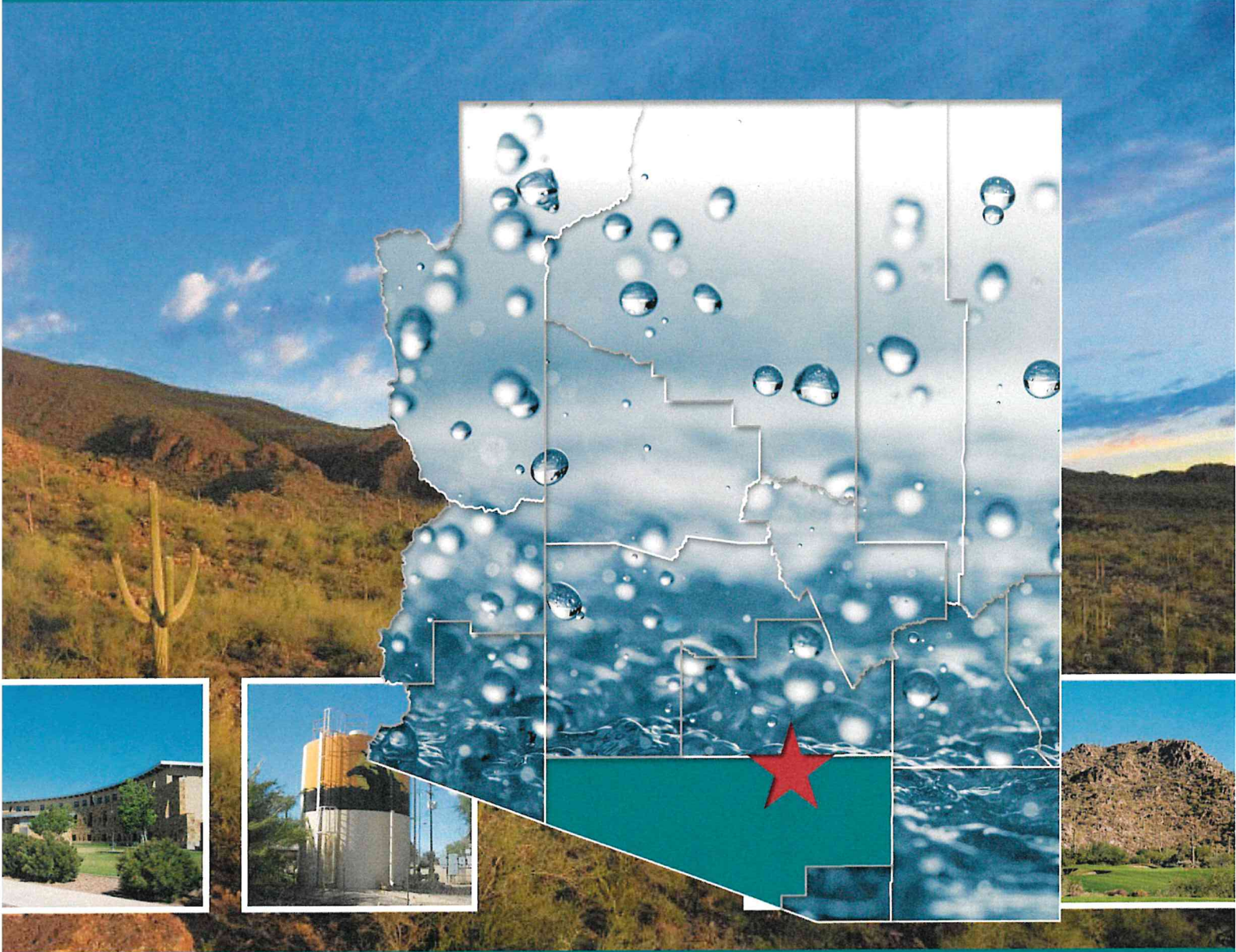




2017

Water and Wastewater Utility Impact Fee Study



**TOWN OF MARANA, ARIZONA
WATER AND WASTEWATER UTILITY
IMPACT FEE STUDY**

TABLE OF CONTENTS

Section		Page
I	Introduction to Development Fees	2
	Introduction and Scope	2
	Study Methodology	2
	Background on Development Fees	4
	ARS § 9-463.05	5
	Impact Fee Summary	6
II	Water Utility Impact Fees	7
	Introduction	7
	Water Impact Fee – North Marana	9
	Water Impact Fee – Twin Peaks	11
	Water Impact Fee – Saguaro Bloom	13
	Water Rights Acquisition Fee	15
III	Wastewater Utility Impact Fees	17
	Introduction	17
	Wastewater Impact Fee – Systemwide	19
	Notes and Caveats	21

SECTION I

Introduction to Development Fees

Introduction and Scope



In June 2017 the Town of Marana, Arizona (“The Town”) engaged **Willdan Financial Services/Economists.com** (Willdan) to develop a schedule of maximum water and wastewater impact (development) fees. In 2016 the state of Arizona adopted a significant amendment to its impact fee statutes, which has affect the process by which these fees are calculated and implemented. The processes employed in this report to calculate the fees are consistent with the state statutes.

As part of the impact fee study process, the Town has divided its water and wastewater service area into separate and distinct zones called Benefit Areas (“area” or “zone”). For each area, the Town has developed a capital improvement plan that will be required both to repair and replace current capacity and to expand total system capacity to meet the needs of new growth over the next decade. The results of this analysis, and the recommended maximum development impact fees for each area, are presented in this summary report.

In order to be properly calculated and implemented, the development fee process must adhere to a basic, generally-accepted methodology. This methodology has been closely followed during the course of this study. The methodology is known as the *Total Cost Attribution* method, and is considered by the project team to be the most appropriate for the Town.

The development fee models for each zone presented in the appendixes this report presents the development fee calculation methodology in detail.

Study Methodology

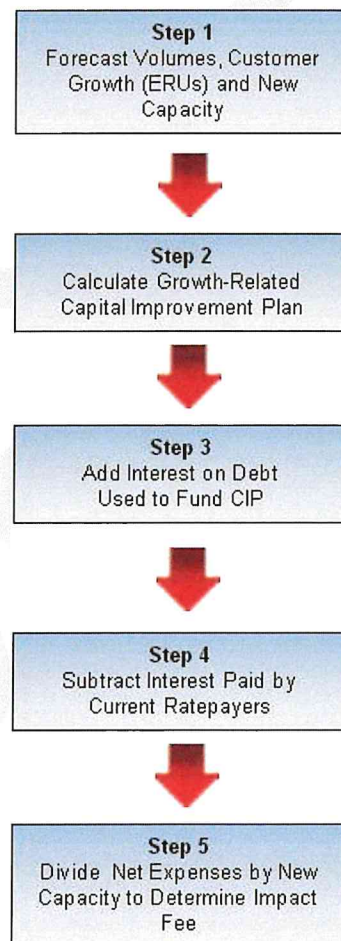
In order to calculate development fees for each defined zone, the following steps are required:

1. The first step is to examine the Town’s actual and projected water and wastewater consumption/billing units, system capacity and customer growth. The existing and projected system capabilities are also identified and incorporated into the impact fee assumptions.
2. The second step is to calculate the impact of the Town’s Capital Improvement Plan (“CIP”) on the determination of impact fees for each zone. The CIP is also referred to as the Infrastructure Improvement Plan (“IIP”). The total CIP over the next decade must be identified and segregated between those expenses devoted to repair and maintain the existing system, and those expenses devoted to growth and system expansion.

3. The third step is to calculate the amount of debt expected to be issued to fund the capital improvement plan for each zone. The amount of debt interest is added to the CIP to develop the total funding eligible to be recovered through a development fee.
4. The fourth step is to calculate a credit for the amount of debt service expected to be paid by new connections during the planning period through monthly rates. This credit is netted against the total funding eligible to be recovered through a development fee.
5. The final step is to calculate the development fee per Equivalent Dwelling Unit also commonly called an Equivalent Residential Unit (“EDU” or “ERU”). The development fee is based on the net cost of the expanded infrastructure as defined in the capital improvement plan, divided by the total new capacity to be provided by the CIP.

This process is illustrated in **Figure I-1**.

Figure I-1



Town staff expended considerable time and effort fulfilling the requests of the project team. All requests were complied with in an efficient, professional manner. During the course of this study project team members conferred on a regular basis with Town staff. Staff input was solicited and incorporated into the analysis and recommendations.

Background on Development Fees

Arthur C. Nelson, author of *System Development Charges for Water, Wastewater and Stormwater Facilities*, succinctly defines development fees as follows:

“System Development Charges (development fees) are one-time charges paid by new development to finance the construction of public facilities needed to serve it.”

The basic premise of impact fees is that the development of land for residential, commercial or industrial use will have a measurable capacity impact on the public infrastructure systems and services. Therefore, the resulting financial impact of this new capacity should be funded directly by the development itself. Under this premise, existing ratepayers should not be compelled to fund the cost of new development through higher user rates or taxes.

Since impact fees are designed to offset the initial capital requirements associated with servicing growth or development, **they cannot be used for personnel, operating, maintenance, repair, alteration or replacement of existing infrastructure.** Impact fee calculations that incorporate these expenses may be declared invalid by state or judicial authorities. Hence, the fundamental objective of impact fees is not simply to serve as another source of revenue. **The purpose is to ensure that adequate public infrastructure is provided to development in order to maintain public health, safety, and welfare.**

Several standards are available by which an impact fee must be measured in order to survive potential legal challenges or pass a test of “fairness”. These standards include, but are not limited to, the following:

Level of Service - New development must not be held to a higher standard for delivery of services than existing development.

Proportionality – The impact fee charged is matched to the projected outlay for infrastructure or services. The fee charged cannot exceed the projected expenditure level.

Universal Application – Impact fees that are implemented must be applicable to all development projects on a non-discriminatory basis.

Rational Nexus – There must be a direct relationship between the impact fee charged and the actual delivery of services. For example, water impact fees may not be used to fund parks and recreation, or other municipal services.

The **rational nexus** standard is the focus of most legal concerns regarding development fee ordinances. In his article *Financing Growth-Related Capacity*, Ed Donahue defines the rational nexus standard by the following test:

- The expansion must be operationally necessary, and must be caused by development;
- The impact fee must be based on the cost of the new facilities, and must not exceed the new development’s proportional share of the cost of the new facilities needed to serve the development;
- The impact fees must be segregated into distinct accounts and spent in such a manner as to ensure that those who pay the charges benefit from the expenditures.

Arizona Revised Statutes § 9-463.05 (2016)

In 2012, the Arizona State Legislature approved SB 1525, a new impact fee law that replaced the existing ARS Section 9-463.05. More recently, in 2016, ARS § 9-463.05 was again revised. This law was developed based on existing laws in Texas and other states. The law outlines a strict series of guidelines and dates for implementation of new impact fees by municipalities in Arizona. This statute is presented as **Appendix A**. It forms the legal and financial basis for the development fee calculations presented in this study.



Impact Fee Summary

Table I-2 presents a summary of the water and wastewater impact fee per EDU as presented in this study compared to the impact fees currently adopted by the Town. This study calculates the following impact fees:

Water
 North Marana
 Twin Peaks
 Saguaro Bloom
 Water Resource Development

Wastewater
 Systemwide

Backup and supporting documentation for the proposed impact fees are contained in Sections II and III of this report.

Table I-2

TOWN OF MARANA IMPACT FEE CALCULATION SEPTEMBER 2017		
	Cost Per EDU	
	<u>Current</u>	<u>Proposed</u>
WATER System Impact Fees		
North Marana	\$ 2,122	\$ 2,331
Twin Peaks	2,457	2,740
Saguaro Bloom	1,189	838
Water Resource Development	1,771	3,050
WASTEWATER System Impact Fees		
Systemwide -- Including Saguaro Bloorr	4,241	3,930

Section II

SECTION II

Water System Impact Fees

Introduction

Section I of this study presented a five-step summary of the calculation of an impact fee. These five steps are as follows:

1. Determine the Town's actual and forecast connections and EDUs.
2. Calculate the percentage of the Town's infrastructure and Capital Improvement Plan devoted to system growth, as opposed to repair and maintenance of the existing system.
3. Determine the amount of growth-related CIP that is expected to be financed through the issuance of long-term debt, and determine total interest expense over the forecast period.
4. Calculate the credit to be paid by new connections during the planning period for debt issued to fund the CIP.
5. Calculate the maximum development fee per EDU.

A not uncommon practice for utilities implementing development fees is to calculate a unique set of charges for each defined service area (Benefit Area). A service area can be defined as a geographic area in which a specific set of facilities provides service. For example, larger cities and communities with distinct geographical areas (hills, valleys, etc.) may have several service areas.

After consultation with the Town staff and WestLand Resources, the project team determined that the Town's water systems' growth will be predominantly in the following service territories:

North Marana

Twin Peaks

Saguaro Bloom

Impact fees for North Marana, Saguaro Bloom and Twin Peaks are calculated in this section, along with the Town's Water Resource Development Fee.

All of the water impact fees calculated in this section utilize a similar set of assumptions. The primary assumptions are as follows:

- Capital improvement plans for the ten-year period are based on estimates by Town staff and WestLand Resources
- Current and forecast capacity levels for the systems are based on estimates by WestLand Resources
- Anticipated growth in EDUs is based on estimates by the project team, Town Staff and WestLand Resources
- Existing and forecast debt issues and interest rates were determined based on discussions with, and information from, Town staff
- Existing EDUs were provided by WestLand Resources as a component of its *Water Infrastructure Improvement Plan* dated June 2017

The full impact fee models containing all relevant calculations and assumptions for each of the proposed impact fees are contained in **Appendixes B-F** of this report.



Water Impact Fee – North Marana

Table II-1 presents the summary water impact fee calculation for the North Marana service territory. **Appendix B** contains the detailed impact fee calculations. The following assumptions were utilized in completing this calculation:

- The Town will require approximately \$5.5 million in CIP expenditures over the next ten years in order to service this territory.
- These expenditures are expected to increase capacity in this territory by approximately 2,351 EDUs, due to an expected increase in the rate of growth in this area.
- The Town anticipates financing the CIP expenditures through impact fees and unrestricted reserves.
- Since there is no debt expected to be issued to finance the CIP, a CIP credit is not calculated for new connections.

Table II-1

TOWN OF MARANA WATER DEVELOPMENT FEE BY METER SIZE Zone: North Marana – 20170912		
Water Meter Size	Meter Equivalency Conversion Ratio*	MAXIMUM Water Development Fee
5/8" x 3/4"	1.00	\$ 2,331
3/4"	1.50	3,497
1"	2.50	5,828
1 1/2"	5.00	11,656
2"	8.00	18,650

* AWWA M1 Principles of Water Rates, Fees, and Charges; Page 338

Table II-2 presents the forecast connections and revenue to be generated over the next ten years from the imposition of the maximum impact fee for the North Marana service territory.

Table II-2

TOWN OF MARANA FORECAST DEVELOPMENT FEE REVENUE		
Benefit Area:		
North Marana -- 20170912	Total	
Maximum Dev Fee	\$	2,331
Forecast New EDUs		
2018		151
2019		169
2020		188
2021		207
2022		226
2023		244
2024		263
2025		282
2026		301
2027		320
Forecast Revenues		
2018	\$	351,981
2019		393,939
2020		438,228
2021		482,517
2022		526,806
2023		568,764
2024		613,053
2025		657,342
2026		701,631
2027		745,920
Total Period		5,480,181

Water Impact Fee – Twin Peaks

Table II-3 presents the summary water impact fee calculation for the Twin Peaks service territory. Appendix C contains the detailed impact fee calculations. The following assumptions were utilized in completing this calculation:

- The Town will require approximately \$5.6 million in capital improvement plan expenditures over the next ten years to service this territory. This includes the balance of a WIFA loan issued to reimburse the Town for construction of infrastructure in the Twin Peaks benefit area.
- These expenditures are expected to increase capacity in this territory by approximately 2,069 EDUs.
- The Town issued approximately \$5.0 million in WIFA bonds for infrastructure expenditures in this Benefit Area. The CIP expenditures are expected to be financed through impact fees collected and unrestricted reserves.
- All debt issued (including WIFA bonds) will be paid by developer fees, thus a CIP credit was not calculated for new connections.

Table II-3

TOWN OF MARANA WATER DEVELOPMENT FEE BY METER SIZE Zone: Twin Peaks – 20170912		
Water Meter Size	Meter Equivalency Conversion Ratio*	MAXIMUM Water Development Fee
5/8"x3/4"	1.00	\$ 2,740
3/4"	1.50	4,110
1"	2.50	6,850
1 1/2"	5.00	13,700
2"	8.00	21,920

* AWWA M1 Principles of Water Rates, Fees, and Charges; Page 338

Table II-4 presents the forecast connections and revenue to be generated over the next ten years from the imposition of the maximum impact fee for the Twin Peaks service territory.

Table II-4

TOWN OF MARANA FORECAST DEVELOPMENT FEE REVENUE		
Benefit Area:		
Twin Peaks -- 20170912		Total
<hr/>		
Maximum Dev Fee	\$ 2,740	
Forecast New Accounts		
2018		140
2019		155
2020		170
2021		185
2022		200
2023		214
2024		229
2025		244
2026		259
2027		273
Forecast Revenues		
2018	\$	383,600
2019		424,700
2020		465,800
2021		506,900
2022		548,000
2023		586,360
2024		627,460
2025		668,560
2026		709,660
2027		748,020
Total Period		5,669,060

Water Impact Fee – Saguaro Bloom

Table II-5 presents the summary water impact fee calculation for the Twin Peaks service territory. Appendix D contains the detailed impact fee calculations. The following assumptions were utilized in completing this calculation:

- The Town will require approximately \$1.0 million to reimburse developers for construction of infrastructure in the Saguaro Bloom benefit area over the next ten years.
- These expenditures are expected to increase capacity in this territory by approximately 1,229 EDUs.
- The Town is expected to finance these reimbursements through impact fees collected and unrestricted reserves.
- The Town is not anticipating debt issues for growth related expenditures during the development fee period, thus a CIP credit was not calculated for new connections.

Table II-5

TOWN OF MARANA WATER DEVELOPMENT FEE BY METER SIZE Zone: Saguaro Bloom – 20170912		
Water Meter Size	Meter Equivalency Conversion Ratio*	MAXIMUM Water Development Fee
5/8"x3/4"	1.00	\$ 838
3/4"	1.50	1,257
1"	2.50	2,095
1 1/2"	5.00	4,189
2"	8.00	6,703

* AWWA M1 Principles of Water Rates, Fees, and Charges; Page 338

Table II-6 presents the forecast connections and revenue to be generated over the next ten years from the imposition of the maximum impact fee for the Saguaro Bloom service territory.

Table II-6

TOWN OF MARANA FORECAST DEVELOPMENT FEE REVENUE		
Benefit Area:		
Saguaro Bloom -- 20170912	Total	
Maximum Dev Fee	\$	838
Forecast New Accounts		
2018		118
2019		119
2020		120
2021		121
2022		122
2023		123
2024		124
2025		125
2026		126
2027		131
Forecast Revenues		
2018	\$	98,866
2019		99,704
2020		100,542
2021		101,380
2022		102,217
2023		103,055
2024		103,893
2025		104,731
2026		105,569
2027		109,758
Total Period		1,029,715

Water Rights Acquisition Fee

Table II-7 presents the summary water rights acquisition fee. Appendix E contains the detailed fee calculations. It should be noted that this fee is applicable to all water connections in all benefit areas identified in the water IIP report. The following assumptions were utilized in completing this calculation:

- The Town will require approximately \$26.2 million in infrastructure and capital improvement plan expenditures over the next ten years to service this territory. Approximately \$1.6 million of this is replacement cost and, therefore, not growth related.
- Approximately 50.0% of the cost of the wastewater system acquisition and Water Reclamation Facility (WRF) expansion is allocated to the water rights development fee.
- The capacity level is equivalent to the renewable water resource capacity (acre-feet) acquired by the wastewater system acquisition, the expansion of the WRF, the addition of the Non-Indian Agricultural Reallocation and the Avra CAP M&I as reported in Table 23 of the Water IIP Report. Converted to EDUs, the total growth related capacity available from these renewable water resources is approximately 9,291 EDUs. This was used as the denominator (excess and new growth capacity) in the impact fee calculation.
- Approximately half of the Town’s wastewater debt interest is allocated to this impact fee. This equates to a net present value of \$6.6 million in interest on \$19.5 million of debt issued in the impact fee period.
- A CIP credit of \$2.9 million is calculated for new connections servicing a portion of the debt issued to fund the CIP.

Table II-7

TOWN OF MARANA WATER DEVELOPMENT FEE BY METER SIZE Zone: Water Rights Acquisition -- 20170912		
Water Meter Size	Meter Equivalency Conversion Ratio*	MAXIMUM Water Development Fee
5/8" x 3/4"	1.00	\$ 3,050
3/4"	1.50	4,575
1"	2.50	7,626
1 1/2"	5.00	15,251
2"	8.00	24,402

* AWWA M1 Principles of Water Rates, Fees, and Charges; Page 338

Table II-8 presents the forecast connections and revenue to be generated over the next ten years from the imposition of the maximum water rights acquisition fee.

Table II-8

TOWN OF MARANA		
FORECAST DEVELOPMENT FEE REVENUE		
Benefit Area: Water Rights		
		Total
Maximum Dev Fee	\$	3,050
Forecast New Accounts*		
2018		409
2019		443
2020		478
2021		513
2022		548
2023		581
2024		616
2025		651
2026		686
2027		724
Forecast Revenues		
2018	\$	1,247,450
2019		1,351,150
2020		1,457,900
2021		1,564,650
2022		1,671,400
2023		1,772,050
2024		1,878,800
2025		1,985,550
2026		2,092,300
2027		2,208,200
Total Period		17,229,450
* Represents growth in study areas only		

SECTION III

Wastewater System Impact Fees

Introduction

Section I of this study presented a five-step summary of the calculation of an impact fee. These five steps are as follows:

1. Determine the Town's actual and forecast connections and EDUs.
2. Calculate the percentage of the Town's infrastructure and Capital Improvement Plan devoted to system growth, as opposed to repair and maintenance of the existing system.
3. Determine the amount of growth-related CIP that is expected to be financed through the issuance of long-term debt, and determine total interest expense over the forecast period.
4. Calculate the credit to be paid by new connections during the planning period for debt issued to fund the CIP.
5. Calculate the maximum development fee per EDU.

A not uncommon practice for utilities implementing development fees is to calculate a unique set of charges for each defined service area (Benefit Area). A service area can be defined as a geographic area in which a specific set of facilities provides service. For example, larger cities and communities with distinct geographical areas (hills, valleys, etc.) may have several service areas.

After consultation with the Town staff and WestLand Resources, the project team determined that the Town's wastewater system could be classified into the following service territories:

Systemwide

All of the wastewater impact fees calculated in this section utilize a similar set of assumptions. The primary assumptions are as follows:

- Capital improvement plans for the ten-year period are based on estimates by Town staff and WestLand Resources.

- Current and forecast capacity levels for the systems are based on estimates by WestLand Resources
- Anticipated growth in EDUs is based on estimates by the project team, Town Staff and WestLand Resources
- Forecast debt issues and interest rates were determined based on discussions with Town staff

The full impact fee models containing all relevant calculations and assumptions for each of the proposed impact fees are contained in **Appendixes B-F** of this report.



Wastewater Impact Fee – Systemwide

Table III-1 presents the summary systemwide wastewater impact fee. Appendix F contains the detailed fee calculations. It should be noted that this fee is applicable to all wastewater connections in the Town. The following assumptions were utilized in completing this calculation:

- The Town will require approximately \$23.9 million in capital improvement plan expenditures over the next ten years to service this territory. Approximately \$1.6 million of this is replacement cost and, therefore, not growth related.
- Approximately 50.0% of the cost of the wastewater system acquisition and WRF expansion is allocated to wastewater system impact fees.
- The capacity level is equivalent to the wastewater treatment capacity acquired by the wastewater system acquisition increased to the forecasted expansion of the WRF to 1.5 mgd (page 4 of the Sewer IIP Report). Based on 187.2 gallons per day produced per EDU (page 3 of the Sewer IIP Report) the total capacity of the WRF after the expansion is 8,013 EDU. The total growth related capacity (less replacement capacity) is approximately 7,091 EDUs. This was used as the denominator (excess and new growth capacity) in the impact fee calculation.
- About half of the Town’s wastewater debt interest is allocated to this impact fee. This equates to a net present value of \$5.6 million.
- The Town is using impact fee payments instead of rates to service debt for the wastewater system acquisition. Therefore, there is no CIP credit.

Table III-1

TOWN OF MARANA WASTEWATER IMPACT FEE BY METER SIZE		
Impact Fee:	Wastewater -- Systemwide SB -- 20170912	
Water Meter Size	AWWA Meter Ratio*	MAXIMUM Wastewater Impact Fee
5/8" -- 3/4"	1.00	\$ 3,930
3/4"	1.50	5,895
1"	2.50	9,824
1 1/2"	5.00	19,648
2"	8.00	31,437

* AWWA M1 Principles of Water Rates, Fees, and Charges; Page 338

Table III-2 presents the forecast connections and revenue to be generated over the next ten years from the imposition of the maximum wastewater system impact fee.

Table III-2

TOWN OF MARANA WASTEWATER SYSTEM IMPACT FEE MODEL		
Benefit Area: Wastewater		
		Total
Maximum Dev Fee	\$	3,930
Forecast New Accounts		
2018		258
2019		278
2020		297
2021		317
2022		337
2023		356
2024		376
2025		396
2026		415
2027		438
Total Period		3,468
Forecast Revenues		
2018	\$	1,013,940
2019		1,092,540
2020		1,167,210
2021		1,245,810
2022		1,324,410
2023		1,399,080
2024		1,477,680
2025		1,556,280
2026		1,630,950
2027		1,721,340
Total Period		13,629,240

Notes and Caveats

The project team notes that this development fee calculation is based on a series of assumptions about future behavior and economic/financial conditions. These assumptions are based on an evaluation of current overall conditions. Should any of the assumptions and representations in this study require revision or modification, the development fees may have to be adjusted accordingly.

These representations include but are not limited to:

- Increases or decreases in future account and billing unit growth
- Adjustments in the capital improvement plan requirements
- Adjustments in total capacity requirements
- Changes in interest rates or debt issue lifespans
- Changes in overall economic conditions
- Catastrophic changes, including such occurrences as weather events, terrorist attacks, etc.

2016 Arizona Revised Statutes

Title 9 - Cities and Towns

§ 9-463.05 Development fees; imposition by cities and towns; infrastructure improvements plan; annual report; advisory committee; limitation on actions; definitions¹

Universal Citation: AZ Rev Stat § 9-463.05 (2016)

9-463.05. Development fees; imposition by cities and towns; infrastructure improvements plan; annual report; advisory committee; limitation on actions; definitions

A. A municipality may assess development fees to offset costs to the municipality associated with providing necessary public services to a development, including the costs of infrastructure, improvements, real property, engineering and architectural services, financing and professional services required for the preparation or revision of a development fee pursuant to this section, including the relevant portion of the infrastructure improvements plan.

B. Development fees assessed by a municipality under this section are subject to the following requirements:

1. Development fees shall result in a beneficial use to the development.
2. The municipality shall calculate the development fee based on the infrastructure improvements plan adopted pursuant to this section.
3. The development fee shall not exceed a proportionate share of the cost of necessary public services, based on service units, needed to provide necessary public services to the development.
4. Costs for necessary public services made necessary by new development shall be based on the same level of service provided to existing development in the service area.
5. Development fees may not be used for any of the following:

¹ Source: JUSTIA US Law

- (a) Construction, acquisition or expansion of public facilities or assets other than necessary public services or facility expansions identified in the infrastructure improvements plan.
- (b) Repair, operation or maintenance of existing or new necessary public services or facility expansions.
- (c) Upgrading, updating, expanding, correcting or replacing existing necessary public services to serve existing development in order to meet stricter safety, efficiency, environmental or regulatory standards.
- (d) Upgrading, updating, expanding, correcting or replacing existing necessary public services to provide a higher level of service to existing development.
- (e) Administrative, maintenance or operating costs of the municipality.

6. Any development for which a development fee has been paid is entitled to the use and benefit of the services for which the fee was imposed and is entitled to receive immediate service from any existing facility with available capacity to serve the new service units if the available capacity has not been reserved or pledged in connection with the construction or financing of the facility.

7. Development fees may be collected if any of the following occurs:

(a) The collection is made to pay for a necessary public service or facility expansion that is identified in the infrastructure improvements plan and the municipality plans to complete construction and to have the service available within the time period established in the infrastructure improvement plan, but in no event longer than the time period provided in subsection H, paragraph 3 of this section.

(b) The municipality reserves in the infrastructure improvements plan adopted pursuant to this section or otherwise agrees to reserve capacity to serve future development.

(c) The municipality requires or agrees to allow the owner of a development to construct or finance the necessary public service or facility expansion and any of the following apply:

(i) The costs incurred or money advanced are credited against or reimbursed from the development fees otherwise due from a development.

(ii) The municipality reimburses the owner for those costs from the development fees paid from all developments that will use those necessary public services or facility expansions.

(iii) For those costs incurred the municipality allows the owner to assign the credits or reimbursement rights from the development fees otherwise due from a development to

other developments for the same category of necessary public services in the same service area.

8. Projected interest charges and other finance costs may be included in determining the amount of development fees only if the monies are used for the payment of principal and interest on the portion of the bonds, notes or other obligations issued to finance construction of necessary public services or facility expansions identified in the infrastructure improvements plan.

9. Monies received from development fees assessed pursuant to this section shall be placed in a separate fund and accounted for separately and may only be used for the purposes authorized by this section. Monies received from a development fee identified in an infrastructure improvements plan adopted or updated pursuant to subsection D of this section shall be used to provide the same category of necessary public services or facility expansions for which the development fee was assessed and for the benefit of the same service area, as defined in the infrastructure improvements plan, in which the development fee was assessed. Interest earned on monies in the separate fund shall be credited to the fund.

10. The schedule for payment of fees shall be provided by the municipality. Based on the cost identified in the infrastructure improvements plan, the municipality shall provide a credit toward the payment of a development fee for the required or agreed to dedication of public sites, improvements and other necessary public services or facility expansions included in the infrastructure improvements plan and for which a development fee is assessed, to the extent the public sites, improvements and necessary public services or facility expansions are provided by the developer. The developer of residential dwelling units shall be required to pay development fees when construction permits for the dwelling units are issued, or at a later time if specified in a development agreement pursuant to section 9-500.05. If a development agreement provides for fees to be paid at a time later than the issuance of construction permits, the deferred fees shall be paid no later than fifteen days after the issuance of a certificate of occupancy. The development agreement shall provide for the value of any deferred fees to be supported by appropriate security, including a surety bond, letter of credit or cash bond.

11. If a municipality requires as a condition of development approval the construction or improvement of, contributions to or dedication of any facilities that were not included in a previously adopted infrastructure improvements plan, the municipality shall cause the infrastructure improvements plan to be amended to include the facilities and shall provide a credit toward the payment of a development fee for the construction, improvement, contribution or dedication of the facilities to the extent that the facilities will substitute for or otherwise reduce the need for other similar facilities in the infrastructure improvements plan for which development fees were assessed.

12. The municipality shall forecast the contribution to be made in the future in cash or by taxes, fees, assessments or other sources of revenue derived from the property owner

towards the capital costs of the necessary public service covered by the development fee and shall include these contributions in determining the extent of the burden imposed by the development. Beginning August 1, 2014, for purposes of calculating the required offset to development fees pursuant to this subsection, if a municipality imposes a construction contracting or similar excise tax rate in excess of the percentage amount of the transaction privilege tax rate imposed on the majority of other transaction privilege tax classifications, the entire excess portion of the construction contracting or similar excise tax shall be treated as a contribution to the capital costs of necessary public services provided to development for which development fees are assessed, unless the excess portion was already taken into account for such purpose pursuant to this subsection.

13. If development fees are assessed by a municipality, the fees shall be assessed against commercial, residential and industrial development, except that the municipality may distinguish between different categories of residential, commercial and industrial development in assessing the costs to the municipality of providing necessary public services to new development and in determining the amount of the development fee applicable to the category of development. If a municipality agrees to waive any of the development fees assessed on a development, the municipality shall reimburse the appropriate development fee accounts for the amount that was waived. The municipality shall provide notice of any such waiver to the advisory committee established pursuant to subsection G of this section within thirty days.

14. In determining and assessing a development fee applying to land in a community facilities district established under title 48, chapter 4, article 6, the municipality shall take into account all public infrastructure provided by the district and capital costs paid by the district for necessary public services and shall not assess a portion of the development fee based on the infrastructure or costs.

C. A municipality shall give at least thirty days' advance notice of intention to assess a development fee and shall release to the public and post on its website or the website of an association of cities and towns if a municipality does not have a website a written report of the land use assumptions and infrastructure improvements plan adopted pursuant to subsection D of this section. The municipality shall conduct a public hearing on the proposed development fee at any time after the expiration of the thirty day notice of intention to assess a development fee and at least thirty days before the scheduled date of adoption of the fee by the governing body. Within sixty days after the date of the public hearing on the proposed development fee, a municipality shall approve or disapprove the imposition of the development fee. A municipality shall not adopt an ordinance, order or resolution approving a development fee as an emergency measure. A development fee assessed pursuant to this section shall not be effective until seventy-five days after its formal adoption by the governing body of the municipality. Nothing in this subsection shall affect any development fee adopted before July 24, 1982.

D. Before the adoption or amendment of a development fee, the governing body of the municipality shall adopt or update the land use assumptions and infrastructure

improvements plan for the designated service area. The municipality shall conduct a public hearing on the land use assumptions and infrastructure improvements plan at least thirty days before the adoption or update of the plan. The municipality shall release the plan to the public, post the plan on its website or the website of an association of cities and towns if the municipality does not have a website, including in the posting its land use assumptions, the time period of the projections, a description of the necessary public services included in the infrastructure improvements plan and a map of the service area to which the land use assumptions apply, make available to the public the documents used to prepare the assumptions and plan and provide public notice at least sixty days before the public hearing, subject to the following:

1. The land use assumptions and infrastructure improvements plan shall be approved or disapproved within sixty days after the public hearing on the land use assumptions and infrastructure improvements plan and at least thirty days before the public hearing on the report required by subsection C of this section. A municipality shall not adopt an ordinance, order or resolution approving the land use assumptions or infrastructure improvements plan as an emergency measure.

2. An infrastructure improvements plan shall be developed by qualified professionals using generally accepted engineering and planning practices pursuant to subsection E of this section.

3. A municipality shall update the land use assumptions and infrastructure improvements plan at least every five years. The initial five year period begins on the day the infrastructure improvements plan is adopted. The municipality shall review and evaluate its current land use assumptions and shall cause an update of the infrastructure improvements plan to be prepared pursuant to this section.

4. Within sixty days after completion of the updated land use assumptions and infrastructure improvements plan, the municipality shall schedule and provide notice of a public hearing to discuss and review the update and shall determine whether to amend the assumptions and plan.

5. A municipality shall hold a public hearing to discuss the proposed amendments to the land use assumptions, the infrastructure improvements plan or the development fee. The land use assumptions and the infrastructure improvements plan, including the amount of any proposed changes to the development fee per service unit, shall be made available to the public on or before the date of the first publication of the notice of the hearing on the amendments.

6. The notice and hearing procedures prescribed in paragraph 1 of this subsection apply to a hearing on the amendment of land use assumptions, an infrastructure improvements plan or a development fee. Within sixty days after the date of the public hearing on the amendments, a municipality shall approve or disapprove the amendments to the land use assumptions, infrastructure improvements plan or development fee. A municipality shall not adopt an ordinance, order or resolution

approving the amended land use assumptions, infrastructure improvements plan or development fee as an emergency measure.

7. The advisory committee established under subsection G of this section shall file its written comments on any proposed or updated land use assumptions, infrastructure improvements plan and development fees before the fifth business day before the date of the public hearing on the proposed or updated assumptions, plan and fees.

8. If, at the time an update as prescribed in paragraph 3 of this subsection is required, the municipality determines that no changes to the land use assumptions, infrastructure improvements plan or development fees are needed, the municipality may as an alternative to the updating requirements of this subsection publish notice of its determination on its website and include the following:

(a) A statement that the municipality has determined that no change to the land use assumptions, infrastructure improvements plan or development fee is necessary.

(b) A description and map of the service area in which an update has been determined to be unnecessary.

(c) A statement that by a specified date, which shall be at least sixty days after the date of publication of the first notice, a person may make a written request to the municipality requesting that the land use assumptions, infrastructure improvements plan or development fee be updated.

(d) A statement identifying the person or entity to whom the written request for an update should be sent.

9. If, by the date specified pursuant to paragraph 8 of this subsection, a person requests in writing that the land use assumptions, infrastructure improvements plan or development fee be updated, the municipality shall cause, accept or reject an update of the assumptions and plan to be prepared pursuant to this subsection.

10. Notwithstanding the notice and hearing requirements for adoption of an infrastructure improvements plan, a municipality may amend an infrastructure improvements plan adopted pursuant to this section without a public hearing if the amendment addresses only elements of necessary public services in the existing infrastructure improvements plan and the changes to the plan will not, individually or cumulatively with other amendments adopted pursuant to this subsection, increase the level of service in the service area or cause a development fee increase of greater than five per cent when a new or modified development fee is assessed pursuant to this section. The municipality shall provide notice of any such amendment at least thirty days before adoption, shall post the amendment on its website or on the website of an association of cities and towns if the municipality does not have a website and shall provide notice to the advisory committee established pursuant to subsection G of this section that the amendment complies with this subsection.

E. For each necessary public service that is the subject of a development fee, the infrastructure improvements plan shall include:

1. A description of the existing necessary public services in the service area and the costs to upgrade, update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.
2. An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.
3. A description of all or the parts of the necessary public services or facility expansions and their costs necessitated by and attributable to development in the service area based on the approved land use assumptions, including a forecast of the costs of infrastructure, improvements, real property, financing, engineering and architectural services, which shall be prepared by qualified professionals licensed in this state, as applicable.
4. A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial and industrial.
5. The total number of projected service units necessitated by and attributable to new development in the service area based on the approved land use assumptions and calculated pursuant to generally accepted engineering and planning criteria.
6. The projected demand for necessary public services or facility expansions required by new service units for a period not to exceed ten years.
7. A forecast of revenues generated by new service units other than development fees, which shall include estimated state-shared revenue, highway users revenue, federal revenue, ad valorem property taxes, construction contracting or similar excise taxes and the capital recovery portion of utility fees attributable to development based on the approved land use assumptions, and a plan to include these contributions in determining the extent of the burden imposed by the development as required in subsection B, paragraph 12 of this section.

F. A municipality's development fee ordinance shall provide that a new development fee or an increased portion of a modified development fee shall not be assessed against a development for twenty-four months after the date that the municipality issues the final approval for a commercial, industrial or multifamily development or the date that the first building permit is issued for a residential development pursuant to an approved site plan or subdivision plat, provided that no subsequent changes are made to the approved site

plan or subdivision plat that would increase the number of service units. If the number of service units increases, the new or increased portion of a modified development fee shall be limited to the amount attributable to the additional service units. The twenty-four month period shall not be extended by a renewal or amendment of the site plan or the final subdivision plat that was the subject of the final approval. The municipality shall issue, on request, a written statement of the development fee schedule applicable to the development. If, after the date of the municipality's final approval of a development, the municipality reduces the development fee assessed on development, the reduced fee shall apply to the development.

G. A municipality shall do one of the following:

1. Before the adoption of proposed or updated land use assumptions, infrastructure improvements plan and development fees as prescribed in subsection D of this section, the municipality shall appoint an infrastructure improvements advisory committee, subject to the following requirements:

(a) The advisory committee shall be composed of at least five members who are appointed by the governing body of the municipality. At least fifty per cent of the members of the advisory committee must be representatives of the real estate, development or building industries, of which at least one member of the committee must be from the home building industry. Members shall not be employees or officials of the municipality.

(b) The advisory committee shall serve in an advisory capacity and shall:

(i) Advise the municipality in adopting land use assumptions and in determining whether the assumptions are in conformance with the general plan of the municipality.

(ii) Review the infrastructure improvements plan and file written comments.

(iii) Monitor and evaluate implementation of the infrastructure improvements plan.

(iv) Every year file reports with respect to the progress of the infrastructure improvements plan and the collection and expenditures of development fees and report to the municipality any perceived inequities in implementing the plan or imposing the development fee.

(v) Advise the municipality of the need to update or revise the land use assumptions, infrastructure improvements plan and development fee.

(c) The municipality shall make available to the advisory committee any professional reports with respect to developing and implementing the infrastructure improvements plan.

(d) The municipality shall adopt procedural rules for the advisory committee to follow in carrying out the committee's duties.

2. In lieu of creating an advisory committee pursuant to paragraph 1 of this subsection, provide for a biennial certified audit of the municipality's land use assumptions, infrastructure improvements plan and development fees. An audit pursuant to this paragraph shall be conducted by one or more qualified professionals who are not employees or officials of the municipality and who did not prepare the infrastructure improvements plan. The audit shall review the progress of the infrastructure improvements plan, including the collection and expenditures of development fees for each project in the plan, and evaluate any inequities in implementing the plan or imposing the development fee. The municipality shall post the findings of the audit on the municipality's website or the website of an association of cities and towns if the municipality does not have a website and shall conduct a public hearing on the audit within sixty days of the release of the audit to the public.

H. On written request, an owner of real property for which a development fee has been paid after July 31, 2014 is entitled to a refund of a development fee or any part of a development fee if:

1. Pursuant to subsection B, paragraph 6 of this section, existing facilities are available and service is not provided.

2. The municipality has, after collecting the fee to construct a facility when service is not available, failed to complete construction within the time period identified in the infrastructure improvements plan, but in no event later than the time period specified in paragraph 3 of this subsection.

3. For a development fee other than a development fee for water or wastewater facilities, any part of the development fee is not spent as authorized by this section within ten years after the fee has been paid or, for a development fee for water or wastewater facilities, any part of the development fee is not spent as authorized by this section within fifteen years after the fee has been paid.

I. If the development fee was collected for the construction of all or a portion of a specific item of infrastructure, and on completion of the infrastructure the municipality determines that the actual cost of construction was less than the forecasted cost of construction on which the development fee was based and the difference between the actual and estimated cost is greater than ten per cent, the current owner may receive a refund of the portion of the development fee equal to the difference between the development fee paid and the development fee that would have been due if the development fee had been calculated at the actual construction cost.

J. A refund shall include any interest earned by the municipality from the date of collection to the date of refund on the amount of the refunded fee. All refunds shall be made to the record owner of the property at the time the refund is paid. If the

development fee is paid by a governmental entity, the refund shall be paid to the governmental entity.

K. A development fee that was adopted before January 1, 2012 may continue to be assessed only to the extent that it will be used to provide a necessary public service for which development fees can be assessed pursuant to this section and shall be replaced by a development fee imposed under this section on or before August 1, 2014. Any municipality having a development fee that has not been replaced under this section on or before August 1, 2014 shall not collect development fees until the development fee has been replaced with a fee that complies with this section. Any development fee monies collected before January 1, 2012 remaining in a development fee account:

1. Shall be used towards the same category of necessary public services as authorized by this section.

2. If development fees were collected for a purpose not authorized by this section, shall be used for the purpose for which they were collected on or before January 1, 2020, and after which, if not spent, shall be distributed equally among the categories of necessary public services authorized by this section.

L. A moratorium shall not be placed on development for the sole purpose of awaiting completion of all or any part of the process necessary to develop, adopt or update development fees.

M. In any judicial action interpreting this section, all powers conferred on municipal governments in this section shall be narrowly construed to ensure that development fees are not used to impose on new residents a burden all taxpayers of a municipality should bear equally.

N. Each municipality that assesses development fees shall submit an annual report accounting for the collection and use of the fees for each service area. The annual report shall include the following:

1. The amount assessed by the municipality for each type of development fee.
2. The balance of each fund maintained for each type of development fee assessed as of the beginning and end of the fiscal year.
3. The amount of interest or other earnings on the monies in each fund as of the end of the fiscal year.
4. The amount of development fee monies used to repay:

- (a) Bonds issued by the municipality to pay the cost of a capital improvement project that is the subject of a development fee assessment, including the amount needed to repay the debt service obligations on each facility for which development fees have

been identified as the source of funding and the time frames in which the debt service will be repaid.

(b) Monies advanced by the municipality from funds other than the funds established for development fees in order to pay the cost of a capital improvement project that is the subject of a development fee assessment, the total amount advanced by the municipality for each facility, the source of the monies advanced and the terms under which the monies will be repaid to the municipality.

5. The amount of development fee monies spent on each capital improvement project that is the subject of a development fee assessment and the physical location of each capital improvement project.

6. The amount of development fee monies spent for each purpose other than a capital improvement project that is the subject of a development fee assessment.

O. Within ninety days following the end of each fiscal year, each municipality shall submit a copy of the annual report to the city clerk and post the report on the municipality's website or the website of an association of cities and towns if the municipality does not have a website. Copies shall be made available to the public on request. The annual report may contain financial information that has not been audited.

P. A municipality that fails to file the report and post the report on the municipality's website or the website of an association of cities and towns if the municipality does not have a website as required by this section shall not collect development fees until the report is filed and posted.

Q. Any action to collect a development fee shall be commenced within two years after the obligation to pay the fee accrues.

R. A municipality may continue to assess a development fee adopted before January 1, 2012 for any facility that was financed before June 1, 2011 if:

1. Development fees were pledged to repay debt service obligations related to the construction of the facility.

2. After August 1, 2014, any development fees collected under this subsection are used solely for the payment of principal and interest on the portion of the bonds, notes or other debt service obligations issued before June 1, 2011 to finance construction of the facility.

S. Through August 1, 2014, a development fee adopted before January 1, 2012 may be used to finance construction of a facility and may be pledged to repay debt service obligations if:

1. The facility that is being financed is a facility that is described under subsection T, paragraph 7, subdivisions (a) through (g) of this section.

2. The facility was included in an infrastructure improvements plan adopted before June 1, 2011.

3. The development fees are used for the payment of principal and interest on the portion of the bonds, notes or other debt service obligations issued to finance construction of the necessary public services or facility expansions identified in the infrastructure improvement plan.

T. For the purposes of this section:

1. "Dedication" means the actual conveyance date or the date an improvement, facility or real or personal property is placed into service, whichever occurs first.

2. "Development" means:

(a) The subdivision of land.

(b) The construction, reconstruction, conversion, structural alteration, relocation or enlargement of any structure that adds or increases the number of service units.

(c) Any use or extension of the use of land that increases the number of service units.

3. "Facility expansion" means the expansion of the capacity of an existing facility that serves the same function as an otherwise new necessary public service in order that the existing facility may serve new development. Facility expansion does not include the repair, maintenance, modernization or expansion of an existing facility to better serve existing development.

4. "Final approval" means:

(a) For a nonresidential or multifamily development, the approval of a site plan or, if no site plan is submitted for the development, the approval of a final subdivision plat.

(b) For a single family residential development, the approval of a final subdivision plat.

5. "Infrastructure improvements plan" means a written plan that identifies each necessary public service or facility expansion that is proposed to be the subject of a development fee and otherwise complies with the requirements of this section, and may be the municipality's capital improvements plan.

6. "Land use assumptions" means projections of changes in land uses, densities, intensities and population for a specified service area over a period of at least ten years and pursuant to the general plan of the municipality.

7. " Necessary public service" means any of the following facilities that have a life expectancy of three or more years and that are owned and operated by or on behalf of the municipality:

(a) Water facilities, including the supply, transportation, treatment, purification and distribution of water, and any appurtenances for those facilities.

(b) Wastewater facilities, including collection, interception, transportation, treatment and disposal of wastewater, and any appurtenances for those facilities.

(c) Storm water, drainage and flood control facilities, including any appurtenances for those facilities.

(d) Library facilities of up to ten thousand square feet that provide a direct benefit to development, not including equipment, vehicles or appurtenances.

(e) Street facilities located in the service area, including arterial or collector streets or roads that have been designated on an officially adopted plan of the municipality, traffic signals and rights-of-way and improvements thereon.

(f) Fire and police facilities, including all appurtenances, equipment and vehicles. Fire and police facilities do not include a facility or portion of a facility that is used to replace services that were once provided elsewhere in the municipality, vehicles and equipment used to provide administrative services, helicopters or airplanes or a facility that is used for training firefighters or officers from more than one station or substation.

(g) Neighborhood parks and recreational facilities on real property up to thirty acres in area, or parks and recreational facilities larger than thirty acres if the facilities provide a direct benefit to the development. Park and recreational facilities do not include vehicles, equipment or that portion of any facility that is used for amusement parks, aquariums, aquatic centers, auditoriums, arenas, arts and cultural facilities, bandstand and orchestra facilities, bathhouses, boathouses, clubhouses, community centers greater than three thousand square feet in floor area, environmental education centers, equestrian facilities, golf course facilities, greenhouses, lakes, museums, theme parks, water reclamation or riparian areas, wetlands, zoo facilities or similar recreational facilities, but may include swimming pools.

(h) Any facility that was financed and that meets all of the requirements prescribed in subsection R of this section.

8. " Qualified professional" means a professional engineer, surveyor, financial analyst or planner providing services within the scope of the person's license, education or experience.

9. " Service area" means any specified area within the boundaries of a municipality in which development will be served by necessary public services or facility expansions

and within which a substantial nexus exists between the necessary public services or facility expansions and the development being served as prescribed in the infrastructure improvements plan.

10. " Service unit" means a standardized measure of consumption, use, generation or discharge attributable to an individual unit of development calculated pursuant to generally accepted engineering or planning standards for a particular category of necessary public services or facility expansions.

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TOWN OF MARANA WATER DEVELOPMENT FEE BY METER SIZE Zone: North Marana -- 20170912		
Water Meter Size	Meter Equivalency Conversion Ratio*	MAXIMUM Water Development Fee
5/8" x 3/4"	1.00	\$ 2,331
3/4"	1.50	3,497
1"	2.50	5,828
1 1/2"	5.00	11,656
2"	8.00	18,650

* AWWA M1 Principles of Water Rates, Fees, and Charges; Page 338

TOWN OF MARANA		
FORECAST DEVELOPMENT FEE REVENUE		
Benefit Area:		
North Marana -- 20170912		Total
<hr/>		
Maximum Dev Fee	\$	2,331
 Forecast New EDUs		
2018		151
2019		169
2020		188
2021		207
2022		226
2023		244
2024		263
2025		282
2026		301
2027		320
 Forecast Revenues		
2018	\$	351,981
2019		393,939
2020		438,228
2021		482,517
2022		526,806
2023		568,764
2024		613,053
2025		657,342
2026		701,631
2027		745,920
Total Period		5,480,181

Forecast 2018-2026
TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL

Input Area – Capital Improvement Plan
 Infrastructure Improvement Plan

Utility: **TOWN OF MARANA**
 Test Year: **2018**
 Forecast Period: **2018-2026**
 Development Fee Zone: **North Marana – 20170912**

	Depreciable Lifespan (Years)	Percent Grant Funded	Percent Growth	Percent Replacement	Total CIP	Total Growth	Total Replacement
Treatment							
x	1	0.0%	100.0%	0.0%	675,000	675,000	-
	2	0.0%	100.0%	0.0%	1,269,000	1,269,000	-
	3	0.0%	100.0%	0.0%	25,000	25,000	-
	4	0.0%	100.0%	0.0%	-	-	-
	5	0.0%	100.0%	0.0%	-	-	-
	6	0.0%	100.0%	0.0%	-	-	-
	7	0.0%	100.0%	0.0%	-	-	-
	8	0.0%	100.0%	0.0%	-	-	-
	9	0.0%	100.0%	0.0%	-	-	-
	10	0.0%	100.0%	0.0%	-	-	-
	11	0.0%	100.0%	0.0%	-	-	-
	12	0.0%	100.0%	0.0%	-	-	-
	13	0.0%	100.0%	0.0%	-	-	-
	14	0.0%	100.0%	0.0%	-	-	-
	15	0.0%	100.0%	0.0%	-	-	-
	Total Treatment				1,969,000	1,969,000	-
Distribution							
x	1	0.0%	100.0%	0.0%	324,000	324,000	-
x	2	0.0%	100.0%	0.0%	934,875	934,875	-
x	3	0.0%	100.0%	0.0%	2,227,770	2,227,770	-
x	4	0.0%	100.0%	0.0%	-	-	-
x	5	0.0%	100.0%	0.0%	-	-	-
x	6	0.0%	100.0%	0.0%	-	-	-
x	7	0.0%	100.0%	0.0%	-	-	-
x	8	0.0%	100.0%	0.0%	-	-	-
x	9	0.0%	100.0%	0.0%	-	-	-
	10	0.0%	100.0%	0.0%	-	-	-
	Total Distribution				3,486,645	3,486,645	-
TOTAL WATER CIP							
Allocation to:					5,455,645	5,455,645	-
	Treatment				1,969,000	1,969,000	-
	Distribution				3,486,645	3,486,645	-
	Administration				-	-	-
	Customer				-	-	-
	Total				5,455,645	5,455,645	0.0%
					100.0%	100.0%	0.0%

CIP Input

**Forecast
2018-2026**

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

2018 2019 2020 2021 2022 2023 2024 2025 2026 2027

Input Area -- Capital Improvement Plan
Infrastructure Improvement Plan

Utility:	Test Year	Forecast Period	Development Fee Zone	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Treatment													
x	1	Marana Park 650 gpm Well				675,000							
	2	Marana Park Reservoir					1,269,000						
	3	Potable Water Master Plan	25,000										
	4	Project											
	5	Project											
	6	Project											
	7	Project											
	8	Project											
	9	Project											
	10	Project											
	11	Project											
	12	Project											
	13	Project											
	14	Project											
	15	Project											
		Total Treatment	25,000		675,000	1,269,000							

Distribution	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
x	1	San Lucas Interconnection								
x	2	W+ to X-zone Booster Station								
x	3	Sanders 24-inch Pipeline				934,875				
x	4	Project					2,227,770			
x	5	Project								
x	6	Project								
x	7	Project								
x	8	Project								
x	9	Project								
x	10	Project								
		Total Distribution	324,000			934,875	2,227,770			

TOTAL WATER CIP	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Allocation to:										
Treatment			675,000	2,203,875	2,227,770					
Distribution	25,000		675,000	1,269,000						
Administration	324,000			934,875	2,227,770					
Customer										
Total	349,000		675,000	2,203,875	2,227,770					

Calculation Year	TOWN OF MARANA							Cumulative
2018	WATER SYSTEM DEVELOPMENT FEE MODEL							Total
Water Meter Size	3/4"	1"	1 1/2"	2"	3"	4"	6"	Total
50x3/4"								

Input Area -- 10 Year Water System Forecast Demand
Zone: North Marana -- 20170912

Total ERUs -- June 2017

Total Service Area	3,882	-	-	-	-	-	-	3,882
Percent	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Total Zone	3,882	-	-	-	-	-	-	3,882
	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%

Forecast Annual New ERUs

2018	151	-	-	-	-	-	-	151
2019	169	-	-	-	-	-	-	169
2020	188	-	-	-	-	-	-	188
2021	207	-	-	-	-	-	-	207
2022	226	-	-	-	-	-	-	226
2023	244	-	-	-	-	-	-	244
2024	263	-	-	-	-	-	-	263
2025	282	-	-	-	-	-	-	282
2026	301	-	-	-	-	-	-	301
2027	320	-	-	-	-	-	-	320
Check	151	-	-	-	-	-	-	151
	169	-	-	-	-	-	-	169
	188	-	-	-	-	-	-	188
	207	-	-	-	-	-	-	207
	226	-	-	-	-	-	-	226
	244	-	-	-	-	-	-	244
	263	-	-	-	-	-	-	263
	282	-	-	-	-	-	-	282
	301	-	-	-	-	-	-	301
	320	-	-	-	-	-	-	320
								2,351

Forecast Annual Total ERUs

2018	4,033	-	-	-	-	-	-	4,033
2019	4,202	-	-	-	-	-	-	4,202
2020	4,390	-	-	-	-	-	-	4,390
2021	4,597	-	-	-	-	-	-	4,597
2022	4,823	-	-	-	-	-	-	4,823
2023	5,067	-	-	-	-	-	-	5,067
2024	5,330	-	-	-	-	-	-	5,330
2025	5,612	-	-	-	-	-	-	5,612
2026	5,913	-	-	-	-	-	-	5,913
2027	6,233	-	-	-	-	-	-	6,233

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

	5/8x3/4"	3/4"	1"	1 1/2"	2"	3"	4"	6"	Total	Cumulative Total
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**Input Area -- 10 Year Water System Forecast Demand
Zone: North Marana -- 20170912**

	1.00	1.50	2.50	5.00	8.00	15.00	25.00	50.00	3,882	Cumulative Monthly Bills
3/4" Conv. Factor	3,882	-	-	-	-	-	-	-	-	3,882
Most Recent Month Total Accounts	4,033	4,390	4,823	5,067	5,330	5,612	5,913	6,233	4,033	48,396
2018	4,202	4,390	4,597	4,823	5,067	5,330	5,612	5,913	4,202	50,424
2019	4,390	4,597	4,823	5,067	5,330	5,612	5,913	6,233	4,390	52,680
2020	4,597	4,823	5,067	5,330	5,612	5,913	6,233	-	4,597	55,164
2021	4,823	5,067	5,330	5,612	5,913	6,233	-	-	4,823	57,876
2022	5,067	5,330	5,612	5,913	6,233	-	-	-	5,067	60,804
2023	5,330	5,612	5,913	6,233	-	-	-	-	5,330	63,960
2024	5,612	5,913	6,233	-	-	-	-	-	5,612	67,344
2025	5,913	6,233	-	-	-	-	-	-	5,913	70,956
2026	6,233	-	-	-	-	-	-	-	6,233	74,796
2027	-	-	-	-	-	-	-	-	-	602,400

	151	169	188	207	226	244	263	282	301	320	2,351	Cumulative Monthly Bills
Forecast Annual New Accounts	151	169	188	207	226	244	263	282	301	320	2,351	151
2018	169	188	207	226	244	263	282	301	320	-	151	320
2019	188	207	226	244	263	282	301	320	-	-	169	508
2020	207	226	244	263	282	301	320	-	-	-	188	715
2021	226	244	263	282	301	320	-	-	-	-	207	941
2022	244	263	282	301	320	-	-	-	-	-	226	1,185
2023	263	282	301	320	-	-	-	-	-	-	244	1,448
2024	282	301	320	-	-	-	-	-	-	-	263	1,730
2025	301	320	-	-	-	-	-	-	-	-	282	2,031
2026	320	-	-	-	-	-	-	-	-	-	301	2,351
2027	-	-	-	-	-	-	-	-	-	-	320	2,351
Total	2,351	-	-	-	-	-	-	-	-	-	2,351	136,560

Cumulative New ERU Monthly Bills

TOWN OF MARANA WATER SYSTEM DEVELOPMENT FEE MODEL			
<u>Calculation Year</u>	Total WTP Capacity (gallons/day)	Total WTP Capacity (ERUs)	Forecast Annual New Meter Equivalents (ERUs)
2018			
Year	Capacity (gallons/day)	Capacity (ERUs)	Additional Capacity (ERUs)

Input Area -- Forecast Water System Capacity
Zone: North Marana -- 20170912

2018
 2018-2026
 North Marana -- 20170808

Total ERUs 3,882
 Average Consumption Per Day Per ERU -- 5/8"x3/4" Meter 270
 Production Factor 10.0%
 Peaking Factor 2.00
 Peak Production Gallons Per Day Per ERU -- 3/4" Meter 594

2018	151	151	151
2019	169	169	169
2020	188	188	188
2021	207	207	207
2022	226	226	226
2023	244	244	244
2024	263	263	263
2025	282	282	282
2026	301	301	301
2027	320	320	320
Total Increase in ERUs	2,351	2,351	2,351

NOTE: System capacity increase in forecast period is calculated to be equivalent to increase in new EDUs

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

Calculation Year
2018

2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 Total
Period

Input Area -- CIP Debt Funding Assumptions
North Marana -- 20170912

CIP Funding Summary																					
Beginning Funds Available - 2016 Ending B	\$	(147,641)	\$	(144,660)	\$	249,280	\$	15,000	\$	(1,706,208)	\$	(3,407,172)	\$	(2,838,408)	\$	(2,225,355)	\$	(1,568,013)	\$	(866,382)	
Interest						2,493		150													
Plus Development Fees						438,228		482,517		526,806		568,764		613,053		657,342		701,631		745,920	
Plus Proceeds from Issuance of Debt						-		-		-		-		-		-		-		-	
Total Available Funds						690,000		497,667		(1,179,402)		(2,838,408)		(2,225,355)		(1,568,013)		(866,382)		(120,462)	
CIP Input						675,000		2,203,875		2,227,770		-		-		-		-		-	5,455,645
Ending Funds Available						15,000		(1,706,208)		(3,407,172)		(2,838,408)		(2,225,355)		(1,568,013)		(866,382)		(120,462)	

Forecast Debt Issues

Principal (1)																					
Closing Costs (1)																					
Total																					

Growth-Related Debt Service

Percent Water (2)																					
Total Water																					

Funding Assumptions

Year of Issuance																					
Interest																					
Term																					

Total Interest (3)

Total Interest -- Actual																					
Total Interest -- NPV																					

Growth-Related Interest

Total Interest -- Actual																					
Total Interest -- NPV																					

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

Calculation Year
2018

Description	Total	Water Meter Size	AWWA Conversion Ratio	MAXIMUM Water Development Fee
Summary Schedule -- Calculation of Impact Fee				
Zone: North Marana -- 20170912				
Water System Development Fee				
2018 2018-2026				
I. Current and Forecast Capacity -- ERUs				
Forecast Expansions	2,351	5/8" x 3/4"	1.00	2,331
		3/4"	1.50	3,497
		1"	2.50	5,828
		1 1/2"	5.00	11,656
		2"	8.00	18,650
II. Development Fee per ERU				
Current CIP Value of Growth-Related Improvements	\$ 5,455,645			
Impact Fee Study Preparation Expenses	25,000			
Interest Expense Allocated to Planning Period	-			
Sub-Total	\$ 5,480,645	3"	15.00	34,968 **
Less CIP Credit	-	4"	25.00	58,280 **
New Value of CIP to be Paid from Development Fees	\$ 5,480,645	6"	50.00	116,560 **
Forecast Expansions	2,351			
Net Water Facility Development Fee Per ERU	\$ 2,331			\$ 3.92

** These are for illustration and revenue generation purposes only, and are not to be actual recommendations for impact fees for these larger meter sizes.

**TOWN OF MARANA
WATER DEVELOPMENT FEE BY METER SIZE
Zone: Twin Peaks -- 20170912**

Water Meter Size	Meter Equivalency Conversion Ratio*	MAXIMUM Water Development Fee
5/8"x3/4"	1.00	\$ 2,740
3/4"	1.50	4,110
1"	2.50	6,850
1 1/2"	5.00	13,700
2"	8.00	21,920

* AWWA M1 Principles of Water Rates, Fees, and Charges; Page 338

**TOWN OF MARANA
FORECAST DEVELOPMENT FEE REVENUE**

Benefit Area:

Twin Peaks -- 20170912	Total
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Maximum Dev Fee	\$	2,740
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Forecast New Accounts

2018	140
2019	155
2020	170
2021	185
2022	200
2023	214
2024	229
2025	244
2026	259
2027	273

Forecast Revenues

2018	\$	383,600
2019		424,700
2020		465,800
2021		506,900
2022		548,000
2023		586,360
2024		627,460
2025		668,560
2026		709,660
2027		748,020

Total Period		5,669,060
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**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

Forecast
2018 - 2027

Input Area – Capital Improvement Plan
Infrastructure Improvement Plan

Utility:	Depreciable Lifespan (Years)	Percent Grant Funded	Percent Growth	Percent Replacement	Total CIP	Total Growth	Total Replacement
Treatment							
1 Potable Water Master Plan	50	0.0%	100.0%	0.0%	25,000	25,000	-
2 Project	50	0.0%	100.0%	0.0%	-	-	-
3 Project	50	0.0%	100.0%	0.0%	-	-	-
4 Project	50	0.0%	100.0%	0.0%	-	-	-
5 Project	50	0.0%	100.0%	0.0%	-	-	-
6 Project	50	0.0%	100.0%	0.0%	-	-	-
7 Project	50	0.0%	100.0%	0.0%	-	-	-
8 Project	50	0.0%	100.0%	0.0%	-	-	-
9 Project	50	0.0%	100.0%	0.0%	-	-	-
10 Project	50	0.0%	100.0%	0.0%	-	-	-
11 Project	50	0.0%	100.0%	0.0%	-	-	-
12 Project	50	0.0%	100.0%	0.0%	-	-	-
13 Project	50	0.0%	100.0%	0.0%	-	-	-
14 Project	50	0.0%	100.0%	0.0%	-	-	-
15 Project	50	0.0%	100.0%	0.0%	-	-	-
Total Treatment					25,000	25,000	-

Utility:	Depreciable Lifespan (Years)	Percent Grant Funded	Percent Growth	Percent Replacement	Total CIP	Total Growth	Total Replacement
Distribution							
1 Picture Rocks Interconnect	50	0.0%	100.0%	0.0%	1,344,600	1,344,600	-
2 24-inch Twin Peaks/Continental Reserve Interconnect	50	0.0%	100.0%	0.0%	1,736,910	1,736,910	-
3 Reimburse Town for Construction Funds - WIFA Loan	50	0.0%	100.0%	0.0%	2,537,466	2,537,466	-
4 Project	50	0.0%	100.0%	0.0%	-	-	-
5 Project	50	0.0%	100.0%	0.0%	-	-	-
6 Project	50	0.0%	100.0%	0.0%	-	-	-
7 Project	50	0.0%	100.0%	0.0%	-	-	-
8 Project	50	0.0%	100.0%	0.0%	-	-	-
9 Project	50	0.0%	100.0%	0.0%	-	-	-
10 Project	50	0.0%	100.0%	0.0%	-	-	-
Total Distribution					5,618,976	5,618,976	-

TOTAL WATER CIP

Allocation to:
Treatment
Distribution
Administration
Customer

Total					5,643,976	5,643,976	0.0%
					25,000	25,000	0.0%
					5,618,976	5,618,976	0.0%
					5,643,976	5,643,976	0.0%
					100.0%	100.0%	0.0%

**Forecast
2018 - 2027**

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

2018 2019 2020 2021 2022 2023 2024 2025 2026 2027

**Input Area – Capital Improvement Plan
Infrastructure Improvement Plan**

Utility:
Test Year
Forecast Period
Development Fee Zone

Treatment	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
1 Potable Water Master Plan	25,000	-	-	-	-	-	-	-	-	-
2 Project	-	-	-	-	-	-	-	-	-	-
3 Project	-	-	-	-	-	-	-	-	-	-
4 Project	-	-	-	-	-	-	-	-	-	-
5 Project	-	-	-	-	-	-	-	-	-	-
6 Project	-	-	-	-	-	-	-	-	-	-
7 Project	-	-	-	-	-	-	-	-	-	-
8 Project	-	-	-	-	-	-	-	-	-	-
9 Project	-	-	-	-	-	-	-	-	-	-
10 Project	-	-	-	-	-	-	-	-	-	-
11 Project	-	-	-	-	-	-	-	-	-	-
12 Project	-	-	-	-	-	-	-	-	-	-
13 Project	-	-	-	-	-	-	-	-	-	-
14 Project	-	-	-	-	-	-	-	-	-	-
15 Project	-	-	-	-	-	-	-	-	-	-
Total Treatment	25,000	-	-	-	-	-	-	-	-	-

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Distribution										
x 1 Picture Rocks Interconnect										
x 2 24-inch Twin Peaks/Continental Reserve Interconnect										
x 3 Reimburse Town for Construction Funds - WIFA Loan	2,537,466		1,736,910							
x 4 Project										
5 Project										
6 Project										
7 Project										
8 Project										
9 Project										
10 Project										
Total Distribution	2,537,466	1,344,600	1,736,910							

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
TOTAL WATER CIP	2,562,466	1,344,600	1,736,910							
Allocation to:										
Treatment	25,000	-	-	-	-	-	-	-	-	-
Distribution	2,537,466	1,344,600	1,736,910							
Administration	-	-	-	-	-	-	-	-	-	-
Customer	-	-	-	-	-	-	-	-	-	-
Total	2,562,466	1,344,600	1,736,910							

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

Calculation Year 2018	Water Meter Size 5/8x3/4"	1"	1 1/2"	2"	3"	4"	6"	Total	Cumulative Total
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**Input Area -- 10 Year Water System Forecast Demand
Zone: Twin Peaks -- 20170912**

Total EDUs -- June 2017

Total Service Area	3,821	-	-	-	-	-	-	3,821	3,821
Total Percent	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
Total Zone Twin Peaks -- 20170912									
Total	3,821	-	-	-	-	-	-	3,821	3,821
Total Percent	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%

Forecast Annual New EDUs

2018	140	-	-	-	-	-	-	140	140
2019	155	-	-	-	-	-	-	155	155
2020	170	-	-	-	-	-	-	170	170
2021	185	-	-	-	-	-	-	185	185
2022	200	-	-	-	-	-	-	200	200
2023	214	-	-	-	-	-	-	214	214
2024	229	-	-	-	-	-	-	229	229
2025	244	-	-	-	-	-	-	244	244
2026	259	-	-	-	-	-	-	259	259
2027	273	-	-	-	-	-	-	273	273
								2,069	2,069
									<u>Check</u>

Forecast Annual Total EDUs

2018	3,961	-	-	-	-	-	-	3,961	3,961
2019	4,116	-	-	-	-	-	-	4,116	4,116
2020	4,286	-	-	-	-	-	-	4,286	4,286
2021	4,471	-	-	-	-	-	-	4,471	4,471
2022	4,671	-	-	-	-	-	-	4,671	4,671
2023	4,885	-	-	-	-	-	-	4,885	4,885
2024	5,114	-	-	-	-	-	-	5,114	5,114
2025	5,358	-	-	-	-	-	-	5,358	5,358
2026	5,617	-	-	-	-	-	-	5,617	5,617
2027	5,890	-	-	-	-	-	-	5,890	5,890

Calculation Year
2018

TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL

Water Meter Size	3/4"	1"	1 1/2"	2"	3"	4"	6"	Total	Cumulative Total
5/8x3/4"									

Input Area -- 10 Year Water System Forecast Demand
Zone: Twin Peaks -- 20170912

3/4" Conv. Factor	1.00	1.50	2.50	5.00	8.00	15.00	25.00	50.00		Cumulative Monthly Bills
Most Recent Month Total Accounts	3,821	-	-	-	-	-	-	-	3,821	
Forecast Accounts										
2018	3,961	-	-	-	-	-	-	-	3,961	47,532
2019	4,116	-	-	-	-	-	-	-	4,116	49,392
2020	4,286	-	-	-	-	-	-	-	4,286	51,432
2021	4,471	-	-	-	-	-	-	-	4,471	53,652
2022	4,671	-	-	-	-	-	-	-	4,671	56,052
2023	4,885	-	-	-	-	-	-	-	4,885	58,620
2024	5,114	-	-	-	-	-	-	-	5,114	61,368
2025	5,358	-	-	-	-	-	-	-	5,358	64,296
2026	5,617	-	-	-	-	-	-	-	5,617	67,404
2027	5,890	-	-	-	-	-	-	-	5,890	70,680
Total										580,428

Forecast Annual New Accounts	140	155	170	185	200	214	229	244	259	273	Total
2018	140	-	-	-	-	-	-	-	-	-	140
2019	155	-	-	-	-	-	-	-	-	-	155
2020	170	-	-	-	-	-	-	-	-	-	170
2021	185	-	-	-	-	-	-	-	-	-	185
2022	200	-	-	-	-	-	-	-	-	-	200
2023	214	-	-	-	-	-	-	-	-	-	214
2024	229	-	-	-	-	-	-	-	-	-	229
2025	244	-	-	-	-	-	-	-	-	-	244
2026	259	-	-	-	-	-	-	-	-	-	259
2027	273	-	-	-	-	-	-	-	-	-	273
Total											2,069

Cumulative New EDU Monthly Bills

121,908

TOWN OF MARANA WATER SYSTEM DEVELOPMENT FEE MODEL				
<u>Calculation Year</u>	Total WTP Capacity (gallons/day)	Total WTP Capacity (EDUs)	Forecast Annual New Meter Equivalents (EDUs)	Additional Capacity (EDUs)
Year				
2018				

**Input Area -- Forecast Water System Capacity
Zone: Twin Peaks -- 20170912**

Total EDUs 3,821
 Average Consumption Per Day Per EDU -- 5/8"x3/4" Meter 270
 Production Factor 10.0%
 Peaking Factor 2.00
 Peak Production Gallons Per Day Per EDU -- 5/8"x3/4" Meter 594

2018	140	140	140	140
2019	155	155	155	155
2020	170	170	170	170
2021	185	185	185	185
2022	200	200	200	200
2023	214	214	214	214
2024	229	229	229	229
2025	244	244	244	244
2026	259	259	259	259
2027	273	273	273	273
Total Increase in EDUs	2,069	2,069	2,069	2,069

NOTE: System capacity increase in forecast period is calculated to be equivalent to increase in new EDUs

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

Calculation Year
2018

**Total
Period**

2018 2019 2020 2021 2022 2023 2024 2025 2026 2027

**Input Area -- CIP Debt Funding Assumptions
Zone: Twin Peaks -- 20170912**

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total Period
CIP Funding Summary											
Beginning Funds Available - 2016 Ending B \$	(147,641)	(2,326,507)	(3,246,407)	(4,517,517)	(4,010,617)	(3,462,617)	(2,876,257)	(2,248,797)	(1,580,237)	(870,577)	(870,577)
Interest 1.0%	-	-	-	-	-	-	-	-	-	-	-
Plus Development Fees	383,600	424,700	465,800	506,900	548,000	586,360	627,460	668,560	709,660	748,020	748,020
Plus Proceeds from Issuance of Debt	-	-	-	-	-	-	-	-	-	-	-
Total Available Funds	235,960	(1,901,807)	(2,780,607)	(4,010,617)	(3,462,617)	(2,876,257)	(2,248,797)	(1,580,237)	(870,577)	(122,557)	
Less Water CIP	2,562,466	1,344,600	1,736,910	-	-	-	-	-	-	-	5,643,976
Ending Funds Available	(2,326,507)	(3,246,407)	(4,517,517)	(4,010,617)	(3,462,617)	(2,876,257)	(2,248,797)	(1,580,237)	(870,577)	(122,557)	
Forecast Debt Issues											
Principal (1)	-	-	-	-	-	-	-	-	-	-	-
Closing Costs (1)	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Total	-	-	-	-	-	-	-	-	-	-	-
Growth-Related Debt Service											
Percent Water (2)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total Water	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Funding Assumptions											
Year of Issuance	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
Interest Rate	1.50%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Term (Years)	25	30	30	30	30	30	30	30	30	30	30
Total Interest (3)											
Total Interest -- Actual	-	-	-	-	-	-	-	-	-	-	-
Total Interest -- NPV	-	-	-	-	-	-	-	-	-	-	-
Growth-Related Interest											
Total Interest -- Actual	-	-	-	-	-	-	-	-	-	-	-
Total Interest -- NPV	-	-	-	-	-	-	-	-	-	-	-

Debt Funding Input

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

Input Area -- Forecast Debt Service
Zone: Twin Peaks -- 20170912

Series	2018
Total Water Principal	\$ 2,537,466
Term of Debt	25
Interest Rate	1.50%

Year	Beginning Principal	Principal & Interest Payment	Interest Payment	Total Payment	Ending Principal	Total New Capacity ERUs	Interest Expense Per ERU
2018	\$ 2,537,466	\$ 254,135	\$ -	\$ 254,135	\$ 2,283,331		
2019	2,283,331	254,055	-	254,055	2,029,276		
2020	2,029,276	253,973	-	253,973	1,775,303		
2021	1,775,303	253,889	-	253,889	1,521,414		
2022	1,521,414	253,802	-	253,802	1,267,612		
2023	1,267,612	253,712	-	253,712	1,013,900		
2024	1,013,900	253,620	-	253,620	760,280		
2025	760,280	253,525	-	253,525	506,755		
2026	506,755	253,428	-	253,428	253,327		
2027	253,327	-	-	-	-		
2028	-	-	-	-	-		
TOTAL NPV		2,537,466	-	2,537,466	2,340,199	2,069	-

Series	2019
Total Water Principal	\$ -
Term of Debt	30
Interest Rate	5.00%

Year	Beginning Principal	Principal & Interest Payment	Interest Payment	Total Payment	Ending Principal	Total New Capacity ERUs	Interest Expense Per ERU
2018	\$ -	\$ -	\$ -	\$ -	\$ -		
2019	-	-	-	-	-		
2020	-	-	-	-	-		
2021	-	-	-	-	-		
2022	-	-	-	-	-		
2023	-	-	-	-	-		
2024	-	-	-	-	-		
2025	-	-	-	-	-		
2026	-	-	-	-	-		
2027	-	-	-	-	-		
2028	-	-	-	-	-		
TOTAL NPV		-	-	-	-	2,069	-

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

Input Area -- Forecast Debt Service
Zone: Twin Peaks -- 20170912

Year	Beginning Principal	Principal & Interest Payment	Interest Payment	Total Payment	Ending Principal	Total New Capacity ERUs	Interest Expense Per ERU
2018	\$ 2,537,466	\$ 254,135	\$ -	\$ 254,135	\$ 2,283,331		
2019	2,283,331	254,055	-	254,055	2,029,276		
2020	2,029,276	253,973	-	253,973	1,775,303		
2021	1,775,303	253,889	-	253,889	1,521,414		
2022	1,521,414	253,802	-	253,802	1,267,612		
2023	1,267,612	253,712	-	253,712	1,013,900		
2024	1,013,900	253,620	-	253,620	760,280		
2025	760,280	253,525	-	253,525	506,755		
2026	506,755	253,428	-	253,428	253,327		
2027	253,327	253,327	-	253,327	-		
2028	-	-	-	-	-		
TOTAL NPV		2,537,466	-	2,537,466			
		2,340,199	-	2,340,199			

\$ -

Year	Beginning Principal	Principal & Interest Payment	Interest Payment	Total Payment	Ending Principal	Total New Capacity ERUs	Interest Expense Per ERU
2018	\$ 2,537,466	\$ 254,135	\$ -	\$ 254,135	\$ 2,283,331		
2019	2,283,331	254,055	-	254,055	2,029,276		
2020	2,029,276	253,973	-	253,973	1,775,303		
2021	1,775,303	253,889	-	253,889	1,521,414		
2022	1,521,414	253,802	-	253,802	1,267,612		
2023	1,267,612	253,712	-	253,712	1,013,900		
2024	1,013,900	253,620	-	253,620	760,280		
2025	760,280	253,525	-	253,525	506,755		
2026	506,755	253,428	-	253,428	253,327		
2027	253,327	253,327	-	253,327	-		
2028	-	-	-	-	-		
TOTAL NPV		2,537,466	-	2,537,466			
		2,340,199	-	2,340,199			

\$ 2,069

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

Calculation Year
2018

Description	Total	Water Meter Size	AWWA Conversion Ratio	MAXIMUM Water Development Fee
Summary Schedule -- Calculation of Impact Fee				
Zone: Twin Peaks -- 20170912				
Water System Development Fee				
I. Current and Forecast Capacity -- ERUs				
Forecast Expansions	2,069	5/8"x3/4"	1.00	\$ 2,740
		3/4"	1.50	4,110
		1"	2.50	6,850
		1 1/2"	5.00	13,700
		2"	8.00	21,920
II. Development Fee per ERU				
Current CIP Value of Growth-Related Improvements	\$ 5,643,976			
Impact Fee Study Preparation Expenses	25,000			
Interest Expense Allocated to Planning Period	-			
Sub-Total	\$ 5,668,976			
Less CIP Credit	-			
New Value of CIP to be Paid from Development Fees	\$ 5,668,976			
Forecast Expansions	2,069			
Net Water Facility Development Fee Per ERU	\$ 2,740			
		3"	15.00	41,099 **
		4"	25.00	68,499 **
		6"	50.00	136,998 **

Development Fee Per Gallon	\$ 4.61
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** These are for illustration and revenue generation purposes only, and are no to be actual recommendations for impact fees for these larger meter sizes.

APPENDIX D

**TOWN OF MARANA
WATER DEVELOPMENT FEE BY METER SIZE
Zone: Saguaro Bloom -- 20170912**

Water Meter Size	Meter Equivalency Conversion Ratio*	MAXIMUM Water Development Fee
5/8"x3/4"	1.00	\$ 838
3/4"	1.50	1,257
1"	2.50	2,095
1 1/2"	5.00	4,189
2"	8.00	6,703

* AWWA M1 Principles of Water Rates, Fees, and Charges; Page 338

**TOWN OF MARANA
FORECAST DEVELOPMENT FEE REVENUE**

Benefit Area:

Saguaro Bloom -- 20170912	Total
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Maximum Dev Fee	\$	838
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Forecast New Accounts

2018	118
2019	119
2020	120
2021	121
2022	122
2023	123
2024	124
2025	125
2026	126
2027	131

Forecast Revenues

2018		\$ 98,866
2019		99,704
2020		100,542
2021		101,380
2022		102,217
2023		103,055
2024		103,893
2025		104,731
2026		105,569
2027		109,758

Total Period		1,029,715
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**Forecast
2018 - 2027**

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

Input Area – Capital Improvement Plan
Infrastructure Improvement Plan

Utility:
Test Year
Forecast Period
Development Fee Zone

TOWN OF MARANA
2018
2018 - 2027
Saguaro Bloom – 20170912

Treatment	Depreciable Lifespan (Years)	Percent Grant Funded	Percent Growth	Percent Replacement	Total CIP	Total Growth	Total Replacement
1 Water Master Plan	50	0.0%	100.0%	0.0%	25,000	25,000	-
2 Project	50	0.0%	100.0%	0.0%	-	-	-
3 Project	50	0.0%	100.0%	0.0%	-	-	-
4 Project	50	0.0%	100.0%	0.0%	-	-	-
5 Project	50	0.0%	100.0%	0.0%	-	-	-
6 Project	50	0.0%	100.0%	0.0%	-	-	-
7 Project	50	0.0%	100.0%	0.0%	-	-	-
8 Project	50	0.0%	100.0%	0.0%	-	-	-
9 Project	50	0.0%	100.0%	0.0%	-	-	-
10 Project	50	0.0%	100.0%	0.0%	-	-	-
11 Project	50	0.0%	100.0%	0.0%	-	-	-
12 Project	50	0.0%	100.0%	0.0%	-	-	-
13 Project	50	0.0%	100.0%	0.0%	-	-	-
14 Project	50	0.0%	100.0%	0.0%	-	-	-
15 Project	50	0.0%	100.0%	0.0%	-	-	-
Total Treatment					25,000	25,000	-

Distribution	Developer Reimbursement for Water System Infrastructure	Percent Growth	Percent Replacement	Total CIP	Total Growth	Total Replacement
x 1	50	0.0%	100.0%	979,715	979,715	-
x 2	50	0.0%	100.0%	-	-	-
x 3	50	0.0%	100.0%	-	-	-
x 4	50	0.0%	100.0%	-	-	-
5	50	0.0%	100.0%	-	-	-
6	50	0.0%	100.0%	-	-	-
7	50	0.0%	100.0%	-	-	-
8	50	0.0%	100.0%	-	-	-
9	50	0.0%	100.0%	-	-	-
10	50	0.0%	100.0%	-	-	-
Total Distribution				979,715	979,715	-

TOTAL WATER CIP

Allocation to:	Percent Growth	Percent Replacement	Total CIP	Total Growth	Total Replacement
Treatment			1,004,715	1,004,715	-
Distribution			25,000	25,000	-
Administration			979,715	979,715	-
Customer			-	-	-
Total	0.0%	0.0%	1,004,715	1,004,715	-
				100.0%	0.0%

**Forecast
2018 - 2027**

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

2018 2019 2020 2021 2022 2023 2024 2025 2026 2027

**Input Area – Capital Improvement Plan
Infrastructure Improvement Plan**

*Utility:
Test Year
Forecast Period
Development Fee Zone*

Treatment	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
1 Water Master Plan	25,000	-	-	-	-	-	-	-	-	-
2 Project	-	-	-	-	-	-	-	-	-	-
3 Project	-	-	-	-	-	-	-	-	-	-
4 Project	-	-	-	-	-	-	-	-	-	-
5 Project	-	-	-	-	-	-	-	-	-	-
6 Project	-	-	-	-	-	-	-	-	-	-
7 Project	-	-	-	-	-	-	-	-	-	-
8 Project	-	-	-	-	-	-	-	-	-	-
9 Project	-	-	-	-	-	-	-	-	-	-
10 Project	-	-	-	-	-	-	-	-	-	-
11 Project	-	-	-	-	-	-	-	-	-	-
12 Project	-	-	-	-	-	-	-	-	-	-
13 Project	-	-	-	-	-	-	-	-	-	-
14 Project	-	-	-	-	-	-	-	-	-	-
15 Project	-	-	-	-	-	-	-	-	-	-
Total Treatment	25,000	-	-	-	-	-	-	-	-	-

Distribution

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
x 1 Developer Reimbursement for Water System Infrastructure	\$ 97,967	\$ 97,972	\$ 97,972	\$ 97,972	\$ 97,972	\$ 97,972	\$ 97,972	\$ 97,972	\$ 97,972	\$ 97,972
x 2 Project	-	-	-	-	-	-	-	-	-	-
x 3 Project	-	-	-	-	-	-	-	-	-	-
x 4 Project	-	-	-	-	-	-	-	-	-	-
5 Project	-	-	-	-	-	-	-	-	-	-
6 Project	-	-	-	-	-	-	-	-	-	-
7 Project	-	-	-	-	-	-	-	-	-	-
8 Project	-	-	-	-	-	-	-	-	-	-
9 Project	-	-	-	-	-	-	-	-	-	-
10 Project	-	-	-	-	-	-	-	-	-	-
Total Distribution	97,967	97,972	97,972	97,972	97,972	97,972	97,972	97,972	97,972	97,972

TOTAL WATER CIP

Allocation to:	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Treatment	25,000	-	-	-	-	-	-	-	-	-
Distribution	97,967	97,972	97,972	97,972	97,972	97,972	97,972	97,972	97,972	97,972
Administration	-	-	-	-	-	-	-	-	-	-
Customer	-	-	-	-	-	-	-	-	-	-
Total	122,967	97,972	97,972	97,972	97,972	97,972	97,972	97,972	97,972	97,972

TOWN OF MARANA WATER SYSTEM DEVELOPMENT FEE MODEL										
Calculation Year	5/8x3/4"	3/4"	1"	1 1/2"	2"	3"	4"	6"	Total	Cumulative Total
2018										

Input Area -- 10 Year Water System Forecast Demand
Zone: Saguaro Bloom -- 20170912

Total EDUs -- June 2017

Total Service Area	381	-	-	-	-	-	-	-	381	381
Percent	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
Total Zone	381	-	-	-	-	-	-	-	381	381
Percent	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%

Forecast Annual New EDUs

2018	118	-	-	-	-	-	-	-	118	118
2019	119	-	-	-	-	-	-	-	119	119
2020	120	-	-	-	-	-	-	-	120	120
2021	121	-	-	-	-	-	-	-	121	121
2022	122	-	-	-	-	-	-	-	122	122
2023	123	-	-	-	-	-	-	-	123	123
2024	124	-	-	-	-	-	-	-	124	124
2025	125	-	-	-	-	-	-	-	125	125
2026	126	-	-	-	-	-	-	-	126	126
2027	131	-	-	-	-	-	-	-	131	131
									1,229	1,229

Check

Forecast Annual Total EDUs

2018	499	-	-	-	-	-	-	-	499	499
2019	618	-	-	-	-	-	-	-	618	618
2020	738	-	-	-	-	-	-	-	738	738
2021	859	-	-	-	-	-	-	-	859	859
2022	981	-	-	-	-	-	-	-	981	981
2023	1,104	-	-	-	-	-	-	-	1,104	1,104
2024	1,228	-	-	-	-	-	-	-	1,228	1,228
2025	1,353	-	-	-	-	-	-	-	1,353	1,353
2026	1,479	-	-	-	-	-	-	-	1,479	1,479
2027	1,610	-	-	-	-	-	-	-	1,610	1,610

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

	Water Meter Size	3/4"	1"	1 1/2"	2"	3"	4"	6"	Total	Cumulative Total
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**Input Area -- 10 Year Water System Forecast Demand
Zone: Saguaro Bloom -- 20170912**

Water Equivalent Dwelling Units (EDUs)

	1.00	1.50	2.50	5.00	8.00	15.00	25.00	50.00	381
3/4" Conv. Factor	381	-	-	-	-	-	-	-	-
Most Recent Month Total Accounts	381	-	-	-	-	-	-	-	381

Forecast Accounts

2018	499	-	-	-	-	-	-	-	499
2019	618	-	-	-	-	-	-	-	618
2020	798	-	-	-	-	-	-	-	798
2021	859	-	-	-	-	-	-	-	859
2022	981	-	-	-	-	-	-	-	981
2023	1,104	-	-	-	-	-	-	-	1,104
2024	1,228	-	-	-	-	-	-	-	1,228
2025	1,353	-	-	-	-	-	-	-	1,353
2026	1,479	-	-	-	-	-	-	-	1,479
2027	1,610	-	-	-	-	-	-	-	1,610
Total	12,229	-	-	-	-	-	-	-	125,628

Forecast Annual New Accounts

2018	118	-	-	-	-	-	-	-	118
2019	119	-	-	-	-	-	-	-	119
2020	120	-	-	-	-	-	-	-	120
2021	121	-	-	-	-	-	-	-	121
2022	122	-	-	-	-	-	-	-	122
2023	123	-	-	-	-	-	-	-	123
2024	124	-	-	-	-	-	-	-	124
2025	125	-	-	-	-	-	-	-	125
2026	126	-	-	-	-	-	-	-	126
2027	131	-	-	-	-	-	-	-	131
Total	1,229	-	-	-	-	-	-	-	1,229

Cumulative New EDU Monthly Bills

79,908

TOWN OF MARANA WATER SYSTEM DEVELOPMENT FEE MODEL			
Calculation Year	Total WTP Capacity (gallons/day)	Total WTP Capacity (EDUs)	Forecast Annual New Meter Equivalents (EDUs)
2018			
Year	Capacity (gallons/day)	Capacity (EDUs)	Additional Capacity (EDUs)

Input Area -- Forecast Water System Capacity
Zone: Saguaro Bloom -- 20170912

Total EDUs 381
 Average Consumption Per Day Per EDU -- 5/8"x3/4" Meter 270
 Production Factor 10.0%
 Peaking Factor 2.00
 Peak Production Gallons Per Day Per EDU -- 5/8"x3/4" Meter 594

2018		118	118
2019		119	119
2020		120	120
2021		121	121
2022		122	122
2023		123	123
2024		124	124
2025		125	125
2026		126	126
2027		131	131
Total Increase in EDUs		1,229	1,229

NOTE: System capacity increase in forecast period is calculated to be equivalent to increase in new EDUs

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

Calculation Year
2018

2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 **Total Period**

Input Area -- CIP Debt Funding Assumptions
Saguaro Bloom -- 20170912

CIP Funding Summary		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
Beginning Funds Available	\$ -	\$ (24,101)	\$ (22,369)	\$ (19,799)	\$ (16,392)	\$ (12,146)	\$ (7,063)	\$ (1,142)	\$ (1,142)	\$ 5,617	\$ 13,270	13,270
Interest 1.0%										56	133	133
Plus Development Fees	98,866	99,704	100,542	101,380	102,217	103,055	103,893	104,731	105,569	105,569	109,758	109,758
Plus Proceeds from Issuance of Debt												
Total Available Funds	98,866	75,603	78,173	81,580	85,826	90,909	96,830	103,589	111,242	111,242	123,161	123,161
Less Water CIP	122,967	97,972	97,972	97,972	97,972	97,972	97,972	97,972	97,972	97,972	97,972	1,004,715
Ending Funds Available	(24,101)	(22,369)	(19,799)	(16,392)	(12,146)	(7,063)	(1,142)	5,617	13,270	13,270	25,189	25,189

Forecast Debt Issues

Principal (1)	-	-	-	-	-	-	-	-	-	-	-	-
Closing Costs (1)	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Total	-	-	-	-	-	-	-	-	-	-	-	-

Growth-Related Debt Service

Percent Water (2)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total Water	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Funding Assumptions

Year of Issuance	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Interest Rate	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Term (Years)	30	30	30	30	30	30	30	30	30	30

Total Interest (3)

Total Interest -- Actual	-	-	-	-	-	-	-	-	-	-	-	-
Total Interest -- NPV	-	-	-	-	-	-	-	-	-	-	-	-

Growth-Related Interest

Total Interest -- Actual	-	-	-	-	-	-	-	-	-	-	-	-
Total Interest -- NPV	-	-	-	-	-	-	-	-	-	-	-	-

Calculation Year
2018

TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL

Description	Total	Water Meter Size	AWWA Conversion Ratio	MAXIMUM Water Development Fee
Summary Schedule -- Calculation of Impact Fee				
Zone: Saguaro Bloom -- 20170912				
Water System Development Fee				
I. Current and Forecast Capacity -- ERUs				
Forecast Expansions	1,229	5/8"x3/4"	1.00	838
		3/4"	1.50	1,257
		1"	2.50	2,095
		1 1/2"	5.00	4,189
		2"	8.00	6,703
II. Development Fee per ERU				
Current CIP Value of Growth-Related Improvements	\$ 1,004,715			
Impact Fee Study Preparation Expenses	25,000			
Interest Expense Allocated to Planning Period	-			
Sub-Total	\$ 1,029,715	3"	15.00	12,568 **
Less CIP Credit	-	4"	25.00	20,946 **
New Value of CIP to be Paid from Development Fees	\$ 1,029,715	6"	50.00	41,892 **
Forecast Expansions	1,229			
Net Water Facility Development Fee Per ERU	\$ 838			\$ 1.41

** These are for illustration and revenue generation purposes only, and are not to be actual recommendations for impact fees for these larger meter sizes.

APPENDIX E

**TOWN OF MARANA
WATER DEVELOPMENT FEE BY METER SIZE**

Zone: Water Rights Acquisition -- 20170912

Water Meter Size	Meter Equivalency Conversion Ratio*	MAXIMUM Water Development Fee
5/8" x 3/4"	1.00	\$ 3,050
3/4"	1.50	4,575
1"	2.50	7,626
1 1/2"	5.00	15,251
2"	8.00	24,402

* AWWA M1 Principles of Water Rates, Fees, and Charges; Page 338

TOWN OF MARANA		
FORECAST DEVELOPMENT FEE REVENUE		
Benefit Area: Water Rights		
		Total
<hr/>		
Maximum Dev Fee	\$	3,050
Forecast New Accounts*		
2018		409
2019		443
2020		478
2021		513
2022		548
2023		581
2024		616
2025		651
2026		686
2027		724
Forecast Revenues		
2018	\$	1,247,450
2019		1,351,150
2020		1,457,900
2021		1,564,650
2022		1,671,400
2023		1,772,050
2024		1,878,800
2025		1,985,550
2026		2,092,300
2027		2,208,200
		<hr/>
Total Period		17,229,450

* Represents growth in study areas only

**Forecast
2018-2027**

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

**Input Area – Capital Improvement Plan
Infrastructure Improvement Plan**

Utility:
 Test Year
 Forecast Period
 Development Fee Zone

TOWN OF MARANA
 2018
 2018-2027
 Water Rights Acquisition – 20170912

Treatment	Depreciable Lifespan (Years)	Percent Grant Funded	Percent Growth	Percent Replacement	Total CIP	Total Growth	Total Replacement
1 Marana WRF System Acquisition (allocated 50/50 Water Rights/WW)	50	0.0%	100.0%	0.0%	7,755,000	7,755,000	-
2 Marana WRF Upgrade (allocated 50/50 Water Rights/WW)	50	0.0%	100.0%	0.0%	2,350,000	2,350,000	-
3 WRF 1.5 MGD Expansion (allocated 50/50 Water Rights/WW)	50	0.0%	87.7%	12.3%	13,000,000	11,400,000	1,600,000
4 Recharge Basin	50	0.0%	100.0%	0.0%	2,277,260	2,277,260	-
5 CAP	50	0.0%	100.0%	0.0%	692,970	692,970	-
6 Non-Indian Agricultural Reallocation	50	0.0%	100.0%	0.0%	78,530	78,530	-
7 Project	50	0.0%	100.0%	0.0%	-	-	-
8 Project	50	0.0%	100.0%	0.0%	-	-	-
9 Project	50	0.0%	100.0%	0.0%	-	-	-
10 Project	50	0.0%	100.0%	0.0%	-	-	-
11 Project	50	0.0%	100.0%	0.0%	-	-	-
12 Project	50	0.0%	100.0%	0.0%	-	-	-
13 Project	50	0.0%	100.0%	0.0%	-	-	-
14 Project	50	0.0%	100.0%	0.0%	-	-	-
15 Project	50	0.0%	100.0%	0.0%	-	-	-
Total Treatment	50	0.0%	100.0%	0.0%	26,153,760	24,553,760	1,600,000

Distribution	Percent Growth	Percent Replacement	Total CIP	Total Growth	Total Replacement
1 Project	100.0%	0.0%	-	-	-
2 Project	100.0%	0.0%	-	-	-
3 Project	100.0%	0.0%	-	-	-
4 Project	100.0%	0.0%	-	-	-
5 Project	100.0%	0.0%	-	-	-
6 Project	100.0%	0.0%	-	-	-
7 Project	100.0%	0.0%	-	-	-
8 Project	100.0%	0.0%	-	-	-
9 Project	100.0%	0.0%	-	-	-
10 Project	100.0%	0.0%	-	-	-
Total Distribution	100.0%	0.0%	-	-	-

Allocation to:	Total CIP	Total Growth	Total Replacement
TOTAL WATER CIP	26,153,760	24,553,760	1,600,000
Treatment	26,153,760	24,553,760	1,600,000
Distribution	-	-	-
Administration	-	-	-
Customer	-	-	-
Total	26,153,760	24,553,760	1,600,000
		93.9%	6.1%

**Forecast
2018-2027**

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

2018 2019 2020 2021 2022 2023 2024 2025 2026 2027

**Input Area – Capital Improvement Plan
Infrastructure Improvement Plan**

Utility:
Test Year
Forecast Period
Development Fee Zone

Treatment	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
1 Marana WRF System Acquisition (allocated 50/50 Water Rights/MW)	\$ 7,755,000	-	-	-	-	-	-	-	-	-
2 Marana WRF Upgrade (allocated 50/50 Water Rights/MW)	2,350,000	-	-	-	-	-	-	-	-	-
3 WRF 1.5 MGD Expansion (allocated 50/50 Water Rights/MW)	13,000,000	-	-	-	-	-	-	-	-	-
4 Recharge Basin	2,277,260	-	-	-	-	-	-	-	-	-
5 CAP	692,970	-	-	-	-	-	-	-	-	-
6 Non-Indian Agricultural Reallocation	-	15,706	15,706	15,706	15,706	15,706	-	-	-	-
7 Project	-	-	-	-	-	-	-	-	-	-
8 Project	-	-	-	-	-	-	-	-	-	-
9 Project	-	-	-	-	-	-	-	-	-	-
10 Project	-	-	-	-	-	-	-	-	-	-
11 Project	-	-	-	-	-	-	-	-	-	-
12 Project	-	-	-	-	-	-	-	-	-	-
13 Project	-	-	-	-	-	-	-	-	-	-
14 Project	-	-	-	-	-	-	-	-	-	-
15 Project	-	-	-	-	-	-	-	-	-	-
Total Treatment	26,075,230	15,706	15,706	15,706	15,706	15,706	-	-	-	-

Distribution

1 Project	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2 Project	-	-	-	-	-	-	-	-	-	-
3 Project	-	-	-	-	-	-	-	-	-	-
4 Project	-	-	-	-	-	-	-	-	-	-
5 Project	-	-	-	-	-	-	-	-	-	-
6 Project	-	-	-	-	-	-	-	-	-	-
7 Project	-	-	-	-	-	-	-	-	-	-
8 Project	-	-	-	-	-	-	-	-	-	-
9 Project	-	-	-	-	-	-	-	-	-	-
10 Project	-	-	-	-	-	-	-	-	-	-
Total Distribution	-	-	-	-	-	-	-	-	-	-

TOTAL WATER CIP

Allocation to:

Treatment	26,075,230	15,706	15,706	15,706	15,706	15,706	-	-	-	-
Distribution	-	-	-	-	-	-	-	-	-	-
Administration	-	-	-	-	-	-	-	-	-	-
Customer	-	-	-	-	-	-	-	-	-	-
Total	26,075,230	15,706	15,706	15,706	15,706	15,706	15,706	15,706	15,706	15,706

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

	Water Service Area North Marana	Twin Peaks	Saguaro Bloom	Other	Other	Other	Total	Cumulative Total
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**Input Area -- 10 Year Water System Forecast Demand
Zone: Water Rights Acquisition -- 20170912**

Total EDUs -- June 2017

Total	3,882	3,821	381	-	-	-	8,084	8,084
Percent	48.02%	47.27%	4.71%	0.00%	0.00%	0.00%	100.00%	100.00%

Total Zone Water Rights Acquisition -- 20170912

Total	3,882	3,821	381	-	-	-	8,084	8,084
Percent	48.02%	47.27%	4.71%	0.00%	0.00%	0.00%	100.00%	100.00%

Forecast Annual New EDUs

Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Check
2018	151	140	119	118	-	-	-	-	-	-	409
2019	169	155	119	120	-	-	-	-	-	-	443
2020	188	170	120	121	-	-	-	-	-	-	478
2021	207	185	121	122	-	-	-	-	-	-	513
2022	226	200	122	123	-	-	-	-	-	-	548
2023	244	214	123	124	-	-	-	-	-	-	581
2024	263	229	124	125	-	-	-	-	-	-	616
2025	282	244	125	126	-	-	-	-	-	-	651
2026	301	259	126	131	-	-	-	-	-	-	686
2027	320	273	131	-	-	-	-	-	-	-	724
											5,649

Forecast Annual Total EDUs

Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
2018	4,033	3,961	4,202	4,116	4,286	4,597	4,823	4,671	4,885	5,114
2019	4,202	4,116	4,286	4,471	4,671	4,823	4,671	4,885	5,114	5,358
2020	4,390	4,286	4,471	4,671	4,823	4,671	4,885	5,114	5,358	5,617
2021	4,597	4,471	4,671	4,823	4,671	4,885	5,114	5,358	5,617	5,913
2022	4,823	4,671	4,823	4,671	4,885	5,114	5,358	5,617	5,913	6,233
2023	5,067	4,823	4,671	4,885	5,114	5,358	5,617	5,913	6,233	-
2024	5,300	5,067	4,823	4,671	4,885	5,114	5,358	5,617	5,913	-
2025	5,533	5,300	5,067	4,823	4,671	4,885	5,114	5,358	5,617	-
2026	5,766	5,533	5,300	5,067	4,823	4,671	4,885	5,114	5,358	-
2027	6,000	5,766	5,533	5,300	5,067	4,823	4,671	4,885	5,114	-

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

Calculation Year 2018	Water Service Area North Marana	Twin Peaks	Saguaro Bloom	Other	Other	Other	Other	Other	Total	Cumulative Total
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**Input Area -- 10 Year Water System Forecast Demand
Zone: Water Rights Acquisition -- 20170912**

	1.00	1.50	2.50	5.00	8.00	15.00	25.00	50.00		
3/4" Conv. Factor	3,882	2,547	152	-	-	-	-	-	6,581	
Most Recent Month Total Accounts										
Forecast EDUs										
2018	4,033	3,961	499	-	-	-	-	-	8,493	101,916
2019	4,202	4,116	618	-	-	-	-	-	8,936	107,232
2020	4,390	4,286	738	-	-	-	-	-	9,414	112,968
2021	4,597	4,471	859	-	-	-	-	-	9,927	119,124
2022	4,823	4,671	981	-	-	-	-	-	10,475	125,700
2023	5,067	4,885	1,104	-	-	-	-	-	11,056	132,672
2024	5,330	5,114	1,228	-	-	-	-	-	11,672	140,064
2025	5,612	5,358	1,353	-	-	-	-	-	12,323	147,876
2026	5,913	5,617	1,479	-	-	-	-	-	13,009	156,108
2027	6,233	5,890	1,610	-	-	-	-	-	13,733	164,796
										1,308,456
Forecast Annual New Accounts										
2018	151	140	118	-	-	-	-	-	409	409
2019	169	155	119	-	-	-	-	-	443	852
2020	188	170	120	-	-	-	-	-	478	1,330
2021	207	185	121	-	-	-	-	-	513	1,843
2022	226	200	122	-	-	-	-	-	548	2,391
2023	244	214	123	-	-	-	-	-	581	2,972
2024	263	229	124	-	-	-	-	-	616	3,588
2025	282	244	125	-	-	-	-	-	651	4,239
2026	301	259	126	-	-	-	-	-	686	4,925
2027	320	273	131	-	-	-	-	-	724	5,649
Total	2,351	2,069	1,229	-	-	-	-	-	5,649	338,376

Cumulative New ERU Monthly Bills

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

Calculation Year
2018

Year	WWTP Capacity (gallons/day)	WWTP Capacity (Acre Feet)	NIA Purchases (Acre Feet)	Avra CAP M&I Purchases (Acre Feet)	Total Capacity (Acre Feet)	Total Capacity (EDUs)	Additional Capacity (EDUs)
2018	172,500	193	-	-	193	639	5,587
2019	500,000	560	515	808	1,883	6,226	-
2020	1,500,000	1,680	515	808	3,003	9,930	3,704
2021	1,500,000	1,680	515	808	3,003	9,930	-
2022	1,500,000	1,680	515	808	3,003	9,930	-
2023	1,500,000	1,680	515	808	3,003	9,930	-
2024	1,500,000	1,680	515	808	3,003	9,930	-
2025	1,500,000	1,680	515	808	3,003	9,930	-
2026	1,500,000	1,680	515	808	3,003	9,930	-
2027	1,500,000	1,680	515	808	3,003	9,930	-
Total Increase in ERUs						9,291	9,291

Input Area -- Forecast Water System Capacity
Zone: Water Rights Acquisition -- 20170912

Total ERUs 8,084
 Gallons Per Capita Per Day 100
 Persons Per Dwelling Unit 2.70
 Gallons Per Day per ERU 270
 Acre Feet Per Year per ERU 0.302
 Gallons Per Acre Foot 325,851

Total Increase in ERUs

NOTE: System capacity increase in forecast period is calculated to be equivalent to increase in new ERUs

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

Calculation Year
2018

Total
Period

Input Area -- CIP Debt Funding Assumptions
Zone: Water Rights Acquisition -- 20170912

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
CIP Funding Summary											
Beginning Funds Available - 2016 Ending B	\$ 1,129,538	\$ (1,925,891)	\$ (590,447)	\$ 851,747	\$ 2,417,726	\$ 4,121,774	\$ 5,960,554	\$ 7,958,565	\$ 10,103,286	\$ 12,397,652	\$ 12,397,652
Interest 2.0%	22,591	-	-	17,035	48,355	82,435	119,211	159,171	202,066	247,953	247,953
Plus Development Fees	1,247,450	1,351,150	1,457,900	1,564,650	1,671,400	1,772,050	1,878,800	1,985,550	2,092,300	2,208,200	2,208,200
Plus Proceeds from Issuance of Debt	21,749,760	-	-	-	-	-	-	-	-	-	-
Total Available Funds	24,149,339	(574,741)	867,453	2,433,432	4,137,480	5,976,260	7,958,565	10,103,286	12,397,652	14,853,805	14,853,805
Less Water CIP	26,075,230	15,706	15,706	15,706	15,706	15,706	-	-	-	-	26,153,760
Ending Funds Available	(1,925,891)	(590,447)	851,747	2,417,726	4,121,774	5,960,554	7,958,565	10,103,286	12,397,652	14,853,805	

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
Forecast Debt Issues											
Principal (1)	21,749,760	-	-	-	-	-	-	-	-	-	21,749,760
Closing Costs (1)	0.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Total	21,749,760	-	-	-	-	-	-	-	-	-	21,749,760

Growth-Related Debt Service

Percent Water (2)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total Water	\$ 21,749,760	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 21,749,760

Funding Assumptions

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Year of Issuance	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Interest Rate	5.00%	5.00%	2.50%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Term (Years)	25	30	25	30	30	30	30	30	30	30

Total Interest (3)

Total Interest -- Actual	2,958,300	910,900	3,342,515	1,436,044	-	-	-	-	-	-	-
Total Interest -- NPV	2,306,631	710,243	2,535,641	1,089,387	-	-	-	-	-	-	-

Growth-Related Interest

Total Interest -- Actual	2,958,300	910,900	3,342,515	1,436,044	-	-	-	-	-	-	8,647,758
Total Interest -- NPV	2,306,631	710,243	2,535,641	1,089,387	-	-	-	-	-	-	6,641,903

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

Year	Beginning Principal	Principal Payment	Interest Payment	Total Payment	Ending Principal	Total New Capacity ERUs	Interest Expense Per ERU
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Input Area -- Forecast Debt Service
Zone: Water Rights Acquisition -- 20170912 Allocation to Wastewater: 50.0%

Year	Beginning Principal	Principal Payment	Interest Payment	Total Payment	Ending Principal	Total New Capacity ERUs	Interest Expense Per ERU
2018	\$ 8,275,000	\$ 345,000	\$ 347,888	\$ 692,888	\$ 7,930,000.00		
2019	8,275,000	357,500	334,088	691,588	7,917,500		
2020	7,917,500	367,500	325,150	692,650	7,550,000		
2021	7,550,000	380,000	310,450	690,450	7,170,000		
2022	7,170,000	397,500	295,250	692,750	6,772,500		
2023	6,772,500	412,500	279,350	691,850	6,360,000		
2024	6,360,000	432,500	258,725	691,225	5,927,500		
2025	5,927,500	455,000	237,100	692,100	5,472,500		
2026	5,472,500	477,500	214,350	691,850	4,995,000		
2027	4,995,000	500,000	190,475	690,475	4,495,000		
2028	4,495,000	525,000	165,475	690,475	3,970,000		
TOTAL		3,439,233	2,958,300	7,606,300		9,291	248.26
NPV			2,306,631	5,745,864			

Input Area -- Forecast Debt Service
Zone: Water Rights Acquisition -- 20170912 Allocation to Wastewater: 50.0%

Year	Beginning Principal	Principal Payment	Interest Payment	Total Payment	Ending Principal	Total New Capacity ERUs	Interest Expense Per ERU
2018	\$ 2,590,000	\$ 105,000	\$ 107,075	\$ 212,075	\$ 2,485,000		
2019	2,485,000	110,000	102,875	212,875	2,375,000		
2020	2,375,000	112,500	100,125	212,625	2,262,500		
2021	2,262,500	117,500	95,625	213,125	2,145,000		
2022	2,145,000	122,500	90,925	213,425	2,022,500		
2023	2,022,500	127,500	86,025	213,525	1,895,000		
2024	1,895,000	132,500	79,650	212,150	1,762,500		
2025	1,762,500	140,000	73,025	213,025	1,622,500		
2026	1,622,500	147,500	66,025	213,525	1,475,000		
2027	1,475,000	155,000	58,650	213,650	1,320,000		
2028	1,320,000	162,500	50,900	213,400	1,157,500		
TOTAL		1,058,916	910,900	2,343,400		9,291	76.44
NPV			710,243	1,769,160			

NOTE: 50% of Debt Service allocated to wastewater

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

Input Area -- Forecast Debt Service
Water Rights Acquisition -- 20170912
 Allocation to Wastewater: 50.0%

Year	Beginning Principal	Principal Payment	Interest Payment	Total Payment	Ending Principal	Total New Capacity ERUs	Interest Expense Per ERU
2018	8,607,500	\$	357,386	357,386	8,607,500		
2019	8,607,500		298,513	298,513	8,607,500		
2020	8,607,500		298,513	298,513	8,607,500		
2021	8,607,500		298,513	298,513	8,607,500		
2022	8,607,500		298,513	298,513	8,607,500		
2023	8,607,500		298,513	298,513	8,607,500		
2024	8,607,500		298,513	298,513	8,607,500		
2025	8,607,500		298,513	298,513	8,607,500		
2026	8,607,500		298,513	298,513	8,607,500		
2027	8,607,500		298,513	298,513	8,607,500		
2028	8,607,500		298,513	298,513	8,607,500		
TOTAL			3,342,515	3,342,515			
NPV			2,535,641	2,535,641		9,291	272.91

NOTE: 50% of Debt Service allocated to wastewater

Year	Beginning Principal	Principal Payment	Interest Payment	Total Payment	Ending Principal	Total New Capacity ERUs	Interest Expense Per ERU
2018	8,607,500	\$	153,544	153,544	8,607,500		
2019	8,607,500		128,250	128,250	8,607,500		
2020	8,607,500		128,250	128,250	8,607,500		
2021	8,607,500		128,250	128,250	8,607,500		
2022	8,607,500		128,250	128,250	8,607,500		
2023	8,607,500		128,250	128,250	8,607,500		
2024	8,607,500		128,250	128,250	8,607,500		
2025	8,607,500		128,250	128,250	8,607,500		
2026	8,607,500		128,250	128,250	8,607,500		
2027	8,607,500		128,250	128,250	8,607,500		
2028	8,607,500		128,250	128,250	8,607,500		
TOTAL			1,436,044	1,436,044			
NPV			1,089,387	1,089,387		9,291	117.25

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

Input Area -- Forecast Debt Service
Zone: Water Rights Acquisition -- 20170912
 Allocation to Wastewater: 50.0%

Year	Beginning Principal	Principal Payment	Interest Payment	Total Payment	Ending Principal	Total New Capacity ERUs	Interest Expense Per ERU
2018	\$ 19,472,500	\$ 450,000	\$ 965,892	\$ 1,415,892	\$ 19,022,500		
2019	19,367,500	467,500	863,725	1,331,225	18,900,000		
2020	18,900,000	480,000	852,038	1,332,038	18,420,000		
2021	18,420,000	497,500	832,838	1,330,338	17,922,500		
2022	17,922,500	520,000	812,938	1,332,938	17,402,500		
2023	17,402,500	540,000	792,138	1,332,138	16,862,500		
2024	16,862,500	565,000	765,138	1,330,138	16,297,500		
2025	16,297,500	595,000	736,888	1,331,888	15,702,500		
2026	15,702,500	625,000	707,138	1,332,138	15,077,500		
2027	15,077,500	655,000	675,888	1,330,888	14,422,500		
2028	14,422,500	687,500	643,138	1,330,638	13,735,000		
TOTAL NPV		6,082,500	8,647,758	14,730,258			715
		4,498,149	6,641,903	11,140,052			\$

Series Interest Rate
 5.00%

Year	Beginning Principal	Principal Payment	Interest Payment	Total Payment	Ending Principal	Total New Capacity ERUs	Interest Expense Per ERU
2018	\$ 19,472,500	\$ 450,000	\$ 965,892	\$ 1,415,892	\$ 19,022,500		
2019	19,367,500	467,500	863,725	1,331,225	18,900,000		
2020	18,900,000	480,000	852,038	1,332,038	18,420,000		
2021	18,420,000	497,500	832,838	1,330,338	17,922,500		
2022	17,922,500	520,000	812,938	1,332,938	17,402,500		
2023	17,402,500	540,000	792,138	1,332,138	16,862,500		
2024	16,862,500	565,000	765,138	1,330,138	16,297,500		
2025	16,297,500	595,000	736,888	1,331,888	15,702,500		
2026	15,702,500	625,000	707,138	1,332,138	15,077,500		
2027	15,077,500	655,000	675,888	1,330,888	14,422,500		
2028	14,422,500	687,500	643,138	1,330,638	13,735,000		
TOTAL NPV		6,082,500	8,647,758	14,730,258			715
		4,498,149	6,641,903	11,140,052			\$

Series Percent Growth-Related Interest Rate
 100.0%
 5.00%

TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL

Calculation Year
2018

Input Area -- Debt Credit Calculations
Zone: Water Rights Acquisition -- 20170912

Water System	
Planning Period Debt Service	
Total Principal and Interest	\$ 11,140,052
Funded through Development Fees	
Percent	100.0%
Total	11,140,052
Credit Per Current ERU Per Month	
Monthly Bills from Total Accounts during Planning Period	1,308,456
Planning Period Credit per Current ERU Per Month	\$ 8.51
Cumulative Credit	
Cumulative New ERU Monthly Bills	338,376
Credit per Current ERU Per Month	8.51
Cumulative Credit	2,880,896

**TOWN OF MARANA
WATER SYSTEM DEVELOPMENT FEE MODEL**

Calculation Year
2018

Description	Total	Water Meter Size	AWWA Conversion Ratio	MAXIMUM Water Development Fee
Summary Schedule -- Calculation of Impact Fee				
Zone: Water Rights Acquisition -- 20170912				
Water System Development Fee				
I. Current and Forecast Capacity -- ERUs				
Forecast Expansions	9,291	5/8" x 3/4"	1.00	\$ 3,050
		3/4"	1.50	4,575
		1"	2.50	7,626
		1 1/2"	5.00	15,251
		2"	8.00	24,402
II. Impact Fee per ERU				
Current CIP Value of Growth-Related Improvements	\$ 24,553,760			
Impact Fee Study Preparation Expenses	25,000			
Interest Expense Allocated to Planning Period	6,641,903			
Sub-Total	\$ 31,220,663	3"	15.00	45,753 **
Less CIP Credit	2,880,896	4"	25.00	76,255 **
New Value of CIP to be Paid from Development Fees	\$ 28,339,766	6"	50.00	152,510 **
Forecast Expansions	9,291			
Net Water Facility Development Fee Per ERU	\$ 3,050			

** These are for illustration and revenue generation purposes only, and are not to be actual recommendations for impact fees for these larger meter sizes.

APPENDIX F

**TOWN OF MARANA
WASTEWATER IMPACT FEE BY METER SIZE**

Impact Fee: Wastewater -- Systemwide SB -- 20170912

Water Meter Size	AWWA Meter Ratio*	MAXIMUM Wastewater Impact Fee
5/8" -- 3/4"	1.00	\$ 3,930
3/4"	1.50	5,895
1"	2.50	9,824
1 1/2"	5.00	19,648
2"	8.00	31,437

* AWWA M1 Principles of Water Rates, Fees, and Charges; Page 338

TOWN OF MARANA	
WASTEWATER SYSTEM IMPACT FEE MODEL	
Benefit Area: Wastewater	
Total	
Maximum Dev Fee	\$ 3,930
Forecast New Accounts	
2018	258
2019	278
2020	297
2021	317
2022	337
2023	356
2024	376
2025	396
2026	415
2027	438
Total Period	3,468
Forecast Revenues	
2018	\$ 1,013,940
2019	1,092,540
2020	1,167,210
2021	1,245,810
2022	1,324,410
2023	1,399,080
2024	1,477,680
2025	1,556,280
2026	1,630,950
2027	1,721,340
Total Period	13,629,240

Forecast 2018-2027		TOWN OF MARANA WASTEWATER SYSTEM IMPACT FEE MODEL						Total	Total	Total
Treatment/ Dis/Admin/ Customer	Depreciable Lifespan (Years)	Percent Grant Funded	Percent Growth	Percent Replacement	Total CIP	Total Growth	Total Replacement			

Input Area – Capital Improvement Plan – Wastewater

Input Area - Growth vs. Replacement

Utility: TOWN OF MARANA
 Test Year: 2018
 Forecast Period: 2018-2027
 Impact Fee: Wastewater – Systemwide SB – 20170912

Project	Description	Treat	50	0.0%	100.0%	0.0%	\$ 7,755,000	\$ 7,755,000	\$ -
1	Water Reclamation Facility	Treat	50	0.0%	100.0%	0.0%	7,755,000	7,755,000	-
2	Marana WRF System Acquisition (allocated 50/50 Water Rights/WW)	Treat	50	0.0%	100.0%	0.0%	2,350,000	2,350,000	-
3	Marana WRF Upgrade (allocated 50/50 Water Rights/WW)	Treat	50	0.0%	87.7%	12.3%	13,000,000	11,400,000	1,600,000
4	WRF 1.5 MGD Expansion (allocated 50/50 Water Rights/WW)	Treat	50	0.0%	100.0%	0.0%	-	-	-
5	Project	Treat	50	0.0%	100.0%	0.0%	-	-	-
6	Project	Treat	50	0.0%	100.0%	0.0%	-	-	-
7	Project	Treat	50	0.0%	100.0%	0.0%	-	-	-
8	Project	Treat	50	0.0%	100.0%	0.0%	-	-	-
9	Project	Treat	50	0.0%	100.0%	0.0%	-	-	-
10	Project	Treat	50	0.0%	100.0%	0.0%	-	-	-
	Subtotal						23,105,000	21,505,000	1,600,000
Conveyance/Collection System									
1	Project	Coil	50	0.0%	0.0%	100.0%	-	-	-
2	Project	Coil	50	0.0%	0.0%	100.0%	-	-	-
3	Collection System Master Plan	Coil	5	0.0%	100.0%	0.0%	70,000	70,000	-
4	Marana/Sanders 21" Main	Coil	50	0.0%	100.0%	0.0%	248,400	248,400	-
5	Clark Farms Flow Split	Coil	50	0.0%	100.0%	0.0%	485,750	485,750	-
6	Project	Coil	20	0.0%	100.0%	0.0%	-	-	-
7	Project	Coil	50	0.0%	100.0%	0.0%	-	-	-
8	Project	Coil	50	0.0%	100.0%	0.0%	-	-	-
9	Project	Coil	50	0.0%	100.0%	0.0%	-	-	-
10	Project	Coil	50	0.0%	100.0%	0.0%	-	-	-
	Subtotal						784,150	784,150	-
TOTAL WASTEWATER CIP							23,889,150	22,289,150	1,600,000

Allocation to:

Treatment	96.7%	23,105,000	21,505,000	1,600,000
Collection	3.3%	784,150	784,150	-
Administration	0.0%	-	-	-
Customer	0.0%	-	-	-
Total	100.0%	23,889,150	22,289,150	1,600,000
			93.3%	6.7%

**Forecast
2018-2027**

**TOWN OF MARANA
WASTEWATER SYSTEM IMPACT FEE MODEL**

2018 2019 2020 2021 2022 2023 2024 2025 2026 2027

Input Area -- Capital Improvement Plan -- Wastewater

Utility: TOWN OF MARANA
 Test Year: 2018
 Forecast Period: 2018-2027
 Impact Fee: Wastewater -- Systemwide SI

Input Area - Annual Capital Expenditures

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Water Reclamation Facility										
1 Marana WRF System Acquisition (allocated 50/50 Water Rights/WW)	\$ 7,755,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2 Marana WRF Upgrade (allocated 50/50 Water Rights/WW)	2,350,000	-	-	-	-	-	-	-	-	-
3 WRF 1.5 MGD Expansion (allocated 50/50 Water Rights/WW)	13,000,000	-	-	-	-	-	-	-	-	-
4 Project	-	-	-	-	-	-	-	-	-	-
5 Project	-	-	-	-	-	-	-	-	-	-
6 Project	-	-	-	-	-	-	-	-	-	-
7 Project	-	-	-	-	-	-	-	-	-	-
8 Project	-	-	-	-	-	-	-	-	-	-
9 Project	-	-	-	-	-	-	-	-	-	-
10 Project	-	-	-	-	-	-	-	-	-	-
Subtotal	23,105,000	-	-	-	-	-	-	-	-	-
Conveyance/Collection System										
1 Project	-	-	-	-	-	-	-	-	-	-
2 Project	-	-	-	-	-	-	-	-	-	-
3 Collection System Master Plan	70,000	-	-	-	-	-	-	-	-	-
4 Marana/Sanders 21" Main	-	-	-	-	-	-	-	-	-	-
5 Clark Farms Flow Split	-	-	-	-	-	-	-	-	-	-
6 Project	-	-	-	-	-	-	-	-	-	-
7 Project	-	-	-	-	-	-	-	-	-	-
8 Project	-	-	-	-	-	-	-	-	-	-
9 Project	-	-	-	-	-	-	-	-	-	-
10 Project	-	-	-	-	-	-	-	-	-	-
Subtotal	70,000	-	-	-	-	-	-	-	-	-
TOTAL WASTEWATER CIP	23,175,000	-	-	-	-	-	-	-	-	-
Allocation to:										
Treatment	23,105,000	-	-	-	-	-	-	-	-	-
Collection	70,000	-	-	-	-	-	-	-	-	-
Administration	-	-	-	-	-	-	-	-	-	-
Customer	-	-	-	-	-	-	-	-	-	-
Total	23,175,000	-	-	-	-	-	-	-	-	-

465,750

248,400

TOWN OF MARANA WASTEWATER SYSTEM IMPACT FEE CALCULATION MODEL						
Calculation Year	Other WWTP Capacity (gallons/day)	Marana WWTP Capacity (gallons/day)	Total WWTP Capacity (gallons/day)	Total WWTP Capacity (ERUs)	Forecast Annual Meter Equivalents (ERUs)	
2018						
Year						

Input Area -- Forecast Wastewater Facility Capacity

Impact Fee:

Wastewater -- Systemwide SB -- 20170912

Wastewater System

Persons per Equivalent Dwelling Unit (EDU)
Gallons Per Capita Per Day
Average Treated Gallons Per Day Per ERU

2.70 (1)
69.3 (1)
187.2 (1)

2018	-	500,000	500,000	2,671	3,646
2019	-	1,500,000	1,500,000	8,013	3,924
2020	-	1,500,000	1,500,000	8,013	4,221
2021	-	1,500,000	1,500,000	8,013	4,538
2022	-	1,500,000	1,500,000	8,013	4,875
2023	-	1,500,000	1,500,000	8,013	5,231
2024	-	1,500,000	1,500,000	8,013	5,607
2025	-	1,500,000	1,500,000	8,013	6,003
2026	-	1,500,000	1,500,000	8,013	6,418
2027	-	1,500,000	1,500,000	8,013	6,856
Ending Capacity	-	1,500,000	1,500,000	8,013	6,856
Beginning Capacity - 11.5% Replacement	-	-	-	921	3,388
Total Capacity Required for Growth	-	1,500,000	1,500,000	7,091	3,468
					48.9%

(1) Source: Westland Resources

Calculation Year
2018

TOWN OF MARANA
WASTEWATER SYSTEM IMPACT FEE CALCULATION MODEL

Input Area -- 10 Year Wastewater System Forecast Demand
Impact Fee Wastewater -- Systemwide SB -- 20170912

Calculation Year	Total EDUs in System										Cumulative Total
	Northwest	Southwest	Other	Other	Other	Other	Other	Other	Other	Total	
2018	441	-	-	-	-	-	-	-	-	441	441
Total	2,947	13,025	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	17,972	17,972
Percent	86.98%	13.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.0%	
Forecast Annual Growth Rate											
2018	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.62%
2019	4.18%	25.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.62%
2020	4.42%	21.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.57%
2021	4.62%	18.31%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.51%
2022	4.79%	16.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.43%
2023	4.93%	14.38%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.30%
2024	5.04%	13.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.19%
2025	5.12%	12.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.06%
2026	5.18%	11.06%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.91%
2027	5.25%	10.37%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.82%
Forecast Annual Total											
2018	3,062	584	-	-	-	-	-	-	-	3,646	3,646
2019	3,190	794	-	-	-	-	-	-	-	3,924	7,570
2020	3,331	890	-	-	-	-	-	-	-	4,221	11,791
2021	3,485	1,053	-	-	-	-	-	-	-	4,538	16,329
2022	3,652	1,223	-	-	-	-	-	-	-	4,875	21,204
2023	3,832	1,399	-	-	-	-	-	-	-	5,231	26,435
2024	4,025	1,582	-	-	-	-	-	-	-	5,607	32,042
2025	4,231	1,772	-	-	-	-	-	-	-	6,003	38,045
2026	4,450	1,968	-	-	-	-	-	-	-	6,418	44,463
2027	4,684	2,172	-	-	-	-	-	-	-	6,856	51,319
Forecast Annual New EDUs											
1	2018	115	143	-	-	-	-	-	-	258	258
2	2019	128	150	-	-	-	-	-	-	278	536
3	2020	141	156	-	-	-	-	-	-	297	833
4	2021	154	163	-	-	-	-	-	-	317	1,150
5	2022	167	170	-	-	-	-	-	-	337	1,487
6	2023	180	176	-	-	-	-	-	-	356	1,843
7	2024	193	183	-	-	-	-	-	-	376	2,219
8	2025	206	190	-	-	-	-	-	-	396	2,615
9	2026	219	196	-	-	-	-	-	-	415	3,030
10	2027	234	204	-	-	-	-	-	-	438	3,468
		1,737	1,731	-	-	-	-	-	-	3,468	17,439

Calculation Year
2018

TOWN OF MARANA
WASTEWATER SYSTEM IMPACT FEE CALCULATION MODEL

Input Area -- 10 Year Wastewater System Forecast Demand
Impact Fee Wastewater -- Systemwide SB -- 20170912

	Northwest	Southwest	Other	Other	Total EDUs in System	Other	Other	Other	Other	Total	Cumulative Total
Conversion Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Most Recent Month	2,947	441	-	-	1.0	-	-	-	-	3,388	406,560

	Forecast Wastewater Equivalent Units (EDUs)										
2018	3,062	584	-	-	-	-	-	-	-	-	3,646
2019	3,190	794	-	-	-	-	-	-	-	3,924	4,221
2020	3,331	890	-	-	-	-	-	-	-	4,221	4,538
2021	3,485	1,053	-	-	-	-	-	-	-	4,538	4,875
2022	3,652	1,223	-	-	-	-	-	-	-	4,875	5,231
2023	3,832	1,399	-	-	-	-	-	-	-	5,231	5,607
2024	4,025	1,582	-	-	-	-	-	-	-	5,607	6,003
2025	4,231	1,772	-	-	-	-	-	-	-	6,003	6,418
2026	4,450	1,968	-	-	-	-	-	-	-	6,418	6,856
2027	4,684	2,172	-	-	-	-	-	-	-	6,856	

	Forecast Annual New Water Equivalent Units (EDUs)										
2018	115	143	-	-	-	-	-	-	-	-	258
2019	128	150	-	-	-	-	-	-	-	278	536
2020	141	156	-	-	-	-	-	-	-	297	833
2021	154	163	-	-	-	-	-	-	-	317	1,150
2022	167	170	-	-	-	-	-	-	-	337	1,487
2023	180	176	-	-	-	-	-	-	-	356	1,843
2024	193	183	-	-	-	-	-	-	-	376	2,219
2025	206	190	-	-	-	-	-	-	-	396	2,615
2026	219	196	-	-	-	-	-	-	-	415	3,030
2027	234	204	-	-	-	-	-	-	-	438	3,468
Total	1,737	1,731	-	-	-	-	-	-	-	3,468	

**TOWN OF MARANA
WASTEWATER SYSTEM IMPACT FEE CALCULATION MODEL**

Calculation Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total Period
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**Input Area -- CIP Debt Funding Assumptions
Impact Fee: Wastewater -- Systemwide SB -- 20170912**

Wastewater System

Forecast Capital Improvement Plan											
Total	\$ 23,175,000	\$ -	\$ -	\$ 465,750	\$ -	\$ -	\$ -	\$ 248,400	\$ -	\$ -	\$ 23,889,150
Forecast Debt Issues											
Principal (1)	19,472,500	-	-	-	-	-	-	-	-	-	-
Closing Costs/Reserves (1)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	\$ 19,472,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 19,472,500

Growth-Related Debt Service

Percent Growth-Related											
Total Growth-Related Debt	93.3%	93.3%	93.3%	93.3%	93.3%	93.3%	93.3%	93.3%	93.3%	93.3%	93.3%
	\$ 18,168,310	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 18,168,310

Funding Assumptions

Year of Issuance											
Interest Rate	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	5.0%
Term (Years)	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	25	30	30	30	30	30	30	30	30	30	30

Total Interest (3)

Total Interest -- Actual											
Total Interest -- NPV	3,342,515	-	-	-	-	-	-	-	-	-	3,342,515
	2,535,641	-	-	-	-	-	-	-	-	-	2,535,641

Growth-Related Interest

Total Interest -- Actual											
Total Interest -- NPV	3,118,646	-	-	-	-	-	-	-	-	-	3,118,646
	2,385,814	-	-	-	-	-	-	-	-	-	2,385,814

(1) -- SOURCE: Client and Project Team Estimates
 (2) -- SOURCE: CIP Input
 (3) -- SOURCE: Debt Interest Input

TOWN OF MARANA WASTEWATER SYSTEM IMPACT FEE CALCULATION MODEL									
Calculation Year	Beginning Principal	Principal Payment	Interest Payment	Total Payment	Ending Principal	Total New Capacity EDUs	Interest Expense Per EDU		
2018									

Input Area -- Forecast Debt Service Wastewater -- Systemwide SB -- 20170912 Allocation to Wastewater: 50.0%

Series	2013
Total Wastewater Principal	\$ 8,275,000
Term of Debt	20
Interest Rate	5.0%

2018	\$ 8,275,000	\$ 345,000	\$ 347,888	\$ 692,888	\$ 7,930,000		
2019	8,275,000	357,500	334,088	691,588	7,917,500		
2020	7,917,500	367,500	325,150	692,650	7,550,000		
2021	7,550,000	380,000	310,450	690,450	7,170,000		
2022	7,170,000	397,500	295,250	692,750	6,772,500		
2023	6,772,500	412,500	279,350	691,850	6,360,000		
2024	6,360,000	432,500	258,725	691,225	5,927,500		
2025	5,927,500	455,000	237,100	692,100	5,472,500		
2026	5,472,500	477,500	214,350	691,850	4,995,000		
2027	4,995,000	500,000	190,475	690,475	4,495,000		
2028	4,495,000	525,000	165,475	690,475	3,970,000		
TOTAL			2,958,300	7,608,300			
NPV			2,306,631	5,745,864			

NOTE: 50% of Debt Service allocated to wastewater

Series	2013
Total Wastewater Principal	\$ 2,590,000
Term of Debt	20
Interest Rate	5.0%

2018	\$ 2,590,000	\$ 105,000	\$ 107,075	\$ 212,075	\$ 2,485,000		
2019	2,590,000	110,000	102,875	212,875	2,480,000		
2020	2,480,000	112,500	100,125	212,625	2,367,500		
2021	2,367,500	117,500	95,625	213,125	2,250,000		
2022	2,250,000	122,500	90,925	213,425	2,127,500		
2023	2,127,500	127,500	86,025	213,525	2,000,000		
2024	2,000,000	132,500	79,650	212,150	1,867,500		
2025	1,867,500	140,000	73,025	213,025	1,727,500		
2026	1,727,500	147,500	66,025	213,525	1,580,000		
2027	1,580,000	155,000	58,650	213,650	1,425,000		
2028	1,425,000	162,500	50,900	213,400	1,262,500		
TOTAL			910,900	2,343,400			
NPV			710,243	1,769,160			

NOTE: 50% of Debt Service allocated to wastewater

TOWN OF MARANA WASTEWATER SYSTEM IMPACT FEE CALCULATION MODEL									
Calculation Year	Beginning Principal	Principal Payment	Interest Payment	Total Payment	Ending Principal	Total New Capacity EDUs	Interest Expense Per EDU		
2018									
Year									

Input Area -- Forecast Debt Service
 Impact Fee: Wastewater -- Systemwide SB -- 20170912 Allocation to Wastewater: 50.0%

Series	2018
Total Wastewater Principal	\$ 8,607,500
Term of Debt	25
Interest Rate	5.00%

2018	\$ 8,607,500	\$	357,386	357,386	\$	8,607,500		
2019	8,607,500	-	298,513	298,513	-	8,607,500		
2020	8,607,500	-	298,513	298,513	-	8,607,500		
2021	8,607,500	-	298,513	298,513	-	8,607,500		
2022	8,607,500	-	298,513	298,513	-	8,607,500		
2023	8,607,500	-	298,513	298,513	-	8,607,500		
2024	8,607,500	-	298,513	298,513	-	8,607,500		
2025	8,607,500	-	298,513	298,513	-	8,607,500		
2026	8,607,500	-	298,513	298,513	-	8,607,500		
2027	8,607,500	-	298,513	298,513	-	8,607,500		
2028	8,607,500	-	298,513	298,513	-	8,607,500		
TOTAL			3,342,515	3,342,515				
NPV			2,535,641	2,535,641				7.091
								357.57

Series	2019
Total Wastewater Principal	\$ -
Term of Debt	30
Interest Rate	5.00%

2018	\$	-	\$	-	\$	-		
2019	-	-	-	-	-	-		
2020	-	-	-	-	-	-		
2021	-	-	-	-	-	-		
2022	-	-	-	-	-	-		
2023	-	-	-	-	-	-		
2024	-	-	-	-	-	-		
2025	-	-	-	-	-	-		
2026	-	-	-	-	-	-		
2027	-	-	-	-	-	-		
2028	-	-	-	-	-	-		
TOTAL								7.091
NPV								-

TOWN OF MARANA WASTEWATER SYSTEM IMPACT FEE CALCULATION MODEL							
Calculation Year	Beginning Principal	Principal Payment	Interest Payment	Total Payment	Ending Principal	Total New Capacity EDUS	Interest Expense Per EDU
2018							

Input Area -- Forecast Debt Service
 Impact Fee: Wastewater -- Systemwide SB -- 20170912 Allocation to Wastewater: 50.0%

Year	Beginning Principal	Principal Payment	Interest Payment	Total Payment	Ending Principal	Total New Capacity EDUS	Interest Expense Per EDU
2018	\$ 19,472,500	\$ 450,000	\$ 812,349	\$ 1,262,349	\$ 19,022,500		
2019	19,472,500	467,500	735,475	1,202,975	19,005,000		
2020	19,005,000	480,000	723,788	1,203,788	18,525,000		
2021	18,525,000	497,500	704,588	1,202,088	18,027,500		
2022	18,027,500	520,000	684,688	1,204,688	17,507,500		
2023	17,507,500	540,000	663,888	1,203,888	16,967,500		
2024	16,967,500	565,000	636,888	1,201,888	16,402,500		
2025	16,402,500	595,000	608,638	1,203,638	15,807,500		
2026	15,807,500	625,000	578,888	1,203,888	15,182,500		
2027	15,182,500	655,000	547,638	1,202,638	14,527,500		
2028	14,527,500	687,500	514,888	1,202,388	13,840,000		
TOTAL		6,082,500	7,211,715	13,294,215			
NPV		4,498,149	5,552,516	10,050,665			\$ 783.00

Wastewater System

Year	Beginning Principal	Principal Payment	Interest Payment	Total Payment	Ending Principal	Total New Capacity EDUS	Interest Expense Per EDU
2018	\$ 19,472,500	\$ 450,000	\$ 812,349	\$ 1,262,349	\$ 19,022,500		
2019	19,472,500	467,500	735,475	1,202,975	19,005,000		
2020	19,005,000	480,000	723,788	1,203,788	18,525,000		
2021	18,525,000	497,500	704,588	1,202,088	18,027,500		
2022	18,027,500	520,000	684,688	1,204,688	17,507,500		
2023	17,507,500	540,000	663,888	1,203,888	16,967,500		
2024	16,967,500	565,000	636,888	1,201,888	16,402,500		
2025	16,402,500	595,000	608,638	1,203,638	15,807,500		
2026	15,807,500	625,000	578,888	1,203,888	15,182,500		
2027	15,182,500	655,000	547,638	1,202,638	14,527,500		
2028	14,527,500	687,500	514,888	1,202,388	13,840,000		
TOTAL		6,082,500	7,211,715	13,294,215			
NPV		4,498,149	5,552,516	10,050,665			\$ 783.00

Series	Percent Growth-Related	Interest Rate
WASTEWATER SYSTEM	100.00%	5.00%

7.091 \$ 783.00

**TOWN OF MARANA
WASTEWATER SYSTEM IMPACT FEE CALCULATION MODEL**

Calculation Year	Description	Total	Water Meter Size	AWWA Meter Ratio	MAXIMUM Wastewater Impact Fee
2018					

Summary Schedule -- Calculation of Combined Wastewater Impact Fee
Impact Fee: Wastewater -- Systemwide SB -- 20170912

Wastewater -- System Impact Fee

I. Current and Forecast Capacity (ERUs)

Beginning Capacity	921
Capacity Required for New Growth/Connections	2,091
Total Capacity	8,013

III. Wastewater Impact Fee by Water Meter Size

5/8" -- 3/4"	1.0		\$	3,930
3/4"	1.5			5,895
1"	2.5			9,824
1 1/2"	5.0			19,648
2"	8.0			31,437
3"	15.0			58,945
4"	25.0			98,242
6"	50.0			196,484
8"	80.0			314,374

II. Impact Fee per ERU

Local Current CIP Value of Growth-Related Improver	\$ 22,289,150
Impact Fee Study Preparation Expenses	25,000
Interest Expense Allocated to Planning Period	5,552,516
Sub-Total	\$ 27,866,666
Less CIP Credit	-
New Value of CIP to be Paid from Impact Fees	\$ 27,866,666
Total Forecast Expansions and Capacity	7,091
Net Wastewater Facility Impact Fee Per ERU	\$ 3,930