LINDON

DRINKING WATER IMPACT FEE FACILITY PLAN AND IMPACT FEE ANALYSIS

(HAL Project No.: 340.05.100)

January 2024

HANSEN ALLEN & LUCE inc
ENGINEERS

LINDON CITY

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TABLE OF CONTENTS

ACKNOWLEDGEMENTS ..... **ii**
TABLE OF CONTENTS ..... **iii**
LIST OF TABLES ..... **v**
LIST OF FIGURES ..... **v**
IMPACT FEE CERTIFICATION ..... **vi**
IMPACT FEE SUMMARY **S-1**
PURPOSE OF STUDY S-1
LEVEL OF SERVICE S-1
IMPACT FEE CALCULATION S-1

CHAPTER 1 INTRODUCTION **1-1**
PURPOSE AND SCOPE 1-1
IMPACT FEE COLLECTION 1-1
MASTER PLANNING 1-1

CHAPTER 2 SYSTEM DEMAND AND CAPACITY **2-1**
GENERAL 2-1
EXISTING EQUIVALENT RESIDENTIAL CONNECTIONS AND IRRIGATED ACREAGE 2-1
LEVEL OF SERVICE 2-1
METHODOLOGY USED TO DETERMINE EXISTING SYSTEM CAPACITY 2-2
WATER SOURCE AND REMAINING CAPACITY 2-2
WATER SOURCE REDUNDANCY 2-3
STORAGE FACILITIES AND REMAINING CAPACITY 2-4
DISTRIBUTION SYSTEM 2-4

CHAPTER 3 IMPACT FEE FACILITY PLAN AND ANALYSIS **3-1**
GROWTH PROJECTIONS 3-1
COST OF EXISTING FACILITIES 3-2
Source Facilities 3-2
Storage Facilities 3-2
Distribution Facilities 3-2
COST OF FUTURE FACILITIES 3-3
IMPACT FEE UNIT CALCULATION 3-4
Source 3-4
Storage 3-5
Distribution 3-6
Planning 3-7
TOTAL IMPACT FEE UNIT CALCULATION 3-8
NONSTANDARD IMPACT FEE CALCULATION 3-9
COSTS BY TIME PERIOD 3-9
REVENUE OPTIONS 3-10
General Obligation Bonds through Property Taxes 3-10
Revenue Bonds 3-11
State/Federal Grants and Loans 3-11
User Fees 3-11
Impact Fees 3-11
REFERENCES **R-1**

APPENDIX A
Historic Project Costs

APPENDIX B
Impact Fee Eligible Costs of Future Projects

LIST OF TABLES

NO.	TITLE	PAGE
S-1	Proposed Impact Fee by Component	S-2
2-1	Demand and Capacity of Existing Drinking Water Sources	2-2
2-2	Demand and Capacity of Existing Drinking Water Sources - Redundancy	2-3
2-3	Existing Drinking Water Pump Stations	2-3
2-4	Demand and Capacity of Existing Storage Tanks	2-4
3-1	Growth Projections	3-1
3-2	Impact Fee Eligible Cost of Existing Source Facilities	3-2
3-3	Impact Fee Eligible Cost of Existing Distribution Facilities	3-3
3-4	Estimated Impact Fee Eligible Cost of Future Facilities	3-4
3-5	Source Impact Fee Unit Calculation	3-5
3-6	Source Cost by Time Period	3-5
3-7	Storage Impact Fee Unit Calculation	3-6
3-8	Storage Cost by Time Period	3-6
3-9	Distribution Impact Fee Unit Calculation	3-7
3-10	Distribution Cost by Time Period	3-7
3-11	Planning Component of Impact Fee	3-8
3-12	Total Proposed Impact Fee per Typical Single-Family Connection	3-8
3-13	Proposed Drinking Water Impact Fee per Based on Meter Size	3-9
3-14	Facility Cost by Time Period	3-10

LIST OF FIGURES

NO.	TITLE	PAGE
2-1	Existing Drinking Water System	After 2-1
3-1	Drinking Water System Impact Fee Facilities Plan	After 3-3

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 drinking 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.

IFA Certification

Hansen, Allen & Luce, Inc. certifies that the Impact Fee Analysis (IFA) prepared for the drinking 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. costs with grants or other alternate sources of payment; and
3. complies in each and every relevant respect with the Impact Fees Act.

HANSEN, ALLEN & LUCE, INC.

IMPACT FEE SUMMARY

PURPOSE OF STUDY

The **purpose** of the Impact Fee Facility Plan (IFFP) and Impact Fee Analysis (IFA) is to comply with the requirements of the Utah Impact Fees Act by identifying demands placed on the existing drinking water system by new development and by identifying the means by which the City will meet these new demands. The Lindon City Drinking Water System Master Plan has been used in support of this analysis. There are several growth-related capital facilities anticipated to be needed in the next 10 years, so the calculated impact fee is based on anticipated capital facility projects as well as existing excess capacity and documented historic costs.

The impact fee **service area** is the drinking water system service area, which includes the current city boundary and future service areas as identified in the City's Drinking Water Master Plan.

LEVEL OF SERVICE

The existing and proposed **level of service** for the drinking water system includes the following:

Level of Service

- Indoor Source Capacity: 490 gpd/ERC (Peak Day)
- Indoor Source Volume: 0.392 ac-ft/ERC (Annual Demand)
- Indoor Storage Capacity: 245 gallons/ERC (Equalization), and 72 gallons/ERC (fire flow), or 317 gallons/ERC total
- Outdoor Source Capacity: 8.0 gpm/irr-ac (Peak Day)
- Outdoor Source Volume: 4.0 ac-ft/irr-ac (Annual Demand)
- Outdoor Storage Capacity: 5,760 Gallons/irr-ac
- Distribution Capacity: 40 psi minimum during peak day demand conditions, 30 psi minimum during peak instantaneous conditions, and availability of a redundant source
- Source Redundancy: The demand on the drinking water system must be able to be met by the drinking water system with any source out of service.

Fire Suppression

- Minimum Fire Flow (dead end lines): 1,000 gpm for 2 hours
- Minimum Fire Flow (residential areas not on dead end lines): 1,500 gpm for 2 hours
- Minimum Pressure: 20 psi residual during peak day + fire flow event
- Fire Suppression Storage: 4,500 gpm for 3 hours (810,000 gallons)

IMPACT FEE CALCULATION

The existing system served about 6,039 equivalent residential connections at the end of 2020 Projected **growth** adds 3,030 equivalent residential connections and 57 irrigated acres in the next 10 years for a total of 8,820 connections or equivalent and 158 irrigated acres.

The costs calculated for the capacity required for growth in the next 10 years comes from the proportional historical buy-in costs of **excess capacity** in existing facilities and **new projects** required entirely to provide capacity for new development.

The **drinking water impact fee** is calculated based on the buy-in cost for facilities which have capacity remaining and the estimated cost of projects required to support future growth. These costs were added together and divided by the number of equivalent residential connections (ERCs) that are projected to be added within the next 10 years. The proposed drinking water system impact fee for one ERC is **$1,467** for indoor use only.

Components of the impact fee are presented in Table S-1.

Table S-1
Proposed Impact Fee by Component

Component	Per Typical Residential Connection (Indoor Use)	Per Irrigated Acre
Source	$382.90	$9,002.06
Storage	$370.48	$6,722.88
Distribution	$665.81	$0.00
Planning	$47.95	$0.00
Total	**$1,467**	**$15,725**

CHAPTER 1 INTRODUCTION

PURPOSE AND SCOPE

Lindon City is experiencing significant growth. To ensure availability of funds for growth-related infrastructure projects, an Impact Fee Facility Plan (IFFP) and Impact Fee Analysis (IFA) were commissioned by the City.

This report identifies those items that the Utah Impact Fees Act specifically requires, including demands placed upon existing facilities by new development and the proposed means by which the municipality will meet those demands.

IMPACT FEE COLLECTION

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. Impact fees enable local governments to finance public facility improvements necessary for growth, without burdening existing customers with costs that are exclusively attributable to growth.

In order 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.

MASTER PLANNING

A drinking water system master plan was prepared in conjunction with this analysis, and is incorporated by reference into this analysis.

The master plan for the City's drinking water system is more comprehensive than the IFFP and IFA. It provides the basis for the IFFP and IFA and identifies all capital facilities required of the drinking water system for the 20-year planning range, including maintenance, repair, replacement, and growth-related projects. The recommendations made within the master plan are in compliance with current City policies and standard engineering practices.

A hydraulic model of the drinking water system was prepared to aid in the analyses performed to complete the drinking water system master plan. The model was used to assess existing performance, to establish a proposed level of service and to confirm the effectiveness of the proposed capital facility projects to maintain the proposed level of service over the next 10 years.

CHAPTER 2 SYSTEM DEMAND AND CAPACITY

GENERAL

The purpose of this section is to identify the current level of service, characterize the facilities of the existing system, and determine the remaining capacity of these facilities.

Lindon's existing drinking water system is comprised of a distribution network, water storage facilities, and water sources. These facilities are found within 5 pressure zones. Figure 2-1 illustrates the existing water system and its service area.

EXISTING EQUIVALENT RESIDENTIAL CONNECTIONS AND IRRIGATED ACREAGE

Water demands from non-residential water users, such as commercial, industrial, or civic water users have been determined in terms of an Equivalent Residential Connection (ERC). The use of ERCs is a common engineering practice used to describe the entire system's usage based on a common unit of measurement. An ERC is equal to the average demand of one average single-family residential connection in Lindon City. Using ERCs for analysis is a way to allocate existing and future demands over non-residential land uses.

Lindon operates a separate pressurized irrigation system that serves certain areas of the City. Outside of the pressurized irrigation system service area, customers irrigate from the drinking water system. In these areas, the City considers outdoor water demand in terms of irrigated acres.

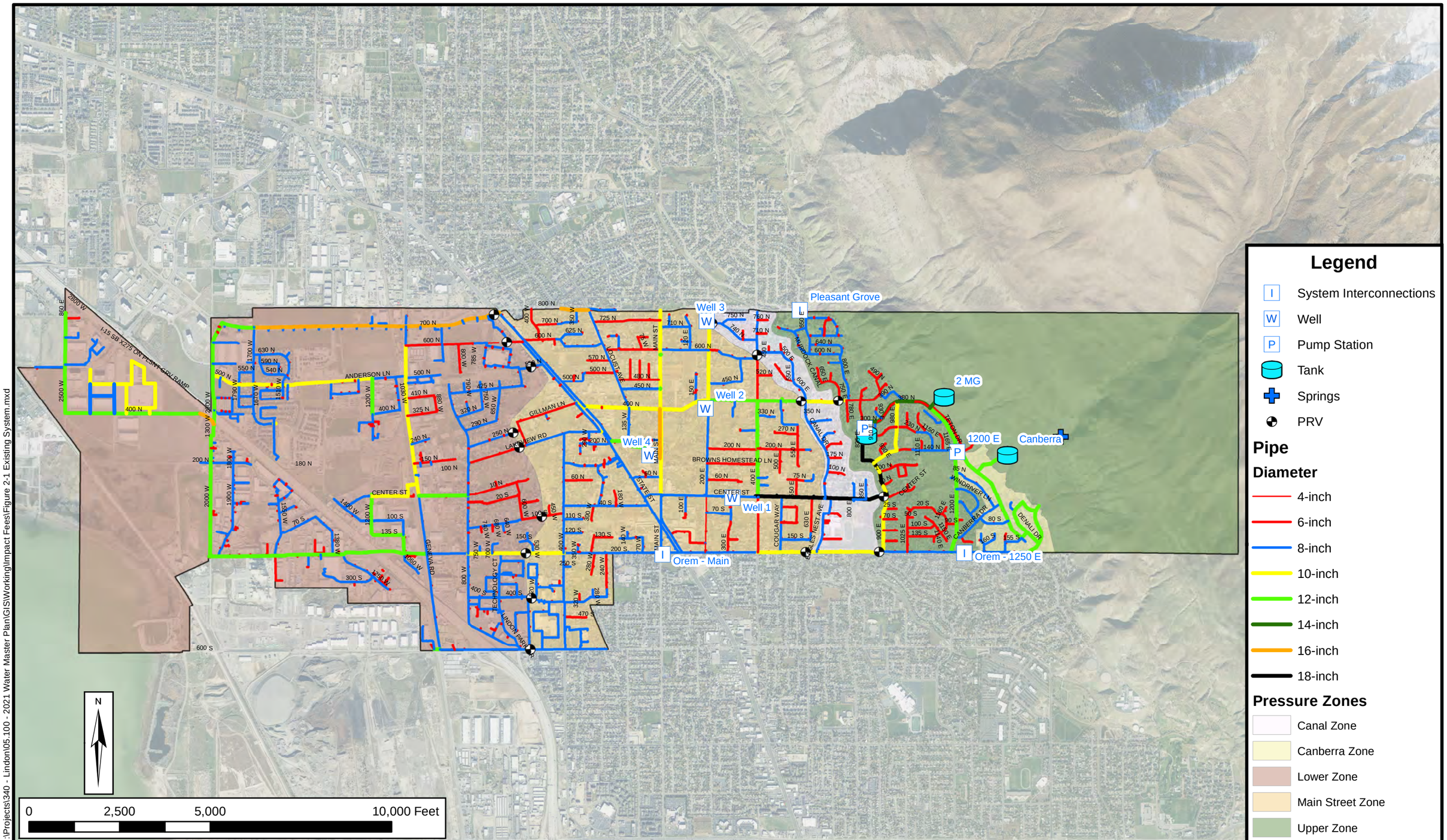
At the end of 2020, the City was estimated to have 5,790 ERCs and 101 irrigated acres served by the drinking water system.

LEVEL OF SERVICE

The City has established a level of service for the drinking water system. It establishes the sizing criteria for the City's distribution facilities, source facilities, storage facilities, and water rights. The level of service standards are shown below:

Level of Service

- Indoor Source Capacity: 490 gpd/ERC (Peak Day)
- Indoor Source Volume: 0.392 ac-ft/ERC (Annual Demand)
- Indoor Storage Capacity: 245 gallons/ERC (Equalization), and 72 gallons/ERC (fire flow), or 317 gallons/ERC total
- Outdoor Source Capacity: 8.0 gpm/irr-ac (Peak Day)
- Outdoor Source Volume: 4.0 ac-ft/irr-ac (Annual Demand)
- Outdoor Storage Capacity: 5,760 Gallons/irr-ac
- Distribution Capacity: 40 psi minimum during peak day demand conditions, 30 psi minimum during peak instantaneous conditions, and availability of a redundant source
- Source Redundancy: The demand on the drinking water system must be able to be met by the drinking water system with any source out of service.



Legend

- I — System Interconnections
- W — Well
- P — Pump Station
- Tank
- Springs
- PRV

Pipe

Diameter

- 4-inch
- 6-inch
- 8-inch
- 10-inch
- 12-inch
- 14-inch
- 16-inch
- 18-inch

Pressure Zones

- Canal Zone
- Canberra Zone
- Lower Zone
- Main Street Zone
- Upper Zone

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LINDON DRINKING WATER MASTER PLAN

EXISTING DRINKING WATER SYSTEM

FIGURE 2-1

Fire Suppression

- Minimum Fire Flow (dead end lines): 1,000 gpm for 2 hours
- Minimum Fire Flow (residential areas not on dead end lines): 1,500 gpm for 2 hours
- Minimum Pressure: 20 psi residual during peak day + fire flow event
- Fire Suppression Storage: 4,500 gpm for 3 hours (810,000 gallons)

METHODOLOGY USED TO DETERMINE EXISTING SYSTEM CAPACITY

Each component of the drinking water system was assessed a capacity in terms of gallons per minute (for peak day source), acre-feet per year (for annual source), or gallons (for storage). Demands on each component were computed by applying the level of service to the amount of ERCs and irrigated areas served by each component. The difference between the capacity of the component and the demand on the component is the component's remaining capacity, which can be used to serve either ERCs or irrigated acres. A hydraulic model was developed for the purpose of assessing system operation and distribution capacity.

WATER SOURCE AND REMAINING CAPACITY

Drinking water sources in Lindon include a series of springs and four wells, as described in Table 2-1.

Table 2-1
Demand and Capacity of Existing Drinking Water Sources

Source	Existing Zone	Peak Day Source Capacity (gpm)[1]	Annual Source Capacity[1] (ac-ft)
Well #1	Main Street	400	581
Well #2	Main Street	200	290
Well #3	Main Street	500	726
Well #4	Main Street	2,500	2,016
Dry Canyon Springs	Canberra	18	43
Total		**3,618**	**3,656**
Demand at Level of Service[2]		**2,778**	**2,673.68**
Capacity Remaining		**+840**	**+982.32**

1. See Table 3-1 of the drinking water master plan report
2. See Tables 3-3 and 3-5 of the drinking water master plan report

If all sources are operational, there is excess capacity remaining for peak day and average yearly source requirements.

WATER SOURCE REDUNDANCY

Table 2-2 shows a comparison of the capacity of the system drinking water system with its largest source (Well #4) out of service, and the system demand at the level of service. In this scenario, it is assumed that the City's interconnections with Orem and Pleasant Grove would be utilized to provide source.

Table 2-2
Demand and Capacity of Existing Drinking Water Sources - Redundancy

Source	Existing Zone(s)	Peak Day Source Capacity (gpm)
Well #1	Main Street	400
Well #2	Main Street	200
Well #3	Main Street	500
Well #4	Main Street	0
Dry Canyon Springs	Canberra	18
Emergency Interconnections[1]	Main Street/Upper	1,100
Source Capacity - Redundancy		**2,218**
Demand at Level of Service (gpm)[2]		**2,778**
Capacity Remaining (gpm)		**-560**

1. See Table 3-6 of the drinking water master plan
2. See Table 3-3 of the drinking water master plan

There is a deficit of 560 gpm in the drinking water system when considering source redundancy.

Table 2-3 shows the demand and capacity of the City's pump stations.

Table 2-3
Existing Drinking Water Pump Stations

Name	From Zone	To Zone	Pumps	Rated Capacity (gpm)	Demand (gpm)	Capacity Remaining (gpm)
1200 E Booster	Upper	Canberra	3 x 125 gpm	250	54	+196
835 E Booster	Main Street	Upper	3 x 700 gpm	1,400	313	+1,087

Both pump stations have adequate capacity for existing users.

STORAGE FACILITIES AND REMAINING CAPACITY

Lindon currently operates four concrete water storage tanks totaling 3.78 MG. Table 2-4 shows the capacity of each tank and the storage demand of the system. Demands were calculated by applying the level of service to the ERCs served by each tank, and incorporating fire flow storage requirements provided by the local fire authority as per IFC.

Table 2-4
Demand and Capacity of Existing Storage Tanks

Tank	Zone	Volume (MG)	Existing Equalization Demand (MG)[1]	Required Fire Storage	Storage Requirement (MG)	Remaining Capacity (MG)
835 E 1	Main Street	0.95	2.00	0.44[2]	2.53	+1.34
835 E 2	Main Street	0.50				
Canberra	Canberra	0.33				
2 MG	Upper	2.00				
Totals	**-**	**3.78**	**2.00**	**0.44**	**2.44**	**+1.34**

1. See Table 4-3 of the drinking water master plan
2. Total required fire storage is 0.81 MG. The fire storage listed in this table is the proportion of the total fire storage attributable to existing ERCs. The remainder of the total 0.81 MG of fire flow storage is eligible to be repaid with impact fees from future users, and as such, is not included in calculations for remaining existing capacity in this report.

There is 1.34 MG of storage capacity remaining in the drinking water system. The drinking water master plan proposes demolition of aging tanks and construction of a larger tank at the 835 E site when more storage becomes necessary. See Chapters 4 and 7 of the master plan report for more details.

DISTRIBUTION SYSTEM

Pipe diameters range from 6 inches to 18 inches, with the majority being 6 and 8 inches in diameter. The function of the larger pipes in the system is to facilitate filling of the storage tanks and meet peak day and fire flow demands. Smaller pipes facilitate local distribution. Figure 2-1 illustrates the existing distribution pipelines. A hydraulic model was used to identify future projects necessary to provide capacity for future growth. These projects are impact fee-eligible and are discussed further in Chapter 3 of this report.

CHAPTER 3 IMPACT FEE FACILITY PLAN AND ANALYSIS

This section relies on the data presented in the previous sections to calculate a proposed impact fee based on an appropriate buy-in cost of available existing excess capacity previously purchased by the City, and the cost of projects needed to support projected growth.

The projected costs of the drinking water system projects are presented. Also included in this section are the possible revenue sources that the City may consider to fund the recommended projects.

GROWTH PROJECTIONS

The development of impact fees requires growth projections over the next ten years. Growth projections for Lindon were made by incorporating the growth rate presented in the Master Plan. Total growth projections for the City through 2031 are summarized in Table 3-1.

Table 3-1
Growth Projections

Year	ERCs	Irrigated Acres
2020	5,790	101
2021	6,039	106
2022	6,299	110
2023	6,569	116
2024	6,852	121
2025	7,146	126
2026	7,453	132
2027	7,774	138
2028	8,108	145
2029	8,457	151
2030	8,820	158
10-year Difference	**+3,030**	**+57**

The existing system served about 5,790 ERCs and 101 irrigated acres at the end of 2020. Projected growth adds 3,030 ERCs and 57 irrigated acres in the next 10 years for a total of 8,820 ERCs and 158 irrigated acres.

COST OF EXISTING FACILITIES

This section contains a discussion of the excess capacity remaining within existing facilities, as well as the portion of the cost of those facilities that is eligible to be repaid using impact fees. Historic costs were obtained from Lindon City Records.

Source Facilities

The City does not have records of costs paid for existing source facilities.

Storage Facilities

Capacity in existing storage facilities that has not been consumed by existing users is eligible to be reimbursed by impact fees. The impact fee-eligible cost of existing source facilities is summarized in Table 3-2.

Table 3-2
Impact Fee Eligible Cost of Existing Storage Facilities

Project	Cost	Funded by Lindon (%)	Capacity Remaining (%)	Impact Fee Eligible Cost[2]
Historic Cost for Tanks	$472,588.00	100%	35.5%[1]	$167,864.40
Totals	**$472,588.00**	**-**	**-**	**$167,864.40**

1. Capacity remaining in existing system storage facilities was estimated as the remaining capacity (1.34 MG) divided by the total capacity of the system (3.78 MG).
2. Calculated as (cost) * (% funded by Lindon) * (% capacity remaining)
3. Historic costs are document in Appendix A.

Distribution Facilities

Capacity in existing distribution facilities that has not been consumed by existing users is eligible to be reimbursed by impact fees. The impact fee-eligible cost of existing distribution facilities is summarized in Table 3-3.

Table 3-3
Impact Fee Eligible Cost of Existing Distribution Facilities

Project	Cost	Funded by Lindon (%)	Capacity Remaining (%)[1]	Impact Fee Eligible Cost[3]
Main St, 400N-725N	$8,378.76	100%	48%	$4,041.43
2000 W, 700 N-200S	$40,862.76	100%	48%	$19,709.84
Center St, Geneva-1200 W.	$71,419.60	100%	48%	$34,448.70
West Side Water Line Extension	$252,899.53	100%	48%	$121,984.17
700 N Waterline & Loop	$829,603.87	100%	48%	$400,153.14
Creekside Waterline Oversizing	$12,693.00	100%	48%	$6,122.37
PRV Stations	$89,167.01	100%	48%	$43,009.03
500 N. Waterline Extension	$63,412.32	100%	48%	$30,586.45
Totals	**$1,368,436.85**	**-**	**-**	**$660,055.15**

1. Capacity remaining in existing system distribution facilities was conservatively estimated as the difference between the existing ERC count (5,790) and the projected ERC count at 2060 (11,185).
2. Calculated as (cost) * (% funded by Lindon) * (% capacity remaining)
3. Historic costs are document in Appendix A.

COST OF FUTURE FACILITIES

The facilities and costs presented in Table 3-4 and shown on Figure 3-1 are proposed projects essential to maintain the current level of service while accommodating future growth within the next 10 years. The facility sizing for the future proposed projects was based on the proposed level of service with growth projections provided by the City and hydraulic modeling. The proposed impact fee will be based both on costs of existing projects and the projected cost of future construction projects. Detailed information on these projects and their estimated cost is included in the City's drinking water master plan report.

Notes:
1. Conceptual future well locations shown are approximate and subject to availability of property for purchase. Well locations will be refined further as property is acquired.

Project 4
Install and Replace Pipes

Project 6
2.0 MG Tank

Project 3
Replace Pipes

Project 1
Drill and Equip 2,500 gpm Well

Project 2
Replace Pipes

Project 5
Replace Pipes

Legend
- Proposed Tank
- Existing Tank
- Proposed Well
- Pipes

N

0 2,500 5,000 10,000 Feet

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IMPACT FEE FACILITY PLAN PROJECTS

FIGURE 3-1

Table 3-4
Estimated Impact Fee Eligible Cost of Future Facilities

Project	Map ID	Source	Distribution	Storage	Total	Associated Capacity
Well for redundant source	1	$2,183,000.00	$0.00	$0.00	$2,183,000.00	1,940 gpm[3]
Center Street Transmission Line	2	$0.00	$429,000.00	$0.00	$429,000.00	5,395 ERCs
North Main Street Transmission Line	3	$0.00	$135,000.00	$0.00	$135,000.00	5,395 ERCs
400 N and Locust Ave Transmission Line	4	$0.00	$1,496,000.00	$0.00	$1,496,000.00	5,395 ERCs
Main St. and 200 S. Transmission Line	5	$0.00	$872,000.00	$0.00	$872,000.00	5,395 ERCs
2 MG Tank	6	$0.00	$0.00	$3,150,000.00	$3,150,000.00	1.50 MG[4]
	Total	**$2,183,000.00**	**$2,932,000.00**	**$3,150,000.00**	**$8,265,000.00**	

1. See Table 7-1 in master plan for details on projects
2. The impact fee-eligible costs for each project are shown in Appendix B
3. It is assumed that a new well would yield approximately 2,500 gpm with 1,940 gpm being impact fee eligible. See Table 2-2
4. New tank would be 2.0 MG with 1.50 MG being impact fee eligible.

IMPACT FEE UNIT CALCULATION

Only those costs attributed to the new growth in the next 10 years can be included in the impact fee. The following sections describe the impact fee calculation for each component.

Source

Projected growth in the system will require the construction of an additional well. The source impact fee was calculated by combining the available buy-in capacity and cost of existing source facilities with the capacity and projected cost of planned future sources. See Table 3-5.

Table 3-5
Source Impact Fee Unit Calculation

	Existing[1]	Future[2]	Total
Eligible Cost	0	$2,183,000.00	$2,183,000.00
Capacity (gal)	0	1,940	1,940
Source impact (per gpm)[3]			$1,125.26
Source impact (per ERC)[4]			$382.90
Source impact (per irr-ac)[5]			$9,002.06

1. See Tables 2-2 and 2-3
2. See Table 3-4
3. Calculated as the sum of existing and future eligible costs divided by the sum of existing and future eligible capacity
4. Calculated at a proposed level of service of 490 gpd/ERC or 0.34 gpm/ERC
5. Calculated at a proposed level of service of 8.0 gpm/irr-ac

Expected source costs by time period are listed in Table 3-6. Source facilities are expected to support growth for more than 10 years. The portion of their costs attributable to growth outside of the 10-year planning window is not impact fee-eligible.

Table 3-6
Source Cost by Time Period

Time Period	ERCs served	Irr-ac Served	Buy-in Cost	Growth Cost	Total Cost
Existing	5,790	101	$0.00	$0.00	$0.00
Next 10 years	3,030	57	$0.00	$1,673,305.13	$1,673,305.13
Beyond 10 years	2,365	42	$0.00	$509,694.87	$509,694.87
Total	**11,185**	**200**	**$0.00**	**$2,183,000.00**	**$2,183,000.00**

Storage

The existing 0.5 MG tank at 835 East is reaching the end of its service life. Replacing it with a new 2.0 MG tank is the recommended approach to provide additional capacity to accommodate future growth.

The storage impact fee was calculated as shown in Table 3-7.

Table 3-7
Storage Impact Fee Unit Calculation

	Existing[1]	Future[2]	Total
Eligible Cost	$167,864.40	$3,150,000.00	$3,317,864.40
Capacity (gal)	1,342,665	1,500,000	2,842,665
Storage impact (per gal)[3]			$1.17
Storage impact (per ERC)[4]			$370.48
Storage impact (per irr-ac)[5]			$6,722.88

1. See Tables 2-4 and 3-2
2. See Table 3-4
3. Calculated as the sum of existing and future eligible costs divided by the sum of existing and future eligible capacity
4. Calculated at the proposed level of service of 317 gal/ERC. Includes 72 gallons of fire storage, which was computed by dividing the 2060 fire storage requirement (0.81 MG) by the projected 2060 ERC count (11,185)
5. Calculated at the proposed level of service of 5,760 gal/irr-ac

Expected storage costs by time period are listed in Table 3-8. Storage facilities are expected to support growth for more than 10 years. The portion of their costs attributable to growth outside of the 10-year planning window is not impact fee-eligible.

Table 3-8
Storage Cost by Time Period

Time Period	ERCs served	Irr-ac Served	Buy-in Cost	Growth Cost	Total Cost
Existing	5,790	101	$304,723.60	$0.00	$304,723.60
Next 10 years	3,030	57	$76,182.56	$1,429,576.76	$1,505,759.32
Beyond 10 years	2,365	42	$91,681.85	$1,720,423.24	$1,812,105.08
Total	**11,185**	**200**	**$472,588.00**	**$3,150,000.00**	**$3,622,588.00**

Distribution

Several distribution projects will be required to support growth through the 10-year planning period. The portion of the impact fee for these projects is shown in Table 3-9.

Table 3-9
Distribution Impact Fee Calculation

	Existing[1]	Future[2]	Total
Eligible Cost	$660,055.15	$2,932,000.00	$3,592,055.15
Capacity (ERCs)[3]	5,395	5,395	5,395
Distribution Impact (per ERC)[4]			**$665.81**

1. See Table 3-3
2. See Table 3-4
3. Distribution infrastructure is sized to accommodate future users through year 2060. A remaining capacity of 5,146 ERCs was calculated as the projected year 2060 ERCs (11,185) minus ERCs existing at the beginning of year 2021 (5,790).
4. Calculated as the sum of existing and future eligible costs divided by the sum of existing and future eligible capacity

Expected distribution costs by time period are listed in Table 3-10. Distribution facilities are expected to support growth for more than 10 years. The portion of their costs attributable to growth outside of the 10-year planning window is not impact fee-eligible.

Table 3-10
Distribution Cost by Time Period

Time Period	ERCs served	Buy-in Cost	Growth Cost	Total Cost
Existing	5,790	$708,381.70	$0.00	$708,381.70
Next 10 years	3,030	$370,707.52	$1,646,702.50	$2,017,410.03
Beyond 10 years	2,365	$289,347.62	$1,285,297.50	$1,574,645.12
Total	**11,185**	**$1,368,436.85**	**$2,932,000.00**	**$4,300,436.85**

Planning

The planning portion of the impact fee was calculated as shown in Table 3-11. Portions of the City's 2020 master plan study that are attributable to growth (approximately 60% of total expenditures) are impact fee eligible. 100% of costs associated with the Impact Fee Facility Plan and Impact Fee Analysis are impact fee eligible.

The City intends to update their master plan at roughly 5-year intervals and their impact fees at roughly 3-year intervals. The ERCs served by each update was calculated based on this interval and the growth projections listed in Table 3-1.

Table 3-11
Planning Component of Impact Fee

Planning Document	Cost	% of Plan Associated with Growth	Cost Associated with Growth	ERCs Served	Cost per ERC
2022 Water Master Plan	$78,200.00	60%	$46,920.00	1,356	$34.60
2022 IFFP and IFA	$10,400.00	100%	$10,400.00	779	$13.35
Total	**$88,600.00**	**-**	**$57,320.00**	**-**	**$47.95**

All of these costs are anticipated to be recovered within the 10-year planning window.

TOTAL IMPACT FEE UNIT CALCULATION

The proposed drinking water system impact fee for one ERC is **$1,467** for indoor use only. See Table 3-12. The proposed drinking water system impact fee for one for one irrigated acre is $15,725.

Table 3-12
Total Proposed Impact Fee per Typical Single-Family Connection

Component	Per Typical Residential Connection (Indoor Use)	Per irrigated Acre
Source	$382.90	$9,002.06
Storage	$370.48	$6,722.88
Distribution	$665.81	$0.00
Planning	$47.95	$0.00
Total	**$1,467**	**$15,725**

1. It is assumed any irrigated acreage will be associated with indoor ERCs. Planning costs are accounted for in the indoor fees.

The impact fee has been calculated based on 1 ERC which would correspond to a standard ¾" or 1" meter. Larger meters are assumed to serve more than 1 ERC and will have a higher corresponding impact fee. Table 3-13 indicates the impact fee rate schedule based on water meter size. The ERC factor is calculated based on American Water Works Association (AWWA) rated capacity for each meter size.

Table 3-13
Proposed Drinking Water
Impact Fee Based on Meter Size

Water Meter Size	ERC	Impact Fee
¾" or 1"	1.00	$1,467
1 ½ "	3.33	$4,886
2"	5.33	$7,820

NONSTANDARD IMPACT FEE CALCULATION

If situations arise where one customer wishes to use multiple meters, or it appears that the proposed fees by meter size in Table 3-13 will not lead to a fair and equitable result, the City may instead calculate impact fees according to the following formula:

Impact fee = (Peak Day Water use [gpd]) / (490 gpd/ERC) * ($1,467/ERC)

For example, a customer who would use 20,000 gallons of water on the peak day would have an impact fee calculated as follows:

Impact fee = (20,000 gpd) / (490 gpd/ERC) * ($1,467/ERC) = $59,878

COSTS BY TIME PERIOD

Table 3-14 is a summary of the existing and future facility costs by drinking water system component and by time period. Existing costs are those costs attributed to capacity currently being used by existing connections. 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. Costs attributed to beyond 10 years are costs for the existing capacity or new capacity for the assumed growth beyond 10 years.

Table 3-14
Facility Cost by Time Period

Component	Existing	Next 10 Years	Beyond 10 Years	Total
Source	$0.00	$1,673,305.13	$509,694.87	$2,183,000.00
Storage	$304,723.60	$1,505,759.32	$1,812,105.08	$3,622,588.00
Distribution	$708,381.70	$2,017,410.03	$1,574,645.12	$4,300,436.85
Planning	$0.00	$57,320.00	$0.00	$57,320.00
Total Cost	**$1,013,105.30**	**$5,253,794.48**	**$3,896,445.07**	**$10,163,344.85**

REVENUE OPTIONS

Utah Code 11-36a-302(2) requires a local political subdivision to generally consider all revenue sources to finance the impacts on system improvements, including grants, bonds, interfund loans, impact fees, and anticipated or accepted dedications of system improvements. This impact fee facilities plan considers each of these options. An expanded discussion on options the City has to generate revenue is included in this section for reference.

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 (for example, the purchase of water source to ensure a sufficient water supply for the City in the future). 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 for taxable property within the City. G.O. Bonds must be approved through a citizen vote. 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.

Not charging impact fees, or significantly lowering them could be viewed negatively from the perspective of State/Federal funding agencies. Charging a proper impact fee signals to these agencies that the community is using all possible means to finance the projects required to provide vital services to their residents.

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

As discussed in Section 1, 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.

REFERENCES

State of Utah. 2014c. Utah Code Annotated, Section Utah Code 11-36a: Impact Fees Act

Hansen, Allen & Luce. 2022. “Lindon City Drinking Water Master Plan and Capital Facility Plan”

APPENDIX A

Historic Project Costs

GL #	GL Name	
	CULINARY WATER	**Total**
5130120	Culinary Water Impact Fees	$ 2,499,092.01
5130125	Interest (PTIF)	$ 142,191.39
5140310/315	Exp: Impact Fee Study/Cap Fac Plan/Bond Agent fees	$ 131,816.54
5140735	Exp: Main St, 400N-725N	$ 8,378.76
5140737	Exp: 2000W, 700N-200S (1/3)	$ 40,862.76
5140741	Exp: Center St, Geneva-1200 W	$ 71,419.60
5140744	Exp: West side water line extension	$ 252,899.53
5140747	Exp: 700 N Waterline & Loop	$ 547,110.37
5140748	Exp: Creekside waterline oversizing	$ 12,693.00
5140755	Exp: PRV Stations	$ 89,167.01
5140775	Exp: 500 N Waterline Extension	$ 63,412.32
	Exp: Historic cost for tanks (see CW IFFP 2015 p. C2-C3)	$ 472,588.00
5140860/861	Exp: 700 N Debt Service pmts	$ 282,493.50
	To trfr to PTIF Cul Wtr Impact Fee acct	$ 668,442.01
	Impact Fee Fund Balance	

APPENDIX B

Impact Fee Eligible Costs of Future Projects

Table B-1
Impact Fee Eligible Costs of Future Projects

Project	Map ID	Total Cost	Impact Fee Eligible Percent	Impact Fee Eligible Cost	Notes
Well for redundant source	1	$2,813,000.00	78%	$2,183,000.00	Calculated as the remaining capacity of the new well considering redundancy. See Table 2-2 of impact fee report
Center Street Transmission Line	2	$1,452,000.00	30%	$429,000.00	Calculated as the difference in unit costs of replacing existing 8-in with 16-in pipeline
North Main Street Transmission Line	3	$660,000.00	20%	$135,000.00	Calculated as the difference in unit costs of replacing existing 10-in with 16-in pipeline
400 N and Locust Ave Transmission Line	4	$3,062,000.00	49%	$1,496,000.00	Calculated as the average cost of replacing an existing 8-in and 10-in with new 16-in as well as installing new portions 16-in pipeline
Main St. and 200 S. Transmission Line	5	$2,620,000.00	33%	$872,000.00	Calculated as the difference in unit costs of replacing existing 8-in with 12-in pipeline
2 MG Tank	6	$4,560,000.00	58%	$3,150,000.00	Calculated as the difference between existing 0.5 MG capacity and new capacity of 2.0 MG
	Total	**$15,167,000.00**	**-**	**$8,265,000.00**	**-**

1. See cost estimate in Appendix H of the drinking water master plan for detailed breakdowns of costs for each project

Table B-2
Pipe Unit Costs

Pipe Diameter (inches)	Cost Per Linear Foot ($/LF)
8	$310.00
10	$350.00
12	$388.00
14	$392.00
16	$440.00