INFRASTRUCTURE IMPROVEMENTS PLAN AND CAPACITY FEES:

Water and Wastewater Facilities

Prepared for:

City of Safford, Arizona

FINAL

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EXECUTIVE SUMMARY

The City of Safford has engaged TischlerBise to update its infrastructure improvements plans and development fees for Water and Wastewater facilities. The City of Safford currently collects development impact fees for Water and Wastewater under the development fee act in Arizona Revised Statutes (ARS) 9-463.05. However, ARS 9-463.05 was modified by Senate Bill 1525 (effective January 1, 2012), which significantly amended the development fee enabling legislation.

The development fee act defines "service area" as follows:

> "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.[1]

Because the City of Safford currently provides utility service outside its municipal boundaries—and plans to do so in the future—the City intends to suspend collection of development fees for Water and Wastewater and implement the collection of capacity fees for Water and Wastewater under ARS 9-511.01.

The City should retain its existing Water and Wastewater Development Fee Funds and follow the state requirements for accounting and reporting until those fees are fully expended and all development fee payers have received their substantial benefit. The City should also create new, separate funds for Water Capacity Fees and Wastewater Capacity Fees to deposit and account for these revenues.

To ensure rational nexus and proportionality, the analysis and fee calculation herein conforms to the rigorous standards of the development fee enabling legislation including provision of an Infrastructure Improvements Plan (IIP) for Water and Wastewater facilities and Land Use Assumptions (issued under separate cover).

ARIZONA CAPACITY FEE ENABLING LEGISLATION

Arizona Revised Statutes 9-511.01, "Water and wastewater business; rates; procedures; responsibility for payments," governs the imposition of fees for municipal utility services. A copy of the statute is provided in the appendix.

[1] ARS 9-463.05 (T)(9), emphasis added.

INFRASTRUCTURE IMPROVEMENTS PLAN

As noted above, the capacity fee analysis follows the rigorous standards for development fees to ensure that the capacity fees meet rational nexus and proportionality requirements. Toward that end, an Infrastructure Improvements Plan (IIP) has been developed in conjunction with the City of Safford for Water and Wastewater that complies with the required elements set forth in the development fee enabling legislation. The IIP is provided in this document

QUALIFICATIONS OF CONSULTANT

A qualified professional (per the development fee act) is defined as "a professional engineer, surveyor, financial analyst, or planner providing services within the scope of the person's license, education, or experience."

TischlerBise is a fiscal, economic, and planning consulting firm specializing in the cost of growth services. Our services include development/impact/capacity fees, fiscal impact analysis, infrastructure financing analyses, user fee/cost of service studies, capital improvement plans, and fiscal software. TischlerBise has prepared over 800 development and other one-time fee studies over the past 30 years for local governments across the United States.

CALCULATION METHODOLOGIES

There are three basic methodologies used to calculate capacity fees. They examine the past, present, and future status of infrastructure. The objective of evaluating these different methodologies is to determine the best measure of the demand created by new development for additional infrastructure capacity.

- **Cost recovery (past)** is used in instances when a community has oversized a facility or asset in anticipation of future development. This methodology is based on the rationale that new development is repaying the community for its share of the remaining unused capacity.
- **Incremental expansion method (present)** documents the current level of service for each type of public facility. The intent is to use revenue collected to expand or provide additional facilities, as needed to accommodate new development, based on the current cost to provide capital improvements.
- **Plan-based method (future)** utilizes a community's capital improvement plan and/or other adopted plans or engineering studies to guide capital improvements needed to serve new development.

A summary is provided in Figure 1 showing the methodologies, components, and allocations used to calculate the City of Safford IIP.

Figure 1: Recommended Calculation Methodologies: City of Safford Water and Wastewater IIP

Type of Infrastructure	*Cost Recovery (past)*	*Incremental Expansion (present)*	*Plan-Based (future)*	*Cost Allocation*
1. Water	Storage; Distribution		Storage; Distribution	*Average Day Gallons*
2. Wastewater	Treatment; Collection			*Average Day Gallons*

WATER FACILITIES

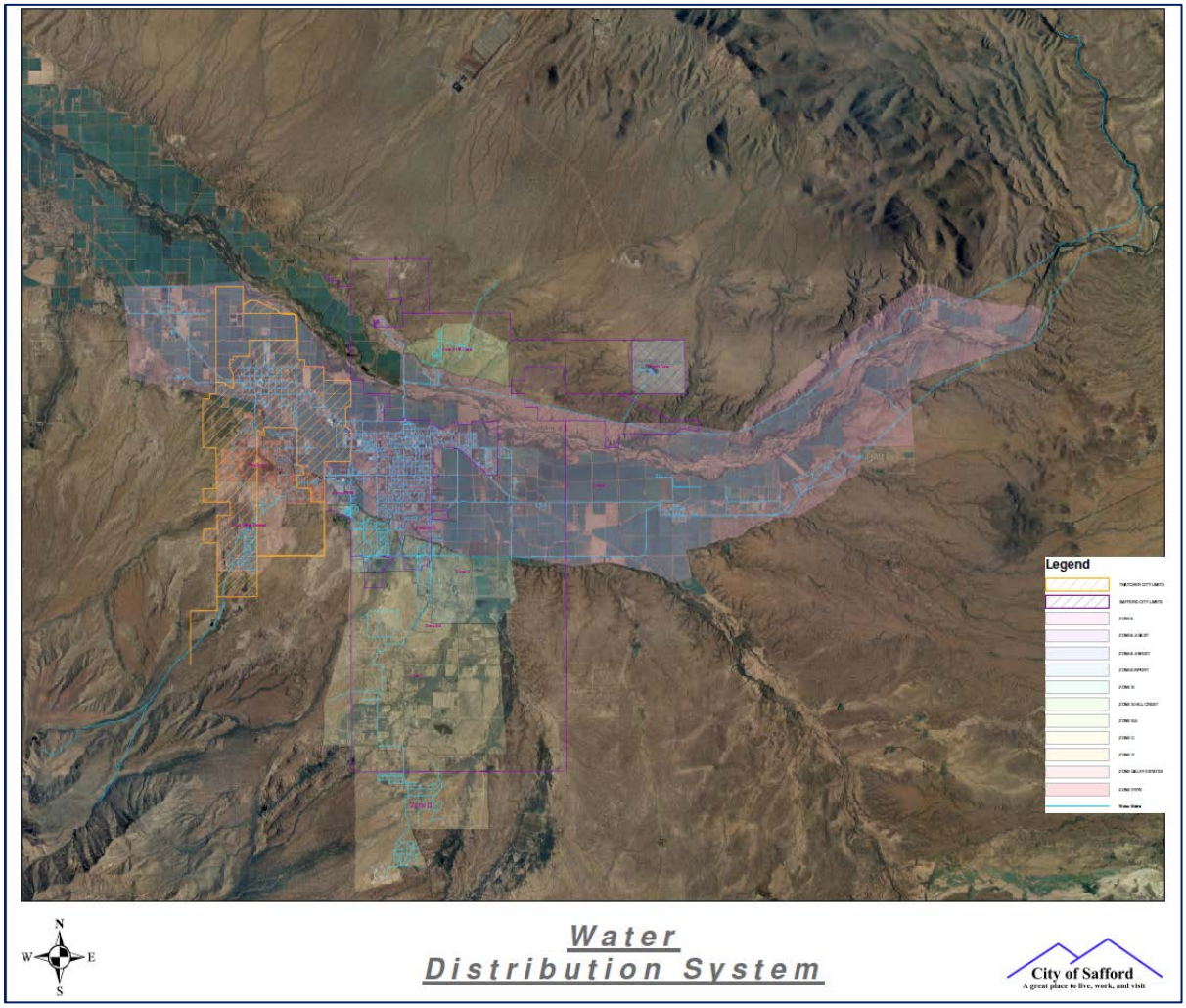
OVERVIEW

The Water Facilities IIP includes components for water storage, distribution improvements, and the cost of preparing the Water Facilities IIP and capacity fees. The cost recovery and plan-based expansion methodology utilizing the City's *Capital Improvement Plan* and projects listed by the City of Safford Utilities Department.

SERVICE AREA

The service area for the Water Facilities IIP is the City of Safford Water Service Area, which includes the City of Safford, Town of Thatcher, and parts of Graham County. A map is provided below:

Figure 1. Map of Safford Water System Service Area



PROPORTIONATE SHARE

Capacity fees should not exceed a proportionate share of the cost of public services needed to provide public services to development.

The Water Facilities IIP and capacity fees are assessed on both residential and nonresidential development as both types of development create a burden for additional water facilities. Yearly customers by land use are used to determine the proportionate share of this burden. In 2012, approximately 90 percent of water customers in Safford were residential customers and 10 percent were non-residential customers.

ANALYSIS OF COSTS, CAPACITY, AND USAGE OF EXISTING PUBLIC SERVICES

The City's current 5-year Capital Improvement Plan for Water includes $8.7 million in projects. Of this planned cost, approximately $4.3 million is for non-growth-related capital improvement projects, or projects to meet the existing needs of the Water system's users.

The Water Facilities IIP includes components for water storage, the water distribution system, and the cost of preparing the Water Facilities IIP and capacity fees. Projects include those that provide additional capacity and do not include maintenance or increases to existing levels of service. Further detail on those projects is provided in the following sections.

The City has a groundwater system and obtains its water from eight water sources. The estimated current water delivery is approximately 4.5 million gallons per day with a current demand of 3.3 million gallons per day.

Figure 2: Current Water Source Capacity

	Water Delivery (mgd)	*Water Demand (mgd)*	*Available Capacity (mgd)*
Safford Water System	4.5	3.3	1.2

Source: City of Safford for 2012 calendar year

Current water usage, or levels of service, is based on gallons per person per day. The current level of service for residential development for water service is 335 gallons per connection per average day. For nonresidential connections, water demand averages 1,396 gallons per day.

Figure 3: Current Water Usage

Land Use Type	*Gallons per Day*	*Customers*	*Gallons per Customer per Day*
Residential	2,305,959	6,879	335
Nonresidential	1,034,356	741	1,396
Total	***3,340,314***	***7,620***	***438***

Source: City of Safford for 2012 calendar year

LEVEL OF SERVICE AND RATIO OF SERVICE UNIT TO LAND USE

Residential Water capacity fees are calculated on a per unit basis, which is calibrated to a 5/8 and 3/4 inch meter. The residential Water capacity fee is calculated by multiplying the number of gallons per housing unit (equivalent residential unit) by the total net cost per gallon.

Nonresidential Water capacity fees are assessed by size and type of water meter needed to serve the development. The nonresidential water capacity fees are calculated by multiplying the number of gallons per residential customer by the capacity ratio for the corresponding size and type of water meter multiplied by the cost per gallon.

Figure 4: Water Ratio of Service Unit to Land Use

Residential Development	
Land Use	*# of Persons per Housing Unit**
Residential Unit	2.62
Average Gallons per Customer per Day	335
Average Gallons per Person	128

** Weighted average all jurisdictions in service area*

Sources: US Census, City of Safford, TischlerBise

Nonresidential Development		
Meter Size (inches)	*Type*	*Capacity Ratio**
5/8 & 3/4	Displacement	1.00
1 & 1.25	Displacement	1.67
1.50	Displacement	3.33
2.00	Compound	5.33
3.00	Compound	10.67
4.00	Compound	16.67

** Source:"AWWA Standards: Displacement C700-09; Singlejet C712-10; Turbine Class I C701-12; Turbine Class II C701-12; Compound Class I C702-10".*

PROJECTED SERVICE UNITS AND PROJECTED DEMAND FOR SERVICES

Over the next ten years, it is projected there will be an additional 645 residential connections and 78 nonresidential connections (a total of 723 connections) needed to be served with an additional 316,674 gallons of water per day. (Demand projections beyond year 10 are shown for calculations that appear later in this section.)

Figure 5: Projected Water Demand

					Annual Increase		Cumulative Increase			
Year		*Res Customers*	*NonRes Customers*	*Total Customers*	Customers	Avg. Gallons per Day *438*	Customers	Avg. Gallons per Day	*Total Avg. Gallons per Day*	
Base	2012	6,879	741	7,620					3,340,314	
1	2013	6,941	748	7,689	69	30,222	69	30,222	3,370,536	
2	2014	7,003	755	7,758	69	30,222	138	60,444	3,400,758	
3	2015	7,066	763	7,829	71	31,098	209	91,542	3,431,856	
4	2016	7,130	771	7,901	72	31,536	281	123,078	3,463,392	
5	2017	7,194	779	7,973	72	31,536	353	154,614	3,494,928	
6	2018	7,259	787	8,046	73	31,974	426	186,588	3,526,902	
7	2019	7,324	795	8,119	73	31,974	499	218,562	3,558,876	
8	2020	7,390	803	8,193	74	32,412	573	250,974	3,591,288	
9	2021	7,457	811	8,268	75	32,850	648	283,824	3,624,138	*10-Yr Increase*
10	2022	7,524	819	8,343	75	32,850	723	316,674	3,656,988	***316,674***
11	2023	7,592	827	8,419	76	33,288	799	349,962	3,690,276	
12	2024	7,660	835	8,495	76	33,288	875	383,250	3,723,564	
13	2025	7,729	843	8,572	77	33,726	952	416,976	3,757,290	
14	2026	7,799	851	8,650	78	34,164	1,030	451,140	3,791,454	
15	2027	7,869	860	8,729	79	34,602	1,109	485,742	3,826,056	
16	2028	7,940	869	8,809	80	35,040	1,189	520,782	3,861,096	
17	2029	8,011	878	8,889	80	35,040	1,269	555,822	3,896,136	
18	2030	8,083	887	8,970	81	35,478	1,350	591,300	3,931,614	
19	2031	8,156	896	9,052	82	35,916	1,432	627,216	3,967,530	
20	2032	8,229	905	9,134	82	35,916	1,514	663,132	4,003,446	

Source: TischlerBise; assumes .9% growth in residential and 1% growth in nonresidential.

DESCRIPTION OF CAPACITY EXPANSIONS AND COSTS ATTRIBUTABLE TO DEVELOPMENT

The City has made recent improvements to expand the capacity of the Water System for both storage and distribution. Debt service is being paid on loans used to fund these projects and for which capacity fees will be collected. Figure 6 provides detail on the amount of the initial loans for past Water improvement projects, the amount outstanding as of April 1, 2013, and the weighted average percentage of the total outstanding.

Figure 6: Outstanding Debt for Capacity Projects

Loan	*Year Issued*	*FY of Final Payment*	*Total Issue*	*Balance 4/1/2013*	*% Outstanding*
WIFA Loan (920119-08A)	2008	2028	$6,349,268	$5,833,626	92%
WIFA Loan (920119-08B)	2008	2017	$1,260,732	$869,853	69%
WIFA Loan (910095-08B)	2008	2016	$1,246,424	$807,162	65%
TOTAL			**$8,856,424**	**$7,510,641**	**85%**

Source: City of Safford

The total cost for completed **storage** projects was $6.21 million including financing costs (assuming net present value of interest payments plus administrative fees on the loans). Of that cost, $3.10 million is growth-related. The amount of debt remaining on these improvements is estimated at 85 percent of the total, or $2.64 million, as described above. The projected increase in demand over the life of the loans (through FY2028) is 520,782 average gallons per day. The resulting cost per gallon of capacity is $5.07 ($2,641,266 / 520,782 gallons = $5.07).

Figure 7: Water Improvements and Expansions: Water Storage Cost Recovery Costs

Proj. #	*Project*		*Year*	*Original Cost*	*Estd. Interest & Fees*	*Total Project Cost*	*Growth Share*	*Growth Cost*
66-564	Water-Hillcrest Tank-WIFA	Storage	2009	$1,079,918	$259,180	$1,341,107	50%	$670,554
66-565	Water-Lebanon Tank-WIFA	Storage	2009	$2,319,656	$556,717	$2,878,382	50%	$1,439,191
66-547	Water - Discovery Park Tank-WIFA	Storage	2010	$1,607,455	$385,789	$1,995,254	50%	$997,627
				$5,007,029	**$1,201,686**	**$6,214,743**		**$3,107,372**

Total Growth Cost	$3,107,372
% Debt Outstanding	85%
$ Debt Outstanding	$2,641,266
Net Increase in System Demand (over life of debt) (gpd)	520,782
Cost per Gallon of Capacity	**$5.07**

Source: City of Safford; TischlerBise

The total cost for completed **distribution** projects was $1.68 million including financing costs (assuming net present value of interest payments plus administrative fees on the loans). These distribution projects are new 12" mains and are 100 percent growth-related. The amount of debt remaining on these improvements is estimated at 85 percent of the total, or $1.43 million, as described above. The projected increase in demand over the life of the loans (through FY2028) is 520,782 average gallons per day. The resulting cost per gallon of capacity is $2.75 ($1,431,939 / 520,782 gallons = $2.75).

Figure 8: Water Improvements and Expansions: Water Distribution Cost Recovery Costs

Proj. #	Project		Year	Original Cost	Estd. Interest & Fees	Total Project Cost	Initial Capacity (gpm) [1]	Capacity after Imprvmt (gpm) [1]	Net Increase in Capacity (gpm) [1]	% Growth Share	Growth Cost
66-569	Discovery Park Pipeline-WIFA (new 12")	Distrbution	2009	$151,158	$36,278	$189,445	0.0	1,035.6	1,035.6	100%	$189,445
66-570	Water-Hillcrest Pipeline-WIFA (new 12")	Distrbution	2009	$163,333	$39,200	$204,542	0.0	11.7	11.7	100%	$204,542
66-571	Water-Lebanon Pipeline-WIFA (new 12")	Distrbution	2009	$207,137	$49,713	$258,859	0.0	214.7	214.7	100%	$258,859
66-523	Carrasco Well Tie-In-WIFA (new 12")	Distrbution	2009	$830,467	$199,312	$1,031,788	0.0	1,000.0	1,000.0	100%	$1,031,788
				$1,352,095	**$324,503**	**$1,684,634**					**$1,684,634**

Total Growth Cost	$1,684,634
% Debt Outstanding	85%
$ Debt Outstanding	$1,431,939
Net Increase in System Demand (over life of debt) (gpd)	520,782
Cost per Gallon of Capacity	**$2.75**

[1] City of Safford from computer simulations of City of Safford Water Distribution System
Source: City of Safford; TischlerBise

Planned Water system projects to meet the needs of future growth include a storage tank and additional distribution projects. Detail is provided below.

The City is building a 250,000 gallon water storage tank slated to be completed in fiscal year 2013. The cost is estimated at $473,056, which results in a cost per gallon of capacity of $1.89 ($473,056 / 250,000 gallons = $1.89).

Figure 9: Water Improvements and Expansions: Water Storage Plan-Based Costs

Proj. #	Project	Year	Previous FY	FY2013	FY2014	FY2015	FY2016	FY2017	Total Project Cost	CAPACITY (gal)	Cost/gal
Storage											
66-584	250,000 T-Bird Gallon Tank	2012	$373,056	$100,000					$473,056	250,000	$1.89
	TOTAL		**$373,056**	**$100,000**	**$0**	**$0**	**$0**	**$0**	**$473,056**	250,000	**$1.89**

Source: City of Safford

The City plans to construct new and upsized water mains to provide additional capacity for new growth. These projects are programmed into the City's Capital Improvement Program over the next 5 years and total $5.08 million. The City conducted an analysis of these projects to determine the amount of additional capacity the improvements will add to the system from which new growth will benefit. The analysis showed that peak capacity will increase by 3.5 million gallons per day due to the improvements. Because the capacity fee methodology uses average day demand, the peak capacity figure is divided by a peaking factor of 2.5 to derive an increase in average day demand of 1.4 million gallons per day. The resulting cost per gallon of capacity is $3.60 ($5,084,502 / 1,414,080 gallons per day = $3.60).

Figure 10: Water Improvements and Expansions: Water Distribution Plan-Based Costs

Proj. #	Project	Year	Cost Recovery	FY2013	FY2014	FY2015	FY2016	FY2017	Total Project Cost	PEAK Hour Day Increase in CAPACITY (gpd) [1]
Distribution										
66-548	Bonita Main (Phase 1) (upgrade 10" to 12")	2012	$855,502						$855,502	16,416
CIP	Bonita Main Upgrade 12" (Phase 2)	2013		$580,000	$420,000	$430,000			$1,430,000	27,936
CIP	Bonita Main Upgrade 12" (Phase 3)	2013		$600,000					$600,000	39,456
CIP	Morris Cluster /8th Ave Bridge Upgrade	2014			$330,000				$330,000	22,608
CIP	12" Main Discovery Tank to 26th St.	2013		$110,000					$110,000	680,256
CIP	West Valley Extension 12" Phase 1 (Church St/1st Ave to Reay Ln)	2014			$400,000				$400,000	251,136
CIP	West Valley Extension 12" Phase 2 (Reay Ln to Wesbster Rd)	2014			$350,000				$350,000	59,760
CIP	Montierth Ln, Lone Star Rd to Upper Solomon Rd 12" Main Upgrade	2015				$150,000			$150,000	618,480
CIP	Phase II Hillcrest Airport Rd /Wye Rock to HC Booster	2015				$184,000			$184,000	263,664
CIP	Complete Kempton Well field tie-in to 12" Bonita line	2016					$300,000		$300,000	996,192
CIP	Phase IV 12" main connection GC Road to Quail Ridge	2016					$375,000		$375,000	559,296
	TOTAL		**$855,502**	**$1,290,000**	**$1,500,000**	**$764,000**	**$675,000**	**$0**	**$5,084,502**	**3,535,200**

Total Cost	$5,084,502
Peak Hour Increase in System Capacity due to Improvements (gpd) [1]	3,535,200
Average Daily Increase in System Capacity due to Improvements (gpd) [2]	1,414,080
Cost per Gallon of Capacity	**$3.60**

[1] City of Safford from computer simulations of City of Safford Water Distribution System
[2] Peak hour capacity divided by peaking factor of 2.5 to estimate average daily capacity
Source: City of Safford

CAPITAL COST REDUCTION TO RECOGNIZE CURRENT DEVELOPMENT FEE BALANCE

The existing City of Safford Water development impact fee fund has a current balance of $900,000 in unspent water impact fees that will be used in part for the planned improvements identified in the IIP shown in the figures above. These funds will continue to be used to construct the system improvements identified above. Therefore, the capacity fee methodology includes a credit to reduce the gross costs of the growth-related projects.

The existing impact fee is based on a 2007 study that included costs for water treatment/exploration as well as storage and distribution. Because the current fee update includes only storage and distribution improvement projects,[2] the outstanding impact fee fund balance is reduced commensurately to reflect the share of the total allocated to storage and distribution (identified as "Distribution" in the previous impact fee study), or 35 percent. To derive the credit, the amount of the impact fees allocated for storage and distribution ($315,000) is divided by the increase in system demand from 2012 to 2017 (154,614 gallons). This results in a credit of $2.04. See Figure 11.

Figure 11: Credit for Current Water Impact Fee Balance

Impact Fee Balance January 2013	$900,000
Percent Allocated to Treatment* [1]	65%
Percent Allocated to Distribution* [2]	35%
Impact Fee Revenue for Storage and Distribution	$315,000
Increase in System Demand (5-Yrs)	154,614
Credit per Gallon of Demand	$2.04

[1] Included treatment, exploration, and development ($13.3m of $20.5m)

[2] Included storage and distribution projects

** 2007 City of Safford Water Impact Fee Study*

[2] Water exploration/production capital costs are included in updated water utility rates (2013).

PROPOSED CAPACITY FEES

The proposed capacity fees for Water Facilities are shown in the figure below, which summarizes the demand and cost factors discussed above. The fees are presented by meter size using capacity ratios as shown. The fees are calculated by multiplying the number of gallons per residential connection by the capacity ratio for the corresponding size and type of water meter multiplied by the net cost per gallon. (For a 5/8 or 3/4 inch water meter, the calculation is: 335 gpd x 1 (capacity ratio) x $11.41 = $3,822). The capacity fee per residential unit is $3,822.

Figure 12: Proposed Water Capacity Fees

	Standards:
Demand Indicators	
Gallons per Day per Residential Connection	335
Cost Factors per Gallon of Capacity	
Cost Recovery: Capital Cost per Gallon-Storage	$5.07
Cost Recovery: Capital Cost per Gallon-Distribution	$2.75
Plan-Based: Capital Cost per Gallon-Storage	$1.89
Plan-Based: Capital Cost per Gallon-Distribution	$3.60
IIP and Dev Fee Study: Cost per Gallon	$0.14
Gross Cost per Gallon	*$13.45*
Credit for Unspent Impact Fee Balance	($2.04)
Net Capital Cost per Gallon	***$11.41***

WATER CAPACITY FEES						
Meter Size (inches)		***Capacity Ratio****	***Net Capital Cost per Gallon***	***Proposed Fee Per Meter***	***Current Fee Per Meter***	***Increase (Decrease)*****
5/8 & 3/4	Displacement	1.00	$11.41	**$3,822**	$2,913	$909
1 & 1.25	Displacement	1.67	$11.41	**$6,383**	$7,282	($899)
1.50	Displacement	3.33	$11.41	**$12,728**	$14,563	($1,835)
2.00	Compound	5.33	$11.41	**$20,373**	$23,301	($2,928)
3.00	Compound	10.67	$11.41	**$40,784**	$43,690	($2,906)
4.00	Compound	16.67	$11.41	**$63,718**	$72,817	($9,099)

** Source: AWWA Standards via Black & Veatch*

*** Capacity ratios differ from existing fee schedule thus affecting the differential between proposed and current fees.*

PROJECTED CASH FLOW FROM WATER CAPACITY FEES

If the Water capacity fees are adopted at the level as shown in this document, the projected cash flow over the next 10 years is as follows. The revenue and cost components include debt service for past capacity improvements and future planned improvements to serve growth as described in the IIP.

Figure 13: Projected Cash Flow from Water Capacity Fees

(Current $ in thousands)	*10-Year Cumulative Total*	*10-Year Average Annual*
REVENUES		
WATER		
1 Water Fee - Residential	$2,465	$247
2 Water Fee - Nonresidential	$1,242	$124
Subtotal Water Fees	*$3,708*	*$371*
CAPITAL COSTS		
WATER		
Water Facilities Debt Service (Capacity Projects)	$4,243	$424
Water Facilities Planned Improvements	$4,329	$433
Subtotal Water Costs	*$6,983*	*$857*
NET CAPITAL FACILITIES CASH FLOW - *WATER*	*Current $ in thousands*	
Annual Surplus (or Deficit)	($4,864)	
Cumulative Surplus (or Deficit)		($486)

WASTEWATER FACILITIES

OVERVIEW

The Wastewater Facilities IIP includes components for water treatment plant expansion, collection improvements, and the cost of preparing the Wastewater Facilities IIP and capacity fees. The cost-recovery methodology for improvement projects that have provided capacity for future growth is used to calculate the Wastewater Facilities IIP.

SERVICE AREA

The service area for the Wastewater Facilities IIP is citywide with a planned expansion outside city limits to the East Valley service area, and includes costs incurred for the expansion of the wastewater treatment plant and trunk line expansions.

PROPORTIONATE SHARE

The Wastewater Facilities IIP and capacity fees are assessed on both residential and nonresidential development as both types of development create a burden for additional wastewater facilities. Customers by land use are used to determine the proportionate share of this burden. In 2012, approximately 88 percent of wastewater customers in Safford were residential and 12% were nonresidential customers.

ANALYSIS OF COSTS, CAPACITY, AND USAGE OF EXISTING PUBLIC SERVICES

The Wastewater Facilities IIP includes components for the wastewater treatment plant, the wastewater collection system, and the cost of preparing the Wastewater IIP and capacity fees.

The City's wastewater treatment plant (WWTP) has a total maximum capacity of 2.0 million gallons per day (mgd). The WWTP processes 950,000 gallons per day, resulting in an estimated remaining capacity of 1.05 million gallons per day.

Figure 14: Wastewater Plant Capacity

	Current Demand (mgd)	*Current Capacity (mgd)*	*Available Capacity (mgd)*
Safford Waste Water Treatment Plant	0.95	2.00	1.05

Source: City of Safford

Level of service for wastewater is based on gallons per connection per day. The current usage or level of service for residential development for wastewater service is 171 gallons per connection per day. For nonresidential connections, wastewater demand averages 1,076 gallons per day.

Figure 15: Wastewater Level of Service

Land Use Type	*Gallons per Day*	*Customers*	*Gallons per Customer per Day*
Residential	522,711	3,055	171
Nonresidential	427,289	397	1,076
Total	***950,000***	***3,452***	***275***

Source: City of Safford: Nov 2011-Oct 2012

LEVEL OF SERVICE AND RATIO OF SERVICE UNIT TO LAND USE

Residential Wastewater capacity fees are calculated on a per unit basis, which is calibrated to a 5/8 and 3/4 inch meter. The residential wastewater capacity fee is calculated by multiplying the number of gallons per housing unit (equivalent residential unit) by the total net cost per gallon.

Nonresidential Wastewater capacity fees are assessed by size and type of meter needed to serve the development. The nonresidential wastewater capacity fees are calculated by multiplying the average number of gallons per residential customer by the capacity ratio for the corresponding size and type of water meter multiplied by the cost per gallon.

Figure 16: Wastewater Ratio of Service Unit to Land Use

Residential Development	
Land Use	*# of Persons per Housing Unit**
Residential Unit	2.48
Average Gallons per Customer per Day	171
Average Gallons per Person	69

** City of Safford*

Sources: US Census, City of Safford, TischlerBise

Nonresidential Development		
Meter Size (inches)	*Type*	*Capacity Ratio**
5/8 & 3/4	Displacement	1.00
1 & 1.25	Displacement	1.67
1.50	Displacement	3.33
2.00	Compound	5.33
3.00	Compound	10.67
4.00	Compound	16.67

** Source:"AWWA Standards: Displacement C700-09; Singlejet C712-10; Turbine Class I C701-12; Turbine Class II C701-12; Compound Class I C702-10".*

PROJECTED SERVICE UNITS AND PROJECTED DEMAND FOR SERVICES

Over the next ten years, it is projected there will be an additional 254 residential connections and 40 nonresidential connections (a total of 294 connections) needing to be served generating an additional flow of 80,785 gallons per day. (Demand projections beyond year 10 are shown for calculations that appear later in this section.)

Figure 17: Projected Wastewater Demand

					Annual Increase		Cumulative Increase			
Year		*Res Customers*	*NonRes Customers*	*Total Customers*	Customers	Avg. Gallons per Day *275*	Customers	Avg. Gallons per Day	*Total Avg. Gallons per Day*	
Base	2012	3,055	397	3,452					950,000	
1	2013	3,080	401	3,481	29	7,860	29	7,860	957,860	
2	2014	3,105	405	3,510	29	7,975	58	15,835	965,835	
3	2015	3,130	409	3,539	29	7,975	87	23,810	973,810	
4	2016	3,155	413	3,568	29	7,975	116	31,785	981,785	
5	2017	3,180	417	3,597	29	7,975	145	39,760	989,760	
6	2018	3,205	421	3,626	29	7,975	174	47,735	997,735	
7	2019	3,231	425	3,656	30	8,250	204	55,985	1,005,985	
8	2020	3,257	429	3,686	30	8,250	234	64,235	1,014,235	
9	2021	3,283	433	3,716	30	8,250	264	72,485	1,022,485	*10-Yr Increase*
10	2022	3,309	437	3,746	30	8,250	294	80,735	1,030,735	***80,735***
11	2023	3,335	441	3,776	30	8,250	324	88,985	1,038,985	
12	2024	3,362	445	3,807	31	8,525	355	97,510	1,047,510	
13	2025	3,389	449	3,838	31	8,525	386	106,035	1,056,035	
14	2026	3,416	453	3,869	31	8,525	417	114,560	1,064,560	
15	2027	3,443	458	3,901	32	8,800	449	123,360	1,073,360	
16	2028	3,471	463	3,934	33	9,075	482	132,435	1,082,435	
17	2029	3,499	468	3,967	33	9,075	515	141,510	1,091,510	
18	2030	3,527	473	4,000	33	9,075	548	150,585	1,100,585	
19	2031	3,555	478	4,033	33	9,075	581	159,660	1,109,660	
20	2032	3,583	483	4,066	33	9,075	614	168,735	1,118,735	

Source: City of Safford; TischlerBise; assumes .8% growth in residential and 1% growth in nonresidential.

DESCRIPTION OF CAPACITY EXPANSIONS AND COSTS ATTRIBUTABLE TO DEVELOPMENT

The City has made recent improvements to provide additional capacity at the Wastewater Treatment Plant (WWTP) and has constructed new and upgraded wastewater collection lines serving the city system.

The WWTP improvement was a $12.5 million project of which $9.1 million was funded by non-local funds (grants and forgivable loans). The remaining cost, $3.4 million, is City funded and allocated to the capacity of the WWTP. The resulting cost per gallon of capacity is $1.70 ($9,100,000 / 2,000,000 gallons = $1.70). See Figure 18.

Figure 18: Wastewater Improvements: WWTP Cost Recovery Costs

Project	*Year*	*Original Cost*	*Total Project Cost*	*Other Funding*	*City Share*
Waste Water Treatment Plant	FY2002	$12,500,000	$12,500,000	$9,100,000	$3,400,000
	TOTAL	*$12,500,000*	*$12,500,000*	*$9,100,000*	*$3,400,000*

Total City Cost	$3,400,000
WWTP Capacity (gpd)	2,000,000
Capital Cost per Gallon	**$1.70**

Source: City of Safford

Wastewater collection capacity improvements were constructed to serve the City's system over the past several years and were debt financed. Figure 19 provides detail on the amount of the initial loan for completed Wastewater improvement projects (a portion of which were capacity improvements), the amount outstanding as of January 1, 2013, and the percentage of the total amount that is currently outstanding.

Figure 19: Outstanding Debt for Capacity Projects

Loan	*Year Issued*	*FY of Final Payment*	*Total Issue (Principal)*	*Principal Balance 1/1/2013*	*% Outstanding*
WIFA Loan (910095-08A)	2008	2028	$1,948,576	$1,712,016	88%
TOTAL			**$1,948,576**	**$1,712,016**	**88%**

Source: City of Safford

The total cost for completed **collection** capacity projects was $1.64 million including financing costs (assuming net present value of interest payments plus administrative fees on the loan). These collection capacity projects are 100 percent growth-related. The amount of debt remaining on these improvements is estimated at 88 percent of the total as described above, or approximately $1.45 million. The projected increase in wastewater demand over the life of the loans (through FY2028) is 132,435 average gallons per day. The resulting cost per gallon of capacity is $10.93 ($1,447,303 / 132,435 gallons = $10.93).

Figure 20: Wastewater Improvements and Expansions: Wastewater Collection Cost Recovery Costs

Fund/Proj #	*Project*	*Year*	*Original Cost*	*Estd. Interest & Fees*	*Total Project Cost*	*Growth Share*	*Growth Cost*
67555, 67561, 67584	Sewer Main & Lift Station Improvements	FY08-11	$1,266,396	$378,267	$1,644,663	100%	$1,644,663
		TOTAL	*$1,266,396*	*$378,267*	*$1,644,663*		*$1,644,663*

Total Growth Cost	$1,644,663
% Debt Outstanding	88%
$ Debt Outstanding	$1,447,303
Net Increase in System Demand (over life of debt) (gpd)	132,435
Cost per Gallon of Capacity	**$10.93**

Source: City of Safford; TischlerBise

CAPITAL COST REDUCTION TO RECOGNIZE CURRENT DEVELOPMENT FEE BALANCE

The City Wastewater development fee fund does not have a current balance, therefore no reduction is necessary.

PROPOSED CAPACITY FEES

The proposed capacity fees for Wastewater Facilities are shown in the figure below, which summarizes the demand and cost factors discussed above. The fees are presented by meter size using capacity ratios as shown. The fees are calculated by multiplying the number of gallons per residential connection by the capacity ratio for the corresponding size and type of water meter multiplied by the net cost per gallon. (For a 5/8 or 3/4 inch water meter, the calculation is: 171 gpd x 1 (capacity ratio) x $12.77 = $2,183). The capacity fee per residential unit is $2,183.

Figure 21: Proposed Wastewater Capacity Fees: Citywide

	Standards:
Demand Indicators	
Gallons per Day per Residential Connection	171
Cost Factors per Gallon of Capacity	
Cost Recovery: Capital Cost per Gallon -WWTP	$1.70
Cost Recovery: Capital Cost per Gallon-Collection	$10.93
IIP and Development Fee Study: Cost per Gallon	$0.14
Gross Cost per Gallon	*$12.77*
Credit for Unspent Impact Fee Balance	$0.00
Net Capital Cost per Gallon of Capacity	***$12.77***

WASTEWATER CAPACITY FEES						
Meter Size (inches)*		***Capacity Ratio****	***Net Capital Cost per Gallon***	***Proposed Fee Per Meter***	***Current Fee Per Meter***	***Increase (Decrease)*****
5/8 - 3/4	Displacement	1.00	$12.77	**$2,183**	$2,245	($62)
1.00	Displacement	1.67	$12.77	**$3,646**	$5,613	($1,967)
1.50	Displacement	3.33	$12.77	**$7,271**	$11,227	($3,956)
2.00	Compound	5.33	$12.77	**$11,638**	$17,963	($6,325)
3.00	Compound	10.67	$12.77	**$23,299**	$33,681	($10,382)
4.00	Compound	16.67	$12.77	**$36,401**	$56,134	($19,733)

** Source: AWWA Standards via Black & Veatch*

*** Capacity ratios differ from existing fee schedule thus affecting the differential between proposed and current fees.*

CASH FLOW ANALYSIS

If the Wastewater capacity fees are adopted at the level as shown in this document, the projected cash flow over the next 10 years is as follows. The revenue and cost components include debt service for past capacity improvements and cost recovery for the City share of the capacity improvements to the WWTP as described in this IIP.

Figure 22: Projected Cash Flow from Wastewater Capacity Fees

(Current $ in thousands)	*10-Year Cumulative Total*	*10-Year Average Annual*
REVENUES		
WASTEWATER		
Wastewater Fee - Residential	$554	$55
Wastewater Fee - Nonresidential	$547	$55
Subtotal WASTE WATER Fees	*$1,101*	*$110*
CAPITAL COSTS		
WASTEWATER		
Wastewater Facilities Debt Service (Capacity Projects)	$982	$98
Wastewater Facilities Cost Recovery	$147	$15
Subtotal Waste Water Costs	*$1,128*	*$113*
NET CAPITAL FACILITIES CASH FLOW- *WASTEWATER*	*Current $ in thousands*	
Annual Surplus (or Deficit)	($27)	
Cumulative Surplus (or Deficit)		($3)

EAST VALLEY SERVICE AREA: WASTEWATER SEWER EXTENSION PROJECT

The City plans to extend wastewater sewer lines outside the City limits and expand its service area. The first phases of the East Valley Sewer Project are programmed for FY 2014-15 at an estimated cost of $1.25 million. The entire project cost for all phases is estimated at $9 million, which will continue beyond FY2017. This project is anticipated to extend sewer lines to the State Prison complex with the intent of obtaining effluent from the facility for reuse as part of the City's water system. The wastewater sewer extension project is anticipated to provide additional capacity in the system. Detail is shown below in Figure 23.

Figure 23: Wastewater Improvements and Expansions: Wastewater Collection Plan-Based Costs

			1	2	3	4	5	
Fund/Proj #	***Project***	***Year***	***FY2013***	***FY2014***	***FY2015***	***FY2016***	***FY2017***	***Total Project Cost***
67	East Valley Sewer Project to San Jose	FY2014-2015	$0	$250,000	$1,000,000	$0	$0	$1,250,000
		TOTAL	*$0*	*$250,000*	*$1,000,000*	*$0*	*$0*	*$1,250,000*

Total Cost	$1,250,000
Average Daily Increase in Capacity Due to Improvements (gpd)	300,000
Cost per Gallon of Capacity	**$4.17**

Source: City of Safford

This component of the capacity fee would be applied to new development in the affected service area only. The capacity fee schedule for this additional fee is shown below in Figure 24.

Figure 24: Proposed Wastewater Capacity Fees: East Valley Service Area

	Standards:
Demand Indicators	
Gallons per Day per Residential Connection	171
Cost Factors per Gallon of Capacity	
Plan Based: Capital Cost per Gallon -Collection	$4.17
Gross Cost per Gallon	*$4.17*
Credit for Unspent Impact Fee Balance	$0.00
Net Capital Cost per Gallon of Capacity	***$4.17***

WASTEWATER CAPACITY FEES				
Meter Size (inches)*		***Capacity Ratio****	***Net Capital Cost per Gallon***	***Proposed Fee Per Meter***
5/8 - 3/4	Displacement	1.00	$4.17	**$713**
1.00	Displacement	1.67	$4.17	**$1,190**
1.50	Displacement	3.33	$4.17	**$2,374**
2.00	Compound	5.33	$4.17	**$3,800**
3.00	Compound	10.67	$4.17	**$7,608**
4.00	Compound	16.67	$4.17	**$11,886**

** Source: AWWA Standards via Black & Veatch*

IIP AND CAPACITY FEE REPORT COSTS

The table below displays each section of the IIP and Capacity Fee Study. Each public service is attributed a cost, followed by the proportion that is assessed against residential and nonresidential. Then, it displays the demand units, the number of these units in 2012 and 2017, and finally the cost per demand unit to be assessed. (Because capacity fees are updated at least every five years, the cost is assessed against the demand units for only 5 years.)

Figure 25: IIP and Capacity Fee Report

Necessary Public Service	*Cost*	*Assessed Against*	*Proportionate Share*	*Units*	*FY2012*	*FY2017*	*Change*	*Cost per Demand Unit*
Water Facilities	$21,840	Res. and Nonres	100%	Gallons	3,340,314	3,494,928	154,614	$0.14
Waste Water Facilities	$5,460	Res. and Nonres	100%	Gallons	950,000	989,785	39,785	$0.14
Total	**$27,300**							

OTHER REVENUES AVAILABLE FOR CAPACITY IMPROVEMENTS

The capacity fees provided herein are for utilities. Other revenues that support utilities are revenues from utility rates and sales, which are used for operations and maintenance purposes and existing development's share of capacity improvements, where applicable, and are not utilized to pay for growth share of the costs for capacity improvements.

- The Water capacity fee update has been coordinated with the update to the City's Water utility rate study, and the capital improvement projects have been assigned to be included either in the utility rates or capacity fees.

- Wastewater capacity fees cover the growth share of capacity projects while future revenues from wastewater rates will be used for operations and maintenance purposes.

CAPACITY FEE LEGISLATION

The enabling legislation governing utility capacity fees is provided below:

ARS 9-511.01. Water and wastewater business; rates; procedures; responsibility for payments

A. A municipality engaging in a domestic water or wastewater business shall not increase any water or wastewater rate or rate component, fee or service charge without complying with the following:

1. Prepare a written report or supply data supporting the increased rate or rate component, fee or service charge. A copy of the report shall be made available to the public by filing a copy in the office of the clerk of the municipality governing board at least thirty days before the public hearing described in paragraph 2.

2. Adopt a notice of intention by motion at a regular council meeting to increase water or wastewater rates or rate components, fees or service charges and set a date for a public hearing on the proposed increase that shall be held not less than thirty days after adoption of the notice of intention. A copy of the notice of intention showing the date, time and place of the hearing shall be published one time in a newspaper of general circulation within the boundaries of the municipality not less than twenty days before the public hearing date.

B. After holding the public hearing, the governing body may adopt, by ordinance or resolution, the proposed rate or rate component, fee or service charge increase or any lesser increase.

C. Notwithstanding section 19-142, subsection B, the increased rate or rate component, fee or service charge shall become effective thirty days after adoption of the ordinance or resolution.

D. Any proposed water or wastewater rate or rate component, fee or service charge adjustment or increase shall be just and reasonable.

E. Rates and charges demanded or received by municipalities for water and wastewater service shall be just and reasonable. Every unjust or unreasonable rate or charge demanded or received by a municipality is prohibited and unlawful.

F. For residential property of four or fewer units, a municipality shall not require payment of unpaid water and wastewater service rates and charges by anyone other than the person who the municipality has contracted with to provide the service, who physically resides or resided at the property and who receives or received the service. A property owner, an immediate family member of the person who does not reside at the property or any other entity, at its sole discretion, may contract for water and wastewater service with a municipality and shall provide payment.

G. For residential property of four or fewer units, a municipality shall not refuse service within the municipality's service area for the unpaid water and wastewater rates and charges to anyone other than the person who physically resided and received the service at the property. A property owner, at the owner's sole discretion, may contract for water and wastewater service with a municipality and shall provide payment for that service.