

NOTICE OF PUBLIC HEARING MAGNA WATER DISTRICT

Regarding Amended Impact Fee Facilities Plans and Amended Impact Fee Enactments

Public notice is hereby given by Magna Water District (the “District”), pursuant to Utah Code Ann. § 17B-1-111, that the District has prepared an amended Impact Fee Facilities Plan and an amended Impact Fee Enactment for each of its culinary water, secondary water, and sanitary sewer services and that a public hearing will be held on the proposals January 14, 2021 at 10:00 a.m. at the District’s offices, 8885 West 3500 South, Magna, Utah. The public is invited to attend and to comment on the proposals. Due to COVID guidelines, public’s attendance is limited to audio via WEB-EX. Please see our website for the link to join the meeting. Following the public hearing the District’s Board of Trustees will consider adoption of the proposals. Copies of the proposed amended Impact Fee Facilities Plans, amended Impact Fee Enactments, summaries and analyses will be available at the District’s offices and the Magna public library for public inspection and review at least fourteen days prior to the public hearing. For additional information or special accommodations, call 801-250-2118.

MAGNA WATER DISTRICT
2021 IMPACT FEE RESOLUTION
RESOLUTION _____

WHEREAS, the Impact Fees Act, Utah Code Ann. § 11-36a-101 *et. seq.* (the “Act”), outlines the procedures and requirements applicable to any “payment of money imposed upon new development activity as a condition of development approval to mitigate the impact of the new development”, which is defined in the Act as an “impact fee” (*Id.* § 11-36a-102(8));

WHEREAS, the Magna Water District (the “District”) desires to comply with applicable requirements of the Act;

WHEREAS, the District provides retail water and sanitary sewer (wastewater) services to meet the additional demand created by development within the District;

WHEREAS, the District provided written notice of its intent to prepare an Impact Fee Facilities Plan and of its intent to prepare an Impact Fee Analysis pursuant to Utah Code Ann. §§ 11-36a-501 and -503;

WHEREAS, new growth and development will be served, in part, by previously constructed/acquired public facilities as identified in the Impact Fee Facilities Plan;

WHEREAS, the District’s water and sewer system Impact Fee Facilities Plan (the “Plan”) and Impact Fee Analysis (the “Analysis”) (the Analysis analyzes the impact fees the District proposes to adopt), and summaries of the Plan and of the Analysis, have been prepared by a consultant in accordance with the requirements of the Act;

WHEREAS, a copy of this Impact Fee Resolution has been available for public inspection at the public libraries located within the boundaries of the District, at the District office, on the state public notice website and on the District website for at least fourteen days prior to the public hearing and copies of the Plan, a Summary of the Plan, the Analysis, and a summary of the Analysis, have been available for public inspection for at least ten days prior to the public hearing at the public libraries and the District office, and a hearing has been held to receive public comments on the Impact Fee Facilities Plan and the Impact Fee Resolution as required by the Act and by Utah Code Ann. § 17B-1-111;

WHEREAS, pursuant to the requirements of the Act, the Trustees of the District desire to establish a service area and adopt this Impact Fee Resolution to establish updated impact fees to be charged by the District; and

WHEREAS, the District expects those wishing to connect to the District's water and sewer systems to pay the amounts mandated by this Resolution, in addition to satisfying other applicable requirements, as a condition to being allowed to connect to the District's system and to receive water and sanitary sewer service from the District;

NOW, THEREFORE, BE IT RESOLVED by the Board of Trustees of the District that the District, including subsequently annexed areas, be and is a single service area as allowed by Utah Code Ann. § 11-36a-102(19)(b) and the updated impact fees adopted by this Resolution shall uniformly be applied throughout the District.

BE IT FURTHER RESOLVED, that the new Impact Fee Facilities Plan, to the extent not previously adopted, be and is adopted and approved.

BE IT FURTHER RESOLVED, that the cost of both previously constructed or acquired public facilities and future public facilities that will serve new growth and development within the District shall be and are included in the applicable impact fees.

BE IT FURTHER RESOLVED, that the District's impact fees (sometimes referred to herein as "impact fees" or "impact fee") shall be as set forth in **Exhibit "A"** attached hereto and incorporated herein by this reference.

BE IT FURTHER RESOLVED, that the District shall have the right to adjust the standard impact fee that would otherwise be applicable to respond to (i) unusual circumstances in specific cases or (ii) a request for a prompt individualized impact fee review for the development activity of the state, a school district, or a charter school and an offset or credit for a public facility for which an impact fee has been or will be collected; and to ensure that the District's impact fees are imposed fairly. The impact fee may be adjusted, under appropriate circumstances, based upon studies and data submitted by the developer. Any adjustment may be either upward or downward, depending upon the circumstances and equities.

BE IT FURTHER RESOLVED, that a developer, including a school district or a charter school, may receive a credit against or a proportionate reimbursement of an impact fee if the developer: (i) dedicates land for a system improvement; (ii) builds and dedicates some or all of a system improvement; or (iii) dedicates a public facility that the District and the developer agree will reduce the need for a system improvement. Furthermore, a credit against impact fees is required for any dedication of land for, improvement to, or new construction of, any system improvement (as defined in the Act) provided by the developer if the facility (i) is a system improvement; or (ii) is both dedicated to the public and offsets the need for an identified system improvement. Otherwise, no credit will be allowed to a developer for improvements provided by the developer. Should the credit exceed the impact fee that would otherwise be paid by the developer, the District and the developer may enter into a written contract specifying how and when the reimbursement will be paid to the developer.

BE IT FURTHER RESOLVED, that a developer and the District, acting through its Board of Trustees, may by contract agree to impact fees other than those set forth in or calculated in accordance with this Resolution.

BE IT FURTHER RESOLVED, that the impact fees set forth in and established by this Resolution shall be and are in addition to other fees, charges and/or exactions lawfully imposed by the District.

BE IT FURTHER RESOLVED that, unless the District is otherwise bound by a contractual requirement, the applicable facilities impact fee shall be determined from the applicable fee schedule and /or formula in effect at the time of payment and shall not be determined at the time a request for an estimate is received by the District. There shall be no guarantee that any quoted impact fee, either oral or in writing, will be in effect when the developer or other person actually makes the impact fee payment.

BE IT FURTHER RESOLVED that, should the ultimate density of any development activity exceed the density upon which the impact fees were based and/or should the impact fees not initially be charged against all units or the total density within a development, the District may charge additional impact fees to the developer or other appropriate person covering the density for which an impact fee was not previously paid, including buildings and lots which have already been connected, directly or indirectly, to the District's system.

BE IT FURTHER RESOLVED, that all or part of any impact fee may be waived or reduced (an "**exemption**") for those developments which are deemed to serve a broad public purpose that would be harmed by the District requiring full payment of applicable impact fees, such as low income housing projects, as determined by the District Board of Trustees. Such waivers shall be handled in accordance with the provisions of the Act and any Impact Fee Policy established by the District. In the event of any such waiver or impact fee exemption, the revenue shortfall to the District may be made up from any other available revenue source, including loans and operating revenues (including property taxes) provided, however, that it will not be necessary for the District to establish any source of funds, other than impact fees, to pay for low income housing development activity, as provided in Utah Code Ann. § 11-36a-403(1). Should the District elect to allow an impact fee exemption for development activity attributable to a school district or a charter school, either a school district or a charter school shall qualify for the exemption on the same basis.

BE IT FURTHER RESOLVED, that all resolutions, policies, procedures, impact fees, rules and regulations, and other actions by the District Board, or parts thereof, in conflict with this Resolution and/or the attached Exhibit are, to the extent of such conflict, hereby repealed provided, however, that the District's previously adopted impact fees, whether in the form of a formula, a schedule, or any other form or format, shall not be repealed or modified until the new impact fees take effect as provided immediately below in this Resolution.

BE IT FURTHER RESOLVED, that Chapter 10 (“Impact Fee Policy”) and Addendum A (“Fee Schedule”) of the District’s Administrative Rules and Regulations Manual be revised and updated within 90 days from the date of this Resolution to incorporate the terms of this Resolution and the Impact Fees set forth in Exhibit A hereto.

BE IT FURTHER RESOLVED, in accordance with Utah Code Ann. § 11-36a-401(2), that this Resolution shall take effect immediately upon its passage, with the new impact fees to take effect 90 days thereafter.

Passed by the Board of Trustees of the Magna Water District this xxx day of xxx, 2021.

Mick Sudbury, Chair

Attest:

LeIsle Fitzgerald, Board Clerk

**EXHIBIT “A”
Schedule of Impact Fees**

Water Impact Fee, per ERU^{1,2}

Calendar Year	2021	2022	2023	2024	2025
Total Overall Fee	\$7,232.00	\$7,368.00	\$7,493.00	\$7,610.00	\$7,743.00

Sewer Impact Fee, per ERU

Calendar Year	2021	2022	2023	2024	2025
Total Overall Fee	\$3,729.00	\$3,845.00	\$3,952.00	\$4,052.00	\$4,181.00

Calculation of Non-Standard Impact Fees

Impact fee calculations are based on Equivalent Residential Units (ERUs). The District will calculate an ERU value (and corresponding impact fee) for customers, other than typical single family residential connections, following procedures as outlined in the District’s Administrative Rules and Regulations Manual.

¹ A typical single-family house constitutes one ERU (Equivalent Residential Unit).

² Water Impact Fee includes culinary water and secondary water which were previously separate fees.

PREPARED FOR:

PREPARED BY:



MAGNA WATER DISTRICT
WATER IFFP & IFA
SEWER IFFP & IFA

OCTOBER 2020

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MAGNA WATER DISTRICT SEWER IMPACT FEE FACILITIES PLAN

October 2020

Prepared for:



Prepared by:



EXECUTIVE SUMMARY SEWER IMPACT FEE FACILITIES PLAN

The purpose of an Impact Fee Facilities Plan (IFFP) is to identify demands placed upon District facilities by future development and evaluate how these demands will be met by the District. The IFFP is also intended to outline the improvements which may be funded through impact fees.

WHY IS AN IFFP NEEDED

The IFFP provides a technical basis for assessing updated impact fees throughout the District. This document addresses the future infrastructure needed to serve the District. The existing and future capital projects documented in this IFFP will ensure that level of service standards are maintained for all existing and future residents who reside within the service area. Local governments must pay strict attention to the required elements of the Impact Fee Facilities Plan which are enumerated in the Impact Fees Act.

PROJECTED FUTURE GROWTH

Before evaluating system capacity, it is first necessary to calculate the demand associated with existing development and projected growth. Using available information for existing development and growth projections from the District's Sewer Master Plan, projected growth in system demand is summarized in Table ES-1 in terms of Equivalent Residential Units (ERUs).

**Table ES-1
District Service Area Projections**

Year	Service Area ERUs	Estimated Dry Weather Sewer Flows (MGD)
2020	10,419	2.81
2030	13,151	3.50
2040	14,755	3.91
2050	16,215	4.29
2060	17,542	4.63

An ERU represents the demand that a typical single-family residence places on the system. The basis of an ERU for historical flow rates is summarized in Table ES-2.

**Table ES-2
Service Area Historic Flows**

Item	Value for Existing Conditions	Value for 10-Year Growth	Total 10-Year Conditions
Equivalent Residential Connections (ERUs)	10,419	2,732	13,151
Domestic Wastewater Production (mgd)	2.31	0.61	2.92
Infiltration, Maximum Month (mgd)	0.49	0.09	0.59
Average Day, Maximum Month Flow (mgd)	2.81	0.70	3.50
Peak Hour Flow (mgd)	6.27	1.61	7.88
Flows per ERU			
Domestic Wastewater Production (gpd/ERU)	222.0	222.0	222.0
Average Day, Maximum Month Flow (gpd/ERU)	269.5	255.3	266.5
Peak Hour Flow (gpd/ERU)	602.5	588.3	599.5
Average Indoor Water Use (gpd/ERU)	246.7	246.7	246.7

LEVEL OF SERVICE

Level of service is defined in the Impact Fees Act as “the defined performance standard or unit of demand for each capital component of a public facility within a service area”. Summary values for both existing and proposed levels of service are contained in Table ES-3.

**Table ES-3
Level of Service for Various System Requirements**

	Existing Level of Service	Proposed Level of Service
Pipeline Capacity		
Maximum Ratio of Flow ¹ to Pipeline Capacity/Percent of Collection System that Meets the Standard		
Pipes with diameter > 12 inches	0.75/95.71%	0.75/100%
Pipes with diameter ≤ 12 inches	0.5/97.24%	0.5/100%
Treatment Capacity		
Average Day, Maximum Month Flow (gpd/ERU)	269.5	255.3
Administration and Service Buildings		
Available Space to Required Need Ratio	1.7	1.0

¹ Peak hour, dry weather flow

EXISTING CAPACITY AVAILABLE TO SERVE FUTURE GROWTH

Projected future growth will be met through a combination of available excess capacity in existing facilities and construction of additional capacity in new facilities. Defining existing system capacity in terms of a single number is difficult. To improve the accuracy of the analysis, the system was

divided into two different components (collection, treatment, and administrative and service buildings). Excess capacity in each component of the system is summarized in Table ES-4.

**Table ES-4
Available Excess Capacity**

Use Category	Collection System Percent Use	Treatment Percent Use	Administrative and Service Buildings
Existing Use	89.36%	70.25%	59.40%
Use By 10-Year Growth	2.74%	17.25%	15.57%
Use By Growth Beyond 10 years	7.89%	12.50%	25.03%
Total	100.00%	100.00%	100.00%

REQUIRED SYSTEM IMPROVEMENTS

Beyond available existing capacity, additional improvements required to serve new growth are summarized in Table ES-5. To satisfy the requirements of state law, Table ES-5 provides a breakdown of the percentage of the project costs attributed to existing and future users. For future use, capacity has been divided between capacity to be used by growth within the 10-year planning horizon of this IFFP and capacity that will be available for growth beyond the 10-year horizon.

**Table ES-5
Project Costs Allocated to Projected Development, 10 Year Planning Horizon**

Project ID	Year	Project	Total Project Cost	Percent to Existing	Percent to 10 Year Growth	Percent to Growth 2029 through Buildout	Cost to Existing	Cost to 10 Year Growth	Cost to Growth 2029 through Buildout
Collection System Projects									
1	2021	8000 West Interceptor	\$2,947,000	0.00%	53.35%	46.65%	\$0	\$1,572,139	\$1,374,861
2	2024	So. Frontage, 8400 W to 8000 W	\$1,919,000	30.29%	12.19%	57.52%	\$581,172	\$233,978	\$1,103,850
3	2027	So. Frontage, 8800 W to 8400 W	\$1,857,000	25.11%	13.90%	60.99%	\$466,332	\$258,148	\$1,132,520
4	2022	9200 West Trunk, Reach 1	\$2,516,000	1.83%	16.86%	81.31%	\$46,024	\$424,191	\$2,045,784
5	2024	9200 West Trunk, Reach 2	\$1,741,000	1.90%	17.52%	80.57%	\$33,162	\$305,090	\$1,402,749
6	2024	9200 West Trunk, Reach 3*	\$894,133	2.20%	55.80%	42.00%	\$19,671	\$498,926	\$375,536
7	2025	7600 West Diversion, Reach 1	\$649,000	65.30%	9.59%	25.11%	\$423,776	\$62,233	\$162,991
8	2025	7600 West Diversion, Reach 2	\$111,000	92.78%	0.00%	7.22%	\$102,990	\$0	\$8,010
9	2025	7270 West Diversion	\$80,000	82.67%	0.00%	17.33%	\$66,133	\$0	\$13,867
10	2026	7200 West Diversion at Parkway Blvd	\$457,000	85.56%	0.48%	13.96%	\$391,007	\$2,200	\$63,793
11	2028	7200 W, 3500 S to 3100 S	\$1,295,000	86.30%	0.27%	13.42%	\$1,117,603	\$3,548	\$173,849
		Subtotal	\$14,466,133				\$3,247,870	\$3,360,454	\$7,857,809
Treatment Plant Projects									
1	2021	Influent Pump Station Modifications	\$5,728,900	70.25%	17.25%	12.50%	\$4,024,552	\$988,235	\$716,113
2	2024	Secondary Reuse	\$2,496,180	70.25%	17.25%	12.50%	\$1,753,566	\$430,591	\$312,023
4	2022	New Dewatering Press	\$440,000	70.25%	17.25%	12.50%	\$309,100	\$75,900	\$55,000
6	2025	SCADA Upgrades	\$250,000	70.25%	17.25%	12.50%	\$175,625	\$43,125	\$31,250
7	2025	Asphalt Replacement	\$500,000	70.25%	17.25%	12.50%	\$351,250	\$86,250	\$62,500
		Subtotal	\$9,415,080				\$6,614,094	\$1,624,101	\$1,176,885
		Total	\$23,881,213				\$9,861,964	\$4,984,555	\$9,034,694

IMPACT FEE FACILITIES PLAN

INTRODUCTION

Magna Water District has retained Bowen Collins & Associates (BC&A) to prepare an Impact Fee Facilities Plan (IFFP) for sewer collection services provided by the District. The purpose of an IFFP is to identify demands placed upon District facilities by future development and evaluate how these demands will be met by the District. The IFFP is also intended to outline the improvements which may be funded through impact fees.

Much of the analysis forming the basis of this IFFP has been taken from the District's Sewer Master Plan prepared by BC&A. The reader should refer to this document for additional discussion of planning and evaluation methodology beyond what is contained in this report.

SERVICE AREA

For the purpose of impact fee calculations, the District system will be treated as a single service area.

IMPACT FEE FACILITY PLAN COMPONENTS

Requirements for the preparation of an IFFP are outlined in Title 11, Chapter 36a of the Utah Code Annotated (the Impact Fees Act). Under these requirements, an IFFP shall accomplish the following for each facility:

1. Identify the existing level of service
2. Establish a proposed level of service
3. Identify excess capacity to accommodate future growth at the proposed level of service
4. Identify demands placed upon existing public facilities by new development
5. Identify the means by which demands from new development will be met
6. Consider the following additional issues:
 - a. revenue sources to finance required system improvements
 - b. necessity of improvements to maintain the proposed level of service
 - c. need for facilities relative to planned locations of schools

The following sections of this report have been organized to address each of these requirements.

EXISTING LEVEL OF SERVICE – Utah Code Annotated 11-36a-302(1)(a)(i)

Level of service is defined in the Impact Fees Act as “the defined performance standard or unit of demand for each capital component of a public facility within a service area”. This section discusses the level of service being currently provided to existing users.

Unit of Demand

For the purposes of this analysis, it is useful to define these various demands in terms of Equivalent Residential Units (ERUs). An ERU represents the demand that a typical single-family residence places on the system. An equivalent residential unit was developed based on indoor billing data across the District along with the number of connections defined as “domestic”. Based on this information, the

number of ERUs in the District was estimated and the flow rate basis of an ERU could be calculated for historic flows as summarized in Table 1.

Table 1
Service Area Historic Flows and Definition of an ERU

Item	Value for Existing Conditions	Value for 10-Year Growth	Total 10-Year Conditions
Equivalent Residential Connections (ERUs)	10,419	2,732	13,151
Domestic Wastewater Production (mgd)	2.31	0.61	2.92
Infiltration, Maximum Month (mgd)	0.49	0.09	0.59
Average Day, Maximum Month Flow (mgd)	2.81	0.70	3.50
Peak Hour Flow (mgd)	6.28	1.61	7.88
Flows per ERU			
Domestic Wastewater Production (gpd/ERU)	222.0	222.0	222.0
Average Day, Maximum Month Flow (gpd/ERU)	269.5	255.3	266.5
Peak Hour Flow (gpd/ERU)	602.5	588.3	599.5
Average Indoor Water Use (gpd/ERU)	246.7	246.7	246.7

It will be noted that projected design flows associated with future connections include a lower amount of infiltration than observed for the existing system. This is associated with projected lower infiltration rates resulting from new construction materials and techniques. This is discussed in detail in the District's Capital Facilities Plan. Thus, only the infiltration that is directly associated with new growth has been included for new connections. Any additional infiltration associated with older materials or system maintenance are specifically excluded from the future growth calculations. Impact fees will be based on only the lower level of infiltration directly associated with new growth as identified in the table.

Included in the table is the definition of an existing ERU in terms of both average and peak flows. The projected flow used to design and evaluate system components will vary depending on the nature of each component. For example, most wastewater treatment facility processes are designed based on average day, maximum month flow. Conversely, conveyance pipelines must be designed based on peak hour flow (function of daily flow and diurnal flow variation).

Performance Standard

Performance standards are those standards that are used to design and evaluate the performance of facilities. This section discusses the existing performance standards for the District.

To improve the accuracy of the analysis, this Impact Fee Facilities Plan has divided the system into three different components (pipeline capacity, treatment capacity, and administrative and service buildings). Each of these components has its own set of performance standards:

Pipeline Capacity. District engineering standards require that all sewer mains greater than or equal to 12-inches in diameter be designed such that the peak flow in the pipe is less than or equal to 75 percent of the pipe's full capacity and all sewer mains less than 12-inches in diameter to be designed such that the peak flow in the pipe is less than or equal to 50 percent of the pipe's full

capacity using a Manning's roughness factor¹ of 0.013. This design standard was used as the level of service for system evaluation.

Wastewater Treatment Facility Capacity. A wastewater treatment facility consists of a large number of different components. Each component may have different criteria for design depending on the nature of the component. For most treatment related components, however, design is based on treating the average daily flow during the maximum month. This is the same standard used by the State of Utah Department of Environmental Quality (UDEQ) when rating the overall capacity of a treatment plant.

Administrative and Service Buildings. In addition to the water system needs, Magna Water District personnel need to be able to provide administrative, operation, and maintenance functions for the District to satisfy a level of service for customers. The District's current administrative and service facilities is composed of a number of different components, including office space, open storage space, maintenance bays, etc., and does not have a specific performance standard. It is proposed that both existing and future users pay for these facilities in proportion to their overall use in the system. Thus, the level of service provided by the facility will be the same for existing and new users. The District's existing facilities should be satisfactory to provide space for personnel through the District's planning window such that there is some excess space available today that is available for additional personnel to fill in the future to support the needs of future users.

Existing Level of Service Summary

Existing level of service has been divided into the same three components as identified for the system performance standard (pipeline capacity, treatment capacity, and administrative and service buildings). Existing level of service values are summarized in Table 2 below.

**Table 2
Existing Level of Service
for Various System Requirements**

	Existing Level of Service
Pipeline Capacity	
Maximum Ratio of Flow ¹ to Pipeline Capacity/Percent of Collection System that Currently Meets the Standard	
Pipes with diameter > 12 inches	0.75/95.71%
Pipes with diameter ≤ 12 inches	0.5/97.24%
Treatment Capacity	
Capacity Required for Existing Connections – Average Day, Maximum Month Flow (gpd/ERU)	269.5
Administration and Service Buildings	
Available Space to Required Need Ratio	1.7

¹Peak hour

¹ Manning's roughness is an empirical measure of roughness or friction used to calculate hydraulic capacity.

As shown in the table, only a small percentage of sewer pipelines in the system fall below the desired performance standard. In most cases, there is excess capacity in District pipes that may be used to accommodate some of future growth. Excess capacity and curing of deficiencies will be discussed in subsequent sections of this report. Costs for projects to correct deficiencies that do not meet the required level of service will not be included as part of the impact fee, consistent with the Impact Fees Act.

PROPOSED LEVEL OF SERVICE - Utah Code Annotated 11-36a-302(1)(a)(ii)

The proposed level of service is the performance standard used to evaluate system needs in the future. The Impact Fee Act indicates that the proposed level of service may:

1. diminish or equal the existing level of service; or
2. exceed the existing level of service if, independent of the use of impact fees, the District implements and maintains the means to increase the level of service for existing demand within six years of the date on which new growth is charged for the proposed level of service.

In the case of this IFFP, no changes are proposed to the existing level of service for design standards except relative to treatment capability. Thus, future growth will essentially be evaluated based on the same design standards level of service as identified for existing. In the case of projected design flows, the proposed level of service will decrease slightly as summarized in Table 1. This is the result of the slower growth in infiltration due to improved construction methods and system maintenance.

The Utah Division of Water Quality has been developing new criteria for the Utah Pollutant Discharge Elimination System (UPDES) Permit related to treatment plant nutrient removal requirements. As a result of the new permit requirements, several improvements will be needed at the District's wastewater treatment facility. As part of these improvements, the District will also be adding some new facilities at the treatment plant that will improve redundancy and the resulting reliability of the plant. These improvements represent an increased level of service that will benefit existing and future users alike. Increases in the level of service for the District will be funded in accordance with the requirements of the Impact Fees Act. As a result, projects associated with these treatment plant improvements will be paid for by all users at proportional rates.

Proposed Level of Service Summary

The resulting proposed level of service for the District is summarized in Table 3.

**Table 3
Proposed Level of Service for Various System Requirements**

	Proposed Level of Service
Pipeline Capacity	
Maximum Ratio of Flow ¹ to Pipeline Capacity/Percent of Collection System that Currently Meets the Standard	
Pipes with diameter > 12 inches	0.75/100%
Pipes with diameter ≤ 12 inches	0.5/100%
Treatment Capacity	
Capacity Required for Future Connections – Average Day, Maximum Month Flow (gpd/ERU)	255.3
Administration and Service Buildings	
Available Space to Need Ratio	1.0

¹ Peak hour

Note that the value given for treatment capacity is the reduced value for future connections based on reduced infiltration as discussed in association with Table 1. The same is true for evaluation of pipeline and lift station capacity. Only the infiltration that is directly associated with new growth has been included for new connections. Any additional infiltration associated with older materials or system maintenance are specifically excluded from the future growth calculations. Impact fees will be based on only the level of infiltration directly associated with new growth as identified in the table.

EXCESS CAPACITY TO ACCOMMODATE FUTURE GROWTH - Utah Code Annotated 11-36a-302(1)(a)(iii)

Because most of the sewer collection facilities within the District have adequate or excess capacity through the long-term planning horizon of the District, capacity for most future growth will be met through available excess capacity in existing facilities. There are two components of assets to discuss within the District: collections system facilities and treatment facilities. Excess capacity in the collection and treatment facilities are described as follows:

Collection

To calculate the percentage of existing capacity to be used by future growth in existing facilities, existing and future flows were examined in the system model for each collection pipeline. The method used to calculate excess capacity available for use by future flows is as follows:

- 1. Calculate Flows** – The peak flow in each facility was calculated in the model for both existing and future flows. The available capacity of each pipeline was also calculated using a criteria based on pipe diameter. For pipes with a diameter greater than 12 inches the capacity at a 0.75 peak flow to capacity ratio was used and for pipes with a diameter less than or equal to 12 inches the capacity at a 0.50 peak flow to capacity ratio was used.
- 2. Identify Available Capacity** – Where a facility has capacity in excess of projected flows at buildout, the available capacity in the facility was defined as the difference between existing flows and buildout flows. Where the facility has capacity less than projected flows at buildout, the available capacity in the facility was defined as the difference between existing flows and the facility's maximum capacity.

3. **Eliminate Facilities without Excess Capacity** – For the 10-year planning horizon period, the projected growth in flow was compared against the facility’s available capacity. Where the future flow exceeded the capacity of the facility, the available excess capacity was assumed to be zero. By definition, this corresponds to those facilities with deficiencies that are identified for replacement in the facilities plan. By assigning a capacity of zero to new users, this eliminated double counting those facilities against new users.
4. **Calculate Percent of Excess Capacity Used in Remaining Facilities** – Where the future flow was less than the capacity of the facility, the percent of excess capacity being used in each facility was calculated by dividing the growth in flow in the facility (future flow less existing flow) by the total capacity (existing flow plus available capacity).
5. **Calculate Excess Capacity for the System as a Whole** – Each pipeline in the system has a different quantity of excess capacity to be used by future growth. To develop an estimate of excess capacity on a system wide basis, the capacities of each of these pipelines and their contribution to the system as a whole must be considered. To do this, each pipeline must first be weighted based on its relative capacity in the system. For this purpose, each pipeline has been weighted based on the product of its diameter and length. For example, a pipe that is 36 inches in diameter and is 4,000 feet long will cost proportionally more than a pipe that is 10 inches in diameter and 300 feet long. The excess capacity in the system as a whole can then be calculated as the sum of the weighted capacity used by future growth divided by the sum of total weighted capacity in the system.

Based on the method described above, the amount of excess capacity in existing facilities available to accommodate future growth and the demands placed on the existing facilities by new development activity has been calculated for each element in the system by BC&A. This is summarized in Table 4.

Table 4
Collection System Excess Capacity

Use Category	District Area Percent Use
Existing Use	89.36%
Use By 10-Year Growth	2.74%
Use By Growth Beyond 10 years	7.89%
Total	100.00%

Treatment

The District has a total treatment capacity of 4.0 mgd at the Magna Wastewater Treatment Facility. Projected peak month, average day flows for existing development are 2.81 mgd, and are projected to be 3.50 mgd in 10 years. Based projected flows in the District service area, the existing treatment plant capacity is summarized in Table 5.

**Table 5
Excess Wastewater Treatment Facility Capacity**

Use Category	Total Treatment Plant Flow (MGD)	District Area Percent Use
Existing Use	2.81	70.25%
Use by 10-Year Growth	0.69	17.25%
Use by Growth Beyond 10 years	0.50	12.50%
Total	4.00	100.00%

Administrative and Service Buildings

As discussed under the existing and proposed level of service sections, Magna Water District's District Office has sufficient capacity through the District's long-term planning window and has excess capacity for future growth as listed in Table 6.

**Table 6
Administrative Excess Capacity**

Use Category	District Area ERUs	District Area Percent Use
Existing Use	10,419	59.40%
Use by 10-Year Growth	2,732	15.57%
Use by Growth Beyond 10 years	4,391	25.03%
Total	17,542	100.00%

DEMANDS PLACED ON FACILITIES BY NEW DEVELOPMENT - Utah Code Annotated 11-36a-302(a)(iv)

Growth within the District's service area, and projections of sewer flows resulting from said growth is discussed in detail in the District's Master Plans. Growth in terms of both Equivalent Residential Units and corresponding sewer flows is summarized in Table 7².

² For the purposes of this report, "10-year Growth" refers to growth between existing and 2030. Existing flows are based on 2019 estimates, which technically makes this an 11-year planning window. However, 2030 is a more common projection interval in District and regional growth projections and is thus, more convenient for estimating than 2029.

**Table 7
District Projections of Growth**

Year	District Area ERUs	Domestic Wastewater (mgd)	Max Month Infiltration (mgd)	Total Max Month, Average Day Flow (mgd)	Peak Hour Flows - District Area (MGD)
2020	10,419	2.31	0.49	2.80	6.27
2030	13,151	2.92	0.59	3.51	7.89
2040	14,755	3.28	0.64	3.92	8.84
2050	16,215	3.60	0.69	4.29	9.69
2060	17,542	3.89	0.73	4.62	10.46

INFRASTRUCTURE REQUIRED TO MEET DEMANDS OF NEW DEVELOPMENT - Utah Code Annotated 11-36a-302(1)(a)(v)

To satisfy the requirements of state law, demands placed upon existing system facilities by future development was projected using the process outlined below. Each of the steps were completed as part of this plan's development:

1. **Existing Demand** - The demand existing development places on the District's system was estimated based on historic water use and flow records.
2. **Existing Capacity** - The capacities of existing collection system facilities were estimated using size data provided by the District and a hydraulic computer model.
3. **Existing Deficiencies** - Existing deficiencies in the system were looked for by comparing defined levels of service against calculated capacities. A few deficiencies were identified in the Sewer Master Plan.
4. **Future Demand** - The demand future development will place on the system was estimated based on development projections (discussed in the Sewer Master Plan).
5. **Future Deficiencies** - Future deficiencies in the collection system (portions of the system that are inadequate to accommodate the demand created by future growth) were identified using the defined level of service and results from a hydraulic computer model (discussed in the Sewer Master Plan).
6. **Recommended Improvements** - Needed system improvements were identified to meet demands associated with future development.

The steps listed above "identify demands placed upon existing public facilities by new development activity at the proposed level of service; and... the means by which the political subdivision or private entity will meet those growth demands" (Section 11-36a-302(1)(a) of the Utah Code Annotated).

10 Year Improvement Plan

In the District's Sewer Master Plan, capital facility projects needed to provide service to customers of the District were identified. Some of the projects identified in the master plan will not be needed within the next 10 years. Only infrastructure to be constructed within a 10-year horizon will be considered in the calculation of impact fees to avoid uncertainty surrounding improvements further into the future. Table 8 summarizes the components of projects identified in the master plan that will need to be constructed within the next ten years.

Table 8
Project Costs Allocated to Projected Development, 10 Year Planning Horizon

Project ID	Year	Project	Total Project Cost	Percent to Existing	Percent to 10 Year Growth	Percent to Growth 2029 through Buildout	Cost to Existing	Cost to 10 Year Growth	Cost to Growth 2029 through Buildout
Collection System Projects									
1	2021	8000 West Interceptor	\$2,947,000	0.00%	53.35%	46.65%	\$0	\$1,572,139	\$1,374,861
2	2024	So. Frontage, 8400 W to 8000 W	\$1,919,000	30.29%	12.19%	57.52%	\$581,172	\$233,978	\$1,103,850
3	2027	So. Frontage, 8800 W to 8400 W	\$1,857,000	25.11%	13.90%	60.99%	\$466,332	\$258,148	\$1,132,520
4	2022	9200 West Trunk, Reach 1	\$2,516,000	1.83%	16.86%	81.31%	\$46,024	\$424,191	\$2,045,784
5	2024	9200 West Trunk, Reach 2	\$1,741,000	1.90%	17.52%	80.57%	\$33,162	\$305,090	\$1,402,749
6	2024	9200 West Trunk, Reach 3*	\$894,133	2.20%	55.80%	42.00%	\$19,671	\$498,926	\$375,536
7	2025	7600 West Diversion, Reach 1	\$649,000	65.30%	9.59%	25.11%	\$423,776	\$62,233	\$162,991
8	2025	7600 West Diversion, Reach 2	\$111,000	92.78%	0.00%	7.22%	\$102,990	\$0	\$8,010
9	2025	7270 West Diversion	\$80,000	82.67%	0.00%	17.33%	\$66,133	\$0	\$13,867
10	2026	7200 West Diversion at Parkway Blvd	\$457,000	85.56%	0.48%	13.96%	\$391,007	\$2,200	\$63,793
11	2028	7200 W, 3500 S to 3100 S	\$1,295,000	86.30%	0.27%	13.42%	\$1,117,603	\$3,548	\$173,849
		Subtotal	\$14,466,133				\$3,247,870	\$3,360,454	\$7,857,809
Treatment Plant Projects									
1	2021	Influent Pump Station Modifications	\$5,728,900	70.25%	17.25%	12.50%	\$4,024,552	\$988,235	\$716,113
2	2024	Secondary Reuse	\$2,496,180	70.25%	17.25%	12.50%	\$1,753,566	\$430,591	\$312,023
4	2022	New Dewatering Press	\$440,000	70.25%	17.25%	12.50%	\$309,100	\$75,900	\$55,000
6	2025	SCADA Upgrades	\$250,000	70.25%	17.25%	12.50%	\$175,625	\$43,125	\$31,250
7	2025	Asphalt Replacement	\$500,000	70.25%	17.25%	12.50%	\$351,250	\$86,250	\$62,500
		Subtotal	\$9,415,080				\$6,614,094	\$1,624,101	\$1,176,885
		Total	\$23,881,213				\$9,861,964	\$4,984,555	\$9,034,694

Project Cost Attributable to Future Growth

To satisfy the requirements of state law, Table 9 provides a breakdown of the capital facility projects and the percentage of the project costs attributed to existing and future users. As defined in Utah Code Annotated 11-36a-102(15), the Impact Fee Facilities Plan should only include the proportionate share of “the cost of public facilities that are roughly proportionate and reasonably related to the service demands and needs of any development activity.” Some projects identified in the table are required solely to meet future growth, but some projects also provide a benefit to existing users. Projects that benefit existing users include those projects addressing existing capacity needs and maintenance related projects.

For many projects, the division of costs between existing and future users is easy because 100 percent of the project costs can be attributed to one category or the other (e.g. infrastructure needed solely to serve new development can be 100 percent attributed to new growth, while projects related to existing condition or capacity deficiencies can be 100 percent attributed to existing user needs). For projects needed to address both existing deficiencies and new growth or where a higher level of service is being proposed, costs have been divided proportionally between existing and future users based on their use of the facility. A few additional notes regarding specific projects are as follows:

- **Secondary Reuse** – This project both improves the District’s wastewater treatment and increases the District’s water supply. This sewer IFFP includes 20% of the total secondary reuse cost as the portion of project costs benefitting wastewater treatment and the rest is included in the District’s water IFFP. For the portion of cost assigned to wastewater, the improvements are treated as level of service improvements that are to be paid for by all user types proportionally (see below).
- **New Dewatering Press** – This project increases the District’s level of service for wastewater treatment by adding a new dewatering press for redundancy. This project gives the District’s wastewater treatment plant the flexibility to cut down the run times for the existing dewatering presses.
- **Treatment Plant Projects** – As can be seen in the table, the percentages of cost assigned to future growth categories are identical for all the treatment plant projects. The reason for this is that all the treatment projects have been classified as improvements in level of service, not additions to capacity at the plant. Therefore, the percentage of cost to existing, 10-year growth, and beyond 10-year growth is distributed based on total use of the plant, the same as calculated in Table 6.

Project Cost Attributable to 10 Year Growth

Included in Table 9 is a breakdown of capacity use associated with growth both through buildout and through the next 10 years. This is necessary because the projects identified in the tables will be built with capacity to accommodate flows beyond the 10-year growth horizon. This has been done following the same general process as described above.

Basis of Construction Cost Estimates

The costs of pipe and planning projects have been based on engineering cost estimates contained in the Sewer Master Plan.

ADDITIONAL CONSIDERATIONS

MANNER OF FINANCING – Utah Code Annotated 11-36a-302(2)

The District may fund the infrastructure identified in this IFFP through a combination of different revenue sources.

Federal and State Grants and Donations

Impact fees cannot reimburse costs funded or expected to be funded through federal grants and other funds that the District has received for capital improvements without an obligation to repay. Grants and donations are not currently contemplated in this analysis. If grants become available for constructing facilities, impact fees will need to be recalculated and an appropriate credit given. Any existing infrastructure funded through past grants will be removed from the system value during the impact fee analysis.

Bonds

None of the costs contained in this IFFP include the cost of bonding. The cost of bonding required to finance impact fee eligible improvements identified in the IFFP may be added to the calculation of the impact fee. This will be considered in the impact fee analysis.

User Rate Revenue

Because infrastructure must generally be built ahead of growth, there often arises situations in which projects must be funded ahead of expected impact fee revenues. In some cases, the solution to this issue will be bonding. In others, funds from existing user rate revenue will be used to complete initial construction of impact fee eligible projects and will be reimbursed later as impact fees are received. Consideration of potential use of user rate revenue to pay for impact fee eligible expenditures will be included in the impact fee analysis and should also be considered in subsequent accounting of impact fee expenditures.

Impact Fees

It is recommended that impact fees be used to fund growth-related capital projects as they help to maintain the proposed level of service and prevent existing users from subsidizing the capital needs for new growth. Based on this IFFP, an impact fee analysis will be able to calculate a fair and legal fee that new growth should pay to fund the portion of the existing and new facilities that will benefit new development.

Developer Dedications and Exactions

Developer exactions are not the same as grants. Developer exactions may be considered in the inventory of current and future infrastructure. If a developer constructs facilities or dedicates land within the development for the construction of facilities identified in this IFFP, the value of the dedication is credited against that particular developer's impact fee liability.

If the value of the dedication/exaction is less than the development's impact fee liability, the developer will owe the balance of the liability to the District. If the value of the improvements dedicated is worth more than the development's impact fee liability, the District must reimburse the difference to the developer from impact fee revenues collected from other developments.

It should be emphasized that the concept of impact fee credits pertains to system level improvements only. For project level improvement (i.e. projects not identified in the impact fee facility plan),

developers will be responsible for the construction of the improvements without credit against the impact fee.

**NECESSITY OF IMPROVEMENTS TO MAINTAIN LEVEL OF SERVICE -
Utah Code Annotated 11-36a-302(3)**

According to State statute, impact fees cannot be used to correct deficiencies in the District's system and must be necessary to maintain the proposed level of service established for all users. Only those facilities or portions of facilities that are required to maintain the proposed level of service for future growth have been included in this IFFP. This will result in an equitable fee as future users will not be expected to fund any portion of the facilities that will benefit existing residents.

SCHOOL RELATED INFRASTRUCTURE - Utah Code Annotated 11-36a-302(2)

As part of the noticing and data collection process for this plan, information was gathered regarding future school District and charter school development. Where the District is aware of the planned location of a school, required public facilities to serve the school have been included in the impact fee facility plan.

NOTICING AND ADOPTION REQUIREMENTS - Utah Code Annotated 11-36a-502

The Impact Fees Act requires that entities must publish a notice of intent to prepare or modify any IFFP. If an entity prepares an independent IFFP rather than include a capital facilities element in the general plan, the actual IFFP must be adopted by enactment. Before the IFFP can be adopted, a reasonable notice of the public hearing must be published in a local newspaper at least 10 days before the actual hearing. A copy of the proposed IFFP must be made available in each public library within the District during the 10-day noticing period for public review and inspection. Utah Code requires that the District must post a copy of the ordinance in at least three places. These places may include the District offices and the public libraries within the District's jurisdiction. Following the 10-day noticing period, a public hearing will be held, after which the District may adopt, amend and adopt, or reject the proposed IFFP.

IMPACT FEE CERTIFICATION - Utah Code Annotated 11-36a-306(1)

This IFFP has been prepared in accordance with Utah Code Annotated Title 11, Chapter 36a (the "Impact Fees Act"), which prescribes the laws pertaining to the imposition of impact fees in Utah. The accuracy of this IFFP relies in part upon planning, engineering, and other source data, provided by the District and its designees.

In accordance with Utah Code Annotated, 11-36a-306(1), Bowen Collins & Associates makes the following certification:

I certify that the attached Impact Fee Facilities Plan:

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. cost 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; or
 - 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.



Keith Larson, P.E.

MAGNA WATER DISTRICT SEWER IMPACT FEE ANALYSIS

October 2020

Prepared for:



Prepared by:



EXECUTIVE SUMMARY SEWER IMPACT FEE ANALYSIS

The purpose of the impact fee analysis (IFA) is to calculate the allowable impact fee that may be assessed to new development in accordance with Utah Code.

WHY ASSESS AN IMPACT FEE?

Until development utilizes the full capacity of existing facilities, the District can assess an impact fee to recover its cost of latent capacity available to serve future development. The general impact fee methodology divides the available capacity of existing and future capital projects between the number of existing and future users. Capacity is measured in terms of Equivalent Residential Units, or ERUs, which represents the demand that a typical single-family residence places on the system.

HOW ARE IMPACT FEES CALCULATED?

A fair impact fee is calculated by dividing the cost of existing and future facilities by the amount of new growth that will benefit from the unused capacity. Only the capacity that is needed to serve the projected growth within in the next ten years is included in the fee. Costs used in the calculation of impact fees include:

- New facilities required to maintain (but not exceed) the proposed level of service in the system; only those expected to be built within ten years are considered in the final calculations of the impact fee.
- Historic costs of existing facilities that will serve new development
- Cost of professional services for engineering, planning, and preparation of the impact fee facilities plan and impact fee analysis

Costs not used in the impact fee calculation

- Operational and maintenance costs
- Cost of facilities constructed beyond 10 years
- Cost associated with capacity not expected to be used within 10 years
- Cost of facilities funded by grants, developer contributions, or other funds which the District is not required to repay
- Cost of renovating or reconstructing facilities which do not provide new capacity or needed enhancement of services to serve future development

IMPACT FEE CALCULATION

Impact fees for this analysis were calculated by dividing the proportional cost of facilities required to service 10-year growth by the amount of growth expected over the next 10-years based on ERUs. This is done for both collection and treatment facilities. Calculated impact fees by component are summarized in Table ES-1. Table ES-1 covers the cost of impacts on collection and treatment facilities from growth within the Magna Water District service area.

**Table ES-1
Impact Fee Calculation per ERU – Magna Water District Service Area**

System Components	Total Cost of Component	% Serving 10-year Growth	Cost Serving 10-year Growth	10-year ERUs Served	Cost Per ERU
Admin. and Service Facilities					
Existing Facilities – Administration Building	\$1,885,028	15.6%	\$293,575	2,732	\$107.46
Collection Facilities					
Existing Facilities – Pipelines	\$2,312,812	2.7%	\$63,371	2,732	\$23.20
Existing Facility Interest Costs - Pipelines	\$848,537	2.7%	\$23,250	2,732	\$8.51
10-year Projects	\$14,466,133	23.2%	\$3,360,454	2,732	\$1,230.03
10-Year Project Interest Costs	\$5,439,313	23.2%	\$1,263,542	2,732	\$462.50
Credit for User Fees Paid Toward Existing					(-\$772.13)
Subtotal	\$23,066,795		\$4,710,617		\$952.11
Treatment Plant					
Existing Facilities	\$36,899,032	17.3%	\$6,365,083	2,732	\$2,329.83
Existing Facility Interest Costs	\$3,394,149	17.3%	\$585,491	2,732	\$214.31
10-year Projects	\$9,415,080	17.2%	\$1,624,101	2,732	\$594.47
10-Year Project Interest Costs	\$4,200,315	17.2%	\$724,554	2,732	\$265.21
Credit for User Fees Paid Toward Existing					(-\$900.58)
Subtotal	\$53,908,576		\$9,299,229		\$2,503.24
Studies					
All Studies	\$275,312	53.5%	\$147,319	1,542	\$95.54
TOTAL	\$79,135,711		\$14,450,739		\$3,658.34

RECOMMENDED IMPACT FEE

The total calculated impact fees are summarized in Table ES-2. Included in this table is the appropriate user fee credit and corresponding overall fee. The calculated user fee credit associated with the impact fees will decrease over time. As a result, the allowable impact fee will increase over time as shown in the table. This is the legal maximum amount that may be charged as an impact fee. A lower amount may be adopted if desired, but a higher fee is not allowable under the requirements of Utah Code.

Table ES-2
Recommended Per ERU Impact Fee – Magna Water District Service Area

Maximum Allowable Impact Fee (Per ERU, by year)						
	2020	2021	2022	2023	2024	2025
Base Impact Fee (includes study costs)	\$5,331.05	\$5,331.05	\$5,331.05	\$5,331.05	\$5,331.05	\$5,331.05
User Fee Credit	\$1,672.71	\$1,601.49	\$1,485.86	\$1,378.42	\$1,278.62	\$1,149.25
Total Overall Fee	\$3,658.34	\$3,729.56	\$3,845.19	\$3,952.63	\$4,052.43	\$4,181.80

IMPACT FEE ANALYSIS (SEWER)

INTRODUCTION

Magna Water District has retained Bowen Collins & Associates (BC&A) to prepare an impact fee analysis (IFA) for its sewer system based on a recently completed impact fee facilities plan. An impact fee is a one-time fee, not a tax, imposed upon new development activity as a condition of development approval to mitigate the impact of the new development on public infrastructure. The purpose of an IFA is to calculate the allowable impact fee that may be assessed to new development in accordance with Utah Code.

Service Areas

For the purpose of impact fee calculations, the Magna Water District sewer system includes the Magna Water District corporate boundary.

Requirements

Requirements for the preparation of an IFA are outlined in Title 11, Chapter 36a of the Utah Code (the Impact Fees Act). Under these requirements, an IFA shall accomplish the following for each facility:

1. Identify the impact of anticipated development activity on existing capacity
2. Identify the impact of anticipated development activity on system improvements required to maintain the established level of service
3. Demonstrate how the impacts are reasonably related to anticipated development activity
4. Estimate the proportionate share of:
 - a. Costs of existing capacity that will be recouped
 - b. Costs of impacts on system improvements that are reasonably related to the new development activity
5. Identify how the impact fee was calculated
6. Consider the following additional issues
 - a. Manner of financing improvements
 - b. Dedication of system improvements
 - c. Extraordinary costs in servicing newly developed properties
 - d. Time-price differential

The following sections of this report have been organized to address each of these requirements.

IMPACT ON SYSTEM - 11-36A-304(1)(A)(B)

Growth within the District's service area, and projections of sewer flows resulting from said growth is discussed in detail in the District's Impact Fee Facilities Plan. For the purposes of impact fee calculation, growth in the system has been expressed in terms of equivalent residential units (ERUs). An ERU represents the demand that a typical single-family residence places on the system. Growth in ERUs projected for the service area is summarized in Table 1.

Table 1
Projected Magna Water Sewer System Growth – Flow ERUs

Year	Service Area ERUs	Estimated Dry Weather Sewer Flows (MGD)
2020	10,419	2.81
2030	13,151	3.50
2040	14,755	3.91
2050	16,215	4.29
2060	17,542	4.63

As indicated in the table, projected growth for the 10-year planning window of this impact fee analysis is 2,732 ERUs. In order to maintain the established level of service, projected future growth will be met through a combination of available excess capacity in existing facilities and construction of additional capacity in new facilities. Use of excess capacity and required system improvements are detailed in the Impact Fee Facilities Plan.

RELATION OF IMPACTS TO ANTICIPATED DEVELOPMENT - 11-36A-304(1)(C)

To satisfy the requirements of state law, it is necessary to show that all impacts identified in the impact fee analysis are reasonably related to the anticipated development activity. This has been documented in detail in Impact Fee Facilities Plan. In short, only that capacity directly associated with demand placed upon existing system facilities by future development has been identified as an impact of the development. The steps completed to identify the impacts of anticipated development are as follows.

1. **Existing Demand** – The demand existing development places on the system was estimated based on historic water use and flow records.
2. **Existing Capacity** – The capacities of existing collection system facilities were estimated using size data provided by the District and a hydraulic computer model.
3. **Existing Deficiencies** – Existing deficiencies in the system were looked for by comparing defined levels of service against calculated capacities. A few deficiencies were identified in the Sewer Master Plan.
4. **Future Demand** - The demand future development will place on the system was estimated based on development projections as discussed in the Impact Fee Facilities Plan.
5. **Future Deficiencies** – Future deficiencies in the collection system (portions of the system that are inadequate to accommodate the demand created by future growth) were identified using the defined level of service and results from a hydraulic computer model (discussed in the Sewer Master Plan).
6. **Recommended Improvements** – Needed system improvements were identified to meet demands associated with future development

Proportionate Share Analysis – 11 – 36A-304(D)

A comprehensive proportionate share analysis associated with anticipated future development and its impact on the system was completed as part of the Impact Fee Facilities Plan. A summary of that analysis is contained here with additional discussion of the costs of facilities impacted by growth.

Excess Capacity to Accommodate Future Growth

Projected future growth will be met through a combination of available excess capacity in existing facilities and construction of additional capacity in new facilities. Defining existing system capacity in terms of a single number is difficult. To improve the accuracy of the analysis, the system was divided into two different components (collection, treatment, and administrative and service buildings). Excess capacity in each component of the system is summarized in Table 2.

Table 2
Use of Existing Capacity

Use Category	Collection System Percent Use	Treatment Percent Use	Administrative and Service Buildings
Existing Use	89.36%	70.25%	59.4%
Use By 10-Year Growth	2.74%	17.25%	15.6%
Use By Growth Beyond 10 years	7.89%	12.50%	25.0%
Total	100.00%	100.00%	100.00%

Existing System Infrastructure Costs

To calculate the actual cost of excess capacity in the existing system, BC&A first looked at the actual cost of all existing facilities. Table 3 lists the actual construction costs of existing components of the District's wastewater system. These are not depreciated replacement costs, but the actual cost of existing District infrastructure at the time of construction. Appendix A shows a detailed breakdown of these projects and their associated costs. These costs were estimated from the District's asset depreciation schedule.

Table 3
Existing Infrastructure Costs

	Collection	Treatment	Administrative
Existing Infrastructure Costs	\$2,312,812	\$36,899,032	\$4,046,861

In this study, public facility costs already incurred by the District will be included in the impact fee only to the extent that new growth will be served by the previously constructed improvements.

Reimbursement Agreements

There are no current reimbursement agreements existing within the District's system that have not already been accounted for in the existing infrastructure analysis.

Future Improvements

In addition to using available existing capacity, demand associated with projected future development will be met through the construction of additional capacity in new facilities. A

primary focus of the Impact Fee Facilities Plan was the identification of projects required to serve new development. The results of the Impact Fee Facilities Plan are summarized in Table 4. Included in the table are the costs of each required project and the portion of costs associated with development for the 10-year planning window. All cost estimates contained in this IFA have been taken directly from the IFFP. The basis of these estimates is documented in the IFFP.

**Table 4
Impact Fee Eligible Capital Projects**

Project ID	Year	Project	Total Project Cost	Percent to 10-Year Growth	Cost to 10-Year Growth
Collection System Projects					
1	2021	8000 West Interceptor	\$2,947,000	53.35%	\$1,572,139
2	2024	So. Frontage, 8400 W to 8000 W	\$1,919,000	12.19%	\$233,978
3	2027	So. Frontage, 8800 W to 8400 W	\$1,857,000	13.90%	\$258,148
4	2022	9200 West Trunk, Reach 1	\$2,516,000	16.86%	\$424,191
5	2024	9200 West Trunk, Reach 2	\$1,741,000	17.52%	\$305,090
6	2024	9200 West Trunk, Reach 3*	\$894,133	55.80%	\$498,926
7	2025	7600 West Diversion, Reach 1	\$649,000	9.59%	\$62,233
8	2025	7600 West Diversion, Reach 2	\$111,000	0.00%	\$0
9	2025	7270 West Diversion	\$80,000	0.00%	\$0
10	2026	7200 West Diversion at Parkway Blvd	\$457,000	0.48%	\$2,200
11	2028	7200 W, 3500 S to 3100 S	\$1,295,000	0.27%	\$3,548
		Subtotal	\$14,466,133		\$3,360,454
Treatment Plant Projects					
1	2021	Influent Pump Station Modifications	\$5,728,900	17.25%	\$988,235
2	2024	Secondary Reuse	\$2,496,180	17.25%	\$430,591
4	2022	New Dewatering Press	\$440,000	17.25%	\$75,900
6	2025	SCADA Upgrades	\$250,000	17.25%	\$43,125
7	2025	Asphalt Replacement	\$500,000	17.25%	\$86,250
		Subtotal	\$9,415,080		\$1,624,101
		Total	\$23,881,213		\$4,984,555

Planning and Impact Fee Studies

Utah Code allows for the cost of planning and engineering associated with impact fee calculations to be recovered as part of an impact fee. The final impact fee will include the cost of this study and recommended planning projects in the next ten years as summarized in Table 5.

Table 5
Impact Fee Costs Associated with Studies per ERU

System Components	Total Cost of Component	% Serving 10-year Growth	Cost Serving 10-year Growth	10-year ERUs Served	Cost Per ERU
2019 Sewer Master Plan	\$71,134	76.95%	\$54,741	1,542	\$35.50
2019 Sewer Impact Fee Facility Plan and Impact Fee Analysis	\$18,178	100.0%	\$18,178	1,542	\$11.79
2017 Treatment Plant Facility Plan Study	\$186,000	40.0%	\$74,400	1,542	\$48.25
Subtotal	\$275,312		\$147,319		\$95.54

IMPACT FEE CALCULATION - 11-36A-304(1)(E)

Using the information contained in the previous sections, impact fees can be calculated by dividing the proportional cost of facilities required to service 10-year growth by the amount of growth expected over the next 10-years. Calculated impact fees by component are summarized in Table 6 for Magna Water District.

Table 6
Impact Fee Calculation per ERU – Magna Water District Service Area

System Components	Total Cost of Component	% Serving 10-year Growth	Cost Serving 10-year Growth	10-year ERUs Served	Cost Per ERU
Admin. and Service Facilities					
Existing Facilities – Administration Building	\$1,885,028	15.6%	\$293,575	2,732	\$107.46
Collection Facilities					
Existing Facilities – Pipelines	\$2,312,812	2.7%	\$63,371	2,732	\$23.20
Existing Facility Interest Costs - Pipelines	\$848,537	2.7%	\$23,250	2,732	\$8.51
10-year Projects	\$14,466,133	23.2%	\$3,360,454	2,732	\$1,230.03
10-Year Project Interest Costs	\$5,439,313	23.2%	\$1,263,542	2,732	\$462.50
Credit for User Fees Paid Toward Existing					(-\$772.13)
Subtotal	\$23,066,795		\$4,710,617		\$952.11
Treatment Plant					
Existing Facilities	\$36,899,032	17.3%	\$6,365,083	2,732	\$2,329.83
Existing Facility Interest Costs	\$3,394,149	17.3%	\$585,491	2,732	\$214.31
10-year Projects	\$9,415,080	17.2%	\$1,624,101	2,732	\$594.47
10-Year Project Interest Costs	\$4,200,315	17.2%	\$724,554	2,732	\$265.21
Credit for User Fees Paid Toward Existing					(-\$900.58)
Subtotal	\$53,908,576		\$9,299,229		\$2,503.24
Studies					
All Studies	\$275,312	53.5%	\$147,319	1,542	\$95.54
TOTAL	\$79,135,711		\$14,450,739		\$3,658.34

Bonding Interest Costs

In addition to construction costs, Table 5 includes the cost of bond interest expense where applicable. This includes both historic interest costs on existing facilities where new growth will benefit from excess capacity and future interest costs for bonds required to build projects needed for growth as identified in the Impact Fee Facilities Plan. Similar to project construction costs, only that portion of

interest expense associated with capacity for growth is included in the impact fee calculation. In the case of the Magna Water District wastewater system, the following bonds were included in the study:

- **2013 General Obligation Refunding Bond** – This bond was a refunding of a previous bond used for improvements to the District’s wastewater treatment plant, minor sewer collection improvements, and improvements to the EDR system. The District started payments on this bond in the year 2014. The beginning bond balance was \$8,245,000 with 51.78 percent of this associated with sewer improvements. This bond was included in the table above under the Treatment Plant Existing Facility Interest Costs and Collection Facilities Existing Facility Interest Costs categories. Costs shown are actual costs that have been or will be incurred in association with this bond.
- **2017 General Obligation Refunding Bond** – This bond was a refunding of a previous bond used for improvements to the District’s wastewater treatment plant, minor sewer collection improvements, and the District’s water distribution system. The District started payments on this bond in the year 2017. The beginning bond balance was \$13,975,000 with 43.38 percent of this associated with sewer improvements. This bond was included in the table above under the Treatment Plant Existing Facility Interest Costs and Collection Facilities Existing Facility Interest Costs categories. Costs shown are actual costs that have been or will be incurred in association with this bond.
- **2019 General Obligation Refunding Bond** – This bond was a refunding of a previous bond used for improvements to the District’s wastewater treatment plant, minor sewer collection improvements, and the District’s water distribution system. The District started payments on this bond in the year 2019. The beginning bond balance was \$8,025,000 with 43.38 percent of this associated with sewer improvements. This bond was included in the table above under the Treatment Plant Existing Facility Interest Costs and Collection Facilities Existing Facility Interest Costs categories. Costs shown are actual costs that have been or will be incurred in association with this bond.
- **Future 2021 Wastewater Bond** – This is a bond that the District will use for the recommended \$9,000,000 treatment plant and collection system improvements. Based on guidance from the District, it is expected that his bond will be issued in 2021 and would be a 20-year bond at 4.5 percent interest. This brings the total bond payment to \$14,252,837. This bond was included in the table above under the Treatment Plant 10-Year Project Interest Costs and Collection Facilities 10-Year Project Interest Costs categories. Based on the projects that this bond will be used to pay for, costs have been allocated 58.5 percent treatment and 41.5 percent to collection.
- **Future 2024 Wastewater Bond** – This bond is a recommended bond that the District would use for the recommended \$7,516,151 treatment plant and collection system improvements. Based on guidance from the District, it is expected that his bond will be issued in 2023 or 2024 and would be a 20-year bond at 4.5 percent interest. This brings the total bond payment to \$11,902,942. This bond was included in the table above under the Treatment Plant 10-Year Project Interest Costs and Collection Facilities 10-Year Project Interest Costs categories. Based on the projects that this bond will be used to pay for, costs have been allocated 25.7 percent treatment and 74.3 percent to collection.

Credit for User Fees

As currently structured, future users will pay for their portion of capacity via impact fees. They cannot also be expected to pay through user rates the portion of future bonds that will be used to build capacity for existing users. This creates the need for a credit for future users. Calculation of

this credit is summarized in Table 7 and Table 8. These tables include the following information:

- **Existing Portion of Loan Paid Through User Fees** – This represents the total amount paid each year by the District toward the portion of any loans used to build capacity for existing users.
- **Cost Per ERU** – This column takes the total amount paid and divides it by the number of ERUs projected for each year. This represents the amount paid in each year by each ERU.
- **Present Value Cost per ERU** – This column takes into account the time value of money assuming a rate of return of 3 percent annually.
- **Total User Fee Credit** – At the bottom of the table, the present value costs for all future years are added together to develop the total user fee credit.

It will be noted that, because the user fee credit is the summation of user fees paid toward existing deficiencies in each year, a new user who joins the system in five or ten years will pay less in total user fees than someone who joins the system next year. Thus, the user fee credit will decrease over time. The appropriate user fee can be calculated by adding the present value cost for all years subsequent to a new user's connection to the system.

Table 7
Credit for User Fees Paid Toward Existing – Magna Water District Collection System

Year	Magna Water ERUs	Existing Capacity Portion of Loans Paid Through User Fees	Cost Per ERU	Present Value Cost Per ERU
2020	10,419	\$179,037	\$17.18	\$17.18
2021	10,746	\$443,143	\$41.24	\$39.46
2022	11,069	\$443,188	\$40.04	\$36.66
2023	11,379	\$442,556	\$38.89	\$34.08
2024	11,681	\$838,527	\$71.78	\$60.19
2025	11,961	\$838,169	\$70.07	\$56.23
2026	12,256	\$837,980	\$68.38	\$52.51
2027	12,600	\$803,721	\$63.79	\$46.87
2028	12,761	\$803,914	\$63.00	\$44.30
2029	12,991	\$803,373	\$61.84	\$41.61
2030	13,151	\$773,477	\$58.82	\$37.87
2031	13,327	\$773,787	\$58.06	\$35.78
2032	13,532	\$773,797	\$57.18	\$33.72
2033	13,629	\$773,944	\$56.79	\$32.04
2034	13,719	\$773,251	\$56.36	\$30.43
2035	13,933	\$773,589	\$55.52	\$28.69
2036	14,048	\$773,436	\$55.06	\$27.22
2037	14,152	\$773,973	\$54.69	\$25.88
2038	14,366	\$700,315	\$48.75	\$22.07
2039	14,621	\$700,192	\$47.89	\$20.75
2040	14,755	\$659,424	\$44.69	\$18.53
2041	14,874	\$395,145	\$26.57	\$10.54
2042	15,009	\$395,145	\$26.33	\$10.00
2043	15,122	\$395,145	\$26.13	\$9.49
Total User Fee Credit				\$772.13

Table 8
Credit for User Fees Paid Toward Existing – Magna Water District Treatment

Year	Magna ERUs	Existing Capacity Portion of Loans Paid Through User Fees	Cost Per ERU	Present Value Cost Per ERU
2020	10,419	\$562,996	\$54.03	\$54.03
2021	10,746	\$855,322	\$79.59	\$76.17
2022	11,069	\$855,463	\$77.28	\$70.77
2023	11,379	\$853,477	\$75.00	\$65.73
2024	11,681	\$963,524	\$82.48	\$69.17
2025	11,961	\$962,397	\$80.46	\$64.56
2026	12,256	\$961,805	\$78.48	\$60.26
2027	12,600	\$854,072	\$67.78	\$49.81
2028	12,761	\$854,679	\$66.98	\$47.10
2029	12,991	\$852,979	\$65.66	\$44.18
2030	13,151	\$758,969	\$57.71	\$37.16
2031	13,327	\$759,944	\$57.02	\$35.14
2032	13,532	\$759,975	\$56.16	\$33.12
2033	13,629	\$760,437	\$55.80	\$31.48
2034	13,719	\$758,259	\$55.27	\$29.84
2035	13,933	\$759,320	\$54.50	\$28.16
2036	14,048	\$758,839	\$54.02	\$26.71
2037	14,152	\$760,529	\$53.74	\$25.43
2038	14,366	\$528,905	\$36.82	\$16.67
2039	14,621	\$528,518	\$36.15	\$15.66
2040	14,755	\$400,318	\$27.13	\$11.25
2041	14,874	\$107,449	\$7.22	\$2.87
2042	15,009	\$107,449	\$7.16	\$2.72
2043	15,122	\$107,449	\$7.11	\$2.58
Total User Fee Credit				\$900.58

Recommended Impact Fee

The total calculated impact fees are summarized in Table 9. Included in this table is the appropriate user fee credit and corresponding overall fee. This is the legal maximum amount that may be charged as an impact fee. A lower amount may be adopted if desired, but a higher fee is not allowable under the requirements of Utah Code.

Table 9
Recommended Per ERU Impact Fee – Magna Water District Service Area

Maximum Allowable Impact Fee (Per ERU, by year)						
	2020	2021	2022	2023	2024	2025
Base Impact Fee (includes study costs)	\$5,331.05	\$5,331.05	\$5,331.05	\$5,331.05	\$5,331.05	\$5,331.05
User Fee Credit	\$1,672.71	\$1,601.49	\$1,485.86	\$1,378.42	\$1,278.62	\$1,149.25
Total Overall Fee	\$3,658.34	\$3,729.56	\$3,845.19	\$3,952.63	\$4,052.43	\$4,181.80

As discussed previously, the calculated user fee credit associated with the impact fees will decrease over time. As a result, the allowable impact fee will increase over time as shown in the table. Impact fees beyond 2025 can be calculated by reducing the user fee credit by the amount shown for each successive year in the credit calculation tables.

Calculation of Non-Standard Impact Fees

The calculations above have been based on an ERU. The Impact Fee Enactment should include a provision that allows for calculation of a fee for customers other than typical residential connections. Consistent with the level of service standards established in the Impact Fee Facilities Plan, the following formula may be used to calculate an impact fee for a non-standard user based on the calculated daily indoor water use for an average residential connection.

$$\frac{\text{Estimated Indoor Water Use}}{246.7 \text{ gallons per day}^1} \times \text{Impact Fee per ERU} = \text{Impact Fee}$$

Calculation all non-standard impact fees should be completed by District personnel using the formula above based on information regarding water use as provided for each non-standard use. This approach will be used for all commercial and industrial development.

¹ Based on average domestic wastewater of 222.0 gpd/ERU entering the wastewater collection system and 10 percent consumption, consistent with previous calculations.

ADDITIONAL CONSIDERATIONS - 11-36A-304(2)**MANNER OF FINANCING - 11-36A-304(2)(A-E)**

As part of this Impact Fee Analysis, it is important to consider how each facility has been or will be paid for. Potential infrastructure funding includes a combination of different revenue sources.

User Charges

Because infrastructure must generally be built ahead of growth, there often arises situations in which projects must be funded ahead of expected impact fee revenues. In some cases, the solution to this issue will be bonding. In others, funds from existing user rate revenue will be loaned to the impact fee fund to complete initial construction of the project and will be reimbursed later as impact fees are received. Interfund loans should be considered in subsequent accounting of impact fee expenditures.

Special Assessments

Where special assessments exist, the impact fee calculation must take into account funds contributed. No special assessments currently exist in the Magna Water District wastewater system.

Pioneering Agreements

Where pioneering agreements exist, the impact fee calculation must take into account payback requirements under each pioneering agreement. The District currently does not have any pioneering agreements.

Bonds

None of the costs contained in the IFFP included bonding. Where District financial plans identify bonding will be required to finance impact fee eligible improvements, the portion of bond cost and interest expense attributable to future growth has been added to the calculation of the impact fee.

General Taxes

If taxes are used to pay for infrastructure, they should be accounted for in the impact fee calculation. Specifically, any contribution made by property owners through taxes should be credited toward their available capacity in the system. In this case, no taxes are proposed for the construction of infrastructure.

Federal and State Grants and Donations

Impact fees cannot reimburse costs funded or expected to be funded through federal grants and other funds that the District has received for capital improvements without an obligation to repay. Grants and donations are not currently contemplated in this analysis. If grants become available for constructing facilities, impact fees will need to be recalculated and an appropriate credit given. Any existing infrastructure funded through past grants has been removed from the system cost.

DEDICATION OF SYSTEM IMPROVEMENTS - 11-36A-304(2)(F)

Developer exactions are not the same as grants. If a developer constructs a system improvement or dedicates land for a system improvement identified in this IFFP, or dedicates a public facility that is recognized to reduce the need for a system improvement, the developer may be entitled to an appropriate credit against that particular developer's impact fee liability or a proportionate reimbursement.

If the value of the credit is less than the development's impact fee liability, the developer will owe the balance of the liability to the District. If the recognized value of the improvements/land dedicated is more than the development's impact fee liability, the District may be required to reimburse the difference to the developer.

It should be emphasized that the concept of impact fee credits pertains to system level improvements only. Developers will be responsible for the construction of project improvements (i.e. improvements not identified in the impact fee facilities plan) without credit against the impact fee.

EXTRAORDINARY COSTS - 11-36A-304(2)(G)

The Impact Fees Act indicates the analysis should include consideration of any extraordinary costs of servicing newly developed properties. In cases where one area of potential growth may cost significantly more to service than other growth, a separate service area may be warranted. No areas with extraordinary costs have been identified as part of this analysis.

TIME-PRICE DIFFERENTIAL - 11-36A-304(2)(H)

Utah Code allows consideration of time-price differential in order to create fairness for amounts paid at different times. To address time-price differential, this analysis includes a conversion to present value cost for future expenditures. In the case of future construction costs, it has been assumed that the return rate on investment will be roughly equivalent to construction inflation and current construction estimates have been used in the calculation of impact fees. Per the requirements of the Code, existing infrastructure cost is based on actual historical costs without adjustment.

IMPACT FEE CERTIFICATION - 11-36A-306(2)

This report has been prepared in accordance with Utah Code Title 11, Chapter 36a (the "Impact Fees Act"), which prescribes the laws pertaining to the imposition of impact fees in Utah. The accuracy of this IFFP relies in part upon planning, engineering, and other source data, provided by the District and its designees.

In accordance with Utah Code Annotated, 11-36a-306(2), Bowen Collins & Associates makes the following certification:

I certify that the attached impact fee analysis:

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 of 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; or
 - 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.



Keith J. Larson, P.E.

**APPENDIX A
DEPRECIATION SCHEDULE**

Description	Useful Life (Years)	Cost			
WWTP KENNECOTT PROPERTY	50	96,697.04	Treatment	WWTP	\$36,899,032
PURCHASE EASEMENT EVERGREN INV	50	8,000.00	Treatment	Collection	\$2,312,812
PURCHASE EASEMNT RITA X BAILEY	50	3,500.00	Treatment		
THERMOMETER	50	250.00	Treatment		
DRY WELL	50	1,722.50	Collection		
MAIN	40	216,135.00	Collection		
MAIN	40	171,558.00	Collection		
MAIN	40	165,350.00	Collection		
MAIN	40	133,610.00	Collection		
MAIN	40	189,205.00	Collection		
MAIN	40	692,537.00	Collection		
MAIN	40	157,042.00	Collection		
BASE & FILL	40	11,011.00	Collection		
FINE SCREEN FACILITY	30	226,363.06	Treatment		
RETAINING WALL WWTP	30	49,653.34	Treatment		
NON POTABLE WATERLINE WWTP	30	88,987.61	Treatment		
FINE SCREEN FACILITY PROJECT	30	1,566,497.42	Treatment		
BIOBROx FACILITY	30	9,532,889.16	Treatment		
ENSIGN DEVEL UPSIZING	30	5,425.00	Collection		
SOLIDS HANDLING BUILDING	30	1,426,772.19	Treatment		
OXIDATION DITCH UPGRADE	30	35,356.80	Treatment		
WEST CLARIFIER UPGRADE	30	24,160.00	Treatment		
SEWER EXTENSION 8550 W	30	64,380.19	Collection		
WWTP HEADWORKS	30	1,246,149.13	Treatment		
NON-PORTABLE TANK UPGRADE	30	44,403.73	Collection		
WWTP OFFICE	30	15,781.11	Treatment		
RVDUMP	30	51,262.64	Treatment		
MISC SEWER LINE CYPRUS	30	70,907.51	Collection		
CDBG SEWERLINE	30	178,563.87	Collection		
SEWER EXTENSION 2700	30	947.80	Collection		
TREATMENT PLANT SHOP	30	22,328.30	Treatment		
ADDITIONAL SLUDGE BED COSTS	30	596.49	Treatment		
SLUDGE BEDS	30	44,958.96	Treatment		
NEW SEWAGE PLANT	30	24,800.00	Treatment		
1992 PROJECTS	30	772.00	Treatment		
STRUCTURES & MAINS 12-94	30	43,094.00	Treatment		
NE QUADRANT	30	2,088,071.55	Treatment		
SLUDGE BEDS	30	133,740.94	Treatment		
OVERHALL PUMPS/TURBINE	30	14,790.00	Treatment		
NEW SLUDGE BEDS (1993)	30	4,135.52	Treatment		
ENGINEERING	30	3,692.17	Treatment		
ON LINE 6-1-87	30	16,056.19	Treatment		
ON LINE 6-1-87	30	5,293,529.78	Treatment		
WEST CLARIFIER UPGRADE	30	270,373.89	Treatment		
SUBDIVIDER	30	192,472.00	Treatment		
8000 W - 3500 S	30	12,841.99	Collection		
SUBDIVIDER	30	117,028.00	Treatment		
8000 W - 3500 S	30	22,848.86	Collection		
SUBDIVIDER	30	170,127.00	Treatment		
SUBDIVIDER	30	106,273.70	Treatment		
ADDN	30	76,258.21	Treatment		
SUBDIVIDER	30	147,533.00	Treatment		
ADDTL COSTS EDR TREATMENT FACI	29	39,640.62	Treatment		
CAP LEGAL ON 24 LINE"	29	2,725.83	Treatment		
HEADWORKS ENCLOSURE & MODIFICA	28	49,431.02	Treatment		
4100 S 8400 W	28	23,779.35	Collection		
ADDN	26	113,482.04	Treatment		
ADDN	26	10,819.72	Treatment		
2017 SEWER LINE REPLACEMENT PROJ	25	76,943.30	Collection		
8" PVC SEWER MAIN 7200 W 3100 S	25	18,855.50	Collection		
WWTP ADMINISTRATION BLDG	25	963,310.36	Treatment		
RV DUMP FENCING	25	20,014.07	Treatment		
10 DRAINLINE FROM HEAD TO BIO"	25	29,624.35	Treatment		
NW 12' W/L TO WWTP SRVC AREA#2	25	174,968.04	Treatment		
BAILEY LANE SEWER	25	54,744.49	Collection		
PLANT PUMP DRAIN	20	7,695.00	Treatment		
VACTOR 2110PLUS SEWER CLEANING MAC	15	365,411.00	Treatment		
VACTOR TRUCK MODEL 2110 46313	15	285,284.00	Treatment		
TREATMENT PLANT BUILDING	15	70,612.90	Treatment		

MAGNA WATER DISTRICT WATER IMPACT FEE FACILITIES PLAN

October 2020

Prepared for:



Prepared by:



EXECUTIVE SUMMARY WATER IMPACT FEE FACILITIES PLAN

The purpose of an impact fee facilities plan is to identify demands placed upon District facilities by future development and evaluate how these demands will be met by the District. The IFFP is also intended to outline the improvements which may be funded through impact fees.

WHY IS AN IFFP NEEDED?

The IFFP provides a technical basis for assessing updated impact fees throughout the District. This document addresses the future infrastructure needed to serve the District. The existing and future capital projects documented in this IFFP will ensure that level of service standards are maintained for all existing and future residents who reside within the service area. Local governments must pay strict attention to the required elements of the Impact Fee Facilities Plan which are enumerated in the Impact Fees Act.

PROJECTED FUTURE GROWTH

To evaluate the use of existing capacity and the need for future capacity, it is first necessary to calculate the demand associated with existing development and projected growth. Using available information for existing development and growth projections from the District's Water Master Plan, projected growth in system demand is summarized in Table ES-1.

**Table ES-1
Peak Day Demand**

Year	Total ERUs	Peak Day Demand ¹ (gpm)
2018	10,049	8,973
2020	10,419	9,313
2025	11,961	10,182
2028	12,761	10,835
2030	13,151	11,149
2035	13,933	11,768
2040	14,755	12,422
2045	15,550	13,051
2050	16,215	13,574
2055	16,897	14,102
2060	17,542	14,596

Demands are projected in terms of Equivalent Residential Units (ERUs). An ERU represents the demand that a typical single-family residence places on the system. The basis of an ERU for historical flow rates is summarized in Table ES-2.

**Table ES-2
Magna Service Area Historic Flows for Planning**

Item	Value for Existing Conditions
Estimated Population	32,430
Equivalent Residential Units (ERUs)	10,419
Average Day Flow (mgd)	5.35
Average Day, Indoor Flow (mgd)	2.48
Peak Day Flow (mgd)	13.41
Peak Hour Flow (mgd)	21.46
Flows per ERU	
Average Day Flow (gpd/ERU)	513
Average Day, Indoor Flow (gpd/ERU)	238
Peak Day Flow (gpd/ERU)	1,287
Peak Hour Flow (gpm/ERU)	1.43

LEVEL OF SERVICE

Level of service is defined in the Impact Fees Act as “the defined performance standard or unit of demand for each capital component of a public facility within a service area.” Performance standards are those standards that are used to design and evaluate the performance of facilities. While the Impact Fees Act includes “defined performance standard” as part of the level of service definition, this report will make a subtle distinction between performance standard and level of service. The performance standard will be considered the desired minimum level of performance for each component, while the existing level of service will be the actual current performance of the component and the proposed level of service will be the proposed actual performance of the component in the future. Summary values for each of these categories are contained in Table ES-3.

**Table ES-3
Performance Standards and Level of Service
for Various System Requirements**

	Existing Performance Standard	Existing Level of Service	Proposed Performance Standard
Production Capacity			
Production Capacity (gpd/ERU) ¹	1,617	1,580	1,430
Storage			
Storage (gallons/ERU) ²	680	2,051	680
Conveyance (Transmission, Pumping, and Distribution)			
Culinary Peak Day Demand Pressure (psi) / Percent of System that Meets the Standard	40 / 100%	100%	40 / 100%
Culinary Peak Hour Demand Pressure (psi) / Percent of System that Meets the Standard	30 / 100%	100%	30 / 100%
Culinary Maximum Pipe Velocity (feet per second) / Percent of System that Meets the Standard	7 / 100%	98.5%	7 / 100%
Secondary Peak Hour Demand Pressure (psi) / Percent of System that Meets the Standard	30 / 100%	100%	30 / 100%
Minimum Available Fire Flow at 20 psi during Peak Day Demand (gpm) / Percent of System that Meets the Standard	1500 ³ / 100%	98.4%	1500 ³ / 100%
Maximum Pipe Velocity Peak Hour (feet per second)	10	100%	7.0 / 100%
Administration and Service Buildings			
Available Space to Required Need Ratio	1.0	1.7	1.0

¹ This includes the District’s recommended safety factor for reliability and redundancy for peak day demand of the culinary and secondary water systems. Proposed performance standard decreases slightly from existing as a result of more demand over which the reliability and redundancy safety factor is applied.

² Does not include fire flow storage, only equalization storage. Shown for services using culinary water for outdoor irrigation (the more common scenario currently).

³ Shown for typical residential need. Actual fire flow requirements for individual structures per fire code as documented in the Master Plan.

REQUIRED SYSTEM IMPROVEMENTS

Beyond available existing capacity, additional improvements required to serve new growth are summarized in Table ES-4. To satisfy the requirements of state law, Table ES-4 provides a breakdown of the percentage of the project costs attributed to existing and future users. For future use, capacity has been divided between capacity to be used by growth within the 10-year planning window of this IFFP and capacity that will be available for growth beyond the 10-year window.

**Table ES-4
Water Project Costs Allocated to Projected Development, 10-year Planning Window**

Project Identifier	Project Description	Estimated Total Cost	Percent to Existing	Percent to 10-Year Growth	Percent to Beyond 10-Year	Cost to Existing	Cost to 10-yr Growth	Cost to Beyond 10-Year
Culinary and Secondary Storage Improvements								
CS-1	Zone 3 II Culinary	\$1,210,000	0.0%	61.5%	38.5%	\$0	\$743,747	\$466,253
SS-1	Zone 3 Secondary	\$4,150,000	13.9%	43.1%	43.0%	\$575,636	\$1,789,213	\$1,785,150
Culinary and Secondary Booster Stations								
CBS-1	Zone 3 II Culinary	\$775,000	0.0%	38.9%	61.1%	\$0	\$301,560	\$473,440
SBS-1	Zone 3 I Secondary	\$575,000	0.0%	55.4%	44.6%	\$0	\$318,801	\$256,199
SBS-2	Zone 3 II Secondary	\$1,000,000	0.0%	55.4%	44.6%	\$0	\$554,437	\$445,563
Culinary Distribution Improvements								
CD-1	Zone 3 Conveyance	\$1,339,000	0.0%	38.9%	61.1%	\$0	\$521,019	\$817,981
CD-3	Zone 3 Pump Connection	\$347,000	0.0%	38.9%	61.1%	\$0	\$135,021	\$211,979
Secondary Distribution Improvements								
SD-1	3100 S, Dayton St to 7900 W	\$717,000	38.6%	22.7%	38.7%	\$276,793	\$162,496	\$277,711
SD-2	3100 S, 7900 W to 7600 W	\$931,000	38.6%	22.7%	38.7%	\$359,407	\$210,995	\$360,599
SD-3	Zone 2 Tank & Pump Station Piping	\$143,000	48.6%	32.6%	18.8%	\$69,498	\$46,646	\$26,857
SD-4	Zone 3 Gateway Piping	\$1,265,000	0.0%	55.4%	44.6%	\$0	\$701,363	\$563,637
SD-5	Zone 3 Magna Regional Park	\$340,000	0.0%	55.4%	44.6%	\$0	\$188,509	\$151,491
SD-6	Scott Matheson Jr & Copper Hills Elementary	\$1,214,000	48.6%	32.6%	18.8%	\$590,000	\$396,000	\$228,000
SD-7	Gateway to Little Valley Piping	\$454,000	0.0%	55.4%	44.6%	\$0	\$251,715	\$202,285
SD-9	7600 W Connections	\$85,000	38.6%	22.7%	38.7%	\$32,814	\$19,264	\$32,923
SD-12	SR201 Crossing Transmission	\$1,059,000	38.6%	22.7%	38.7%	\$408,820	\$240,004	\$410,176
SD-16	8000 W Booster Piping	\$1,021,000	48.6%	32.6%	18.8%	\$496,203	\$333,044	\$191,753
SD-19	2600 S, 7600 W to 7200 W	\$955,000	38.6%	22.7%	38.7%	\$368,672	\$216,434	\$369,894
SD-22	Zone 3, 8200 W Pipe	\$704,000	0.0%	55.4%	44.6%	\$0	\$390,324	\$313,676
SD-23	Zone 3 Tank Pipe	\$438,000	0.0%	55.4%	44.6%	\$0	\$242,844	\$195,156
Source Rehab and Replacement Improvements								
1	Haynes Well #8	\$1,600,000	59.4%	15.6%	25.0%	\$950,400	\$249,120	\$400,480
2	Well Field Rehabilitation	\$250,000	59.4%	15.6%	25.0%	\$148,500	\$38,925	\$62,575
4	Well Field SCADA	\$250,000	59.4%	15.6%	25.0%	\$148,500	\$38,925	\$62,575
5	Immediate EDR Project (Add 3rd Stage)	\$2,754,500	59.4%	15.6%	25.0%	\$1,636,173	\$428,876	\$689,451
7	Brine Pump Station	\$250,000	59.4%	15.6%	25.0%	\$148,500	\$38,925	\$62,575
8	Standby Generator	\$120,000	59.4%	15.6%	25.0%	\$71,280	\$18,684	\$30,036
9	SCADA Upgrades	\$250,000	59.4%	15.6%	25.0%	\$148,500	\$38,925	\$62,575
Other								
1	Shallow Groundwater Development	\$3,450,000	0.0%	23.8%	76.2%	\$0	\$821,429	\$2,628,571
2	Secondary Reuse	\$9,984,720	36.5%	45.0%	18.5%	\$3,644,423	\$4,493,124	\$1,847,173
	Total	\$37,631,220				\$10,074,118	\$13,930,368	\$13,626,735

IMPACT FEE FACILITIES PLAN

INTRODUCTION

Magna Water District (District) has retained Bowen Collins & Associates (BC&A) to prepare an impact fee facilities plan (IFFP) for water supply and distribution provided by the District. The purpose of an IFFP is to determine the public facilities required to service development resulting from new development activity. The IFFP is also intended to outline the improvements which may be funded through impact fees.

Much of the analysis forming the basis of this IFFP has been taken from the District's updated water master plan prepared by BC&A. The reader should refer to the master plan study for additional discussion of planning and evaluation methodology beyond what is contained here. Magna Water District intends to use its culinary water and secondary irrigation systems as equally important parts of its overall water delivery system. Because the secondary irrigation system will offset demands on the District's culinary water system components (pipes, storage tanks, pumps, etc.), all culinary water or secondary irrigation projects will be included in a combined water impact fee assessed by Magna Water District.

Requirements for the preparation of an IFFP are outlined in Title 11, Chapter 36a of the Utah Code (the Impact Fees Act). Under these requirements, an IFFP shall accomplish the following for each facility:

1. Identify the existing level of service
2. Establish a proposed level of service
3. Identify excess capacity to accommodate future growth at the proposed level of service
4. Identify demands placed upon existing public facilities by new development
5. Identify the means by which demands from new development will be met
6. Consider the following additional issues
 - a. revenue sources to finance required system improvements
 - b. necessity of improvements to maintain the proposed level of service
 - c. need for facilities relative to planned locations of schools

The following sections of this report have been organized to address each of these requirements.

EXISTING LEVEL OF SERVICE - 11-36a-302(1)(a)(i)

Level of service is defined in the Impact Fees Act as “the defined performance standard or unit of demand for each capital component of a public facility within a service area.” This section discusses the level of service being currently provided to existing users.

Unit of Demand

The projected flow used to design and evaluate system components will vary depending on the nature of each component. For example, water rights are often evaluated based on average annual yields. Conversely, transmission pipelines must be designed based on peak hour flow. For the purposes of this analysis, it is useful to define these various demands in terms of Equivalent Residential Units (ERUs). An ERU represents the demand that a typical single-family residence places on the system. The basis of an ERU using historical flow rates is summarized in Table 1. Additional detail regarding the calculation of values used in the definition of an ERU are contained in the District’s Water Master Plan.

Table 1
Magna Water District Service Area Historic Flows for Planning

Item	Value for Existing Conditions
Estimated Population	32,430
Equivalent Residential Units (ERUs)	10,419
Average Day Flow (mgd)	5.35
Average Day, Indoor Flow (mgd)	2.48
Peak Day Flow (mgd)	13.41
Peak Hour Flow (mgd)	21.46
Flows per ERU	
Average Day Flow (gpd/ERU)	513
Average Day, Indoor Flow (gpd/ERU)	238
Peak Day Flow (gpd/ERU)	1,287
Peak Hour Flow (gpm/ERU)	1.43

Performance Standard

Performance standards are those standards that are used to design and evaluate the performance of facilities. While the Impact Fees Act includes “defined performance standard” as part of the level of service definition, this report will make a subtle distinction between performance standard and level of service. The performance standard will be considered the desired minimum level of performance for each component, while the existing level of service will be the actual current performance of the component. Thus, if the existing level of service is less than the performance standard it is a deficiency. If it is greater than the performance standard it may indicate excess capacity. This section discusses the existing performance standards for the District. A subsequent section will consider existing level of service relative to these standards.

To improve the accuracy of the analysis, this impact fee facilities plan has divided the system into different components:

- Source Production Capacity
- Storage
- Conveyance (Transmission, Distribution, and Pumping)
- Administrative and Service Buildings

Each of these components has its own set of performance standards:

Production Capacity. Water production must be adequate to satisfy demands on both an annual and peak day basis. Production of supplies must take into account seasonal limitations in supply availability and reductions in yield because of dry year conditions. For peak day demands, the District requires a 10 percent source redundancy requirement for culinary and a 2,000 gpm buffer for secondary irrigation. This source redundancy is to account for mechanical failures amongst its various water sources. For annual demands, the District requires a 10 percent source buffer for culinary water and a 671 acre-foot buffer for secondary water related to the reliability of canal shares and other source as a result of drought, contamination, and other longer-term interruptions to supply.

Storage. Three major criteria are generally considered when sizing storage facilities for a water distribution system: operational or equalization storage, fire flow storage, and emergency or standby storage.

1. **Operational/Equalization Storage:** Operational/equalization storage is the storage required to satisfy the difference between the maximum rate of supply and the rate of demand during peak conditions. Sources, major transmission pipelines, and pump stations are usually sized to convey peak day demands to optimize the capital costs of infrastructure. During peak hour demands, storage is needed to meet the difference in source/conveyance capacity and the increased peak instantaneous demands. Based on the historic usage, the equalization storage for culinary demands in the District was calculated to be 50 percent of average peak day demands.
2. **Fire Flow Storage:** Fire flow storage is the amount of water needed to combat fires occurring in the distribution system. Required fire flow storage is calculated based on the fire flow rate for structures in each area of the system multiplied by a specified duration as required by the fire authority or a fire suppression system engineer. Storage requirements vary between 180,000 gallons and 540,000 gallons depending on facilities within the service area of the tank.
3. **Emergency Storage:** Emergency or standby storage is the storage needed to meet demands in the event of an unexpected emergency situation such as a line break, treatment plant failure, or other unexpected event. For the District, the critical scenario appears to be providing water during a power outage during the peak day. The level of service established for existing customers is to provide 12 hours of peak day demand of emergency storage.

Storage requirements are calculated for the system as a whole and for each individual zone.

Conveyance. Based on input from District staff, the following criteria were used as the performance standards for major conveyance facilities:

1. The system was evaluated for existing conditions and projected conditions at buildout. Each demand scenario included model runs at both peak day and peak hour demand.
2. Under peak day demand, the system must be capable of maintaining constant levels at all system tanks and reservoirs.
3. The District tries to maintain pressure between 60 psi and 120 psi for the full range of demands (peak hour and to static conditions). Where topography would require a large number of pressure reducing valves (terrain slopes greater than 5 percent) to maintain pressures in that range, the District should be capable of maintaining at least 40 psi during peak day demand and 30 psi during peak hour demand, which is consistent with State standards (State of Utah Administrative Rule R309-105-9).
4. Fire flow demands on the culinary system may range between 1,000 gpm and 4,000 gpm depending on specific fire suppression requirements as specified by the District's Fire Marshal (Unified Fire Authority). In no case does the District allow residual fire flow pressure to drop below State of Utah minimum requirements during peak day demand (20 psi).

The performance standard defines the level of service the District has established to satisfy District and/or State performance requirements. For culinary water, this standard has been based on current District standards and requirements of the State of Utah Division of Drinking Water.

Administrative and Service Buildings. In addition to the water system needs, Magna Water District personnel need to be able to provide administrative and service functions for the District to satisfy a level of service for customers. The District's current administrative and service facilities are composed of a number of different components, including office space, open storage space, maintenance bays, etc., and does not have a specific performance standard. It is proposed that both existing and future users pay for these facilities in proportion to their overall use in the system. Thus, the level of service provided by the facility will be the same for existing and new users. The District's existing facilities should be satisfactory to provide space for personnel through the District's planning window such that there is some excess space available today that is available for additional personnel to fill in the future to support the needs of future users.

Existing Level of Service

Existing level of service has been divided into the same components as identified for the system performance standard (production capacity, storage, conveyance, and administrative and service buildings). Existing level of service values are summarized in Table 2. For comparison purposes, Table 2 also includes a summary of the existing performance standards.

**Table 2
Existing Performance Standards and Level of Service
for Various System Requirements**

	Existing Performance Standard	Existing Level of Service
Production Capacity		
Production Capacity (gpd/ERU) ¹	1,617	1,580
Storage		
Storage (gallons/ERU) ²	680	2,051
Conveyance (Transmission, Pumping, and Distribution)		
Culinary Peak Day Demand Pressure (psi) / Percent of System that Meets the Standard	40 / 100%	100%
Culinary Peak Hour Demand Pressure (psi) / Percent of System that Meets the Standard	30 / 100%	100%
Culinary Maximum Pipe Velocity (feet per second) / Percent of System that Meets the Standard	7 / 100%	98.5%
Secondary Peak Hour Demand Pressure (psi) / Percent of System that Meets the Standard	30 / 100%	100%
Minimum Available Fire Flow at 20 psi during Peak Day Demand (gpm) / Percent of System that Meets the Standard	1500 ³ / 100%	98.4%
Maximum Pipe Velocity Peak Hour (feet per second)	10	100%
Administration and Service Buildings		
Available Space to Required Need Ratio	1.0	1.7

¹This includes the District’s recommended safety factor for reliability and redundancy for peak day demand of the culinary and secondary water systems.

²Does not include fire flow storage, only equalization storage. Shown for services using culinary water for outdoor irrigation (the more common scenario currently).

³Shown for typical residential need. Actual fire flow requirements for individual structures per fire code as documented in the Master Plan.

In some cases, the District’s performance standard is higher than the existing level of service and indicates there is some deficiency in the existing system. In most cases, this is associated with limited locations in the existing system and excess capacity still may exist in other parts of the system. Excess capacity and curing of deficiencies will be discussed in subsequent sections of this report. Costs for projects to correct deficiencies that do not meet the required level of service will not be included as part of the impact fee as required by the Impact Fee Act (i.e. new users will not be required to pay to remediate existing deficiencies in the system).

PROPOSED LEVEL OF SERVICE - 11-36A-302(1)(A)(II)

The proposed level of service is the performance standard used to evaluate system needs in the future. The Impact Fees Act indicates that the proposed level of service may:

1. diminish or equal the existing level of service; or
2. exceed the existing level of service if, independent of the use of impact fees, the District implements and maintains the means to increase the level of service for existing demand within six years of the date on which new growth is charged for the proposed level of service.

By definition, the proposed future level of service will be equal to the performance standard. No changes are proposed to the current performance standard and corresponding level of service. Table 3 summarizes the proposed performance standards and level of service.

**Table 3
Proposed Performance Standards and Level of Service
for Various System Requirements**

	Proposed Performance Standard	Proposed Level of Service
Production Capacity		
Production Capacity (gpd/ERU) ¹	1,430	1,430
Storage		
Storage (gallons/ERU)	680	680
Transmission and Distribution		
Culinary Peak Day Demand Pressure (psi) / Percent of System that Meets the Standard	40 / 100%	100%
Culinary Peak Hour Demand Pressure (psi) / Percent of System that Meets the Standard	30 / 100%	100%
Culinary Maximum Pipe Velocity (feet per second) / Percent of System that Meets the Standard	7 / 100%	100%
Secondary Peak Hour Demand Pressure (psi) / Percent of System that Meets the Standard	30 / 100%	100%
Minimum Available Fire Flow at 20 psi during Peak Day Demand (gpm) ² / Percent of System that Meets the Standard	1500 ² / 100%	100%
Maximum Pipe Velocity Peak Hour (feet per second)	7.0 / 100%	100%
Administration and Service Buildings		
Available Space to Required Need Ratio	1.0	1.0

¹ This includes the District’s recommended safety factor for reliability and redundancy for peak day demand of the culinary and secondary water systems. Proposed performance standard decreases slightly from existing as a result of more demand over which the reliability and redundancy safety factor is applied.

² Shown for typical residential need. Actual fire flow requirements for individual structures per fire code as documented in the Master Plan.

EXCESS CAPACITY TO ACCOMMODATE FUTURE GROWTH (11-36A-302(1)(A)(III))

Projected future growth will be met through a combination of available excess capacity in existing facilities and construction of additional capacity in new facilities. Defining existing system capacity in terms of a single number is difficult. To improve the accuracy of the analysis, the system has been divided into different components (production, storage, conveyance, and administrative). The purpose of this breakdown is to consider the available capacity for each component individually. Excess capacity in each component of the system is as follows:

Production

Although the District has been able to produce enough supply to meet demands in recent years, it does not have enough water to meet it established level of service including all redundancy and

reliability requirements. As a result, existing production does not have any excess capacity for future growth as summarized in Table 4.

**Table 4
Production Excess Capacity**

Use Category	District Area Percent Use
Existing Use	100.00%
Use by 10-Year Growth	0.00%
Use by Growth Beyond 10 years	0.00%
Total	100.00%

Conveyance (Transmission & Pumping)

To calculate the percentage of existing capacity to be used by future growth in existing facilities, existing and future flows were examined in the system hydraulic computer model. Because pipelines and pump stations are closely related within the operation of the system, these two components were grouped for the purposes of this analysis. In gravity systems such as sewer and storm drain, it is usually possible to do an analysis of available capacity on a pipe by pipe basis. Unfortunately, this is often not the case with pressurized water systems. Identifying how much 10-year growth and growth beyond 10-year users utilize each distribution pipe can often vary significantly between operational scenarios because flows can reverse directions and loop through different paths as growth occurs and as new pipes are added to the water system. In these cases, the preferred method used to calculate excess capacity available for use by future flows is to treat all pipelines as an interrelated system and examine cumulative use of capacity as a whole. The process for this is as follows:

- 1. Eliminate Facilities without Excess Capacity** – For the planning window period (in this case, 10 years), the projected growth in flow during the planning window was compared against the available capacity for individual facilities. Where the 10-year growth flow exceeded the capacity of the facility (often identified where velocities exceed 7 ft/sec during peak hour demands), the available excess capacity is zero. By assigning a capacity of zero, this eliminated facilities where there is no excess capacity available to future users and facilities are scheduled to be replaced. This effectively eliminates existing pipes that are considered deficient either for existing use or 10-year growth and avoids double counting the capacity of these pipelines.
- 2. Identify Future Needed Capacity** – Based on projected growth as will be discussed subsequently, the percentage of needed capacity in the system is calculated for each of the growth windows (existing development, 10-year growth, and growth beyond 10 years).
- 3. Identify Proportional Value of Existing and Future Infrastructure** – Based on analysis contained in the District’s master plan, the proportional value of infrastructure was developed for each of the growth windows. This is based on the value of existing installed infrastructure and the identified project costs of all recommended projects remaining to complete a system capable of conveying water and satisfying demands at buildout.
- 4. Determine the Portion to Needed Future Capacity Being Satisfied Through Existing Facilities** – With the projected proportion use of future capacity and proportional value of existing and future facilities, it is possible to calculate the use of capacity in any group of facilities if it is assumed that all growth periods will use infrastructure in equal proportions.

This is a reasonable assumption in any system such as Magna Water District where future growth consists of infill or growth that will rely on a large percentage of the existing distribution and transmission pipes. Based on this approach, the capacity for future users satisfied by future infrastructure can be subtracted from the total future capacity need with the remaining need for capacity satisfied through existing infrastructure.

Based on the method described above, the amount of excess capacity in existing transmission and pumping facilities available to accommodate future growth and the demands placed on the existing facilities by new development activity has been calculated. This is summarized in Table 5.

**Table 5
Conveyance System Excess Capacity**

Use Category	District Area Percent Use
Existing Use	84.62%
Use by 10-Year Growth	13.98%
Use by Growth Beyond 10 years	1.41%
Total	100.00%

Storage

The District owns and operates a number of storage reservoirs. Table 6 summarizes the storage volume in the District’s existing reservoirs. The existing and projected future use of existing storage capacity is also summarized in Table 6. Total percent use of capacity has been weighted by the documented actual cost of capacity in each reservoir.

Since all new users will be connected to the proposed secondary irrigation system, new users will only occupy the “indoor water use” portion of storage in the District’s culinary water storage tanks. Storage for “outdoor water use” will be provided by a new secondary irrigation storage tank. This has been accounted for in the percentages shown in Table 6 in order to avoid double charging new users for the capacity in the existing and future facilities.

**Table 6
Existing Storage Facilities**

Tank Service Area	Available Storage (gallons)	Existing Use	Use by 10-Year Growth	Use by Growth Beyond 10 Years	Documented Actual Cost of Asset
Culinary					
Zone 3 Tank	500,000	51.60%	48.40%	0.00%	\$1,071,320
4100 South & Bacchus	10,500,000	64.06%	35.94%	0.00%	\$1,071,134
3500 South & 7600 West	7,000,000	64.06%	35.94%	0.00%	\$714,089
Subtotal	18,000,000	59.39%	40.61%	0.00%	\$2,856,543
Secondary					
Zone 2 Reservoir	7,500,000	48.60%	32.62%	18.78%	\$1,247,633
3500 South	5,050,000	38.60%	22.66%	38.73%	\$2,391,624
Subtotal	12,550,000	42.03%	26.08%	31.89%	\$3,639,257
Total	30,550,000	49.66%	32.47%	17.87%	\$6,495,800

Administrative and Service Buildings

As discussed under the existing and proposed level of service sections, Magna Water District’s District Office has sufficient capacity through the District’s long-term planning window and has excess capacity for future growth as listed in Table 7.

**Table 7
Administrative Excess Capacity**

Use Category	District Area Percent Use
Existing Use	59.40%
Use by 10-Year Growth	15.57%
Use by Growth Beyond 10 years	25.03%
Total	100.00%

DEMANDS PLACED ON FACILITIES BY NEW DEVELOPMENT - 11-36A-302(1)(A)(IV)

Growth and new development in the District is discussed in the District’s Master Plan studies. Growth projections include consideration of developable area, zoning, the nature of surrounding development, designated open space and other factors. Future growth as projected in the District’s Water Master Plan is shown in Table 8.

Table 8

Projected Magna Water District Water System Growth

Year	Total ERUs	Peak Day Demand ¹ (gpm)
2018	10,049	8,973
2020	10,419	9,313
2025	11,961	10,182
2028	12,761	10,835
2030	13,151	11,149
2035	13,933	11,768
2040	14,755	12,422
2045	15,550	13,051
2050	16,215	13,574
2055	16,897	14,102
2060	17,542	14,596

¹Total indoor and outdoor system demand

Projected growth in peak day demand is 1,836 gpm over the next 10 years, and 5,283 gpm through buildout.

INFRASTRUCTURE REQUIRED TO MEET DEMANDS OF NEW DEVELOPMENT - 11-36a-302(1)(a)(v)

To satisfy the requirements of state law, the effect of demand placed upon existing system facilities by future development was evaluated using the process outlined below. Each of the steps was completed as part of this plan's development. More description of the methodology used in the process outlined below can be found in the Culinary Water and Secondary Irrigation Master Plans.

1. **Existing Demand** – The demand existing development places on the District's system was estimated based on historic water use and flow records.
2. **Existing Capacity** – The capacities of existing system facilities were estimated using size data provided by the District and a hydraulic computer model.
3. **Existing Deficiencies** – Existing deficiencies in the system were looked for by comparing defined levels of service against calculated capacities.
4. **Future Demand** - The demand future development will place on the system was estimated based on development projections as discussed in a previous section.
5. **Future Deficiencies** - Future deficiencies in the collection system were identified using defined level of service and results from the computer model.
6. **Recommended Improvements** – Needed system improvements were identified to remedy existing deficiencies and meet demands associated with future development.

The steps listed above “identify demands placed upon existing public facilities by new development activity at the proposed level of service; and... the means by which the political subdivision or private entity will meet those growth demands” (Section 11-36a-302(1)(a) of the Utah Code).

10-Year Improvement Plan

In the District's Water Master Plan, capital facility projects needed to provide service to various parts of the District at projected ten-year and buildout scenarios were identified. Only infrastructure to be constructed within a ten-year horizon will be considered in the calculation of these impact fees to avoid uncertainty surrounding improvements further into the future. Table 9 summarizes the components of projects identified in the Water Master Plan that will need to be constructed within the next ten years. Details associated with the costs used for each project are contained in the Capital Facilities Plan.

**Table 9
Project Costs Allocated to Projected Development, 10-year Planning Window**

Project Identifier	Project Description	Estimated Total Cost	Percent to Existing	Percent to 10-Year Growth	Percent to Beyond 10-Year	Cost to Existing	Cost to 10-yr Growth	Cost to Beyond 10-Year
Culinary and Secondary Storage Improvements								
CS-1	Zone 3 II Culinary	\$1,210,000	0.0%	61.5%	38.5%	\$0	\$743,747	\$466,253
SS-1	Zone 3 Secondary	\$4,150,000	13.9%	43.1%	43.0%	\$575,636	\$1,789,213	\$1,785,150
Culinary and Secondary Booster Stations								
CBS-1	Zone 3 II Culinary	\$775,000	0.0%	38.9%	61.1%	\$0	\$301,560	\$473,440
SBS-1	Zone 3 I Secondary	\$575,000	0.0%	55.4%	44.6%	\$0	\$318,801	\$256,199
SBS-2	Zone 3 II Secondary	\$1,000,000	0.0%	55.4%	44.6%	\$0	\$554,437	\$445,563
Culinary Distribution Improvements								
CD-1	Zone 3 Conveyance	\$1,339,000	0.0%	38.9%	61.1%	\$0	\$521,019	\$817,981
CD-3	Zone 3 Pump Connection	\$347,000	0.0%	38.9%	61.1%	\$0	\$135,021	\$211,979
Secondary Distribution Improvements								
SD-1	3100 S, Dayton St to 7900 W	\$717,000	38.6%	22.7%	38.7%	\$276,793	\$162,496	\$277,711
SD-2	3100 S, 7900 W to 7600 W	\$931,000	38.6%	22.7%	38.7%	\$359,407	\$210,995	\$360,599
SD-3	Zone 2 Tank & Pump Station Piping	\$143,000	48.6%	32.6%	18.8%	\$69,498	\$46,646	\$26,857
SD-4	Zone 3 Gateway Piping	\$1,265,000	0.0%	55.4%	44.6%	\$0	\$701,363	\$563,637
SD-5	Zone 3 Magna Regional Park	\$340,000	0.0%	55.4%	44.6%	\$0	\$188,509	\$151,491
SD-6	Scott Matheson Jr & Copper Hills Elementary	\$1,214,000	48.6%	32.6%	18.8%	\$590,000	\$396,000	\$228,000
SD-7	Gateway to Little Valley Piping	\$454,000	0.0%	55.4%	44.6%	\$0	\$251,715	\$202,285
SD-9	7600 W Connections	\$85,000	38.6%	22.7%	38.7%	\$32,814	\$19,264	\$32,923
SD-12	SR201 Crossing Transmission	\$1,059,000	38.6%	22.7%	38.7%	\$408,820	\$240,004	\$410,176
SD-16	8000 W Booster Piping	\$1,021,000	48.6%	32.6%	18.8%	\$496,203	\$333,044	\$191,753
SD-19	2600 S, 7600 W to 7200 W	\$955,000	38.6%	22.7%	38.7%	\$368,672	\$216,434	\$369,894
SD-22	Zone 3, 8200 W Pipe	\$704,000	0.0%	55.4%	44.6%	\$0	\$390,324	\$313,676
SD-23	Zone 3 Tank Pipe	\$438,000	0.0%	55.4%	44.6%	\$0	\$242,844	\$195,156
Source Rehab and Replacement Improvements								
1	Haynes Well #8	\$1,600,000	59.4%	15.6%	25.0%	\$950,400	\$249,120	\$400,480
2	Well Field Rehabilitation	\$250,000	59.4%	15.6%	25.0%	\$148,500	\$38,925	\$62,575
4	Well Field SCADA	\$250,000	59.4%	15.6%	25.0%	\$148,500	\$38,925	\$62,575
5	Immediate EDR Project (Add 3rd Stage)	\$2,754,500	59.4%	15.6%	25.0%	\$1,636,173	\$428,876	\$689,451
7	Brine Pump Station	\$250,000	59.4%	15.6%	25.0%	\$148,500	\$38,925	\$62,575
8	Standby Generator	\$120,000	59.4%	15.6%	25.0%	\$71,280	\$18,684	\$30,036
9	SCADA Upgrades	\$250,000	59.4%	15.6%	25.0%	\$148,500	\$38,925	\$62,575
Other								
1	Shallow Groundwater Development	\$3,450,000	0.0%	23.8%	76.2%	\$0	\$821,429	\$2,628,571
2	Secondary Reuse	\$9,984,720	36.5%	45.0%	18.5%	\$3,644,423	\$4,493,124	\$1,847,173
	Total	\$37,631,220				\$10,074,118	\$13,930,368	\$13,626,735

Project Cost Attributable to Future Growth

To satisfy the requirements of state law, Table 9 provides a breakdown of the capital facility projects and the percentage of the project costs attributed to existing and future users. As defined in Section 11-36a-102(15), the impact fee facilities plan should only include the proportionate share of “the cost of public facilities that are roughly proportionate and reasonably related to the service demands and needs of any development activity.” While many of the projects identified in the table are required solely to meet future growth, some projects also provide a benefit to existing users.

For projects needed to address both existing deficiencies and new growth or where a higher level of service is being proposed, costs have been divided proportionally between existing and future users based on their proportionate utilization of the facility. These percentages have been calculated based on the projected utilization of each facility. A few additional notes regarding specific projects are as follows:

- **Source Rehab and Replacement Projects.** These projects are considered to increase the level of service for the District’s service area. Cost distribution for this project was calculated using the District’s existing, 10 year, and buildout ERUs.
- **Secondary Reuse.** The District will be expanding reuse water from the District’s wastewater treatment plant to provide additional production capacity for the District’s secondary system. As a result, this project will be paid for based on projected use of capacity in the project for existing, 10-year, and buildout use. Existing users portion of the project includes building sufficient capacity to meet the established reliability and redundancy level of service.
- **Transmission Pipes.** There are a number of transmission pipelines in the secondary system that will also benefit existing users via additional looping and increased capacity. The capacity used by existing, 10-year, and buildout was calculated for proportionate use.

Basis of Construction Cost Estimates

The costs of construction for projects to be completed within ten years have been estimated based on past experience with projects of a similar nature.

ADDITIONAL CONSIDERATIONS

MANNER OF FINANCING - 11-36a-302(2)

The District may fund the infrastructure identified in this IFFP through a combination of different revenue sources.

Federal and State Grants and Donations

Impact fees cannot reimburse costs funded or expected to be funded through federal grants and other funds that the District has received for capital improvements without an obligation to repay. Grants and donations are not currently contemplated in this analysis. If grants become available for constructing facilities, impact fees will need to be recalculated and an appropriate credit given. Any existing infrastructure funded through past grants will be excluded from the system value during the impact fee analysis.

Bonds

None of the costs contained in this IFFP include the cost of bonding. The cost of bonding required to finance impact fee eligible improvements identified in the IFPP may be added to the calculation of the impact fee. This will be considered in the impact fee analysis.

Interfund Loans

Because infrastructure must generally be built ahead of growth, there often arise situations in which projects must be funded ahead of expected impact fee revenues. In some cases, the solution to this issue will be bonding. In others, funds from existing user rate revenue will be loaned to the impact fee fund to complete initial construction of the project and will be reimbursed later as impact fees are received. Consideration of potential interfund loans will be included in the impact fee analysis and should be considered in subsequent accounting of impact fee expenditures.

Impact Fees

It is recommended that impact fees be used to fund growth-related capital projects as they help to maintain the proposed level of service and prevent existing users from subsidizing the capital needs for new growth. Based on this IFFP, an impact fee analysis will be able to calculate a fair and legal fee that new growth should pay to fund the portion of the existing and new facilities that will benefit new development.

Developer Dedications and Exactions

Developer exactions are not the same as grants. If a developer constructs a system improvement or dedicates land for a system improvement identified in this IFFP, or dedicates a public facility that is recognized to reduce or eliminate the need for a system improvement, the developer will be entitled to an appropriate credit against that particular developer's impact fee liability or a proportionate reimbursement.

If the value of the credit is less than the development's impact fee liability, the developer will owe the balance of the liability to the District. If the recognized value of the improvements/land dedicated is more than the development's impact fee liability, the District must reimburse the difference to the developer from impact fee revenues collected from other developments.

It should be emphasized that the concept of impact fee credits pertains to system level improvements only. Developers will be responsible for the construction of project improvements (i.e. improvements not identified in the impact fee facilities plan) without credit against the impact fee.

NECESSITY OF IMPROVEMENTS TO MAINTAIN LEVEL OF SERVICE - 11-36a-302(3)

According to State statute, impact fees cannot be used to correct deficiencies in the District's system and must be necessary to maintain the proposed level of service established for all users. Only those facilities or portions of facilities that are required to maintain the proposed level of service for future growth have been included in this IFFP. Additionally, any portion of projects being used to cure existing deficiencies that will be paid for through future user rates will be accounted for through an impact fee credit to be calculated as part of the impact fee analysis. This will result in an equitable fee as future users will not be expected to fund any portion of the facilities that will benefit existing residents.

IMPACT FEE CERTIFICATION 11-36A-306(1)

This IFFP has been prepared in accordance with Utah Code Title 11 Chapter 36a (the "Impact Fees Act"), which prescribes the laws pertaining to the imposition of impact fees in Utah. The accuracy of this IFFP relies in part upon planning, engineering, and other source data, provided by the District and its designees.

In accordance with Utah Code Annotated, 11-36a-306(1), Bowen Collins & Associates makes the following certification:

I certify that the attached impact fee facilities plan:

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;
or
 - 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 relevant respect with the Impact Fees Act.



Keith J. Larson, P.E.

MAGNA WATER DISTRICT WATER IMPACT FEE ANALYSIS

October 2020

Prepared for:



Prepared by:



EXECUTIVE SUMMARY WATER IMPACT FEE ANALYSIS

The purpose of the impact fee analysis (IFA) is to calculate the allowable impact fee that may be assessed to new development in accordance with Utah Code.

WHY ASSESS AN IMPACT FEE?

Until new development utilizes the full capacity of existing facilities the District can assess an impact fee to recover its cost of latent capacity available to serve future development. The general impact fee methodology divides the available capacity of existing and future capital projects between the number of existing and future users. Capacity is measured in terms of Equivalent Residential Unit, or ERU, which represents the demand that a typical single-family residence places on the system.

HOW ARE IMPACT FEES CALCULATED?

A fair impact fee is calculated by dividing the cost of existing and future facilities by the amount of new growth that will benefit from the unused capacity. Only the capacity that is needed to serve the projected growth within the next ten years is included in the fee. Costs used in the calculation of impact fees include:

- New facilities required to maintain (but not exceed) the proposed level of service identified in the IFFP; only those expected to be built within ten years are considered in the final calculations of the impact fee.
- Historic costs of existing facilities that will serve new development
- Cost of professional services for engineering, planning, and preparation of the impact fee facilities plan and impact fee analysis

Costs not used in the impact fee calculation

- Operational and maintenance costs
- Cost of facilities constructed beyond 10 years in the future
- Cost associated with capacity not expected to be used within 10 years
- Cost of facilities funded by grants, developer contributions, or other funds which the District is not required to repay
- Cost of renovating or reconstructing facilities which do not provide new capacity or needed enhancement of services to serve future development

IMPACT FEE CALCULATION

Impact fees for this analysis were calculated by dividing the proportional cost of facilities required to service 10-year growth by the amount of growth expected over the next 10-years (based on ERUs). This is done for each of the major system components. Calculated impact fees by component are summarized in Table ES-1.

**Table ES-1
Water Impact Fee Calculation per ERU**

System Components	Total Cost of Component	% Serving 10-year Growth	Cost Serving 10-year Growth	10-year ERUs Served	Cost Per ERU
Existing Facilities – Admin Building	\$2,161,833	15.6%	\$336,685	2,732	\$123.24
Production					
Existing Facilities	\$19,022,497	0.0%	\$0	2,732	\$0.00
Existing Facility Interest Costs	\$4,837,440	0.0%	\$0	2,732	\$0.00
10-year Projects	\$18,909,220	32.6%	\$6,166,932	2,732	\$2,257.30
10-Year Project Interest Costs	\$4,707,658	32.6%	\$1,535,326	2,732	\$561.98
Credit for User Fees Paid Toward Existing					(\$1,184.58)
Subtotal	\$47,476,816		\$7,702,258		\$1,634.69
Storage					
Existing Facilities	\$6,495,800	32.5%	\$2,109,186	2,732	\$772.03
Existing Facility Interest Costs	\$0	32.5%	\$0	2,732	\$0.00
10-year Projects	\$5,360,000	47.3%	\$2,532,960	2,732	\$927.14
10-Year Project Interest Costs	\$1,777,142	47.3%	\$839,819	2,732	\$307.40
Credit for User Fees Paid Toward Existing					(\$24.04)
Subtotal	\$13,632,942		\$5,481,965		\$1,982.53
Conveyance					
Existing Facilities	\$22,922,641	14.0%	\$3,203,955	2,732	\$1,172.75
Existing Facility Interest Costs	\$2,313,853	14.0%	\$323,413	2,732	\$118.38
10-year Projects	\$13,362,000	39.1%	\$5,230,476	2,732	\$1,914.52
10-Year Project Interest Costs	\$4,327,110	39.1%	\$1,693,822	2,732	\$619.99
Credit for User Fees Paid Toward Existing					(\$519.35)
Subtotal	\$42,925,604		\$10,451,666		\$3,306.29
Studies	\$89,312	81.65%	\$72,919	1,542	\$47.29
Total	\$106,286,506		\$24,045,492		\$7,094.05

The total impact fee per ERU can be calculated by adding up the fee for each system component. This is separate from any additional charges levied by the District for hookup costs or for other reasonable permit and application fees.

RECOMMENDED IMPACT FEE

The total calculated impact fee per ERU with the appropriate user fee credits is summarized in Table ES-2. This is the legal maximum amount that may be charged as an impact fee. A lower amount may be adopted if desired, but a higher fee is not allowable under the requirements of Utah Code.

Table ES-2
Recommended Impact Fee, per ERU

Maximum Allowable Impact Fee (Per ERU, by Year)						
	2020	2021	2022	2023	2024	2025
Base Impact Fee	\$8,822.02	\$8,822.02	\$8,822.02	\$8,822.02	\$8,822.02	\$8,822.02
User Fee Credit	\$1,727.98	\$1,589.11	\$1,453.90	\$1,328.28	\$1,211.62	\$1,078.70
Total Overall Fee	\$7,094.05	\$7,232.91	\$7,368.12	\$7,493.74	\$7,610.40	\$7,743.32

IMPACT FEE ANALYSIS

INTRODUCTION

Magna Water District (District) has retained Bowen Collins & Associates (BC&A) to prepare an impact fee analysis (IFA) for its culinary water system and secondary irrigation system based on a recently completed impact fee facilities plan (IFFP). An impact fee is a one-time fee, not a tax, imposed upon new development activity as a condition of development approval to mitigate the impact of the new development on public infrastructure. The purpose of an IFA is to calculate the allowable impact fee that may be assessed to new development in accordance with Utah Code.

Requirements for the preparation of an IFA are outlined in Title 11, Chapter 36a of the Utah Code (the Impact Fees Act). Under these requirements, an IFA shall accomplish the following for each facility:

1. Identify the impact of anticipated development activity on existing capacity
2. Identify the impact of anticipated development activity on system improvements required to maintain the established level of service
3. Demonstrate how the impacts are reasonably related to anticipated development activity
4. Estimate the proportionate share of:
 - a. Costs of existing capacity that will be recouped
 - b. Costs of impacts on system improvements that are reasonably related to the new development activity
5. Identify how the impact fee was calculated
6. Consider the following additional issues
 - a. Manner of financing improvements
 - b. Dedication of system improvements
 - c. Extraordinary costs in servicing newly developed properties
 - d. Time-price differential

The following sections of this report have been organized to address each of these requirements.

IMPACT ON SYSTEM - 11-36a-304(a)(b)

Growth within the District's service area, and projections of water demand resulting from said growth is discussed in detail in the District's Water Master Plan and IFFP. For the purposes of impact fee calculation, growth in the system has been expressed in terms of equivalent residential units (ERUs). An ERU represents the demand that a typical single-family residence places on the system. Projected growth in ERUs for the District water system is summarized in Table 1.

**Table 1
Service Area ERU Projections**

Year	Total ERUs
2018	10,049
2020	10,419
2025	11,961
2028	12,761
2030	13,151
2035	13,933
2040	14,755
2045	15,550
2050	16,215
2055	16,897
2060	17,542

As indicated in the table, projected growth for the 10-year planning window of this impact fee analysis is 2,732 ERUs. To maintain the established level of service, projected future growth will be met through a combination of available excess capacity in existing facilities and construction of additional capacity in new facilities. Use of excess capacity and required system improvements are detailed in the IFFP.

RELATION OF IMPACTS TO ANTICIPATED DEVELOPMENT - 11-36a-304(1)(c)

To satisfy the requirements of state law, it is necessary to show that all impacts identified in the impact fee analysis are reasonably related to the anticipated development activity. This has been documented in detail in the Impact Fee Facilities Plan. In short, only that capacity directly associated with demand placed upon existing system facilities by future development has been identified as an impact of the development. The steps completed to identify the impacts of anticipated development are as follows.

1. **Existing Demand** – The demand existing development places on the system was estimated based on historic demand records.
2. **Existing Capacity** – The capacities of existing facilities were calculated based on the level of service criteria established for each type of facility in the Impact Fee Facilities Plan.
3. **Existing Deficiencies** – Existing deficiencies in the system were looked for by comparing defined levels of service against calculated capacities. Where existing deficiencies existed, projects were identified to eliminate the deficiencies. Costs associated with existing deficiencies were not assigned to impacts of development.
4. **Future Demand** - The demand future development will place on the system was estimated based on development projections as discussed in the Impact Fee Facilities Plan.
5. **Future Demand Use of Existing Capacity** – Whenever possible, excess capacity in existing facilities has been used to serve future demands. Where this occurs, the amount of capacity used by future growth has been calculated as described in detail in the Impact Fee Facilities Plan.
6. **Future Deficiencies** – Where excess capacity is inadequate to meet projected demands, future deficiencies in the system were identified using the same established level of service

criteria used for existing demands.

- 7. **Recommended Improvements** – Needed system improvements were identified to meet demands associated with future development.

PROPORTIONATE SHARE ANALYSIS - 11-36a-304(d)

A comprehensive proportionate share analysis associated with anticipated future development and its impact on the system was completed as part of the Impact Fee Facilities Plan. A summary of that analysis is contained here with additional discussion of the costs of facilities impacted by growth.

Excess Capacity to Accommodate Future Growth

Defining existing system capacity in terms of a single number is difficult. To improve the accuracy of the analysis, the system has been divided into three different components (conveyance, storage, administrative and service buildings). As part of the Impact Fee Facilities Plan, the capacity used by each type of user was analyzed in detail. Based on the analysis, the calculated percentage of existing capacity in system facilities used by existing users, growth during the 10-year planning window, and growth beyond the 10-year planning window is summarized in Table 2.

**Table 2
Use of Existing Capacity**

	Production	Storage	Conveyance (Transmission and Pumping)	Administrative and Service Buildings
Existing	100.00%	49.66%	84.62%	59.4%
10-year Growth	0.00%	32.47%	13.98%	15.6%
Growth Beyond 10 Years	0.00%	17.87%	1.41%	25.0%
Total	100.00%	100%	100%	100%

Existing System Infrastructure Costs

To calculate the actual cost of excess capacity in the existing system, BC&A first looked at the actual cost of all existing facilities. Table 3 lists the actual construction costs of existing components of the District’s water system. These costs were obtained from a fixed asset detailed report for the District through fiscal year ending 2019 and only include facilities paid for by the District (i.e. excludes all infrastructure contributed by developers). Detailed costs for the facilities included in the table are contained in Appendix A.

**Table 3
Existing Infrastructure Costs**

Existing Infrastructure Type	Existing Infrastructure Cost	Percent to 10-Year Growth	Cost to 10- Year Growth
Production	\$19,022,497	0.00%	\$0
Storage	\$6,495,800	32.47%	\$2,109,186
Conveyance	\$22,922,641	13.98%	\$3,204,585
Administrative	\$4,046,861	15.57%	\$630,260

In this study, public facility costs already incurred by the District will be included in the impact fee only to the extent that new growth will be served by the previously constructed improvements.

Reimbursement Agreements

There are no current reimbursement agreements existing within the system that have not otherwise been incorporated into the existing system values.

Future Improvements

In addition to using available existing capacity, demand associated with projected future development will be met through the construction of additional capacity in new facilities. A primary focus of the Impact Fee Facilities Plan was the identification of projects required to serve new development. The results of the Impact Fee Facilities Plan are summarized in Table 4. Included in the table are the costs of each required project and the portion of costs associated with development.

Table 4
Impact Fee Eligible Capital Projects

Project Identifier	Project Description	Construction Cost	Percent to 10-Year Growth	Cost to 10-yr Growth
Culinary and Secondary Storage Improvements				
CS-1	Zone 3 II Culinary	\$1,210,000	61.5%	\$743,747
SS-1	Zone 3 Secondary	\$4,150,000	43.1%	\$1,789,213
Culinary and Secondary Booster Stations				
CBS-1	Zone 3 II Culinary	\$775,000	38.9%	\$301,560
SBS-1	Zone 3 I Secondary	\$575,000	55.4%	\$318,801
SBS-2	Zone 3 II Secondary	\$1,000,000	55.4%	\$554,437
	Subtotal	\$2,350,000		\$1,174,799
Culinary Distribution Improvements				
CD-1	Zone 3 Conveyance	\$1,339,000	38.9%	\$521,019
CD-3	Zone 3 Pump Connection	\$347,000	38.9%	\$135,021
	Subtotal	\$1,686,000		\$656,040
Secondary Distribution Improvements				
SD-1	3100 S, Dayton St to 7900 W	\$717,000	22.7%	\$162,496
SD-2	3100 S, 7900 W to 7600 W	\$931,000	22.7%	\$210,995
SD-3	Zone 2 Tank & Pump Station Piping	\$143,000	32.6%	\$46,646
SD-4	Zone 3 Gateway Piping	\$1,265,000	55.4%	\$701,363
SD-5	Zone 3 Magna Regional Park	\$340,000	55.4%	\$188,509
SD-6	Scott Matheson Jr & Copper Hills Elementary	\$1,214,000	32.6%	\$396,000
SD-7	Gateway to Little Valley Piping	\$454,000	55.4%	\$251,715
SD-9	7600 W Connections	\$85,000	22.7%	\$19,264
SD-12	SR201 Crossing Transmission	\$1,059,000	22.7%	\$240,004
SD-16	8000 W Booster Piping	\$1,021,000	32.6%	\$333,044
SD-19	2600 S, 7600 W to 7200 W	\$955,000	22.7%	\$216,434
SD-22	Zone 3, 8200 W Pipe	\$704,000	55.4%	\$390,324
SD-23	Zone 3 Tank Pipe	\$438,000	55.4%	\$242,844
	Subtotal	\$9,326,000		\$3,399,636
Source Rehab and Replacement Improvements				
1	Haynes Well #8	\$1,600,000	15.6%	\$249,120
2	Well Field Rehabilitation	\$250,000	15.6%	\$38,925
4	Well Field SCADA	\$250,000	15.6%	\$38,925
5	Immediate EDR Project (Add 3rd Stage)	\$2,754,500	15.6%	\$428,876
7	Brine Pump Station	\$250,000	15.6%	\$38,925
8	Standby Generator	\$120,000	15.6%	\$18,684
9	SCADA Upgrades	\$250,000	15.6%	\$38,925
	Subtotal	\$5,474,500		\$852,380
Other				
1	Shallow Groundwater Development	\$3,450,000	23.8%	\$821,429
2	Secondary Reuse	\$9,984,720	45.0%	\$4,493,124
	Subtotal	\$13,434,720		\$5,314,553
	Total	\$37,631,220		\$13,930,368

All cost estimates contained in this IFA have been taken directly from the IFFP. The basis of these estimates are documented in the IFFP and are based on previous construction costs for similar projects.

Impact Fee Studies

Utah Code allows for the cost of planning and engineering associated with impact fee calculations to be recovered as part of an impact fee. The final impact fee will include the cost of this study and recommended planning projects in the next ten years as summarized in Table 5.

**Table 5
Impact Fee Costs Associated with Studies per ERU**

System Components	Total Cost of Component	% Serving 10-year Growth	Cost Serving 10-year Growth	10-year ERUs Served	Cost Per ERU
2019 Water Master Plan	\$71,134	76.95%	\$54,741	1,542	\$35.50
2019 Water Impact Fee Facility Plan and Impact Fee Analysis	\$18,178	100.00%	\$18,178	1,542	\$11.79
Subtotal	\$89,312		\$72,919		\$47.29

IMPACT FEE CALCULATION - 11-36a-304(1)(e)

Using the information contained in the previous sections, impact fees can be calculated by dividing the proportional cost of facilities required to service 10-year growth by the amount of growth expected over the next 10-years. This is done for each of the major system components identified previously. Calculated impact fees by component are summarized in Table 6.

Table 6
Impact Fee Calculation per ERU

System Components	Total Cost of Component	% Serving 10-year Growth	Cost Serving 10-year Growth	10-year ERUs Served	Cost Per ERU
Existing Facilities – Admin Building	\$2,161,833	15.6%	\$336,685	2,732	\$123.24
Production					
Existing Facilities	\$19,022,497	0.0%	\$0	2,732	\$0.00
Existing Facility Interest Costs	\$4,837,440	0.0%	\$0	2,732	\$0.00
10-year Projects	\$18,909,220	32.6%	\$6,166,932	2,732	\$2,257.30
10-Year Project Interest Costs	\$4,707,658	32.6%	\$1,535,326	2,732	\$561.98
Credit for User Fees Paid Toward Existing					(\$-1,184.58)
Subtotal	\$47,476,816		\$7,702,258		\$1,634.69
Storage					
Existing Facilities	\$6,495,800	32.5%	\$2,109,186	2,732	\$772.03
Existing Facility Interest Costs	\$0	32.5%	\$0	2,732	\$0.00
10-year Projects	\$5,360,000	47.3%	\$2,532,960	2,732	\$927.14
10-Year Project Interest Costs	\$1,777,142	47.3%	\$839,819	2,732	\$307.40
Credit for User Fees Paid Toward Existing					(\$-24.04)
Subtotal	\$13,632,942		\$5,481,965		\$1,982.53
Conveyance					
Existing Facilities	\$22,922,641	14.0%	\$3,203,955	2,732	\$1,172.75
Existing Facility Interest Costs	\$2,313,853	14.0%	\$323,413	2,732	\$118.38
10-year Projects	\$13,362,000	39.1%	\$5,230,476	2,732	\$1,914.52
10-Year Project Interest Costs	\$4,327,110	39.1%	\$1,693,822	2,732	\$619.99
Credit for User Fees Paid Toward Existing					(\$-519.35)
Subtotal	\$42,925,604		\$10,451,666		\$3,306.29
Studies	\$89,312	81.65%	\$72,919	1,542	\$47.29
Total	\$106,286,506		\$24,045,492		\$7,094.05

The total impact fee per ERU can be calculated by adding up the fee for each type of system component. This is separate from any additional charges levied by the District for hookup costs or for other reasonable permit and application fees.

Bonding Interest Costs

In addition to construction costs, Table 6 includes the cost of bond interest expense where applicable. This includes both historic interest costs on existing facilities where new growth will benefit from excess capacity and future interest costs for bonds required to build projects needed for growth as identified in the Impact Fee Facilities Plan. Similar to project construction costs, only that portion of interest expense associated with capacity for growth is included in the impact fee calculation. In the case of the Magna Water District wastewater system, the following bonds were included in the study:

- **2003 General Obligation Refunding Bond** – This bond was used for improvements to the build initial phases of the District’s secondary transmission and distribution system. The District started payments on this bond in the year 2004. The beginning bond balance was \$1,175,000 with 100 percent of this associated with water improvements. This bond was included in the table above under the Transmission Interest Costs category. Costs shown are actual costs that have been or will be incurred in association with this bond.
- **2007 General Obligation Refunding Bond** – This bond was used to fund improvements to the EDR system. The District started payments on this bond in the year 2009. The beginning bond balance was \$7,100,000 with 100 percent of this associated with water improvements. This bond was included in the table above under the Production Interest Costs category. Costs shown are actual costs that have been or will be incurred in association with this bond.
- **2013 General Obligation Refunding Bond** – This bond was a refunding of a previous bond used for improvements to the District’s wastewater treatment plant, minor sewer collection improvements, and improvements to the EDR system. The District started payments on this bond in the year 2014. The beginning bond balance was \$8,245,000 with 48.22 percent of this associated with water improvements. This bond was included in the table above under the Production Interest Costs category. Costs shown are actual costs that have been or will be incurred in association with this bond.
- **2017 General Obligation Refunding Bond** – This bond was a refunding of a previous bond used for improvements to the District’s wastewater treatment plant, minor sewer collection improvements, EDR treatment, and the water distribution system. The District started payments on this bond in the year 2017. The beginning bond balance was \$13,975,000 with 56.62 percent of this associated with water improvements. This bond was included in the table above under the Production Interest Costs and Transmission Interest Costs categories. Costs shown are actual costs that have been or will be incurred in association with this bond.
- **2019 General Obligation Refunding Bond** – This bond was a refunding of a previous bond used for improvements to the District’s wastewater treatment plant, minor sewer collection improvements, EDR treatment, and the water distribution system. The District started payments on this bond in the year 2019. The beginning bond balance was \$8,025,000 with 56.62 percent of this associated with water improvements. This bond was included in the table above under the Production Interest Costs and Transmission Interest Costs categories. Costs shown are actual costs that have been or will be incurred in association with this bond.
- **Future 2021 Wastewater Bond** – This is a \$4,500,000 bond (plus bond issuance costs) that the District will use for recommended production and collection system improvements.

Based on guidance from the District, it is expected that his bond will be issued in 2021 and would be a 20-year bond at 4.5 percent interest. This brings the total bond payment to \$6,821,028. This bond was included in the table above under both the Production and Treatment 10-Year Project Interest Costs category. Based on the projects that this bond will be used to pay for, costs have been allocated 10.22 percent to production and 89.78 percent to transmission.

- **Future 2024 Wastewater Bond** – This is a \$16,500,000 bond (plus bond issuance costs) that the District will use for recommended production, storage, and collection system improvements. Based on guidance from the District, it is expected that his bond will be issued in 2024 and would be a 20-year bond at 4.5 percent interest. This brings the total bond payment to \$24,952,969. This bond was included in the table above under both the Production and Treatment 10-Year Project Interest Costs category. Based on the projects that this bond will be used to pay for, costs have been allocated 52.65 percent to production, 20.93 percent to storage, and 26.42 percent to transmission.

Credit for User Fees

Not all of the existing deficiencies identified in the plan can be paid for from existing cash reserves. As a result, the plan includes some bonding toward projects that have at least a portion of their costs that benefit existing users. In this situation, user fees will be used to pay for the bonds over their lifetime.

For projects where this is the case, future users will pay for their portion of capacity via impact fees. They cannot also be expected to pay through user rates the portion of future bonds that will be used to build capacity or remedy deficiencies for existing users. This creates the need for a credit for future users. Calculation of this credit is summarized in Table 7 through Table 9. This table includes the following information:

- **Future Administrative Building Costs Paid Through User Fees** – This represents the total amount paid each year by the District toward the portion of future bonds used to increase the level of service for existing users (specifically, the New Public Works Facility).
- **Cost Per ERU** – This column takes the total amount paid and divides it by the number of ERUs projected for each year. This represents the amount paid in each year by each ERU through user rates.
- **Present Value Cost per ERU** – This column takes into account the time value of money assuming a rate of return of 3 percent annually.
- **Total User Fee Credit** – At the bottom of the table, the present value costs for all future years are added together to develop the total user fee credit.

It will be noted that, because the user fee credit is the summation of user fees paid toward existing deficiencies or for increasing the existing level of service in each year, a new user who joins the system in five or ten years will pay less in total user fees than someone who joins the system next year. Thus, the user fee credit will decrease over time. The appropriate user fee can be calculated by adding the present value cost for all years subsequent to a new user's connection to the system.

Table 7
Credit for User Fees Paid Toward Existing – Magna Water District Production

Year	ERUs	Existing Capacity Portion of Loans Paid Through User Fees	Cost Per ERU	Present Value Cost Per ERU
2020	10,419	\$1,048,969	\$100.67	\$100.67
2021	10,746	\$1,060,728	\$98.71	\$94.46
2022	11,069	\$1,061,096	\$95.86	\$87.78
2023	11,379	\$1,058,121	\$92.99	\$81.49
2024	11,681	\$1,301,315	\$111.40	\$93.42
2025	11,961	\$1,299,603	\$108.65	\$87.19
2026	12,256	\$1,298,987	\$105.99	\$81.39
2027	12,600	\$1,119,867	\$88.88	\$65.31
2028	12,761	\$1,120,695	\$87.82	\$61.76
2029	12,991	\$1,118,090	\$86.06	\$57.91
2030	13,151	\$962,793	\$73.21	\$47.14
2031	13,327	\$963,925	\$72.33	\$44.57
2032	13,532	\$963,961	\$71.23	\$42.00
2033	13,629	\$964,497	\$70.77	\$39.93
2034	13,719	\$961,968	\$70.12	\$37.86
2035	13,933	\$963,201	\$69.13	\$35.72
2036	14,048	\$962,642	\$68.53	\$33.88
2037	14,152	\$964,605	\$68.16	\$32.25
2038	14,366	\$695,638	\$48.42	\$21.93
2039	14,621	\$425,650	\$29.11	\$12.61
2040	14,755	\$252,278	\$17.10	\$7.09
2041	14,874	\$239,567	\$16.11	\$6.39
2042	15,009	\$239,567	\$15.96	\$6.06
2043	15,122	\$239,567	\$15.84	\$5.76
			Total User Fee Credit	\$1,184.58

**Table 8
Credit for User Fees Paid Toward Existing – Magna Water District Storage**

Year	ERUs	Existing Capacity Portion of Loans Paid Through User Fees	Cost Per ERU	Present Value Cost Per ERU
2020	10,419	\$0	\$0.00	\$0.00
2021	10,746	\$0	\$0.00	\$0.00
2022	11,069	\$0	\$0.00	\$0.00
2023	11,379	\$0	\$0.00	\$0.00
2024	11,681	\$28,046	\$2.40	\$2.01
2025	11,961	\$28,046	\$2.34	\$1.88
2026	12,256	\$28,046	\$2.29	\$1.76
2027	12,600	\$28,046	\$2.23	\$1.64
2028	12,761	\$28,046	\$2.20	\$1.55
2029	12,991	\$28,046	\$2.16	\$1.45
2030	13,151	\$28,046	\$2.13	\$1.37
2031	13,327	\$28,046	\$2.10	\$1.30
2032	13,532	\$28,046	\$2.07	\$1.22
2033	13,629	\$28,046	\$2.06	\$1.16
2034	13,719	\$28,046	\$2.04	\$1.10
2035	13,933	\$28,046	\$2.01	\$1.04
2036	14,048	\$28,046	\$2.00	\$0.99
2037	14,152	\$28,046	\$1.98	\$0.94
2038	14,366	\$28,046	\$1.95	\$0.88
2039	14,621	\$28,046	\$1.92	\$0.83
2040	14,755	\$28,046	\$1.90	\$0.79
2041	14,874	\$28,046	\$1.89	\$0.75
2042	15,009	\$28,046	\$1.87	\$0.71
2043	15,122	\$28,046	\$1.85	\$0.67
			Total User Fee Credit	\$24.04

Table 9
Credit for User Fees Paid Toward Existing – Magna Water District Conveyance

Year	ERUs	Existing Capacity Portion of Loans Paid Through User Fees	Cost Per ERU	Present Value Cost Per ERU
2020	10,419	\$397,905	\$38.19	\$38.19
2021	10,746	\$457,623	\$42.59	\$40.75
2022	11,069	\$457,360	\$41.32	\$37.84
2023	11,379	\$456,731	\$40.14	\$35.17
2024	11,681	\$522,251	\$44.71	\$37.49
2025	11,961	\$521,946	\$43.64	\$35.02
2026	12,256	\$521,221	\$42.53	\$32.66
2027	12,600	\$522,419	\$41.46	\$30.47
2028	12,761	\$514,291	\$40.30	\$28.34
2029	12,991	\$477,166	\$36.73	\$24.72
2030	13,151	\$476,214	\$36.21	\$23.32
2031	13,327	\$477,172	\$35.80	\$22.06
2032	13,532	\$477,202	\$35.26	\$20.79
2033	13,629	\$477,655	\$35.05	\$19.78
2034	13,719	\$475,516	\$34.66	\$18.72
2035	13,933	\$476,559	\$34.20	\$17.67
2036	14,048	\$476,086	\$33.89	\$16.76
2037	14,152	\$477,747	\$33.76	\$15.97
2038	14,366	\$250,148	\$17.41	\$7.88
2039	14,621	\$249,767	\$17.08	\$7.40
2040	14,755	\$123,795	\$8.39	\$3.48
2041	14,874	\$64,179	\$4.31	\$1.71
2042	15,009	\$64,179	\$4.28	\$1.62
2043	15,122	\$64,179	\$4.24	\$1.54
			Total User Fee Credit	\$519.35

Recommended Impact Fee

The total calculated impact fee is summarized in Table 10 and includes appropriate user fee credits applied to the fee. This is the legal maximum amount that may be charged as an impact fee. A lower amount may be adopted if desired, but a higher fee is not allowable under the requirements of Utah Code.

As discussed previously, the calculated user fee credit associated with the impact fees will decrease over time. As a result, the allowable impact fee will increase over time as shown in the table.

**Table 10
Recommended Impact Fee, per ERU**

Maximum Allowable Impact Fee (Per ERU, by Year)						
	2020	2021	2022	2023	2024	2025
Base Impact Fee	\$8,822.02	\$8,822.02	\$8,822.02	\$8,822.02	\$8,822.02	\$8,822.02
User Fee Credit	\$1,727.98	\$1,589.11	\$1,453.90	\$1,328.28	\$1,211.62	\$1,078.70
Total Overall Fee	\$7,094.05	\$7,232.91	\$7,368.12	\$7,493.74	\$7,610.40	\$7,743.32

Calculation of Non-Standard Impact Fees

The calculations presented previously have been based on an ERU. The Impact Fee Enactment should include a provision that allows for calculation of a fee for customers other than typical residential connections. Consistent with the level of service standards established in the Impact Fee Facilities Plan, the following formula may be used to calculate an impact fee for a non-standard user based on the calculated daily total water use for an average residential connection.

$$\frac{\text{Estimated Average Daily Water Use}}{513 \text{ gallons per day}^1} \times \text{Impact Fee per ERU} = \text{Impact Fee}$$

¹ Based on average water use consumption (both indoor and outdoor) per ERU from historical Magna Water District records.

ADDITIONAL CONSIDERATIONS - 11-36a-304(2)**MANNER OF FINANCING - 11-36a-304(2)(a-e)**

As part of this Impact Fee Analysis, it is important to consider how each facility has been or will be funded. Potential infrastructure funding includes a combination of different revenue sources.

User Charges

Because infrastructure must generally be built ahead of growth, there often arises situations in which projects must be funded ahead of expected impact fee revenues. In some cases, the solution to this issue will be bonding. In others, funds from existing user rate revenue will be loaned to the impact fee fund to complete initial construction of the project and will be reimbursed later as impact fees are received. Interfund loans should be considered in subsequent accounting of impact fee expenditures.

Special Assessments

Where special assessments exist, the impact fee calculation must take into account funds contributed. No special assessments exist.

Bonds

Where bonding will be required to finance impact fee eligible improvements, the portion of the bond cost and interest expense attributable to future growth may be added to the calculation of the impact fee.

General Taxes

If taxes are used to pay for infrastructure, they should be accounted for in the impact fee calculation. Specifically, any contribution made by property owners through taxes should be credited toward their available capacity in the system. In this case, no taxes are proposed for the construction of infrastructure.

Federal and State Grants and Donations

Impact fees cannot reimburse costs funded or expected to be funded through federal grants and other funds that the District has received for capital improvements without an obligation to repay. Grants and donations are not currently contemplated in this analysis. If grants become available for constructing facilities, impact fees will need to be recalculated and an appropriate credit given. Any existing infrastructure funded through past grants has been removed from the system cost.

DEDICATION OF SYSTEM IMPROVEMENTS 11-36a-304(2)(f)

Developer exactions are not the same as grants. If a developer constructs a system improvement or dedicates land for a system improvement identified in the IFFP, or dedicates a public facility that is recognized to reduce the need for a system improvement, the developer may be entitled to an appropriate credit against that particular developer's impact fee liability or a proportionate reimbursement.

If the value of the credit is less than the development's impact fee liability, the developer will owe the balance of the liability to the District. If the recognized value of the improvements/land dedicated is more than the development's impact fee liability, the District may be required to reimburse the difference to the developer.

It should be emphasized that the concept of impact fee credits pertains to system level improvements only. Developers will be responsible for the construction of project improvements (i.e. improvements not identified in the impact fee facilities plan) without credit against the impact fee.

EXTRAORDINARY COSTS - 11-36a-304(2)(g)

The Impact Fees Act indicates the analysis should include consideration of any extraordinary costs of servicing newly developed properties. In cases where one area of potential growth may cost significantly more to service than other growth, a separate service area may be warranted. No areas with extraordinary costs have been identified as part of this analysis.

TIME-PRICE DIFFERENTIAL - 11-36a-304(2)(h)

Utah Code allows consideration of time-price differential in order to create fairness for amounts paid at different times. To address time-price differential, this analysis includes adjustments for construction inflation for future construction projects. Per the requirements of the Code, existing infrastructure cost is based on actual historical costs without adjustment.

IMPACT FEE CERTIFICATION - 11-36a-306(2)

This IFA has been prepared in accordance with Utah Code Title 11, Chapter 36a (the "Impact Fees Act"), which prescribes the laws pertaining to the imposition of impact fees in Utah. The accuracy of this IFA relies in part upon planning, engineering, and other source data, provided by the District and its designees.

In accordance with Utah Code Annotated, 11-36a-306(2), Bowen Collins & Associates, makes the following certification:

I certify that the attached impact fee analysis:

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 of 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; or
 - 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.



Keith J. Larson, P.E.

**APPENDIX A
DEPRECIATION SCHEDULE**

Description	Useful Life (Years)	Cost			
ZONE 3 TANK	50	1,071,320.38	Culinary	Culinary	\$17,802,667
EXODOUS 8400 WEST SECONDARY MAIN	50	161,241.60	Secondary	Secondary	\$5,119,974
3500 S & 8400 W SECONDARY LINE RDA	50	626,907.72	Secondary	Production	\$19,022,497
SECONDARY SYSTEM PH I	50	2,766,615.49	Secondary	Office Building	\$4,046,861
MN STR & 7200 & 9000 W WLINE	50	290,072.01	Culinary	Culinary Storage	\$2,856,543
LAND PURCHASE HAYNES WELLFIELD	50	17,250.00	Production	Secondary Storage	\$3,639,257
16 W/L N.E. QUAD"	50	2,446.51	Culinary		
ENG 1996 WELL	50	4,500.15	Production		
16 FIRELINE"	50	646,675.52	Culinary		
ENGINEERING STATE FUNDING 1996	50	22,866.72	Culinary		
ENGIN & LEGAL FEE RESERVOIR SI	50	3,043.00	Secondary		
HAYNES PUMP REPLACEMENT	50	30,371.69	Production		
FLOW METER	50	9,373.00	Culinary		
PART EQUIP(JOB IN PROGRES12/94	50	21,803.88	Culinary		
PIPE (I/M)	50	1,299.98	Culinary		
PROJECTS	50	214,739.76	Culinary		
1990 LAND AT 6100 W 2820 S	50	48,350.00	Culinary		
PUMP REP.	50	1,200.43	Culinary		
DEAD BOLT LOCKS	50	584.00	Culinary		
PUMP/VALVE BOX LOCATOR	50	3,239.65	Culinary		
MAJOR PUMP REP.	50	3,273.00	Culinary		
PUMP	50	2,779.01	Culinary		
PUMP	50	5,946.00	Culinary		
PUMP	50	12,921.00	Culinary		
TANK REPAINT	50	9,800.90	Culinary		
METER	50	1,052.03	Culinary		
CLARINATOR ALL WELLS	50	8,293.00	Production		
PUMP	50	9,430.00	Culinary		
WELL PUMP	50	5,256.54	Production		
WELL PUMP	50	1,348.00	Production		
WELL PUMP	50	7,378.25	Production		
PUMP	50	3,260.21	Culinary		
DRILLING	50	9,070.00	Production		
WELL HOUSE	50	2,721.17	Production		
PUMP	50	8,777.80	Culinary		
WELL PUMP	50	8,638.00	Production		
WATER RIGHTS	50	10,000.00	Culinary		
PUMPING PLANT	50	1,615.00	Culinary		
ADDITIONAL PMT FOR 16 FIRELINE"	48	1,000.00	Culinary		
8.71 AC RESERVOIR PR 8400 W 41	40	247,830.00	Secondary		
8000 W BOOSTER PUMP STATION REPLACEMENT	30	1,523,150.59	Culinary		
NON-POTABLE WATERLINE	30	23,606.71	Secondary		
NEW OFFICE BUILDING	30	4,046,860.80	General		
ZONE 3 PUMP STATION	30	552,287.96	Culinary		
SECONDARY REPLACEMENT PUMP 3500 S	30	46,655.14	Secondary		
ADDITIONAL ENGINEERING FOR HAYNES #4	30	6,683.35	Production		
HAYNES #4 WELL AND PUMP HOUSE	30	975,333.22	Production		
NON POTABLE PUMPS REPLACEMENTS	30	106,527.77	Secondary		
EDR WATER TREATMENT FACILITY	30	17,006,334.55	Production		
CHLORINE AND SHOWER ROOM	30	63,973.50	Culinary		
8 MG RESERVOIR	30	2,391,624.10	Secondary		
HAYNES #7 WELL	30	233,151.54	Production		
ADDITION TO HAYNES #7 WELL	30	350.00	Production		
HAYNES & BARTON GENERATOR	30	163,757.41	Production		
CHLORINE BUILDING	30	165,058.46	Culinary		
PUMP STATION	30	158,352.93	Culinary		
WELL # 10	30	190,140.33	Production		
PUMP STATION	30	950,437.05	Culinary		
WATER SYS UPGRA ENG & 5MG TANK	30	1,785,222.97	Culinary		
24 WATERLINE"	30	698,180.46	Culinary		
BARTON #3 UPGRADE	30	11,883.00	Production		
BARTON 4 UPGRADE	30	8,673.02	Production		
HAYNES #2&3 MOTOR UPGRADE	30	5,320.84	Production		
BARTON 1 PUMP UPGRADE	30	12,589.00	Production		
HAYNES # 9 PUMP UPGRADE	30	10,979.45	Production		
CHLORINATION PUMP	30	1,795.50	Culinary		
BARTON 5 CHLORINATION PUMP	30	1,795.50	Production		
BOOSTER STATION UPGRADE	30	5,610.56	Culinary		
BARTON # 5 UPGRADE	30	6,285.28	Production		
PUMP OVERHAULED	30	7,170.00	Culinary		

WEELL # 5 2820 S	30	26,487.37	Production
BARTON WELL LINE	30	32,179.13	Production
4100 S.	30	63,026.95	Culinary
ADDITION TO #7 REPLACEMNT WELL	28	3,395.84	Production
BARTON #1 REPAIRS	26	2,950.00	Production
UPSIZING SECON LINES GOGH CONST	25	6,095.69	Secondary
8400 W SECONDARY WATER LINE	25	1,157,629.58	Secondary
2018 WATER LINE REPLACEMENT PROJECT	25	1,838,373.08	Culinary
MAGNA MAIN STREET WATER LINES	25	9,786.00	Culinary
SENIOR CITIZENS CENTER UPSIZE WATER LINE	25	4,022.31	Culinary
2017 CULINARY WATER LINE REPLACEMENT	25	2,112,693.34	Culinary
UPSIZING COSTS CABCO SEC LINE	25	11,380.15	Culinary
ZONE 3 WATERLINES	25	1,476,262.57	Culinary
MONTCLAIR STREET SEWER TIO OVER	25	100,374.60	Culinary
NORTH MEADOWS PHASE II UPSIZING SECOND	25	48,711.00	Secondary
NON POTABLE WATER LINE	25	122,979.15	Secondary
CONT LINE WV PAV RETAIL SHOPS	25	3,000.00	Culinary
CONT LINE NEW ELEMENTARY	25	84,547.00	Secondary
7200 W CULINARY WATER LINE REP	25	310,010.64	Culinary
2820 SOUTH SECONDARY W/L EXT	25	616,493.30	Secondary
WL 2600-2700 S 8900 W	25	168,239.20	Culinary
WL 2650 S 9040 -9180 W	25	114,134.00	Culinary
WL 2600-2700 S 9130 W & 8990 W	25	153,191.11	Culinary
WL HELEN DR 3150 S BUCCAN DR	25	357,353.60	Culinary
WL BUCANNEER DRIVE 2700 S 3100	25	187,840.13	Culinary
UPSIZING OF COON CREEK SECOND	25	6,906.96	Secondary
UPSIZING TERRY GEORGE SUB	25	4,449.89	Culinary
WEST VALLEY SID CONTRIBUTED	25	15,462.80	Secondary
CONT CAP SECON TRAN & MAIN	25	158,638.00	Culinary
3500 WATERLINE UPGRADE & REP	25	40,280.69	Culinary
CONTRIBUTED LINES	25	9,041.00	Culinary
CONTIBUTED LINES	25	187,656.00	Culinary
8 W/L 8560 W UPGRADE"	25	8,667.42	Culinary
8 W/L 8560 W UPGRADE"	25	146,693.56	Culinary
SUPPLY DRAINLINE G RESERVOIR	25	156,878.00	Secondary
LOOPS ALONG 2700 S	25	31,674.59	Culinary
CONTRIBUTED LINES	25	455,366.00	Culinary
ENSIGN MEADOWS UPSIZING	25	55,796.00	Culinary
BELL CANYON W/L 16 EXT"	25	9,183.88	Culinary
ELK RUN UPSIZING	25	5,175.00	Culinary
ELK RUN UPSIZING	25	11,340.00	Culinary
ELK RUN UPSIZING PHII 8400W	25	18,700.00	Culinary
8 3325 S 7730-7780 W"	25	8,343.33	Culinary
A & S STEEL UPSIZING	25	21,768.10	Culinary
MISC WATER LINES	25	92,708.00	Culinary
GODFREY WATERLINE	25	52,822.09	Culinary
SCHULER AVE 8 W/L"	25	33,991.94	Culinary
16 W/L KATHERINE DR"	25	33,127.14	Culinary
20 W/L UPGRADE 2820 S"	25	99,759.02	Culinary
ARBOR HOMES 8 W/L TUTTLE"	25	5,599.15	Culinary
CONTRIBUTED	25	2,760.00	Secondary
ADDITIONAL COSTS TO NON POTABLE	24	9,230.69	Secondary
CRANE INSTALLATION AT EDR MAIN PROD	22	57,010.00	Culinary
PUMP STATION AIR HANDLERS	20	143,677.00	Culinary
TANK INSIDE PAINTING	20	88,254.87	Culinary
HYDRANTS PLACED IN SERVICE	20	9,313.51	Culinary
HYDRANTS PLACED IN SERVICE 08	20	5,706.98	Culinary
HYD PLCD IN SERVICE 07	20	2,888.95	Culinary
HYD PLCD IN SERVICE 06	20	6,693.38	Culinary
HYDRANTS PLACED IN SERVICE	20	1,982.82	Culinary
FLUORIDE INFRASTRUCT	20	459,363.76	Culinary
HYDRANTS PLACE IN SERVICE	20	7,538.50	Culinary
HYDRANTS PLACE IN SERVICE	20	3,257.68	Culinary
HYDRANTS INSTALLED	20	3,553.71	Culinary
5 HYDRANTS INSTALLED	20	4,023.00	Culinary
BARTON CHLORINE EQUIP	20	5,541.88	Production
BARTON WELL FENCING	20	80,387.30	Production
4 HYDRANTS INSTALLED	20	3,530.50	Culinary
STRUC& IMPRO WATER UTIL PLANT	20	7,910.00	Culinary
PUMP HOUSE	20	4,443.68	Culinary
BARTON LINE	20	7,551.69	Production
DRILLING	20	30,189.77	Production

PUMP HOUSE	20	14,420.28	Production
DRILLING	20	9,319.20	Production
DRILLING	20	8,188.00	Production
PUMP HOUSE	20	7,556.37	Production
DRILLING	20	23,265.58	Production
DRILLING TANK	20	18,094.25	Production
ENG & DRILLING	20	24,866.75	Production
FLUORIDE INFRASTRUCTURE	19	20,335.94	Culinary
WATER READING SYSTEM	15	6,000.00	Culinary
6 WATER PATRICIAN"	15	4,619.60	Culinary
9000W 9100W TO 3000S WATERMAIN	15	21,454.05	Culinary
RITTER	15	42,147.57	Secondary
REPAINTING RESERVOIR	13	115,337.45	Secondary

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