High Density	Ultra High Density	Institutional/Mixed Use/Flex	Commercial/Industrial
Units/ac	None	1-1.5	1.5-2	2-2.5	2-3	2-3	2-3	3-5	6-8	9-14	15-18	N/A	N/A
Percent Impervious	0	25	30	35	35	35	35	42	52	58	65	75	80

The development of impact fees requires growth projections over the next ten years. Growth projections for Salem were made by using growth rates consistent with the City's drinking water IFFP as summarized in Table 3-2.



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EXISTING AREA ASSUMED TO NOT REDEVELOP

FIGURE 3-1

TABLE 3-2
PROJECTED GROWTH OF IMPERVIOUS AREA

Year	Stormwater ERUs	Impervious Acres
2021	10,274	1,274
2022	10,737	1,331
2023	11,201	1,389
2024	11,691	1,449
2025	12,209	1,514
2026	12,754	1,581
2027	13,326	1,652
2028	13,899	1,723
2029	14,525	1,801
2030	15,152	1,878
2031	15,833	1,963
2032	16,542	2,051

Based on imagery analysis, Salem had approximately 1,274 acres in summer of 2021. Using the projections in Table 3-2, the existing system contains approximately 1,331 impervious acres (10,737 ERUs). Based on the projections in Table 3-2 at the end of 10 years the impervious acreage will expand to 2,051 acres (16,542 ERUs). This is an increase of 720 impervious acres (5,805 ERUs) over the 10-year window.

3.3 Cost of Future Facilities

As stated previously, no projects provide available buy-in capacity for future development. The projects presented in Table 3-3 are proposed projects essential to maintain the proposed level of service and accommodate future growth. The table lists the project type, description, and estimated cost. All projects have sufficient capacity for the 10-year growth projections. The facility sizing was based on City planning data and modeling. All projects have a design life greater than 10 years, as required by the Impact Fee Act. See Appendix B for cost estimate details of future projects.

TABLE 3-3
IMPACT FEE FACILITY PROJECTS FOR UPCOMING 10 YEARS

Type	Project ID	Recommended Project	Projected Year	Cost
Conveyance	P1	Install 0.49 miles of open channel (SS=2:1, Bottom width=1', depth=3') from 400 W to P2.	2027	$606,000
Conveyance	P2	Install 0.21 miles of 36" RCP from P1 to R1.	2024	$483,000
Conveyance	P3	Install 0.87 miles of 24”-36" pipe from R1 to R2.	2024	$1,504,000

Conveyance	P4	Install 0.35 miles of 36" pipe from R2 to P5.	2025	$820,000
Conveyance	P5	Install 0.75 miles of open channel (SS=2:1, bottom width=1', depth=4') from P4 to Beer Creek.	2028	$1,101,000
Conveyance	P6	Install 0.71 miles of 24" RCP from Salem Canal Rd to Salem Pond through 300 W and Mtn View Dr.	2023	$1,216,000
Conveyance	P7	Install 0.26 miles of 24" RCP from Salem Canal Rd to Salem Pond through 100 E.	2023	$436,000
Conveyance	P8	Install 0.65 miles of 36" RCP from Salem Canal Rd to Salem Pond through 450 E and 300 S.	2023	$1,926,000
Conveyance	P9	Install 0.71 miles of 30" RCP from 100 E to Beer Creek through Center St.	2026	$2,109,000
Conveyance	P13	Install 0.01 miles of 18" RCP from P13 to Woodland Hills Blvd.	2026	$14,000
Conveyance	P14	Install 0.54 miles of open channel (SS=2:1, bottom width 3', depth=3.5') from R5 to Woodland Hills Blvd.	2025	$782,000
Conveyance	P15	Install 0.56 miles of open channel (SS=2:1, bottom width 2', depth=3.5') from Woodland Hills Blvd to P17.	2025	$787,000
Conveyance	P16	Install 0.17 miles of open channel (SS=2:1, bottom width 1', depth=2.5') from P16 to R7.	2023	$186,000
Conveyance	P17	Install 0.37 miles of open channel (SS=2:1, bottom width 1.2', depth=3.2') from 400 N to R7.	2023	$477,000
Conveyance	P18	Install 0.96 miles of 42" RCP from ~530 E to Beer Creek through 400 N.	2027	$3,271,000
Conveyance	P19	Install 0.36 miles of 48" RCP from R7 to P21.	2026	$1,448,000
Conveyance	P20	Install 0.33 miles of open channel (SS=2:1, bottom width 1.5', depth=4') from P20 to P22.	2026	$489,000
Conveyance	P26	Install 0.61 miles of open channel (SS=2:1, bottom width 1', depth=3.5') from ~Arrowhead Trail to P28.	2025	$821,000
Conveyance	P29	Install 1.08 miles of open channel (SS=2:1, bottom width 1', depth=3') along Arrowhead Trail.	2026	$1,558,000

Conveyance	P30	Install 0.38 miles of 42" RCP connecting to P30.	2026	$1,312,000
Conveyance	P31	Install 1.78 miles of 18”–42” RCP along Salem Canal Road.	2022	$5,460,000
Detention	R1	Install 6.0 AF of storage at west end of annexation boundary and Salem Canal Rd.	2027	$937,000
Detention	R2	Install 4.1 AF of storage on Elk Ridge Dr midway between SR 198 and Salem Canal Road.	2024	$813,000
Detention	R3	Install 4.5 AF of storage SE of Salem Canal Rd and 250 W.	2027	$707,000
Detention	R4	Modify outlet works on Salem Pond. Install low level equalization outlet with stepped weir for flood flows. Concept design of 1.5’ deep, 5.5’ wide to accommodate releases up to the 100-year event.	2024	$130,000
Detention	R6	Install 20.2 AF of storage near 700 N and 400 E.	2025	$3,041,000
Detention	R7	Install 4.1 AF of storage near SR 198 and 700 N.	2023	$887,000
Detention	R8	Install 1.6 AF of storage near SR 198 and 8400 S.	2022	$271,000
Detention	R9	Utilize 12.0 AF of storage near 400 N and 460 W.	2027	$1,435,000
Planning	NA	Update Storm Drain Master Plan to identify existing and future deficiencies and their solutions. Reexamine impact fees.	2030	$250,000
			Total	$35,277,000

Only those costs attributed to the new growth can be included in the impact fee. The City only uses impact fees to pay bond payments for bonds used to pay for impact fee eligible projects. Financing costs are not included in the projected cost of future projects. Table 3-4 is a summary of the existing and future facility costs by storm water system component and by time period. Costs attributed to the next 10 years are costs for the existing capacity or new capacity for the assumed growth in the next 10 years.

TABLE 3-4
FACILITY COSTS BY TIME PERIOD

Storm Water Component	EXISTING		NEXT 10 YEARS		BEYOND 10 YEARS		TOTAL	
	Imp. Acres	Cost*	Imp. Acres	Cost	Imp. Acres	Cost	Imp. Acres	Cost
CONVEYANCE	1,331	$7,331,259	720	$8,886,156	1,625	$20,055,559	**3,676***	**$36,272,974**
DETENTION	1,331	$1,744,128	720	$2,378,087	1,625	$5,367,209	**3,676**	**$9,489,424**
PLANNING	1,331	$50,000	720	$61,407	1,625	$138,593	**3,676**	**$250,000**
TOTAL COST	**$9,125,387**		**$11,325,650**		**$25,561,361**		**$46,012,398**	

*Existing costs are costs to be paid for by the existing system which have not yet been constructed.

3.4 Revenue Options

Revenue options for the recommended projects include: general obligation bonds, revenue bonds, State/Federal grants and loans, user fees, and impact fees. Although this analysis focuses on impact fees, the City may need to consider a combination of these funding options. The following discussion describes each of these options.

General Obligation Bonds through Property Taxes

This form of debt enables the City to issue general obligation bonds for capital improvements and replacement. General Obligation (G.O.) Bonds would be used for items not typically financed through the Water Revenue Bonds. G.O. bonds are debt instruments backed by the full faith and credit of the City which would be secured by an unconditional pledge of the City to levy assessments, charges or ad valorem taxes necessary to retire the bonds. G.O. bonds are the lowest-cost form of debt financing available to local governments and can be combined with other revenue sources such as specific fees, or special assessment charges to form a dual security through the City's revenue generating authority. These bonds are supported by the City as a whole, so the amount of debt issued for the water system is limited to a fixed percentage of the real market value of taxable property within the City. For growth-related projects this type of revenue places an unfair burden on existing residents as they had previously paid for their level of service.

Revenue Bonds

This form of debt financing is also available to the City for utility-related capital improvements. Unlike G.O. bonds, revenue bonds are not backed by the City as a whole, but constitute a lien against the water service charge revenues of a Water Utility. Revenue bonds present a greater

risk to the investor than do G.O. bonds, since repayment of debt depends on an adequate revenue stream, legally defensible rate structure /and sound fiscal management by the issuing jurisdiction. Due to this increased risk, revenue bonds generally require a higher interest rate than G.O. bonds, although currently interest rates are at historic lows. This type of debt also has very specific coverage requirements in the form of a reserve fund specifying an amount, usually expressed in terms of average or maximum debt service due in any future year. This debt service is required to be held as a cash reserve for annual debt service payment to the benefit of bondholders. Typically, voter approval is not required when issuing revenue bonds. For growth-related projects this type of revenue places an unfair burden on existing residents as they had previously paid for their level of service.

State/Federal Grants and Loans

Historically, both local and county governments have experienced significant infrastructure funding support from state and federal government agencies in the form of block grants, direct grants in aid, interagency loans, and general revenue sharing. Federal expenditure pressures and virtual elimination of federal revenue sharing dollars are clear indicators that local government may be left to its own devices regarding infrastructure finance in general. However, state/federal grants and loans should be further investigated as a possible funding source for needed water system improvements.

It is also important to assess likely trends regarding federal / state assistance in infrastructure financing. Future trends indicate that grants will be replaced by loans through a public works revolving fund. Local governments can expect to access these revolving funds or public works trust funds by demonstrating both the need for and the ability to repay the borrowed monies, with interest. As with the revenue bonds discussed earlier, the ability of infrastructure programs to wisely manage their own finances will be a key element in evaluating whether many secondary funding sources, such as federal/state loans, will be available to the City.

User Fees

Similar to property taxes on existing residents, User Fees to pay for improvements related to new growth related projects places an unfair burden on existing residents as they had previously paid for their level of service.

Impact Fees

An impact fee is a one-time charge to a new development for the purpose of raising funds for the construction of improvements required by the new growth and to maintain the current level of service. Impact fees in Utah are regulated by the Impact Fee Statute and substantial case law. Impact fees are a form of a development exaction that requires a fee to offset the burdens created by the development on existing municipal services. Funding the future improvements required by growth through impact fees does not place the burden on existing residents to provide funding of these new improvements.

3.5 Impact Fee Unit Calculation

For residential lots, the recommendation to assess stormwater impact fee is based on the size of the planned lot. For example, if a development submits plans showing 15 fifth acre lots and 10 third acres lots, the impact fee would be $1,950*15 + $2,817*10 = $57,420. For nonresidential

developments, it is recommended to base the impact fee on the impervious acre. All plans will show how many total impervious acres will be constructed and impact fees should be calculated using that data. Public roads need not be included in the impervious acreage.

It is recommended that the City have three components to the impact fee for storm water system facilities—conveyance, detention, and planning. The cost breakdown by component is shown below in Table 3-5. Construction of adequate detention or system conveyance may waive a portion of that impact fee component.

TABLE 3-5
IMPACT FEE COSTS FOR NEW DEVELOPMENT

Storm Drain Component	Total Cost	Cost Associated with Growth	ERUs Served	Cost Per ERU
Conveyance	$ 36,272,974	$ 28,941,715	18,917	$ 1,530
Detention	$ 9,489,424	$ 7,745,296	18,917	$ 409
Planning	$ 250,000	$ 200,000	18,917	$ 11
Total	$ 46,012,398	$ 36,887,010	18,917	$ 1,950

3.6 Impact Fee Summary

Adding the proposed Storm Water System impact fee units together, the total proposed impact fee would be **$1,950** per ERU for a typical single-family residential lot of less than a quarter acre (see Table 3-5). This includes $1,530 for conveyance projects, $409 for detention projects, and $11 for planning studies. With the projection of 5,805 ERUs coming in the next 10-years, the City will raise approximately 11 million dollars in impact fees. Should growth necessitate all projects listed in Table 3-2, the City will bond for the other approximately 24 million dollars and be reimbursed by impact fees as development fills in.

TABLE 3-6
PROPOSED IMPACT FEE PER IMPERVIOUS ACRE AND TYPICAL SINGLE FAMILY LOT SIZE

COMPONENT	Impact Fee Per Impervious Acre	Per Residential Lot Size			
		<= 0.25 ac	0.26 ac – 0.49 ac	0.5 – 1.0 ac	1.01 ac – 2.0 ac
	ERU Count	1	1.44	2.33	3.78
Conveyance	$12,342	$1,530	$2,210	$3,565	$5,783
Detention	$3,303	$409	$592	$953	$1,546
Planning	$85	$11	$15	$26	$42
Total	**$15,730**	**$1,950**	**$2,817**	**$4,544**	**$7,371**

Appendix A

Cost Estimates

Opinion of Probable Costs

Pipe Costs

Project No.	Length (ft)	D (in)	In-Street, Out-Street, Inlets?	Cost/LF	Project Cost
P2	1095	36	Out	$ 339	$ 371,457
P3	898	24	Out	$ 197	$ 177,177
	655	24	Out	$ 197	$ 129,235
	1373	30	Out	$ 259	$ 355,843
	998	36	Out	$ 339	$ 338,552
	459	36	Out	$ 339	$ 155,707
P4	1860	36	Out	$ 339	$ 630,968
P6	3772	24	In	$ 248	$ 935,456
P7	1353	24	In	$ 248	$ 335,544
P8	3429	36	In	$ 432	$ 1,481,328
P9	3755	36	In	$ 432	$ 1,622,160
P13	74	18	Out-NoInlets	$ 144	$ 10,666
P18	5043	42	In	$ 499	$ 2,516,457
P19	1920	48	In	$ 580	$ 1,113,600
P23	2364	24	In	$ 248	$ 586,272
P30	2023	42	In	$ 499	$ 1,009,477
P31	9398	varies			$ 4,200,000
					$ 15,969,899

Detention Basin Costs

		Cost of Land			Cost of Excavation			Cost of Outlet Works		
Project No.	Location	Area (Acres)	Cost/acre	Land Cost	Volume (AF)	Exc. (/AF)	Excavation Cost	Outlet Orifice (sf)	Outlet Works Cost	Project Cost
R1	Salem Canal Rd and ~Elk Ridge Dr	2.25	$ 275,000	$ 618,750	6	$ 16,133	$ 96,800	2.0	$ 5,000	$ 720,550
R2	Elk Ridge Dr	2	$ 275,000	$ 550,000	4.2	$ 16,133	$ 67,760	7.0	$ 8,000	$ 625,760
R3	Salem Canal Rd and ~250 W	1.7	$ 275,000	$ 467,500	4.5	$ 16,133	$ 72,600	1.5	$ 4,000	$ 544,100
R4	Salem Pond	18	$ 275,000	$ -	27.5	$ -	$ -	5.0	$ 100,000	$ 100,000
R5	~Woodland Hills Blvd and ~500 N	3.05	$ 275,000	$ 838,750	8.2	$ 16,133	$ 132,293	1.9	$ 4,000	$ 975,043
R6	~400 E and ~650 N	7.3	$ 275,000	$ 2,007,500	20.2	$ 16,133	$ 325,893	7.6	$ 6,000	$ 2,339,393
R7	~SR 198 and ~650 N	2.2	$ 275,000	$ 605,000	4.1	$ 16,133	$ 66,147	2.6	$ 11,000	$ 682,147
R8	~SR 198 and ~8400 S	0.65	$ 275,000	$ 178,750	1.6	$ 16,133	$ 25,813	1.6	$ 4,000	$ 208,563
R9	~400 N and 460 W	4	$ 275,000	$ 1,100,000	12	$ -	$ -	1.8	$ 4,000	$ 1,104,000
				$ 6,366,250			$ 787,307		$ 142,121	**$ 7,299,557**

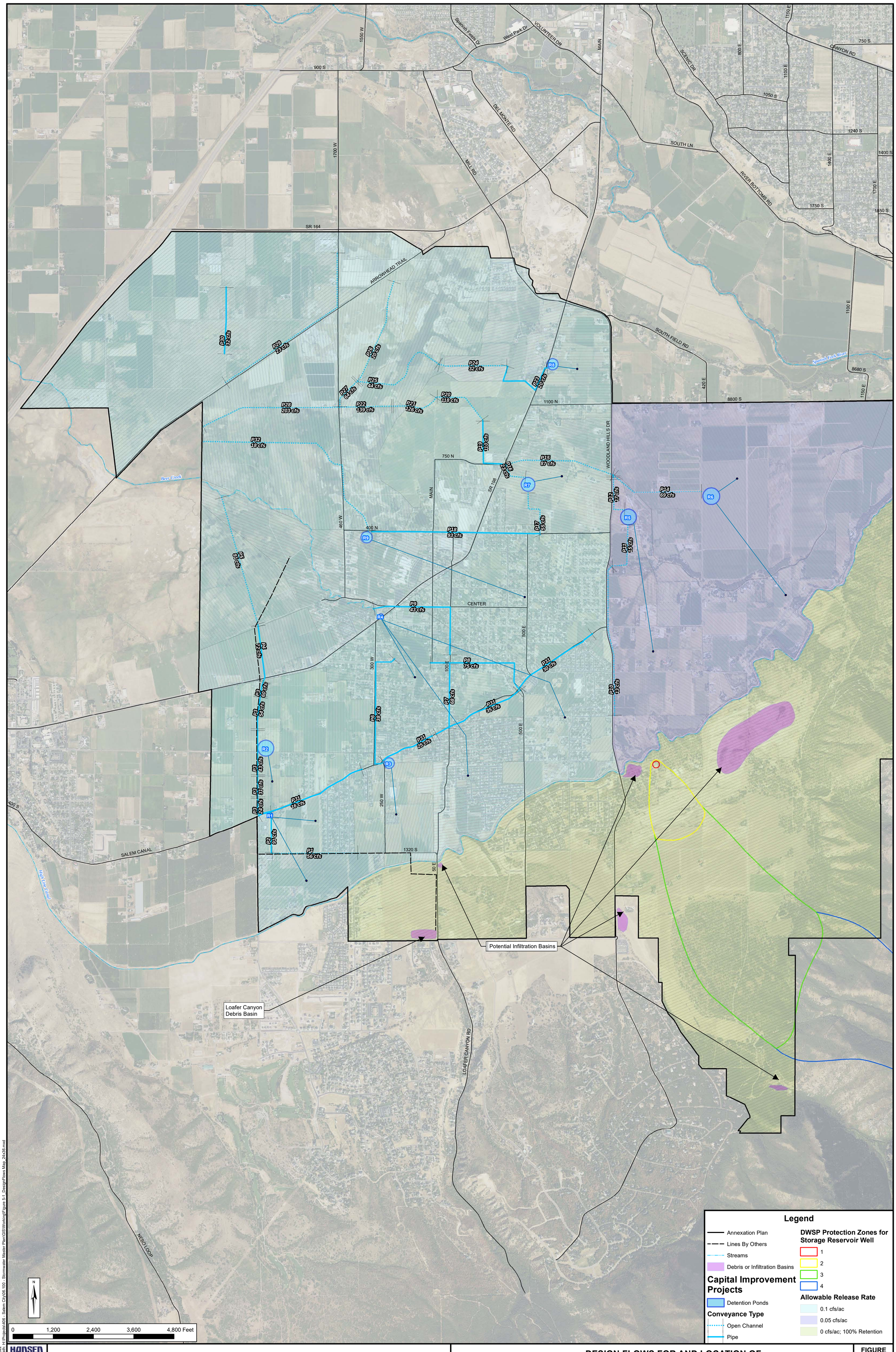
Open Channel Costs

		Cost of Land					Cost of Excavation					Cost of Vegetation			
Project No.	Length (ft)	Trail Width (ft)	Total Width (ft)	Land Area (ac)	Cost/acre	Land Cost	Exc. Area (ft2)	Exc. Volume (AF)	Exc. (/CY)	Exc. (/AF)	Excavation Cost	Area to Revegetate (sf)	Cost (/sf)	Vegetation Cost	Project Cost
P1	2596	12	25	1.49	$ 275,000	$ 409,722	39	2.32	$ 10	$ 16,133	$ 37,498	37,425	$ 0.50	$ 18,712	$ 465,932
P5	3976	12	29	2.65	$ 275,000	$ 727,929	45	4.11	$ 10	$ 16,133	$ 66,267	104,562	$ 0.50	$ 52,281	$ 846,477
P10	4537	12	23	2.40	$ 275,000	$ 658,782	36	3.75	$ 10	$ 16,133	$ 60,493	45,433	$ 0.50	$ 22,716	$ 741,991
P11	1663	12	25	0.95	$ 275,000	$ 262,468	39	1.49	$ 10	$ 16,133	$ 24,021	23,974	$ 0.50	$ 11,987	$ 298,477
P12	1300	12	25.5	0.76	$ 275,000	$ 209,280	40.5	1.21	$ 10	$ 16,133	$ 19,500	19,391	$ 0.50	$ 9,696	$ 238,476
P14	2841	12	29	1.89	$ 275,000	$ 520,133	48	3.13	$ 10	$ 16,133	$ 50,507	62,070	$ 0.50	$ 31,035	$ 601,674
P15	2971	12	28	1.91	$ 275,000	$ 525,177	45	3.07	$ 10	$ 16,133	$ 49,517	61,940	$ 0.50	$ 30,970	$ 605,663
P16	877	12	23	0.46	$ 275,000	$ 127,342	36	0.72	$ 10	$ 16,133	$ 11,693	8,782	$ 0.50	$ 4,391	$ 143,427
P17	1958	12	26	1.17	$ 275,000	$ 321,389	40.8	1.83	$ 10	$ 16,133	$ 29,588	32,633	$ 0.50	$ 16,316	$ 367,293
P20	1736	12	29.5	1.18	$ 275,000	$ 323,308	46.5	1.85	$ 10	$ 16,133	$ 29,898	46,522	$ 0.50	$ 23,261	$ 376,467
P21	1458	12	28.1	0.94	$ 275,000	$ 258,648	44.1	1.48	$ 10	$ 16,133	$ 23,814	32,960	$ 0.50	$ 16,480	$ 298,942
P22	1550	12	48	1.71	$ 275,000	$ 469,697	99	3.52	$ 10	$ 16,133	$ 56,833	78,679	$ 0.50	$ 39,339	$ 565,870
P24	2061	12	23	1.09	$ 275,000	$ 299,261	36	1.70	$ 10	$ 16,133	$ 27,480	20,639	$ 0.50	$ 10,319	$ 337,061
P25	3101	12	30	2.14	$ 275,000	$ 587,311	48	3.42	$ 10	$ 16,133	$ 55,129	84,652	$ 0.50	$ 42,326	$ 684,765
P26	3225	12	27	2.00	$ 275,000	$ 549,716	42	3.11	$ 10	$ 16,133	$ 50,167	64,010	$ 0.50	$ 32,005	$ 631,888
P27	990	12	33	0.75	$ 275,000	$ 206,250	57	1.30	$ 10	$ 16,133	$ 20,900	29,995	$ 0.50	$ 14,998	$ 242,148
P28	4232	12	57	5.54	$ 275,000	$ 1,522,879	123	11.95	$ 10	$ 16,133	$ 192,791	280,290	$ 0.50	$ 140,145	$ 1,855,815
P29	5676	12	29	3.78	$ 275,000	$ 1,039,167	51	6.65	$ 10	$ 16,133	$ 107,213	104,532	$ 0.50	$ 52,266	$ 1,198,646
P32	6743	12	29	4.49	$ 275,000	$ 1,234,514	46.5	7.20	$ 10	$ 16,133	$ 116,129	161,470	$ 0.50	$ 80,735	$ 1,431,378
						$10,252,972					$ 1,029,438			$ 649,979	$ 11,932,389

		Total W/ Contingency
		130%
Open Channel	$ 11,932,389	$ 15,512,105
Pipes	$ 15,969,899	$ 20,760,869
Detention Basins	$ 7,299,557	$ 9,489,424
Total MP Costs	**$ 35,201,845**	**$ 45,762,398**

PROJECT COSTS THROUGH BUILDOUT WITH PERCENT IMPACT FEE ELIGIBLE

Project ID	Type	Impact Fee %	Project Cost	Impact Fee Eligible
P1	Conveyance	100%	$ 605,712	$ 605,712.25
P2	Conveyance	100%	$ 482,894	$ 482,893.91
P3	Conveyance	100%	$ 1,503,468	$ 1,503,468.20
P4	Conveyance	100%	$ 820,258	$ 820,258.14
P5	Conveyance	100%	$ 1,100,420	$ 1,100,419.87
P6	Conveyance	50%	$ 1,216,093	$ 608,046.40
P7	Conveyance	50%	$ 436,207	$ 218,103.60
P8	Conveyance	50%	$ 1,925,726	$ 962,863.20
P9	Conveyance	50%	$ 2,108,808	$ 1,054,404.00
P10	Conveyance	100%	$ 964,589	$ 964,588.80
P11	Conveyance	100%	$ 388,020	$ 388,019.83
P12	Conveyance	100%	$ 310,019	$ 310,018.76
P13	Conveyance	0%	$ 13,866	$ -
P14	Conveyance	100%	$ 782,177	$ 782,176.77
P15	Conveyance	100%	$ 787,362	$ 787,362.23
P16	Conveyance	100%	$ 186,455	$ 186,454.57
P17	Conveyance	100%	$ 477,481	$ 477,480.58
P18	Conveyance	30%	$ 3,271,394	$ 981,418.23
P19	Conveyance	100%	$ 1,447,680	$ 1,447,680.00
P20	Conveyance	100%	$ 489,407	$ 489,406.73
P21	Conveyance	100%	$ 388,624	$ 388,624.28
P22	Conveyance	100%	$ 735,631	$ 735,630.59
P23	Conveyance	100%	$ 762,154	$ 762,153.60
P24	Conveyance	100%	$ 438,179	$ 438,178.86
P25	Conveyance	100%	$ 890,195	$ 890,195.00
P26	Conveyance	100%	$ 821,454	$ 821,453.88
P27	Conveyance	100%	$ 314,792	$ 314,791.91
P28	Conveyance	100%	$ 2,412,559	$ 2,412,559.26
P29	Conveyance	100%	$ 1,558,239	$ 1,558,239.50
P30	Conveyance	100%	$ 1,312,320	$ 1,312,320.10
P31	Conveyance	60%	$ 5,460,000	$ 3,276,000.00
P32	Conveyance	100%	$ 1,860,792	$ 1,860,791.82
R1	Detention	90%	$ 936,715	$ 843,043.50
R2	Detention	70%	$ 813,488	$ 569,441.60
R3	Detention	90%	$ 707,330	$ 636,597.00
R4	Detention	50%	$ 130,000	$ 65,000.00
R5	Detention	100%	$ 1,267,556	$ 1,267,556.33
R6	Detention	100%	$ 3,041,211	$ 3,041,211.33
R7	Detention	70%	$ 886,791	$ 620,753.47
R8	Detention	100%	$ 271,132	$ 271,132.33
R9	Detention	30%	$ 1,435,200	$ 430,560.00
		Total	$ 45,762,398	$ 36,687,010



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HANSEN ALLEN & LUCE INC ENGINEERS

CITY OF SALEM

DESIGN FLOWS FOR AND LOCATION OF CAPITAL IMPROVEMENT PROJECTS

FIGURE 5-1