

CITIZENS' WATER ADVISORY COMMITTEE (CWAC)

Finance Subcommittee

12 p.m., Monday, October 26, 2015
Tucson Water La Entrada Building
3rd Floor Director's Conference Room
310 W. Alameda Street, Tucson, Arizona



Legal Action Report

1. Roll Call

The meeting was called to order by Finance Subcommittee Chair Bruce Billings at 12:03 p.m. Those present and absent were:

Members Present:

Bruce Billings (Chair)	Representative, Ward 3
Chuck Freitas	Representative, City Manager
Mark Lewis	Representative, Ward 5
Catlow Shipek	Representative, City Manager
Brian Wong	Representative, City Manager

Members Absent:

Mark Taylor	Representative, City Manager
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Tucson Water Staff Members:

Scott Clark	Deputy Director
Pat Eisenberg	Chief Engineer
Melodee Loyer	Chief Planner
Fernando Molina	Public Information Supervisor
Andrew Greenhill	Intergovernmental Management Coordinator
Steven Ritter	Finance Management Coordinator
Theresa Bourne	Lead Financial Accountant
Rebecca Spry	Staff Assistant
Suzanna Snyder	Staff Assistant
Kris LaFleur	Staff Assistant

Others Present:

Mark Stratton	CWAC
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2. **Announcements** – There were no announcements.

3. **Call to Audience** – There were no audience comments.

4. **Review of September 17, 2015, Legal Action Report and approval of Meeting Minutes** – Subcommittee Members reviewed the Legal Action Report from the September 17, 2015, CWAC Finance Subcommittee meeting. Member Freitas moved to approve the Minutes; Member Wong seconded the motion. The motion was carried by a vote of 5-0.

Citizens' Water Advisory Committee (CWAC) Finance Subcommittee

Legal Action Report and Minutes

October 26, 2015

5. Brief follow-up to subcommittee information requests:

- a. Water consumption data by user class** – Melodee Loyer and Steve Ritter presented data on water consumption by user class within Tucson Water's service area for FY 2014 and 2015, including variance from projected 2015 consumption rates, and also including figures associated with wheeling agreements and reclaimed consumption. Staff fielded and answered questions from members.
- b. Current number of active services** – Steve Ritter presented data on Tucson Water's active services for 2015 and projected numbers for 2016. Figures were discussed for single-family, duplex-triplex, multifamily, sub-metered mobile home parks, commercial, industrial, and construction water services, as well as fire sprinkler services.
- c. Recap of bonds and water utility financing** – Staff reviewed the debt financing presentation that was previously presented to CWAC in January 2013, and which had been distributed to members prior to the meeting. A brief discussion ensued between members and staff about bonds and other methods of debt financing. Members requested a full presentation on the topic at a future meeting.

6. Review Five-Year Capital Improvement Program – Pat Eisenberg and Melodee Loyer presented an overview of Tucson Water's proposed 5-year Capital Improvement Program. Topics included a broad infrastructure inventory, a review of completed CIP projects, a look at planned vs. actual CIP trends, a summary and discussion of proposed CIP projects, and potential future adjustments to proposed projects.

Members and staff discussed the proposed CIP 5-Year Plan. No action was taken by the subcommittee.

7. Future Meetings / Agenda Items – Members and staff discussed items for inclusion in future Financial Subcommittee meetings.

- Debt financing presentation
- Review FY 2017 O&M Budget

8. Adjournment – The meeting was adjourned at 12:56 p.m.

Tucson Water - Summary of Annual Ccf's by Rate Class

10/20/2015

Source: Navaline Billing System or Rates 2015 Consumption Forecast Model

Potable Water	Water Billed Ccf's				Compare to Projected Ccf's				
	Rate Class	FY 2015	FY 2014	Incr/(Decr)	Percent	Projected 2015	Variance	Percent	Projected 2016
Commercial	9,041,087	9,087,587	(46,500)	-0.5%	8,930,266	110,821	1.2%	8,751,654	
Construction Water	293,989	343,360	(49,372)	-14.4%	370,078	(76,090)	-20.6%	359,429	
Industrial	567,732	646,658	(78,926)	-12.2%	566,377	1,355	0.2%	560,714	
Low Income 1	397,883	346,013	51,870	15.0%		397,883	na		
Low Income 2	3,331	2,251	1,080	48.0%		3,331	na		
Multifamily	7,192,210	7,322,287	(130,077)	-1.8%	7,230,164	(37,954)	-0.5%	7,085,561	
Single Family	20,448,030	21,830,475	(1,382,445)	-6.3%	20,955,751	(507,721)	-2.4%	20,598,199	
Duplex-Triplex	559,081	586,099	(27,018)	-4.6%	557,764	1,317	0.2%	547,741	
Sub-Mtrd MHP	401,329	455,442	(54,113)	-11.9%	408,048	(6,719)	-1.6%	403,967	
Subtotal	38,904,671	40,620,172	(1,715,500)	-4.2%	39,018,448	(113,777)	-0.3%	38,307,265	
OV Wheeled	859,805	692,902	166,903	24.1%					
Vail Wheeled	82,596	0	82,596	new					
49er Potable/Reclaim	29,141	0	29,141	new					
Total Ccf's	39,876,213	41,313,074	(1,436,860)	-3.5%					
Residential Ccf's	29,001,864	30,542,567	(1,540,703)	-5.0%	29,151,727	(149,863)	-0.5%		
Reclaimed Water									
Rate Class	FY 2015	FY 2014	Incr/(Decr)	Percent				Projected 2016	
Reclaimed Ccf's	6,187,509	7,158,564	(971,055)	-13.6%				6,483,368	

Projected 2016	8,751,654
	359,429
	560,714
	na
	na
	7,085,561
	20,598,199
	547,741
	403,967
	38,307,265
(vs. Actual FY 15)	(597,406)
	-1.5%

Tucson Water - Number of Accounts for Active Services

	<u>2015</u>	<u>Projected 2016</u>	
Single Family	201,487	202,091	
Duplex-Triplex	4,347	4,356	
Multifamily	5,397	5,397	
Sub-Mtrd MHP	155	155	
Commercial	14,411	14,411	
Industrial	300	300	
Construction Wtr	335	332	
Subtotal	<u>226,432</u>	<u>227,042.00</u>	0.27%
Fire Sprinkler	3,987	3,987	
Total	230,419	231,029	0.26%

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Citizens' Water Advisory Committee (CWAC)

January 9, 2013

Belinda Oden, Business Services Administrator
William Davis, Managing Director, Piper Jaffray & Co

Debt financing ensures....

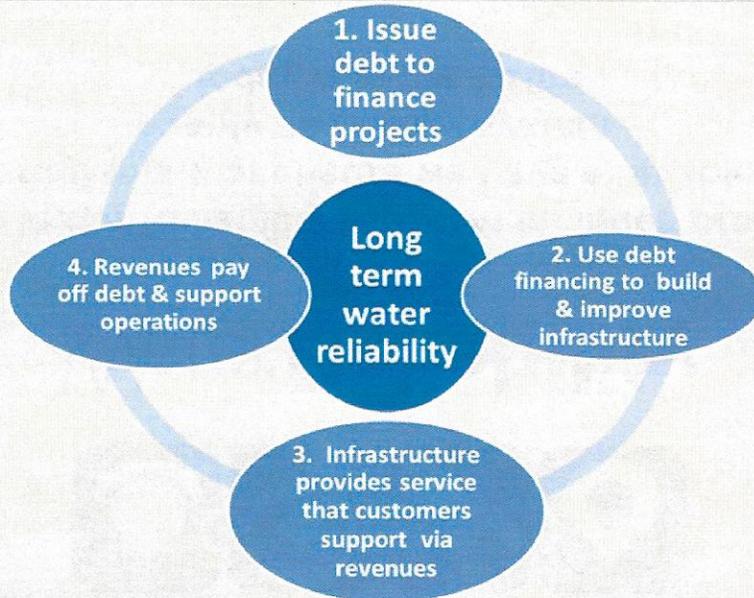


Water **Reliability**

The Water Reliability Program includes projects and programs that ensure we have a reliable water supply and water system – today & in the future



Debt: both capital investment & revenue generation



Tucson Water invests debt proceeds in



Distribution system assets



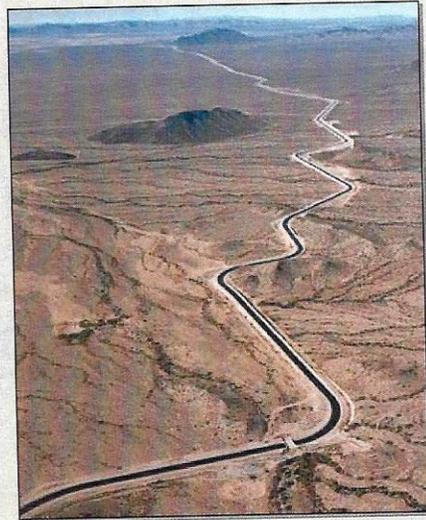
Transmission system assets



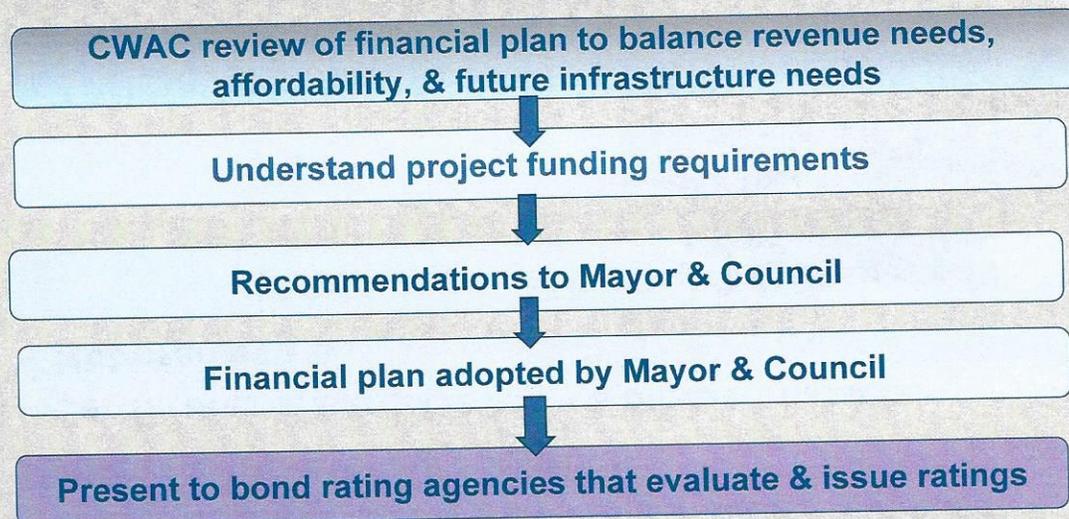
\$1B in Infrastructure Assets

- 68 potable & reclaimed facilities
- 4,400 miles of water mains
- 80,000 valves
- 225,000 meters
- 22,000 fire hydrants
- More than 200 wells

Plus recharge basins,
pumping stations &
more



Debt financing process



Types of Debt

1. **Water Revenue Obligations** – a pledge of water revenues that do not require voter authorization.
2. **Water Revenue Bonds** – a pledge of water revenues that require voter authorization.
3. **Certificates of Participation** - a pledge of assets.
Not used by TW.



Debt rating agencies' view of Tucson Water

*Fitch Rates Tucson, AZ's \$34M Water Revs 'AA';
Outlook stable.* 5/31/2012



*Moody's assigns Aa2 rating to City of Tucson Water
System Revenue Obligations, Series 2012. Long
term rating carries a stable outlook.* 6/5/2012



*Standard & Poor's Ratings Services assigned its
'AA'-rating to Tucson, Ariz.'s series 2012 water
system revenue obligations. Positive outlook.* 6/1/2012



Balancing equity & affordability

Fitch Ratings Report June 11, 2012

“Despite above-average annual projected rate increases, monthly charges are forecast to remain below Fitch Ratings’ affordability threshold of 1% of monthly household income (MHI).”



Tucson Water Debt Overview

Outstanding Senior Lien Debt	\$451,705,000
Outstanding Junior Lien (WIFA) Debt	<u>73,342,120</u>
Total Debt Outstanding	\$525,047,120



How Tucson Water Compares*

	<u>TW</u>	<u>2011 AA Medians</u>
Planned CIP to be debt financed	60%	50%
Total outstanding debt/customer	\$2,199	\$1,502
Total outstanding debt/capita	\$667	\$402
Total debt services as a % of gross revenue	15%	20%

* Other public utilities in the AA ratings category



How Tucson Water Compares*

	<u>TW</u>	<u>2011 AA Medians</u>
Total outstanding debt to net plant assets	43%	44%
Debt to equity	2.2x	3.5x
Debt service coverage (exclude connection fees)	1.6x	2.1x
Days cash on hand	91	292

* Other public utilities in the AA ratings category



How Tucson Water Compares*

	<u>TW</u>	<u>2011 AA Medians</u>
Net working capital as a % of O & M	55.4%	128%
Ten-Year Principal Payout	59.6%	39%
Twenty-Year Payout	99.5%	81%

* Other public utilities in the AA ratings category



Mayor & Council Policy

- Various combinations of revenue, general obligation bonds, tax-secured bonds and water revenues shall be used to finance water capital improvements.
- Repayment of the bonds shall be made from water system revenues.
- The type of bond financing to be used shall result in the least total cost to rate-payers based on present value.
- The term of repayment of debt shall not exceed the useful life of the improvement funded by such debt.

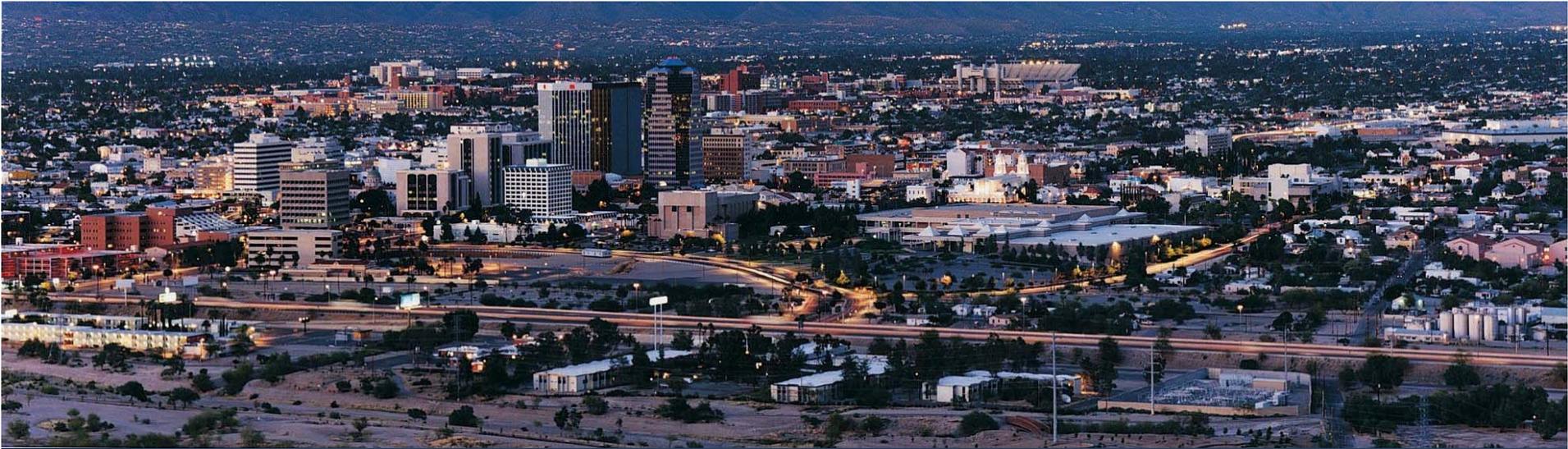


questions or comments



Citizens' Water Advisory Committee (CWAC)

January 9, 2013



Tucson Water

Finance Subcommittee

October 21, 2015

Presenters:

Pat Eisenberg, Chief Engineer

Melodee Loyer, Planning Administrator



Overview

- Infrastructure Inventory
- How have we done?
- Proposed Capital Improvement Program (CIP)
- Alternative Infrastructure Assessment (AIA)
- Upcoming Adjustments



Tucson Water's Infrastructure Inventory

- 4,600 miles of water mains
- 85,400 valves
- 21,600 fire hydrants
- 253,300 services (meters)
- 209 wells
- 280 million gallons of reservoir storage
- 123 boosters
- 135 geographically separated pressure zones



CIP Needs

- Reliability
- Replacement
- Water Quality

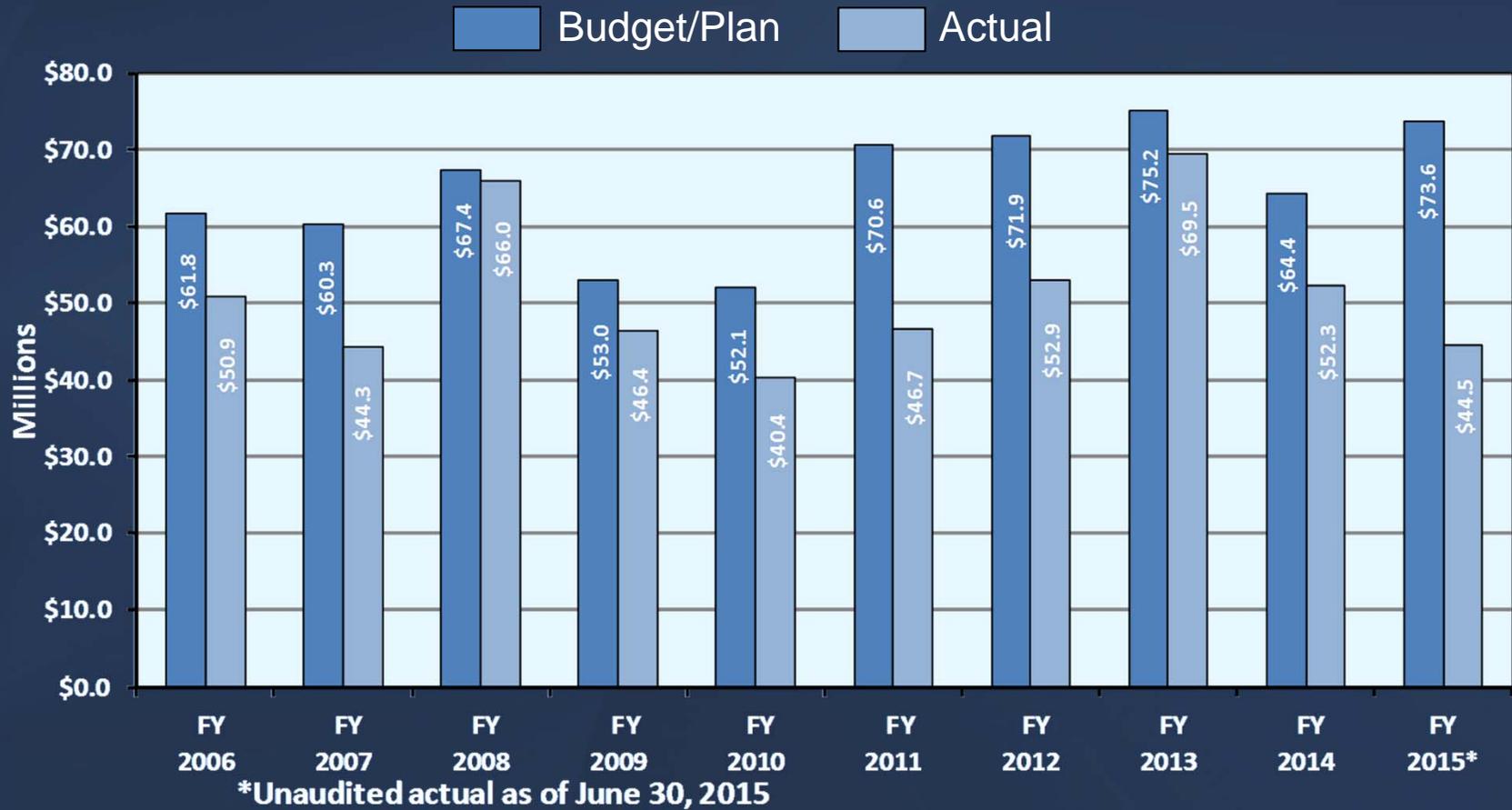


CIP- How have we done?

- 22nd Street Reservoir - \$2.5M
- Dove Mt. 36" Reclaimed TM - \$4.0M
- Kino Parkway Overpass - \$1.6M
- Magee Road - \$0.3M



CIP Trends: Planned vs Actual



FY15 Planning vs Actual - Imbalance

- Delayed Santa Cruz Treatment to support economic development
- Avra Valley Transmission Main (AVTM) work deferred for AIA evaluation
- Inability to retain engineering staff
- Reclaimed filters held back for possible favorable Arizona Department of Environmental Quality (ADEQ) permitting



Capital Improvements Program

CIP#	PROJECT NAME	FY 2016	Prop.	Year 1	Year 2	Year 3	Year 4	Year 5	Years 1-5 Subtotal	Year 6	Year 7	Year 8	Year 9	Year 10	Years 6-10 Subtotal	10-Year Total
		Budget	CF	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026			

Current year plus 5-future year look at requirements

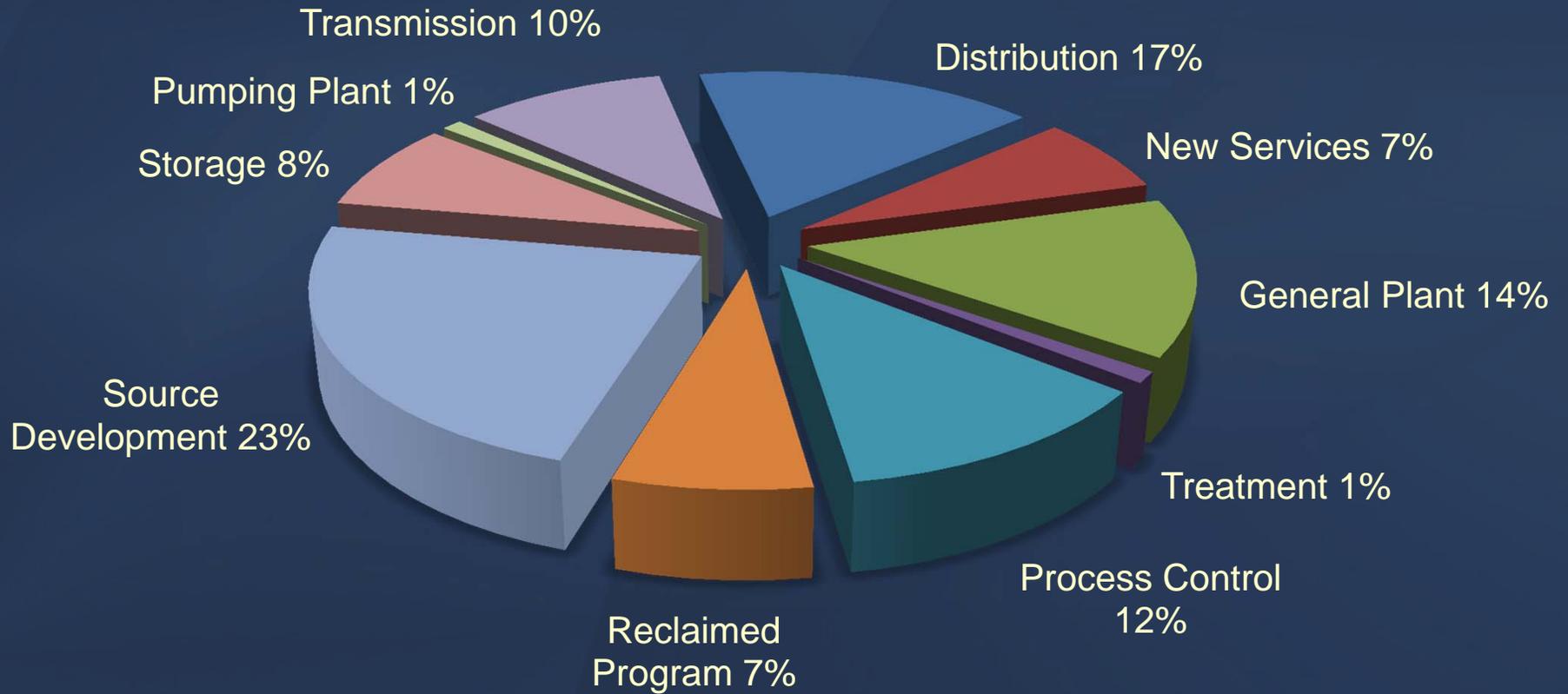
Additional 5-year look for strategic planning

CIP#	PROJECT NAME	FY 2016	Prop.	Year 1	Year 2	Year 3	Year 4	Year 5	Years 1-5 Subtotal	Year 6	Year 7	Year 8	Year 9	Year 10	Years 6-10 Subtotal	10-Year Total
		Budget	CF	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026			
Potable Total:		69,167	8,300	53,591	51,134	53,220	48,213	43,886	258,344	22,852	24,368	45,925	38,250	19,865	151,260	409,604
Reclaimed Total:		6,038	2,000	9,040	8,049	592	612	961	21,254	25,362	27,128	46,435	38,760	20,375	158,060	179,314
Total FY17 through FY2021 Proposed CIP Budget		75,205	10,300	62,631	59,183	53,812	48,825	44,847	279,598	48,214	51,496	92,360	77,010	40,240	309,320	588,918

Annual CIP budget; \$48M - \$75M

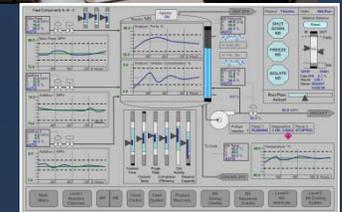
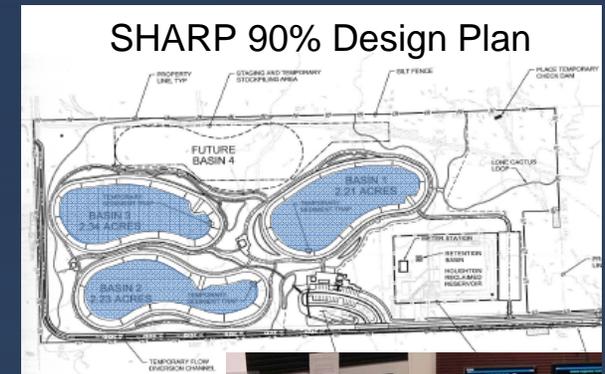


FY2017 – FY2021 Capital Budget \$279.6 Million



Proposed 5-Yr CIP Large Infrastructure Replacement (Continuing)

- 20,000 Advanced Metering Infrastructure (AMI) Meters/Year - \$25.5M
- Main Replacements - \$24.0M
- Supervisory Control And Data Acquisition (SCADA) Upgrades - \$31.5M
- Clearwell Reservoir Rehab - \$14.2M
- Southeast Houghton Area Recharge Project (SHARP) - \$7.1M



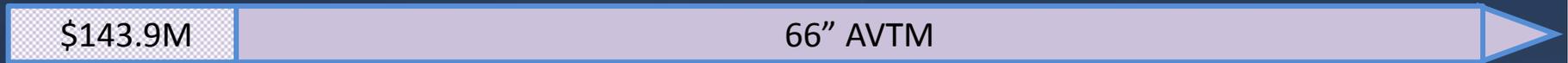
Proposed 5-Yr CIP (New Work)

- ~~Reclaimed Filtration - \$4.8M~~ → Filter Bypass - \$2.1M
- Valley View Reservoir - \$2.7M
- Effluent Forebay Roof - \$3.9M
- ~~Avra Valley Transmission Main (AVTM 7 Year Implementation)~~ → AIA
- Santa Cruz Wellfield

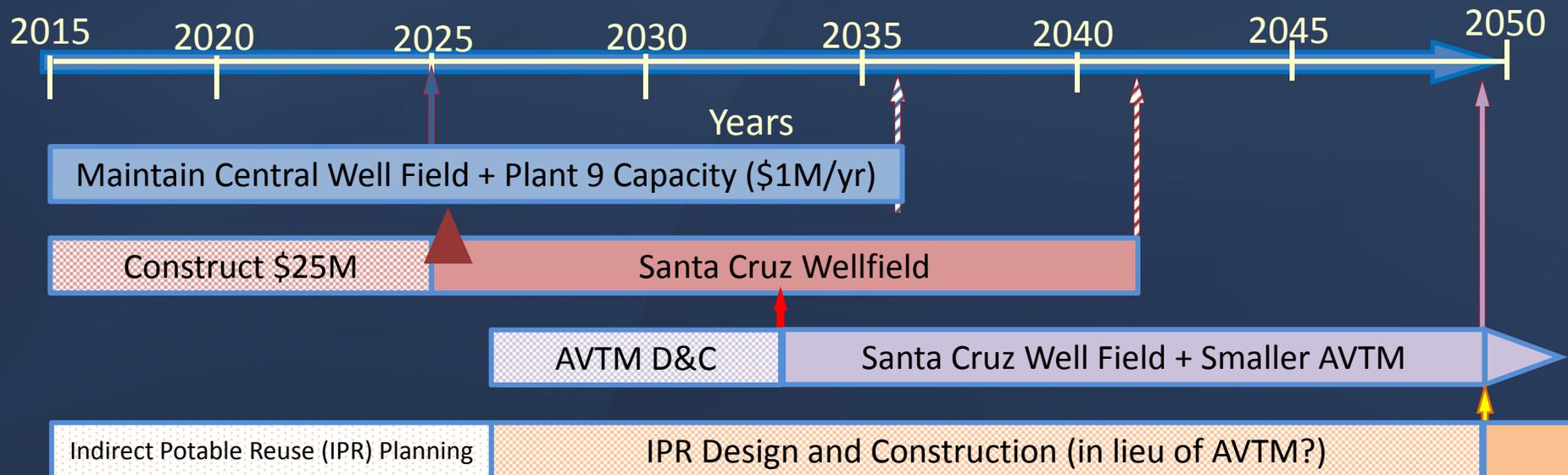


AIA Outcome

Original AVTM Plan



AIA Plan



Santa Cruz Wellfield Phasing

	2016	2017	2018	2019	2020	2021
Phase I (10 MGD)	X \$1,000	X \$1,000	X \$1,000	X \$1,000	X \$1,000	X \$1,000
W857 Re-Equip 3/5/8/13	300	610				
W039 SC-008 Collector	27	200				
New SC-005 Collector	27	200				
New SC-013 Collector	27	200				
Phase II (Disinfection)						
W759 Treatment		150	2320			
W089 Headers for Treatment	10	40	5500			
W153 Nogales 36"	500	500	2018			
W154 SC TM PH2	5	5	85			
Phase III (5 MGD)						
New Well Replace 1/4/14			500	2000		
New Collector SC-001		15	10	200		
New Collector SC-004		15	10	200		
New Collector SC-014		15	10	200		
W796 Slip Liner	30	70	1037	5397		
Phase IV (5MGD)						
New Well Drill (3)				2500	-	-
*New Well Outfit (3)					150	1200
W160 Collector Mains					50	1150
W161 Transmission					50	2000
Totals	926	2020	6540	10647	250	4350

10MGD

Treatment

10MGD
+5MGD
15MGD

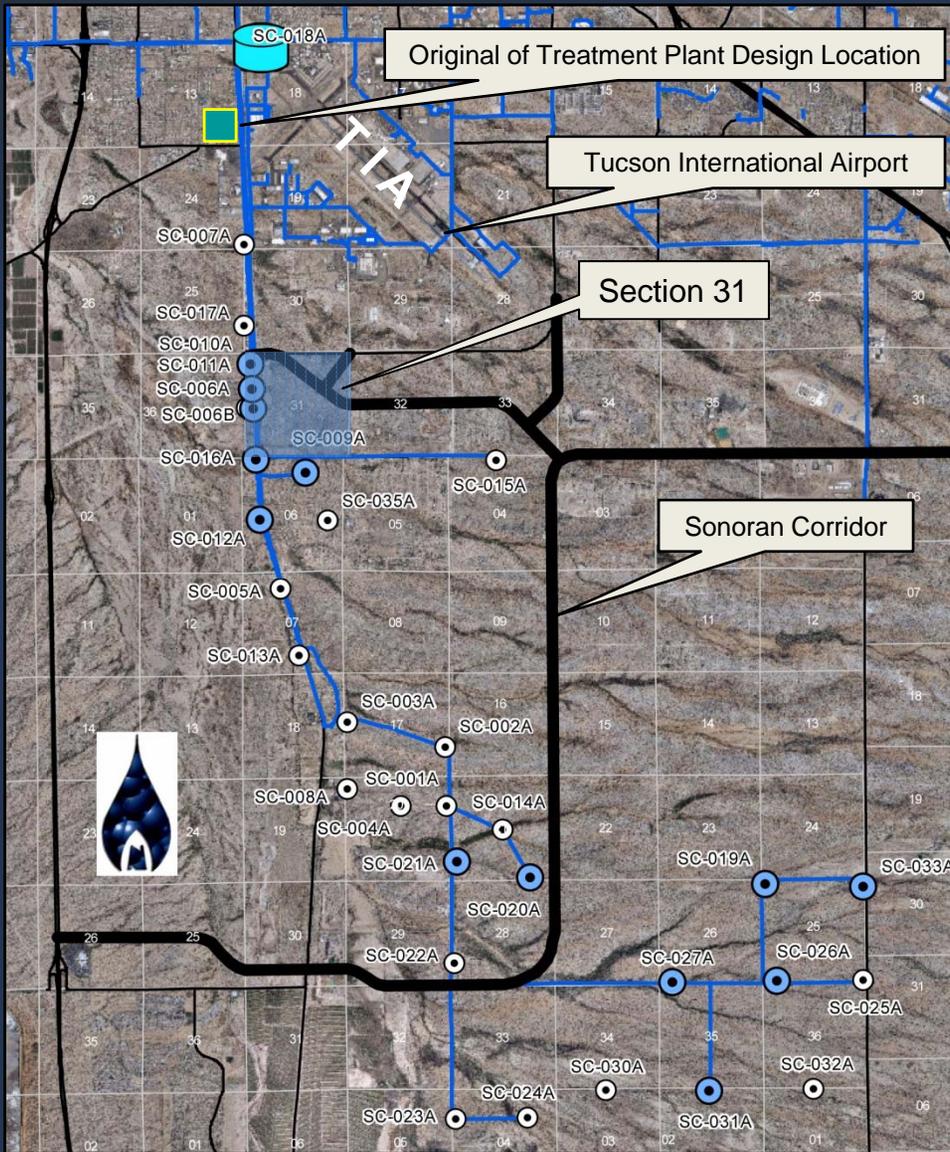
15MGD
+5MGD
20MGD

+20MGD = \$24.7M



Sonoran Corridor (West Side)

- Original treatment plant design location
- Section 31 is the most viable property for future development



Upcoming CIP Adjustments

Relocate Treatment Plant to Support Economic Development



Existing CIP = \$14.3M

- 28" slip liner
- Santa Cruz Treatment Facilities
- Martin Booster Upgrade
- 4,000' – 36" line

Unfunded = \$5.5M - \$6M

- 37% shorter slip liner
- **Treatment Relocation Cost**
- **Eliminate Martin Booster Upgrade**
- **Additional 5280' – 36" line**
- **10,000' – 16" Hughes Main**
- **B-D Reservoir and Booster**





Questions?

Tucson Water Finance Subcommittee

October 21, 2015

Presenters:

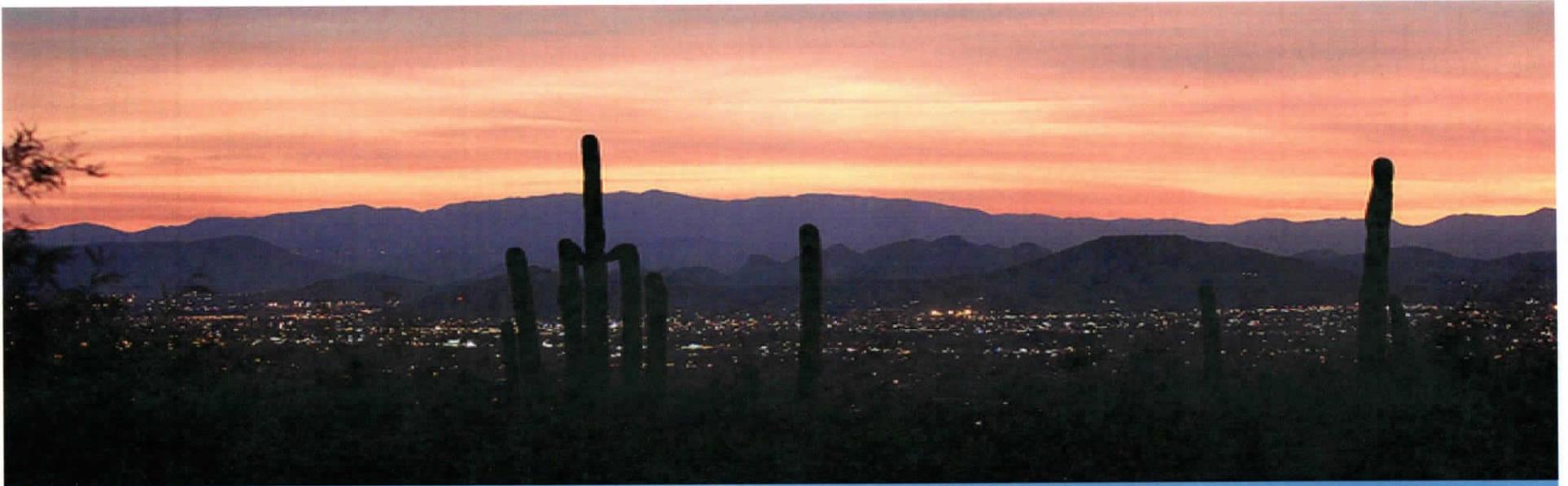
Pat Eisenberg, *Chief Engineer*

Melodee Loyer, *Planning Administrator*



REARVIEW Project Expenditures FY2011 through FY2015

Unit Name	FY2011	FY2012	FY2013	FY2014	FY2015	Total Expenditure FY11 through FY15
Total City Transportation Main Replacement Modifications	4,033,662	4,225,656	10,329,865	2,660,936	676,740	21,926,860
Total Modifications (including City Transportation)	4,453,224	4,792,303	11,622,257	3,922,342	3,441,618	28,231,743
Total City Transportation Main Replacement %	91%	88%	89%	68%	20%	78%
City Transportation MFRs related Modifications % of the Total CIP	8.51%	7.84%	14.67%	5.00%	1.52%	8.14%
Total Water Revenue Fund expenditures	13,538,183	11,831,559	20,517,205	22,952,971	15,643,056	84,482,974
Total Bond Fund expenditures:	33,872,219	42,041,998	49,880,390	30,302,285	28,888,640	184,985,532
% paid for by bonds	71.4%	78.0%	70.9%	56.9%	64.9%	68.6%
Total CIP expenditures	47,410,402	53,873,557	70,397,596	53,255,257	44,531,695	269,468,506



**Tucson Water's
Proposed
Five -Year Capital Budget
FY 2017 through FY 2021**

**CWAC Presentation
November 4, 2015**





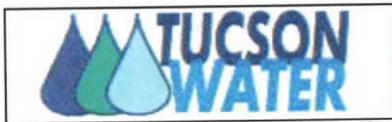
CIP COMPARISON:
Adopted FY's 2016-2020 versus Proposed FY's 2017-2021
(Amounts Rounded to 000's)

	FY16	YEAR 1 FY2017	YEAR 2 FY2018	YEAR 3 FY2019	YEAR 4 FY2020	YEAR 5 FY2021	5 Year Total
FY2016 - FY2020 Adopted CIP	75,205	57,395	75,286	61,271	55,644		324,801
New CIPs		6,251	12,112	12,976	15,206	21,508	68,053
Delayed or Deleted CIPs		(20,760)	(27,978)	(25,956)	(23,275)	-	(97,969)
Projects with Major Revisions		657	1,772	7,250	(480)	2,232	11,431
Other Adjustments		19,088	(2,009)	(1,729)	1,730	21,107	38,187
FY2017 - FY2021 Proposed CIP (prop. CF)							
	10,300	62,631	59,183	53,812	48,825	44,847	279,598
Difference		5,236	(16,103)	(7,459)	(6,819)	44,847	(45,203)



CIP COMPARISON:
Adopted FY's 2016-2020 versus Proposed FY's 2017-2021
 (Amounts Rounded to 000's)

New CIPs		YEAR 1 FY2017	YEAR 2 FY2018	YEAR 3 FY2019	YEAR 4 FY2020	YEAR 5 FY2021	5 Year Total	
W194	ASR at F-008 Equipping	-	-	290	2,399	-	2,689	
W199	C-049 Well Re-Equip	190	-	-	-	-	190	
W101	Drill Production Wells	-	1,685	1,740	1,800	1,860	7,085	
W166	Pima Mine Rd Prod Well Drilling	-	-	2,900	-	-	2,900	
W195	Pima Mine Rd Well Equipping (3)	-	-	-	180	1,488	1,668	
W176	Recycled Water Program	3,208	3,876	5,743	7,738	7,686	28,251	
W167	Santa Cruz Well SC-001/04/14 Drilling	-	169	1,392	-	-	1,561	
W189	Santa Cruz Well SC-001/04/14 Equipping	-	-	174	1,440	-	1,614	
W082	SA-012A Recovery Well Drilling	-	-	-	-	-	-	
W063	SAVSARP Phase II Well Equipping	-	-	-	-	-	-	
W064	SAVSARP Phase III Well Equipping	-	-	-	-	1,178	1,178	
W090	TARP R-009A Replacement Well	-	-	-	-	-	-	
W168	Old Vail Steel Tank Upgrades (Rehab)	347	-	-	-	-	347	
W170	Anklam Rd (2000 W) Relocate PRV	-	197	-	-	-	197	
W171	Camino de Los Ranchos Relocate PRV	-	-	203	-	-	203	
W172	Craycroft-Shadow Ridge Relocate PRV	251	-	-	-	-	251	
W173	Glenn-Campbell PRV Relocate PRV	223	-	-	-	-	223	
W181	Magee Rd (410 E) PRV SCADA Installation	-	84	-	-	-	84	
W198	Relocate Spencer PRV	-	-	-	180	-	180	
W174	Via Valazquez Relocate PRV	195	-	-	-	-	195	
W160	CAP Basin Well Collection Mains, Pima Mine Rd	-	-	-	60	1,426	1,486	
W161	CAP Basin Well 24" Trans Main, Pima Mine Rd, Old Nogales Hwy	-	-	174	60	2,479	2,713	
W153	Nogales Hwy 36" Trans Main Replacement	893	2,468	-	-	-	3,361	
W154	Santa Cruz Trans Main Replacement Phase II	6	95	-	-	-	101	
W710	SAVSARP Collector Lines Phase III	-	-	-	-	930	930	
W832	SAVSARP Collector Lines Phase V	-	-	-	41	2,210	2,251	
W444	SAVSARP Recovered Water TM	-	-	-	-	620	620	
W183	SC-001 & SC-004 Well Collector Trans lines	-	56	244	264	-	564	
W184	SC-005 Well Collector Trans Line	112	-	-	-	-	112	
W185	SC-013 Well Collector Trans Line	100	-	-	-	-	100	
W155	Arizona Ave Main Replacement	56	-	-	-	-	56	
W187	Drexel I19 Crossing	-	-	-	60	1,178	1,238	
W846	Maryvale Manor Subdivision, Phase III MR	-	-	-	564	-	564	
W175	Nebraska Rd Distribution Main	-	-	-	300	-	300	
W163	Fire Hydrants in Annexation Areas	112	112	116	120	124	584	
W157	Tertiary Effluent Forebay Roof Improvements	558	3,370	-	-	-	3,928	
W761	Reclaimed Booster Expansion	-	-	-	-	329	329	
Total New CIPs		-	6,251	12,112	12,976	15,206	21,508	68,053



CIP COMPARISON:
Adopted FY's 2016-2020 versus Proposed FY's 2017-2021
 (Amounts Rounded to 000's)

CIPs Delayed, Deleted, Moved to O&M or Completed Ahead of Schedule		YEAR 1 FY2017	YEAR 2 FY2018	YEAR 3 FY2019	YEAR 4 FY2020	YEAR 5 FY2021	5 Year Total
W221	Disinfection Upgrades	(135)	(134)	(140)	(144)		(553)
W736	Reservoir and Tank Rehabilitation	(56)	(56)	(58)	(6,001)		(6,171)
W254	Pumping Facility Modifications	(350)	(346)	(361)	(372)		(1,429)
W506	Pipeline Protection Acoustic Monitoring	(226)	(223)	(233)	(240)		(922)
W518	Rehabilitate Critical PCCP Trans Main Segments	(361)	(335)	(349)	(360)		(1,405)
W327	Upgrade Corrosion Test Stations	(56)	(56)	(58)	(60)		(230)
W283	Valve Replacement Program	(902)	(893)	(931)	(960)		(3,686)
WRs	Service Line Replacement	(677)	(670)	(698)	(720)		(2,765)
W798	Reclaimed Reservoir and Tank Rehabilitation Program	(28)	(28)	(29)	(30)		(115)
W438	Reclaimed PRVs Control Valves	(56)	(56)	(58)	(60)		(230)
W454	Reclaimed Pumping Facility Modifications	(56)	(56)	(58)	(60)		(230)
W513	Reclaimed Main Enhancements	(113)	(112)	(116)	(120)		(461)
W649	Reclaimed Chlorine System Improvements	(56)	(56)	(58)	(60)		(230)
W083	SA-016A Recovery Well Drilling	(677)	-	-	720		43
W084	SA-019A/SA-021A Recovery Well Drilling	(1,289)	-	-	1,371		82
W085	SA-023A Recovery Well Drilling	(677)	-	-	720		43
W058	Valley View Reservoir Rehabilitation	(2,707)	2,696	-	-		(11)
W135	Houghton Reclaimed Reservoir Rehabilitation	(2,819)	2,809	-	-		(10)
W570	Country Club Reservoir	-	-	(290)	(300)		(590)
W145	3rd Avenue PRV	-	-	-	(120)		(120)
W143	Augmentation Surge Protection Facility	-	(112)	(814)	-		(926)
W144	Drexel Phase 1 PRV	-	-	(175)	-		(175)
W142	Southwest Turnout PRV	-	-	(407)	-		(407)
W795	Hayden-Udall Prime Reservoir and Booster Station	(564)	(9,489)	(5,654)	-		(15,707)
W410	Avra Valley Trans Main Augmentation Phase I	(965)	(12,600)	(13,084)	-		(26,649)
W762	Avra Valley Trans Main Augmentation Phase II	-	-	(1,512)	(9,842)		(11,354)
W080	Avra Valley Trans Main Augmentation Phase III	-	-	-	(1,116)		(1,116)
W067	Country Club C-Zone Augmentation Trans Main	(9,022)	(8,261)	-	-		(17,283)
W068	Park Ave B-Zone Augmentation Main	-	-	(873)	(5,521)		(6,394)
W039	Santa Cruz SC-008 Well Collector Line	223	-	-	-		223
W074	Well W-006 Transmission Main	307	-	-	-		307
W793	Craycroft Addition Subdivision, Phase I	502	-	-	-		502
Total Delayed CIPs		(20,760)	(27,978)	(25,956)	(23,275)	-	(97,969)



CIP COMPARISON:
Adopted FY's 2016-2020 versus Proposed FY's 2017-2021
 (Amounts Rounded to 000's)

		YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	5 Year
CIPs with Major Revisions		FY2017	FY2018	FY2019	FY2020	FY2021	Total
W553	CAVSARP Well Pump Improvements	(342)	(333)	(350)	(360)	372	(1,013)
W077	Well Field Upgrade	(570)	(554)	(583)	(600)	620	(1,687)
W796	Sahuarita Supply Line Slip Liner	78	1,165	6,261	-	-	7,504
W089	Santa Cruz Wellfield Pipelines	45	618	-	-	-	663
W781	SAVSARP Collector Lines Phase II	669	-	-	-	-	669
W791	Maryvale Manor Subdivision, Phase I MR	-	-	975	-	-	975
W790	Northgate Subdivision, Phase II	-	-	975	-	-	975
W850	San Paulo Village Main Replacement Phase I	(2)	-	-	-	-	(2)
W041	San Paulo Village Main Replacement Phase II	(4)	6	-	-	-	2
W071	San Paulo Village Main Replacement Phase III	-	-	(1)	-	-	(1)
W072	Tierra del Sol Main Replacement Phase I	62	416	(489)	-	-	(11)
W060	Valve Access Vault	445	450	464	480	620	2,459
W668	Arc Flash System Upgrades	276	4	(2)	-	620	898
Total Projects with Major Revisions		657	1,772	7,250	(480)	2,232	11,431



FIVE-YEAR CIP FY's 2017-2021

(1,000)

PROGRAM AREA	FY2016 CYFWD	YEAR 1 2016-17	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	5 YEAR TOTAL
TOTAL POTABLE SOURCE DEVELOPMENT	1,150	6,897	8,455	14,646	18,858	13,855	63,861
TOTAL POTABLE STORAGE	2,200	7,865	9,264	522	2,520	806	23,177
TOTAL POTABLE PUMPING PLANT	100	669	281	203	180	-	1,433
TOTAL POTABLE TRANSMISSION MAINS	750	5,501	5,076	7,375	1,145	8,409	28,256
TOTAL POTABLE DISTRIBUTION MAINS	950	8,259	8,718	10,663	9,185	9,051	46,826
TOTAL POTABLE NEW SERVICES	-	3,750	3,774	3,898	4,032	4,165	19,619
TOTAL GENERAL PLANT	1,650	9,724	9,553	9,778	5,939	1,897	38,541
TOTAL POTABLE TREATMENT	-	2,589	-	-	-	-	2,589
TOTAL POTABLE PROCESS CONTROL	1,500	8,337	6,013	6,135	6,354	5,703	34,042
TOTAL POTABLE SYSTEM	8,300	53,591	51,134	53,220	48,213	43,886	258,344
TOTAL RECLAIMED SOURCE DEVELOPMENT	-	7,085	-	-	-	-	7,085
TOTAL RECLAIMED STORAGE	-	558	6,207	-	-	-	6,765
TOTAL RECLAIMED PUMPING PLANT	1,500	-	-	-	-	329	1,829
TOTAL RECLAIMED TRANSMISSION	100	-	-	-	-	-	100
TOTAL RECLAIMED DISTRIBUTION MAINS	-	346	348	360	372	384	1,810
TOTAL RECLAIMED NEW SERVICES	-	56	56	58	60	62	292
TOTAL RECLAIMED TREATMENT	200	558	786	-	-	-	1,544
TOTAL RECLAIMED PROCESS CONTROL	200	437	652	174	180	186	1,829
TOTAL RECLAIMED SYSTEM	2,000	9,040	8,049	592	612	961	21,254
TOTAL	10,300	62,631	59,183	53,812	48,825	44,847	279,598



FIVE-YEAR CIP FY's 2017-2021

(Amounts Rounded to 000's)

POTABLE SOURCE DEVELOPMENT

CIP#	FY 2016 CYFWD	YEAR 1 2016-17	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	5 YEAR TOTAL
W194 Aquifer Storage Recovery at F-008 Equipping	-	-	-	290	2,399	-	2,689
W081 AV-020B/SA-013A Recovery Well Drilling	200	-	-	-	-	-	200
W199 C-049 Well Re-Equip	-	190	-	-	-	-	190
W553 CAVSARP Well Pump Improvements	-	335	337	348	360	372	1,752
W101 Drill Production Wells	-	-	1,685	1,740	1,800	1,860	7,085
W061 Equip Well A-061	-	56	393	-	-	-	449
W062 Equip Well W-006	-	446	-	-	-	-	446
W140 Gas Engines	-	837	843	870	900	-	3,450
W166 Pima Mine Rd Production Well Drilling	-	-	-	2,900	-	-	2,900
W195 Pima Mine Rd Well Equipping (3)	-	-	-	-	180	1,488	1,668
W075 Pressure Tank Replacement	-	502	506	522	540	558	2,628
W087 Production Well Sites	-	84	84	87	90	93	438
W176 Recycled Water Program	-	3,208	3,876	5,743	7,738	7,686	28,251
W857 Santa Cruz Wells - Re-Equipping	100	681	-	-	-	-	781
W167 Santa Cruz Wells SC-001/SC-004/SC-014 Drilling	-	-	169	1,392	-	-	1,561
W189 Santa Cruz Well SC-001/SC-004/SC-014 Equipping	-	-	-	174	1,440	-	1,614
W082 SA-012A Recovery Well Drilling	100	-	-	-	-	-	100
W083 SA-016A Recovery Well Drilling	-	-	-	-	720	-	720
W084 SA-019A/SA-021A Recovery Well Drilling	-	-	-	-	1,371	-	1,371
W085 SA-023A Recovery Well Drilling	-	-	-	-	720	-	720
W063 SAVSARP Phase II Well Equipping	250	-	-	-	-	-	250
W064 SAVSARP Phase III Well Equipping	-	-	-	-	-	1,178	1,178
W090 TARP R-009A Replacement Well	500	-	-	-	-	-	500
W077 Wellfield Upgrades	-	558	562	580	600	620	2,920
TOTAL POTABLE SOURCE DEVELOPMENT	1,150	6,897	8,455	14,646	18,858	13,855	63,861

POTABLE SOURCE DEVELOPMENT

Aquifer Storage Recovery at F-008 Equipping							W194
DESCRIPTION:							
Re-equip well F-008 as an Aquifer Storage and Recovery (ASR) well to provide the ability to inject renewable CAP supplies into the Tucson basin aquifer where it will be available for recovery during peak demand or infrastructure outage periods. This is an additional step in providing renewable supply redundancy to the 96" Clearwell pipeline. This project includes installation of an ASR system pump, valves, piping, down hole gearing and packers in production well F-008. This project will begin in Fiscal Year 2019 and will be completed in Fiscal Year 2020. Total project cost is \$2,689,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	290	2,399	-	2,689

AV-020B/SA-013A Recovery Well Drilling							W081
DESCRIPTION:							
Design and drill water recovery wells AV-020B and SA-013A. Project scope provides for the drilling and constructing of stainless steel casing to prevent corrosion. New wells are needed to meet demand, to replace wells or supplement well capacities, and to provide back-up system capacity. These wells will be drilled in Fiscal Year 2016. Total project cost is \$2,559,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
200	-	200	-	-	-	-	200

C-049 Well Re-Equip							W199
DESCRIPTION:							
Existing well C-049 has been out of service due to failed, antiquated equipment. The well site requires re-equipping of the above ground facilities in order to bring it back into production. This will involve replacing the electrical and control equipment, hydro pneumatic tank, production flow meter, disinfection equipment, modifying and upgrading the site enclosure. This project will begin in Fiscal Year 2016 and will be completed in Fiscal Year 2017. Total project cost is \$270,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	190	190	-	-	-	-	190

POTABLE SOURCE DEVELOPMENT

CAVSARP Well Pump Improvements							W553
DESCRIPTION:							
Upgrade existing line shafts on Central Avra Valley Storage and Recovery Project (CAVSARP) wells, upgrade well pumps, change product lubrication systems, and re-equip wells with new materials. Evaluating and upgrading wells will reduce maintenance and improve operating efficiency and reliability.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	335	335	337	348	360	372	1,752

Drill Production Wells							W101
DESCRIPTION:							
Drilling of 2 replacement production wells per year in wellfields other than CAVSARP, SAVSARP and TARP. Replacements will be focused on aging wells beyond repair, or which are more economical to replace by installing stainless steel constructed wells. This on-going project will equip wells to pump historic production levels of the original wells and contribute to maintaining 90 MGD of redundant wellfield pumping capacity to meet peak demands in the event of a failure of the 96-inch Clearwell pipeline.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	1,685	1,740	1,800	1,860	7,085

Equip Well A-061							W061
DESCRIPTION:							
Design and equip well A-061. Well A-061 is needed to supplement water supply in the northwest portion of Tucson Water's system. Design will begin in Fiscal Year 2017 and construction will be completed in Fiscal Year 2018. Total project cost is \$449,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	56	56	393	-	-	-	449

POTABLE SOURCE DEVELOPMENT

Equip Well W-006							W062
DESCRIPTION:							
Design and equip well W-006. The existing WC Service area is an isolated system and is supplied by only one well, W-001. This new well would provide a level of redundancy in the event of failure or maintenance requirements of well W-001. Design began in Fiscal Year 2015 and construction will be completed in Fiscal Year 2017. Total project cost is \$477,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	446	446		-	-	-	446

Gas Engines							W140
DESCRIPTION:							
Installation of 5 natural gas engines per year in the CAVSARP wellfield area. Current engines are approaching the industry standard life expectancy of 100,000 hours. Upgraded engines will have the latest technology needed to meet the emissions control permit requirements, making it more cost effective and advantageous to upgrade to new engines rather than rebuild existing engines. This project began in Fiscal Year 2015 and will be completed in Fiscal Year 2020. Total project cost is \$4,961,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	837	837	843	870	900	-	3,450

Pima Mine Rd Production Well Drilling							W166
DESCRIPTION:							
Drilling of 3 production wells at Pima Mine Road, which will assist The Utility in reaching its goal of 20 MGD of production capacity from the Santa Cruz Wellfield. These wells will ensure water levels remain below the alert levels for the underground storage facility permit, and help resolve water quality issues in the Santa Cruz Wellfield. Each well will be between 500 & 600 feet below land surface and will eventually be equipped to pump approximately 1,500 GPM. Construction will begin and be completed in Fiscal Year 2019. Total project cost will be \$2,900,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	2,900	-	-	2,900

POTABLE SOURCE DEVELOPMENT

Pima Mine Rd Well Equipping (3)							W195
DESCRIPTION:							
Design and install three production well pumps, control buildings and surface piping in production wells drilled at the Pima Mine Road Recharge Project. Estimated production is 2,000 GPM per well. This project will begin in Fiscal Year 2020 and will be completed in Fiscal Year 2021. Total project cost will be \$1,668,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	-	180	1,488	1,668

Pressure Tank Replacement							W075
DESCRIPTION:							
Design and construct replacement pressure tanks at water wells and booster stations. As funds become available, on an annual basis, uncertified tanks will be replaced and the remaining uncertified tanks prioritized. Safety requirements mandate tank replacement for those not meeting code or lacking certification from the American Society of Mechanical Engineers.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	502	502	506	522	540	558	2,628

Production Well Sites							W087
DESCRIPTION:							
This on-going project is for the acquisition of property for new production well sites. Well sites are needed to meet future demand and to replace obsolete wells.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	84	84	84	87	90	93	438

POTABLE SOURCE DEVELOPMENT

Recycled Water Program							W176
DESCRIPTION:							
Plan development for the full utilization of the City's effluent entitlement. This program will address effluent quality and quantity, methods of treatment, existing and future uses of effluent. It will include the continued expansion of the non-potable reclaimed water and recharge, capital improvement projects and costs needed for implementation. The 2011-2015 Action Plan for Water Sustainability Report identified preparation and implementation of the Recycled Water Master Plan as a water resource task. This project will begin in Fiscal Year 2016. Total project cost is \$30,351,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	3,208	3,208	3,876	5,743	7,738	7,686	28,251

Santa Cruz Wells - Re-Equipping							W857
DESCRIPTION:							
Design and construct well equipping of 4 existing production wells in the Santa Cruz Wellfield. Due to the higher groundwater elevations, this wellfield provides the most cost-effective access to our renewable water resource. Returning these wells to service will production from this wellfield can be increased to approximately 15 MGD. This project began in Fiscal Year 2014 and will be completed in Fiscal Year 2017. Total project cost is \$1,501,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
100	681	781	-	-	-	-	781

Santa Cruz Wells SC-001/SC-004/SC-014 Drilling							W167
DESCRIPTION:							
Drilling for the replacement of inactive wells SC-001, SC-004 and SC-014. These wells are under the hydrologic influence of the Pima Mine Road Recharge Project and are in an area where the aquifer transmissivity is high. These replacement wells will add to the collective production capacity necessary to meet The Utility's goal of 20 MGD from the Santa Cruz Wellfield. Additionally, these wells will ensure water levels remain below the alert levels for the PMRRP facility permit, and will help resolve water quality issues in the Santa Cruz Wellfield. This project will begin in Fiscal Year 2018 and be completed in Fiscal Year 2019. Total project cost is \$1,561,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	169	1,392	-	-	1,561

POTABLE SOURCE DEVELOPMENT

Santa Cruz Well SC-001/SC-004/SC-014 Equipping

W189

DESCRIPTION:

Equip production wells SC-001/SC-004/SC-014. Wells will be 16" diameter stainless steel louvered screen and blank casing construction. Total depth will be between 500 and 600 ft. below land surface. These wells will be equipped to pump approximately 1,000 GPM each and will assist the Utility's goal of reaching 20 MGD of production capacity from the Santa Cruz Wellfield. This project will begin in Fiscal Year 2019 and will be completed in Fiscal Year 2020. Total project cost is \$1,614,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	174	1,440	-	1,614

SA-012A Recovery Well Drilling

W082

DESCRIPTION:

Well SA-012A will be drilled and cased to 1,000 feet below land surface and will be constructed with a stainless steel casing to prevent corrosion. The additional well will allow the Southern Avra Valley Storage and Recovery Project (SAVSARP) wellfield to be operated more efficiently and enables more complete utilization of the recharged CAP water. This will allow additional withdrawals as recharge capacity increases and provide reliability while other wells are down for maintenance. Design and construction will begin in Fiscal Year 2016. Total project cost is \$1,033,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
100	-	100	-	-	-	-	100

SA-016A Recovery Well Drilling

W083

DESCRIPTION:

Design and drill water recovery well SA-016A. Project scope provides for the drilling and constructing of a stainless steel casing to prevent corrosion. Additional wells will allow the Southern Avra Valley Storage and Recovery Project (SAVSARP) wellfield to be operated more efficiently and enables more complete utilization of the recharged CAP water. This will allow additional withdrawals as recharge capacity increases and provide reliability while other wells are down for maintenance. Design and construction will be in Fiscal Year 2020. Total project cost is \$720,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	-	720	-	720

POTABLE SOURCE DEVELOPMENT

SA-019A/SA-021A Recovery Well Drilling							W084
DESCRIPTION:							
Design and drill water recovery wells SA-019A and SA-021A. Project scope provides for the drilling and constructing of stainless steel casings to prevent corrosion. Additional wells will allow the Southern Avra Valley Storage and Recovery Project (SAVSARP) wellfield to be operated more efficiently and enables more complete utilization of the recharged CAP water. This will allow additional withdrawals as recharge capacity increases and provide reliability while other wells are down for maintenance. Design and construction will be in Fiscal Year 2020. Total project cost is \$1,371,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	-	1,371	-	1,371

SA-023A Recovery Well Drilling							W085
DESCRIPTION:							
Design and drill water recovery well SA-023A. Project scope provides for the drilling and constructing of a stainless steel casing to prevent corrosion. The additional well will allow the Southern Avra Valley Storage and Recovery Project (SAVSARP) wellfield to be operated more efficiently and enables more complete utilization of the recharged CAP water. This will allow additional withdrawals as recharge capacity increases and provide reliability while other wells are down for maintenance. Design and construction will be in Fiscal Year 2020. Total project cost is \$720,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	-	720	-	720

SAVSARP Phase II Well Equipping							W063
DESCRIPTION:							
Design and drill water recovery wells SA-003A, SA-017A, SA-018A and SA-020A. Additional wells will allow the Southern Avra Valley Storage and Recovery Project (SAVSARP) wellfield to be operated more efficiently and will enable more complete utilization of the recharged CAP water. This will allow additional withdrawals as recharge capacity increases and provide reliability while other wells are down for maintenance. This project will begin and be completed in Fiscal Year 2016. Total project cost is \$2,577,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
250	-	250	-	-	-	-	250

POTABLE SOURCE DEVELOPMENT

SAVSARP Phase III Well Equipping							W064
DESCRIPTION:							
Design and drill water recovery wells SA-002A, SA-005A, SA-007A, SA-008A and SA-010A. Additional wells will allow the Southern Avra Valley Storage and Recovery Project (SAVSARP) wellfield to be operated more efficiently and will enable more complete utilization of recharged CAP water. This will allow additional withdrawals as recharge capacity increases and provide reliability while other wells are down for maintenance. This project will begin in Fiscal Year 2021 and be completed in Fiscal Year 2022. Total project cost is \$3,000,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	-	-	1,178	1,178

TARP R-009A Replacement Well							W090
DESCRIPTION:							
Design and construct a replacement well at R-009A. The TARP remediation system is operated by Tucson Water in accordance with the 1991 Consent Decree with the US EPA to contain and treat groundwater contaminated with trichloroethene (TCE). Well R-009A is a remediation well used to contain the TCE plume at an original flow rate between 1,250 and 1,350 GPM. Flow rates have degraded, impeding containment. A replacement well with a minimum capacity of 1,000 GPM is required to ensure future capture. This project began in Fiscal Year 2015 and will be completed in Fiscal Year 2016. Total project cost is \$1,290,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
500	-	500	-	-	-	-	500

Wellfield Upgrades							W077
DESCRIPTION:							
Upgrade pumps and motors at production wells. This on-going project will maximize efficiency and production capacity, and minimize repair and maintenance costs.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	558	558	562	580	600	620	2,920



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(Amounts Rounded to 000's)

POTABLE STORAGE

CIP#	FY 2016 CYFWD	YEAR 1 2016-17	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	5 YEAR TOTAL
W091 Academy Reservoir	500	-	-	-	-	-	500
W056 Clearwell Reservoir Rehabilitation	-	7,474	6,535	139	-	-	14,148
W051 Escalante Reservoir	-	11	11	174	780	806	1,782
W054 Manzanita Tank Lining	-	11	11	35	780	-	837
W168 Old Vail Steel Tank Upgrades (Rehab)	200	347	-	-	-	-	547
W092 Rauscher Reservoir Rehabilitation	1,500	11	-	-	-	-	1,511
W050 Trails End Reservoir Rehabilitation	-	11	11	174	960	-	1,156
W058 Valley View Reservoir Rehabilitation	-	-	2,696	-	-	-	2,696
TOTAL POTABLE STORAGE	2,200	7,865	9,264	522	2,520	806	23,177

POTABLE STORAGE

Academy Reservoir							W091
DESCRIPTION:							
Design and construct a new reservoir liner at the Police and Fire Academy Reservoir. Modifications and new operational controls will be added to well PF-001A so operators can turn the well on and off remotely. A billing meter, backflow assembly, and fire pump will also be installed. Construction will be completed in Fiscal Year 2017. Total project cost is \$751,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
500	-	500	-	-	-	-	500

Clearwell Reservoir Rehabilitation							W056
DESCRIPTION:							
Design and construct new interior shear walls, roof and interior lining. Review of the reservoir revealed a need for structural improvements to comply with seismic code requirements; and the liner and roof have reached the end of their service life and are in need of replacement. The work will be performed on one cell at a time to minimize disruption to water system operation. Design began in FY2015 and construction will be completed in Fiscal Year 2019. Total project cost is \$14,354,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	7,474	7,474	6,535	139	-	-	14,148

Escalante Reservoir							W051
DESCRIPTION:							
Design and construct improvements as developed through the condition assessment to bring this reservoir up to current standards. This project must be completed to continue to provide long-term reliability and prevent water loss. Design began in Fiscal Year 2015 and construction will be completed in Fiscal Year 2021. Total project cost is \$1,800,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	11	11	11	174	780	806	1,782

POTABLE STORAGE

Manzanita Tank Lining							W054
DESCRIPTION:							
Design and construct a new liner at the Manzanita steel tank. The coatings and linings of the tank have reached the end of their service life and require replacement to prevent accelerated deterioration of the tank. Design will begin in Fiscal Year 2017 and construction will be completed in Fiscal Year 2020. Total project cost is \$837,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	11	11	11	35	780	-	837

Old Vail Steel Tank Upgrades (Rehab)							W168
DESCRIPTION:							
Design and construct improvements to the Old Vail Steel Tank which include the design and construction of a back-up storage tank. The interior and exterior of the 200,000 gallon tank will also be removed and recoated. This project will begin in Fiscal Year 2016 and be completed in Fiscal Year 2017. Total project cost is \$ 947,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
200	347	547	-	-	-	-	547

Rauscher Reservoir Rehabilitation							W092
DESCRIPTION:							
Design and construct the reservoir roof superstructure, replace the roof covering and add a liner to reduce leakage. Site work will be performed to address security and general site renewal. Design began in Fiscal Year 2015 and construction will be completed in Fiscal Year 2017. Total project cost is \$5,231,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
1,500	11	1,511	-	-	-	-	1,511

POTABLE STORAGE

Trails End Reservoir Rehabilitation							W050
DESCRIPTION:							
Design and construct improvements as developed through the condition assessment to bring this reservoir up to current standards. This project must be completed to continue to provide long-term reliability and prevent water loss. Design will begin in Fiscal Year 2017 and construction will be completed in Fiscal Year 2020. Total project cost is \$1,156,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	11	11	11	174	960		1,156

Valley View Reservoir Rehabilitation							W058
DESCRIPTION:							
Design and construct a new liner and additional improvements at Valley View Reservoir. This will prevent leakage and provide long term reliability of this facility. This project will be completed in Fiscal Year 2017. Total project cost is \$2,800,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	2,696	-	-	-	2,696



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(Amounts Rounded to 000's)

POTABLE PUMPING PLANT

CIP#	FY 2016 CYFWD	YEAR 1 2016-17	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	5 YEAR TOTAL
W169 Aeropark-Teton Relocate PRV	50	-	-	-	-	-	50
W170 Anklam Rd (2000 W) Relocate PRV	-	-	197	-	-	-	197
W171 Camino de Los Ranchos Relocate PRV	-	-	-	203	-	-	203
W862 Camino de Oeste Pressure Reducing Valve at Thornydale anc	50	-	-	-	-	-	50
W172 Craycroft-Shadow Ridge Relocate PRV	-	251	-	-	-	-	251
W173 Glenn-Campbell Relocate PRV	-	223	-	-	-	-	223
W181 Magee Rd (410 E) PRV SCADA Installation	-	-	84	-	-	-	84
W198 Relocate Spencer PRV	-	-	-	-	180	-	180
W174 Via Velazquez Relocate PRV	-	195	-	-	-	-	195
TOTAL POTABLE PUMPING PLANT	100	669	281	203	180	-	1,433

POTABLE PUMPING PLANT

Aeropark-Teton Relocate PRV							W169
DESCRIPTION:							
Relocate the current 6-inch pressure reducing valve (PRV) to an above ground 8-inch PRV at well site SC-007. This PRV is critical for fire flow in the C1 WSA area. The current 6-inch PRV is located in a vault and the site has access issues. Relocating and upgrading will improve operating efficiency, improve reliability, improve public service and resolves safety issues. This project will be completed in Fiscal Year 2017. The total project cost is \$250,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
50	-	50	-	-	-	-	50

Anklam Rd (2000 W) Relocate PRV							W170
DESCRIPTION:							
Relocate the current PRV and construct an above ground 6-inch C-A PRV at the La Cholla Booster Station. The current PRV is located in a vault and the site has access issues. Relocating will improve operating efficiency, improve reliability, improve public service and resolve safety issues. The supply and discharge mains will be 8-inch. This project will begin in Fiscal Year 2018. The total project cost is \$197,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-		197	-	-	-	197

Camino de Los Ranchos Relocate PRV							W171
DESCRIPTION:							
Relocate the current PRV and construct an above ground 6-inch D-B PRV at the B-094 well site. The current PRV is located in a vault and the site has access and safety issues. Relocating will improve operating efficiency, improve reliability, improve public service and resolve safety issues. Additionally, 4 private PRVs will be installed on Camino Real between B-094 and Camino de Los Ranchos. This project will begin in Fiscal Year 2019. The total project cost is \$203,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-		-	203	-	-	203

POTABLE PUMPING PLANT

Camino de Oeste Pressure Reducing Valve at Thornydale and Ivory Rose Drive W862
DESCRIPTION:
 Design and construct an 8-inch PRV and create a ZA+ zone to alleviate low pressure fluctuations. This project will also install a 12-inch valve to serve as a zone boundary valve. This will improve fire flow reliability for the Quail Run Elementary School. Design began in Fiscal Year 2014 and construction will be completed in Fiscal Year 2017. Total project cost is \$262,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
50	-	50	-	-	-	-	50

Craycroft-Shadow Ridge Relocate PRV W172
DESCRIPTION:
 Relocate the current PRV and construct an above ground 6-inch I-H PRV at the Craycroft Booster Station. The current PRV is located in a vault and the site has access and safety issues. Relocating will improve operating efficiency, reliability, public service and resolve safety issues. Supply and discharge mains will be 8-inch. Approximately 300 ft. of "H4" discharge main will be needed on Craycroft. This project will begin and be completed in Fiscal Year 2017. The total project cost is \$251,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	251	251	-	-	-	-	251

Glenn-Campbell Relocate PRV W173
DESCRIPTION:
 Relocate the current PRV and construct an above ground 6-inch B-A PRV at the NE corner of Conner Park at Glenn and Plumer. The current PRV is located in a vault and the site has access and safety issues. Relocating will improve operating efficiency, reliability, public service and resolve safety issues. Supply and discharge mains will be 8-inch. This PRV is critical when the 1st Ave. 42-inch main is out of service. This project will begin and be completed in Fiscal Year 2017. The total project cost is \$223,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	223	223	-	-	-	-	223

POTABLE PUMPING PLANT

Magee Rd (410 E) PRV SCADA Installation							W181
DESCRIPTION:							
Installation of solar SCADA to monitor flow and water pressures of the new 8-inch PRV which is the sole source of water for approximately 1,300 customers. SCADA will allow quicker response to maintenance issues. This project will begin and be completed in Fiscal Year 2018. The total project cost is \$84,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	84	-	-	-	84

Relocate Spencer PRV							W198
DESCRIPTION:							
Construct a 6-inch D-C PRV to replace the PRV at the current site. The current PRV is located in a vault and the site has safety issues. Relocating and upgrading will improve operating efficiency, reliability, public service and resolves safety issues. This project will begin and be completed in Fiscal Year 2020. Total project cost is \$180,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	-	180	-	180

Via Velazquez Relocate PRV							W174
DESCRIPTION:							
Relocate and upgrade current PRV to an above ground 6-inch F-D PRV near the current Via Velaquez site. The current PRV is located in a vault and the site has safety issues. Relocating and upgrading will improve operating efficiency, reliability, public service and resolves safety issues. Supply and discharge mains will be 8-inch. They will be connected to the 12-inch main in Via Velazquez Road. This site will need to have walls. This project will begin and be completed in Fiscal Year 2017. The total project cost is \$195,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	195	195	-	-	-	-	195



FIVE-YEAR CIP FY's 2017-2021

(Amounts Rounded to 000's)

POTABLE TRANSMISSION MAINS

CIP#	FY 2016 CYFWD	YEAR 1 2016-17	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	5 YEAR TOTAL
W048 48" Aviation/3rd Ave. Cathodic Protection	200	-	-	-	-	-	200
W151 Calle Santa Cruz 24-inch Transmission Main Replacement	-	2,399	-	-	-	-	2,399
W160 CAP Basin Well Collection Mains, Pima Mine Rd	-	-	-	-	60	1,426	1,486
W161 CAP Basin Well 24" Transmission Main, Pima Mine Rd	-	-	-	174	60	2,479	2,713
W320 Cathodic Protection for Critical Pipelines	-	669	674	696	720	744	3,503
W153 Nogales Hwy 36" Transmission Main Replacement	-	893	2,468	-	-	-	3,361
W796 Sahuarita Supply Line Slip Liner	-	78	1,165	6,261	-	-	7,504
W039 Santa Cruz SC-008 Well Collector Line	-	223	-	-	-	-	223
W089 Santa Cruz Wellfield Pipelines	-	45	618	-	-	-	663
W154 Santa Cruz Transmission Main Replacement Phase II	-	6	95	-	-	-	101
W768 Santa Rita Ranch Houghton Road 12 inch Main	200	-	-	-	-	-	200
W781 South Avra Valley Storage and Recovery Project Collector Pip	200	669	-	-	-	-	869
W710 SAVSARP Collector Lines Phase III	-	-	-	-	-	930	930
W832 SAVSARP Collector Lines Phase V	-	-	-	-	41	2,210	2,251
W046 SAVSARP Raw Water Recovered Cathodic Protection	150	-	-	-	-	-	150
W444 SAVSARP Recovered Water Transmission Main	-	-	-	-	-	620	620
W183 SC-001 & SC-004 Well Collector Transmission Main	-	-	56	244	264	-	564
W184 SC-005 Well Collector Transmission Main	-	112	-	-	-	-	112
W185 SC-013 Well Collector Transmission Lateral	-	100	-	-	-	-	100
W074 Well W-006 Transmission Main	-	307	-	-	-	-	307
TOTAL POTABLE TRANSMISSION MAINS	750	5,501	5,076	7,375	1,145	8,409	28,256

POTABLE TRANSMISSION MAINS

48" Aviation/3rd Ave. Cathodic Protection							W048
DESCRIPTION:							
Design and construct the cathodic protection (CP) to the existing 48-inch 3rd Avenue pipeline. Applied CP will increase the original life span. Failure to apply CP to the pipeline will allow corrosion and over time the pipe will degrade and raise the risk of potential pipeline water leaks and possible failures. Design began in Fiscal Year 2014 and construction will be completed in Fiscal Year 2017. Total project cost is \$560,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
200	-	200	-	-	-	-	200

Calle Santa Cruz 24-inch Transmission Main Replacement							W151
DESCRIPTION:							
Design and construct 2 miles of 24-inch transmission main replacement on Calle Santa Cruz between Valencia and Irvington. The main will be in City of Tucson property B1 water service area. This replacement maintains existing water pressure in emergency situations. This project began in Fiscal Year 2015 and will be completed in Fiscal Year 2017. Total Project cost \$2,484,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	2,399	2,399	-	-	-	-	2,399

CAP Basin Well Collection Mains, Pima Mine Rd							W160
DESCRIPTION:							
Install 1/2 mile of 24-inch collection main on Old Nogales Highway ROW or CAP Basin land. Main will collect well water from the CAP Basin wells near Old Nogales Highway and Pima Mine Road. This project is dependent upon CIP W796 (Sahuarita Supply Line Slip Liner), will begin in Fiscal Year 2020 and will be completed in Fiscal Year 2021. Total project cost will be \$1,486,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	-	60	1,426	1,486

POTABLE TRANSMISSION MAINS

CAP Basin Well 24" Transmission Main, Pima Mine Rd W161
DESCRIPTION:
 Design and install 1.75 miles of 24-inch transmission main on Old Nogales Highway ROW or purchased/leased easement. This main will convey water from the CAP Basin wells along Old Nogales Highway starting 0.75 miles north of Pima Mine Road to Lumber Street. This project will begin in Fiscal Year 2019 and will be completed in Fiscal Year 2021. Total project cost will be \$2,713,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	174	60	2,479	2,713

Cathodic Protection for Critical Pipelines W320
DESCRIPTION:
 Design and construct cathodic protection and corrosion monitoring facilities. These critical pipelines range from 16-inches to 96-inches in diameter and are located throughout Tucson Water's service area. This on-going project is necessary to prevent corrosion related failures of the City's largest and most critical potable water pipelines.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	669	669	674	696	720	744	3,503

Nogales Hwy 36" Transmission Main Replacement W153
DESCRIPTION:
 Design and install approximately 4,000 LF of 36-inch DIP main to replace a section of 36-inch CCP main which has been out of service since 2010. This new main will convey flow from the Santa Cruz Well Field Treatment Facility to the future Phase II replaced main, with an objective of delivering 20 MGD to the Martin Reservoir. This is in lieu of slip-lining the existing 36-inch main which would reduce capacity the main can convey, not meeting The Utility's goal of 20 MGD. This project began in Fiscal Year 2015 and will be completed in Fiscal Year 2018. Total project cost will be \$3,453,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	893	893	2,468	-	-	-	3,361

POTABLE TRANSMISSION MAINS

Sahuarita Supply Line Slip Liner							W796
DESCRIPTION:							
Design and install a high-density polyethylene pipe (HDPE) slip liner in the existing 30-inch and 36-inch concrete cylinder pipe (CCP) Sahuarita Supply Line from Lumber Street and Old Nogales Highway to Medina Road and Nogales Highway. This project will increase the capacity available from the Santa Cruz Wellfield from 12 MGD to 20 MGD. This project began in Fiscal Year 2013 and will be completed in Fiscal Year 2019. Total project cost is \$7,666,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
	78	78	1,165	6,261	-	-	7,504

Santa Cruz SC-008 Well Collector Line							W039
DESCRIPTION:							
Design and install 3,500 ft. of 12-inch HDPE collector line from existing well SC-008 to existing 30-inch transmission main. This will increase flow from the Santa Cruz Wellfield from 10 MGD to 20 MGD. This project began in Fiscal Year 2014 and will be completed in Fiscal Year 2017. Total project cost is \$341,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
	223	223	-	-	-	-	223

Santa Cruz Wellfield Pipelines							W089
DESCRIPTION:							
Design and construct two 155 foot long 30-inch and 36-inch header pipelines with butterfly valves, connecting the proposed Santa Cruz Wellfield Treatment Facility to the existing transmission main and proposed sliplined transmission main pipelines that convey water from the Santa Cruz wellfields to the Martin Reservoir and the water distribution system. Design began in Fiscal Year 2014 and construction will be completed in Fiscal Year 2018. Total project cost is \$744,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
	45	45	618	-	-	-	663

POTABLE TRANSMISSION MAINS

Santa Cruz Transmission Main Replacement Phase II

W154

DESCRIPTION:

Install approx. 1,400 LF of 36-inch main -S. Nogales Highway, east to Park Avenue and to the Martin Reservoir. The main will be in B1 water service area and in the City of Tucson ROW. This new main will convey flow from the Phase I replaced 36-inch main. Tucson Water's objective is to increase the capacity of the Santa Cruz Wellfield water that is delivered to the Martin Reservoir to 20 MGD. This project will begin in Fiscal Year 2016 and will be completed in Fiscal Year 2018. Total project cost is \$106,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	6	6	95	-	-	-	101

Santa Rita Ranch Houghton Road 12 inch Main

W768

DESCRIPTION:

Design and construct approximately 3,800 ft. of 12-inch pipe in Houghton Road between Tallahassee Road and Forrest Freezor Street with a connection to the existing 8-inch pipeline at Vista Monte Drive. The new pipeline will connect two existing 12-inch mains providing increased reliability between the South Houghton Booster Station, The Santa Rita Booster Station and the Sycamore Canyon Reservoir. Design began in Fiscal Year 2011 and construction will be completed in Fiscal Year 2017. Total project cost is \$1,014,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
200	-	200	-	-	-	-	200

South Avra Valley Storage and Recovery Project Collector Pipelines Phase II

W781

DESCRIPTION:

Design and install approximately 3,710 ft. of 16-inch pipe and 2,000 ft. of 36-inch pipe including appurtenances. This will provide collector lines to convey water from wells SA-003A, SA-010A, SA-017A, SA-018A and SA-020A to the SAVSARP reservoir. This schedule will match the drilling and equipping schedule of the SAVSARP recovery wells. This project began in Fiscal Year 2012 and will be completed in Fiscal Year 2017. Total project cost is \$1,933,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
200	669	869	-	-	-	-	869

POTABLE TRANSMISSION MAINS

SAVSARP Collector Lines Phase III							W710
DESCRIPTION:							
Install approximately 300 ft. of 16-inch pipe and 9,000 LF of 36-inch pipe and appurtenances to convey water from SAVSARP recovery wells SA-002A, SA-004A, SA-005A, SA-007A to the SAVSARP reservoir and booster station. This project will begin in Fiscal Year 2021 and will be completed in Fiscal Year 2022. Total project cost is \$1,680,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	-	-	930	
							930

SAVSARP Collector Lines Phase V							W832
DESCRIPTION:							
Install approximately 1,300 ft. of 16-inch pipe and 5,280 ft. of 24-inch pipe to convey water from wells SA-006A, SA-016A, and SA-023A, to the SAVSARP Reservoir and Booster Station. This project will begin in Fiscal Year 2020 and will be completed in Fiscal Year 2021. Total project cost is \$2,251,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	-	41	2,210	
							2,251

SAVSARP Raw Water Recovered Cathodic Protection							W046
DESCRIPTION:							
Design and construct the cathodic protection (CP) to the CAVSARP and SAVSARP pipelines. Applied CP will increase the original life span. Failure to apply CP to the pipeline will allow corrosion and over time will degrade and raise the risk of potential pipeline water leaks and possible failures. Design began in Fiscal Year 2014 and will be completed in Fiscal Year 2017. Total project cost is \$584,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
150		150	-	-	-	-	
							150

POTABLE TRANSMISSION MAINS

SAVSARP Recovered Water Transmission Main							W444
DESCRIPTION:							
Design and construct approximately 48,000 ft. of 64-inch diameter transmission main to convey up to 72,000 acre feet 11 months per year of recovered water (SAVSARP and CAVSARP) from the proposed SAVSARP reservoir and booster station to a proposed new reservoir/booster station located at the HUWTP. This project will begin in Fiscal Year 2021 and will be completed in Fiscal Year 2025. Total project cost is \$40,855,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	-	-	620	620

SC-001 & SC-004 Well Collector Transmission Main							W183
DESCRIPTION:							
Install 2,400 ft. of 12-inch and 200 ft. of 16-inch PVC collector line, connecting to the 30-inch existing main. This collector line will allow wells SC-001 and SC-004 to convey water into the Tucson Water system. This project will begin in Fiscal Year 2018 and will be completed in Fiscal Year 2020. Total project cost is \$564,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	56	244	264	-	564

SC-005 Well Collector Transmission Main							W184
DESCRIPTION:							
Install 140 ft. of 12-inch PVC collector line, connecting to the 24-inch existing main and leaving a 12-inch T&S for future connection to the parallel main. This collector line will allow well SC-005 to convey water into the Tucson Water system. This project will begin in Fiscal Year 2016 and be completed in Fiscal Year 2017. Total project cost is \$162,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	112	112	-	-	-	-	112

POTABLE TRANSMISSION MAINS

SC-013 Well Collector Transmission Lateral **W185**
DESCRIPTION:
 Install 140 ft. of 12-inch PVC transmission lateral, connecting to the 24-inch existing main. This transmission lateral will allow well SC-013 to convey water into the Tucson Water system. This project will begin in Fiscal Year 2016 and be completed in Fiscal Year 2017. Total project cost is \$150,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	100	100	-	-	-	-	100

Well W-006 Transmission Main **W074**
DESCRIPTION:
 Design and construct approximately 800 ft. of 8-inch main from Booster W01 to Insun Street along Luckett Road. The new main will tie into the existing 8-inch main. This will solve a local water delivery problem. Design began in Fiscal Year 2015 and construction will be completed in Fiscal Year 2017. Total project cost is \$339,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	307	307	-	-	-	-	307



FIVE-YEAR CIP FY's 2017-2021

(Amounts Rounded to 000's)

POTABLE DISTRIBUTION MAINS

CIP#	FY 2016 CYFWD	YEAR 1 2016-17	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	5 YEAR TOTAL
W155 Arizona Ave. Main Replacement	-	56	-	-	-	-	56
W859 Cavalier Estates Phase I	-	56	402	-	-	-	458
W076 Cocio Road Main Replacement Phase II	100	-	-	-	-	-	100
W793 Craycroft Addition Subdivision, Phase I	-	502	-	-	-	-	502
W187 Drexel I19 Crossing	-	-	-	-	60	1,178	1,238
W186 Emergency Main Replacement	-	223	225	232	240	248	1,168
W107 Extensions for New Services	-	112	112	116	120	124	584
W849 Golf Links Main Replacement Phase II	150	-	-	-	-	-	150
W858 Golf Links Main Replacement Phase V	-	558	-	-	-	-	558
W791 Maryvale Manor Subdivision, Phase I	-	-	-	975	-	-	975
W846 Maryvale Manor Subdivision, Phase II MR	-	-	-	-	564	-	564
W175 Nebraska Rd Distribution Main	-	-	-	-	300	-	300
W789 Northgate Subdivision, Phase I	400	-	-	-	-	-	400
W790 Northgate Subdivision, Phase II	-	-	-	975	-	-	975
W108 Payments To Developers For Oversized Systems	-	112	112	116	120	124	584
W109 Review/Inspect Developer-Financed Potable Projects	-	1,060	1,067	1,102	1,140	1,178	5,547
W146 River Road 12-inch Main	-	-	34	696	-	-	730
W111 Road Improvement Main Replacements	-	4,463	4,494	5,221	4,199	5,579	23,956
W850 San Paulo Village Main Replacement Phase I	-	167	-	-	-	-	167
W041 San Paulo Village Main Replacement Phase II	-	303	930	-	-	-	1,233
W071 San Paulo Village Main Replacement Phase III	-	-	56	476	-	-	532
W040 Tanque Verde Wentworth Distribution Main	-	27	252	-	-	-	279
W072 Tierra del Sol Main Replacement Phase I	-	62	472	-	-	-	534
W147 Tierra del Sol Main Replacement Phase II	-	-	-	58	504	-	562
W148 Tierra del Sol Main Replacement Phase III	-	-	-	58	744	-	802
W149 Tierra del Sol Main Replacement Phase IV	-	-	-	58	594	-	652
W060 Valve Access Vault	-	558	562	580	600	620	2,920



FIVE-YEAR CIP FY's 2017-2021

(Amounts Rounded to 000's)

POTABLE DISTRIBUTION MAINS

CIP#	FY 2016 CYFWD	YEAR 1 2016-17	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	5 YEAR TOTAL
W861 Wilmot Main Replacement	300	-	-	-	-	-	300
TOTAL POTABLE DISTRIBUTION MAINS	950	8,259	8,718	10,663	9,185	9,051	46,826

POTABLE DISTRIBUTION MAINS

Arizona Ave. Main Replacement							W155
DESCRIPTION:							
Remove and replace 250 feet of 12-inch concrete-asbestos pipe in Arizona Avenue between Broadway and Congress with new ductile iron pipe. Encase the pipe per SD-800 as needed to compensate for insufficient utility separation. The existing pipe exceeds its 60-year life expectancy and bears the foundation of an adjacent building and power pole. Construction of the AC Marriott Hotel will increase stresses. Sustained undetected leakage could undermine foundations. This began in Fiscal Year 2015 and will be completed in Fiscal Year 2017. Total project cost is \$408,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	56	56	-	-	-	-	56

Cavalier Estates Phase I							W859
DESCRIPTION:							
Design and install 3,600 feet of 8-inch pipe in Wilmot, Zuni Avenue, 31st and 29th Streets. This area has been identified as having an above average amount of main break records by Tucson Water's Customer Service and Maintenance Divisions. Much of the pipe in this neighborhood was installed in the 1950's and 1960's and has reached the end of its useful life. Design will begin in Fiscal Year 2017 and construction will be completed in Fiscal Year 2018. Total project cost is \$458,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	56	56	402	-	-	-	458

Cocio Road Main Replacement Phase II							W076
DESCRIPTION:							
Design and install 6,200 feet of 6-inch pipe, valves, and pavement replacement in El Cerrito Lane, Cocoraque Lane, Waterman Lane, Redrock Lane, Quemado Lane, and Wolcott Lane east of Cocio Road between Silverbell Road and Trico-Marana Road. This area has experienced numerous main breaks and customer outages. Design began in Fiscal Year 2015 and construction will be completed in Fiscal Year 2017. Total project cost is \$549,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
100	-	100	-	-	-	-	100

POTABLE DISTRIBUTION MAINS

Craycroft Addition Subdivision, Phase I **W793**
DESCRIPTION:

Design and install 11,900 feet of 6-inch pipe in the Craycroft Addition Subdivision Phase I, bordered by 23rd Street, 30th Street, Van Buren and Sahuara Avenue. This project will also relocate 46 water meters from alleys to the street and replace 14 existing fire hydrants. This area has been identified as having an above average amount of main break records by Tucson Water's Customer Service and Maintenance Divisions. Much of the pipe in this neighborhood was installed in the 1950's and 1960's and has reached the end of its useful life. This project began in Fiscal Year 2012 and will be completed in Fiscal Year 2017. Total project cost is \$590,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	502	502	-	-	-	-	502

Drexel I19 Crossing **W187**
DESCRIPTION:

Install 800 ft. of 24-inch main on Drexel under I-19, replacing the existing 8-inch main. Install 50 ft. of 6-inch main on Calle Pinta and connect to the 24-inch main. This project will begin in Fiscal Year 2020 and will be completed in Fiscal Year 2021. Total project cost is \$1,238,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	-	60	1,178	1,238

Emergency Main Replacement **W186**
DESCRIPTION:

This on-going project is to replace approximately 3,000 feet of 2-inch, 4-inch and 6-inch new mains on an as-needed, emergency basis. Immediate response to requests for emergency main replacements is required to reduce water loss, ensure system reliability, and maintain water quality.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	223	223	225	232	240	248	1,168

POTABLE DISTRIBUTION MAINS

Extensions for New Services							W107
DESCRIPTION:							
Design and install minor extensions from the distribution system as requested by customers. Associated costs are reimbursed by the customer. Extensions allow Tucson Water to install (or upgrade piping in order to install) new services in an expedient manner. This on-going project ensures that piping is suitable in strength and durability and is available to connect to the distribution system.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	112	112	112	116	120	124	
							584

Golf Links Main Replacement Phase II							W849
DESCRIPTION:							
Design and install 1,600 feet of 8-inch pipe in 33rd Street, 34th Street, Calle Silvosa, Sahuara and Zuni Avenues. This area has been identified as having an above average amount of main break records by Tucson Water's Customer Service and Maintenance Divisions. Much of the pipe in this neighborhood was installed in the 1950's and 1960's and has reached the end of its useful life. This project will relocate 70 water meters from alleys into streets. Design began in Fiscal Year 2015 and construction will be completed in Fiscal Year 2017. Total project cost is \$374,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
150	-	150	-	-	-	-	
							150

Golf Links Main Replacement Phase V							W858
DESCRIPTION:							
Design and install 8,550 feet of 8-inch pipe in Golf Links, Wilmot, Zuni Avenue and 32nd Street. This area has been identified as having an above average amount of main break records by Tucson Water's Customer Service and Maintenance Divisions. Much of the pipe in this neighborhood was installed in the 1950's and 1960's and has reached the end of its useful life. This project will relocate 131 water meters from alleys into streets and replace two existing fire hydrants. Design will begin in Fiscal Year 2016 and construction will be completed in Fiscal Year 2017. Total project cost is \$608,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	558	558	-	-	-	-	
							558

POTABLE DISTRIBUTION MAINS

Maryvale Manor Subdivision, Phase I							W791
DESCRIPTION:							
Design and install 4,100 feet of 6-inch pipe in the Maryvale Manor Subdivision bordered by 32nd Street, 36th Street, Van Buren and Jefferson Avenue. This area has been identified as having an above average amount of main break records by Tucson Water's Customer Service and Maintenance Divisions. Much of the pipe in this neighborhood was installed in the 1950's and 1960's and has reached the end of its useful life. This project will relocate 92 water meters from alleys into streets and replace 12 existing fire hydrants. Design began in Fiscal Year 2015 and construction will be completed in Fiscal Year 2019. Total project cost is \$1,020,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	975	-	-	975

Maryvale Manor Subdivision, Phase II MR							W846
DESCRIPTION:							
Design and install approximately 4,450 feet of 6-inch water main and 1,000 feet of 8-inch water main in the Maryvale Manor neighborhood. The new mains will replace existing 4-inch, 6-inch and 8-inch diameter cement asbestos mains which are approximately 50 years old and have experienced numerous breaks. This project includes approximately 58 meter relocations with service lines and private plumbing, service renewals/tie-overs, valves, fire hydrants, pavement replacement and other appurtenances. This project will begin and be completed in Fiscal Year 2020. Total project cost is \$564,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	-	564	-	564

Nebraska Rd Distribution Main							W175
DESCRIPTION:							
Installation of 2,100 feet of 8-inch main on Nebraska from Sunset to 800 feet West of Spencer, connecting to the existing 2-inch main. This distribution main will replace two vault PRVs (Spencer and Sheridan). The main will be in the Nebraska (unpaved) Right of Way. New customers will be added to this main. This project will begin and be completed in Fiscal Year 2020. The total project cost is \$300,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	-	300	-	300

POTABLE DISTRIBUTION MAINS

Northgate Subdivision, Phase I							W789
DESCRIPTION:							
Design and install approximately 8,000 feet of 6-inch pipe in the Northgate subdivision bordered by 22nd Street, Van Buren Avenue, 25th Street and Craycroft Road. This area has been identified as having an above average amount of main break records by Tucson Water's Customer Service and Maintenance Divisions. Much of the pipe in this neighborhood was installed in the 1950's and 1960's and has reached the end of its useful life. This project will relocate 124 water meters from alleys into streets and replace 8 existing fire hydrants. Design began in Fiscal Year 2014 and construction will be completed in Fiscal Year 2017. Total project cost is \$1,147,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
400	-	400	-	-	-	-	400

Northgate Subdivision, Phase II							W790
DESCRIPTION:							
Design and install approximately 12,900 feet of 6-inch pipe in the Northgate Subdivision bordered by Craycroft Road, 26th Street, 32nd Street, and Van Buren. This area has been identified as having an above average amount of main break records by Tucson Water's Customer Service and Maintenance Divisions. Much of the pipe in this neighborhood was installed in the 1950's and 1960's and has reached the end of its useful life. This project will relocate 73 water meters from alleys into streets and replace 14 existing fire hydrants. Construction will be completed in Fiscal Year 2019. Total project cost is \$1,000,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	975	-	-	975

Payments To Developers For Oversized Systems							W108
DESCRIPTION:							
This on-going project is to reimburse developers for the cost of oversizing water system components (pipes, mains, and boosters) when Tucson Water requests a capacity greater than needed by the development. Oversizing is sometimes required to supply future projected demands consistent with Tucson Water's long range planning and to avoid more expensive replacement in the future, after buildings and streets are constructed.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	112	112	112	116	120	124	584

POTABLE DISTRIBUTION MAINS

Review/Inspect Developer-Financed Potable Projects							W109
DESCRIPTION:							
This on-going project is to conduct plan reviews and construction inspection of developer financed water system infrastructure projects to ensure compliance with Tucson Water requirements. These systems are donated to Tucson Water upon completion. Associated costs are recovered by fees paid by the developer.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	1,060	1,060	1,067	1,102	1,140	1,178	5,547

River Road 12-inch Main							W146
DESCRIPTION:							
Design and install 5,500 feet of 12-inch pipe on River Road between Craycroft and Avenida Del Cazador. This water main will serve as a redundancy C-zone distribution main and as an emergency transmission main when the Columbus 54-inch main is out of service. The main will connect to three existing main segments on River Road in its distribution capacity. In an emergency, this main will deliver C-zone well water to the Valley View Booster Station. Design will begin in Fiscal Year 2018 and construction will be completed in Fiscal Year 2019. Total project cost is \$730,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	34	696	-	-	730

Road Improvement Main Replacements							W111
DESCRIPTION:							
This on-going project relocates water mains during road improvement projects of the City of Tucson, Pima County, Arizona Department of Transportation and other agencies, including Regional Transportation Authority (RTA) projects. Intergovernmental agreements determine the City of Tucson cost allocation for each project. Replacing water mains during roadway projects allows Tucson Water to maintain system capacity while saving money on the cost of pavement removal and replacement.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	4,463	4,463	4,494	5,221	4,199	5,579	23,956

POTABLE DISTRIBUTION MAINS

San Paulo Village Main Replacement Phase I **W850**
DESCRIPTION:

Design and install 1,600 feet of 6-inch pipe in alleyways bordered by Sylvane Street, 28th Street, Sonoita Avenue and Alamo Avenue. This area has been identified as having an above average amount of main break records by Tucson Water's Customer Service and Maintenance Divisions. Much of the pipe in this neighborhood was installed in the 1950's and 1960's and has reached the end of its useful life. This project will replace 30 service lines. Design will begin in Fiscal Year 2016 and construction will be completed in Fiscal Year 2017. Total project cost is \$217,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	167	167	-	-	-	-	167

San Paulo Village Main Replacement Phase II **W041**
DESCRIPTION:

Design and install 12,200 feet of 6-inch main in alleyways in the area of Sahuara, 28th Street, 22nd Street and Wilmot Road. This area has been identified as having an above average amount of main breaks records by Tucson Water's Customer Service and Maintenance Divisions. Much of the pipe in this neighborhood was installed in the 1950's and 1960's and has reached the end of its useful life. This project will replace 3-inch water mains in alleys and 309 water service lines. Design will begin in Fiscal Year 2017 and construction will be completed in Fiscal Year 2018. Total project cost is \$1,233,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	303	303	930	-	-	-	1,233

San Paulo Village Main Replacement Phase III **W071**
DESCRIPTION:

Design and install 4,800 feet of 6-inch main in alleyways in the area of Alamo, 25th Street, 22nd Street and Wilmot Road. This area has been identified as having an above average amount of main breaks records by Tucson Water's Customer Service and Maintenance Divisions. Much of the pipe in this neighborhood was installed in the 1950's and 1960's and has reached the end of its useful life. This project will replace 3-inch water mains in alleys and 113 water service lines. Design will begin in Fiscal Year 2018 and construction will be completed in Fiscal Year 2019. Total project cost is \$532,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	56	476	-	-	532

POTABLE DISTRIBUTION MAINS

Tanque Verde Wentworth Distribution Main							W040
DESCRIPTION:							
Design and install 2,900 feet of 8-inch pipe in Redington Road from Wentworth to Camino La Cebadilla connecting to the existing 8-inch mains. This main will improve water distribution and fire flow capacity in the E1 and G8 water service areas. Design will begin in Fiscal Year 2017 and construction will be completed in Fiscal Year 2018. Total project cost is \$279,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	27	27	252	-	-	-	
							279

Tierra del Sol Main Replacement Phase I							W072
DESCRIPTION:							
Design and install 5,000 feet of 8-inch pipe and 4,130 feet of 6-inch pipe in Alamo Road, Calle Bellatrix, 22nd Street, and Fordham Road. This area has been identified as having an above average amount of main breaks records by Tucson Water's Customer Service and Maintenance Divisions. Much of the pipe in this neighborhood was installed in the 1950's and 1960's and has reached the end of its useful life. Design will begin in Fiscal Year 2017 and construction will be completed in Fiscal Year 2018. Total project cost is \$534,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	62	62	472	-	-	-	
							534

Tierra del Sol Main Replacement Phase II							W147
DESCRIPTION:							
Design and install 3,177 feet of 8-inch pipe and 3,832 feet of 6-inch pipe in Calle Bellatrix, Avenida Regulo, Avenida Planeta, and Calle Marte. This area has been identified as having an above average amount of main breaks records by Tucson Water's Customer Service and Maintenance Divisions. Much of the pipe in this neighborhood was installed in the 1950's and 1960's and has reached the end of its useful life. Design will begin in Fiscal Year 2019 and construction will be completed in Fiscal Year 2020. Total project cost is \$562,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	58	504	-	
							562

POTABLE DISTRIBUTION MAINS

Tierra del Sol Main Replacement Phase III							W148
DESCRIPTION:							
Design and install 1,682 feet of 8-inch pipe and 10,000 feet of 6-inch pipe in Calle Betelgeux, Calle Canis, Avenida Planeta, and Kolb Road. This area has been identified as having an above average amount of main breaks records by Tucson Water's Customer Service and Maintenance Divisions. Much of the pipe in this neighborhood was installed in the 1950's and 1960's and has reached the end of its useful life. Design will begin in Fiscal Year 2019 and construction will be completed in Fiscal Year 2020. Total project cost is \$802,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	58	744	-	
							802

Tierra del Sol Main Replacement Phase IV							W149
DESCRIPTION:							
Design and install 3,742 feet of 8-inch pipe and 1,200 feet of 6-inch pipe in Calle Marte, Calle Denebola, Avenida Planeta, and Kolb Road. This area has been identified as having an above average amount of main breaks records by Tucson Water's Customer Service and Maintenance Divisions. Much of the pipe in this neighborhood was installed in the 1950's and 1960's and has reached the end of its useful life. Design will begin in Fiscal Year 2019 and construction will be completed in Fiscal Year 2020. Total project cost is \$652,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	58	594	-	
							652

Valve Access Vault							W060
DESCRIPTION:							
Design and construct vaults over butterfly valve (BFV) actuators to allow safe access for BFV actuator repair, refurbishment or replacement. Installing vaults to grade will eliminate the need to excavate roadways, reduce overall maintenance costs, and improve safety. The project will install up to 5 vaults per year prioritizing the largest and most critical BFV actuators.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	558	558	562	580	600	620	
							2,920

POTABLE DISTRIBUTION MAINS

Wilmot Main Replacement							W861
DESCRIPTION:							
Design and install approximately 4,700 feet of 12-inch pipe in Wilmot, 22nd Street to Golf Links Road. This area has been identified as having an above average amount of main breaks records by Tucson Water's Customer Service and Maintenance Division. Much of the pipe has reached the end of its useful life. This project will replace 14 existing fire hydrants. Design will begin in Fiscal Year 2015 and construction will be completed in Fiscal Year 2017. Total project cost is \$1,038,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
300		300	-	-	-	-	300



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(Amounts Rounded to 000's)

POTABLE NEW SERVICES

CIP#	FY 2016 CYFWD	YEAR 1 2016-17	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	5 YEAR TOTAL
W124 Fire Services	-	1,953	1,966	2,030	2,100	2,169	10,218
W163 Fire Hydrants in Annexation Areas	-	112	112	116	120	124	584
W114 Water Services	-	1,685	1,696	1,752	1,812	1,872	8,817
TOTAL POTABLE NEW SERVICES	-	3,750	3,774	3,898	4,032	4,165	19,619

POTABLE NEW SERVICES

Fire Services							W124
DESCRIPTION:							
Design and install fire hydrants and fire sprinkler service connections in areas needed, upon customer request and payment for work and connection fees. This on-going project is required to provide for the installation of new fire hydrants and fire services to customers upon request.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	1,953	1,953	1,966	2,030	2,100	2,169	10,218

Fire Hydrants in Annexation Areas							W163
DESCRIPTION:							
On-going installation of fire hydrants in areas of annexation. The City of Tucson is annexing various adjacent and outlying areas some of which do not have fire service. As a condition of annexation, fire service may be required and 6-inch fire hydrants will need to be installed at locations specified by the Tucson Fire Department.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	112	112	112	116	120	124	584

Water Services							W114
DESCRIPTION:							
This on-going project is for the installation of new metered water services upon customer request and payment for work and connection fees. These services include minor main connections, extensions and meters to new services.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	1,685	1,685	1,696	1,752	1,812	1,872	8,817



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GENERAL PLANT

CIP#	FY 2016 CYFWD	YEAR 1 2016-17	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	5 YEAR TOTAL
W138 Advanced Metering Infrastructure	800	815	843	926	984	372	4,740
W381 Facility Safety and Security Infrastructure	-	1,116	1,123	1,160	1,200	1,240	5,839
W800 La Entrada Structural Modernization	100	259	-	-	-	-	359
W435 Meter Upgrade and Replacement Program	-	6,722	6,767	6,845	2,879	-	23,213
W126 Miscellaneous Land & Right-of-Way Acquisitions	-	11	11	12	12	12	58
W137 Plant 2 Relocation	750	-	-	-	-	-	750
W716 Responsive Meter Replacement	-	558	562	580	600	-	2,300
W715 Source Meter Replacement	-	243	247	255	264	273	1,282
TOTAL GENERAL PLANT	1,650	9,724	9,553	9,778	5,939	1,897	38,541

GENERAL PLANT

Advanced Metering Infrastructure

W138

DESCRIPTION:

Provides for the set-up of the network software and cost of repeaters and collectors needed to read meters. This project will increase meter reading efficiency, reduce energy/fuel consumption and could provide customers with timely data to assist them with managing their water use and notify them if they have a leak. This project will begin in Fiscal Year 2016 and will be completed in Fiscal Year 2021. Total project cost is \$5,040,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
800	815	1,615	843	926	984	372	4,740

Facility Safety and Security Infrastructure

W381

DESCRIPTION:

Implementation of an enterprise-wide security system for Tucson Water. This project will include ongoing security analysis, acquisition and installation of security system hardware and software, video cameras, and sensor equipment, as well as building modifications including wiring, access card reader installations and remodel work. This long-range project will provide security for approximately 794 parcels owned by Tucson Water.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	1,116	1,116	1,123	1,160	1,200	1,240	5,839

La Entrada Structural Modernization

W800

DESCRIPTION:

This project will include a new electrical service entrance as well as other work to ensure NEC and building code compliance. Following a building assessment it was determined that several structural and electrical modifications were needed. This project began in Fiscal Year 2011 and will be completed in Fiscal Year 2017. Total project cost is \$1,884,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
100	259	359	-	-	-	-	359

GENERAL PLANT

Meter Upgrade and Replacement Program

W435

DESCRIPTION:

This project upgrades and installs replacement meters system-wide on an annual basis. Older meters become inefficient and tend to under-read water usage, and affect compliance with water loss regulations. This project began in Fiscal Year 2015 and will be completed in Fiscal Year 2020.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	6,722	6,722	6,767	6,845	2,879	-	23,213

Miscellaneous Land & Right-of-Way Acquisitions

W126

DESCRIPTION:

This on-going project provides for preliminary real estate services necessary prior to determining the feasibility of a well, booster station, reservoir or pipeline project. Services include the determination of the need for, and acquisition of, right-of-way, easements or real property.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	11	11	11	12	12	12	58

Plant 2 Relocation

W137

DESCRIPTION:

Design and construct buildings, storage, and parking for a new facility in the undeveloped area at Hayden Udall, for the relocation of Water's Property Management and Well Maintenance Sections. Design began in Fiscal Year 2015 and construction will be completed in Fiscal Year 2017. Total project cost is \$2,722,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
750	-	750	-	-	-	-	750

GENERAL PLANT

Responsive Meter Replacement

W716

DESCRIPTION:

This project provides for the replacement of meters that are not included in the on-going residential meter replacement program. This project will increase efficiency and revenues by replacing meters which were found to be under-reading or fail to read consumption properly. This project began in Fiscal Year 2008 and will be completed in Fiscal Year 2020.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	558	558	562	580	600	-	2,300

Source Meter Replacement

W715

DESCRIPTION:

This on-going project is for the installation of new magnetic meters at the wellheads to improve the accounting of how much potable water is produced. This project will assist in determining the amount of real losses versus apparent losses of water, and improve compliance with water loss regulations.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	243	243	247	255	264	273	1,282



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POTABLE TREATMENT

CIP#	FY 2016 CYFWD	YEAR 1 2016-17	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	5 YEAR TOTAL
W759 Santa Cruz Wellfield Upgrade	-	2,589	-	-	-	-	2,589
TOTAL POTABLE TREATMENT	-	2,589	-	-	-	-	2,589

POTABLE TREATMENT

Santa Cruz Wellfield Upgrade							W759
DESCRIPTION:							
This project consists of a land acquisition and design and construction of a Chemical Feed and Water Quality Monitoring Facility to provide pH adjustment, disinfection, and water quality monitoring through Supervisory Control and Data Acquisition (SCADA). This facility will ensure that pH adjustment, disinfection, and water quality monitoring will be performed in an integrated way in providing water to approximately 50,000 customers. This project began in Fiscal Year 2010 and will be completed in Fiscal Year 2017. Total project cost is \$4,700,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
	2,589	2,589	-	-	-	-	2,589



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POTABLE PROCESS CONTROL

CIP#	FY 2016 CYFWD	YEAR 1 2016-17	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	5 YEAR TOTAL
W668 Arc Flash System Upgrades	-	558	562	580	600	620	2,920
W045 Control Panel Replacements: Potable	-	112	112	116	120	124	584
W782 SCADA Potable Upgrades	1,500	7,667	5,339	5,439	5,634	4,959	30,538
TOTAL POTABLE PROCESS CONTROL	1,500	8,337	6,013	6,135	6,354	5,703	34,042

POTABLE PROCESS CONTROL

Arc Flash System Upgrades							W668
DESCRIPTION:							
Occupational Safety and Health Administration (OSHA) regulation NFPA-70E on electrical safety, requires all non-occupied Water Department sites containing electrical breakers or switchgear to be brought into compliance. This on-going project will purchase and install on-site power interrupt switches, new label plates warning of potential arc flash hazard, and new protective equipment for personnel visiting water sites.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
	558	558	562	580	600	620	2,920

Control Panel Replacements: Potable							W045
DESCRIPTION:							
This on-going project will install new control panels and electronic equipment at existing production facilities such as wells, boosters, reservoirs, and pressure reducing valve facilities. The existing control panels are approaching the end of their service life and need to be replaced to ensure system reliability.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	112	112	112	116	120	124	584

SCADA Potable Upgrades							W782
DESCRIPTION:							
The Supervisory Control and Data Acquisition (SCADA) communication infrastructure has become obsolete and needs updating. This project provides for the installation of field instrumentation, controllers, and communications equipment necessary to communicate water system flows, levels, and pressures to system operators. Existing Master Station hardware and software will be replaced with improved technology. This project began in Fiscal Year 2013 and will be completed in Fiscal Year 2021. Total project cost is \$35,673,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
1,500	7,667	9,167	5,339	5,439	5,634	4,959	30,538



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RECLAIMED SOURCE DEVELOPMENT

CIP#	FY 2016 CYFWD	YEAR 1 2016-17	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	5 YEAR TOTAL
W797 Southeast Houghton Area Recharge Project (SH	-	7,085	-	-	-	-	7,085
TOTAL RECLAIMED SOURCE DEVELOPMENT	-	7,085	-	-	-	-	7,085

RECLAIMED SOURCE DEVELOPMENT

Southeast Houghton Area Recharge Project (SHARP)							W797
DESCRIPTION:							
Tucson Water and Pima County are engaged in a jointly funded reclaimed water recharge project in the southeast Houghton Road area. The project is planned to provide the capability to recharge reclaimed water that would ordinarily be discharged into the Santa Cruz River, resulting in beneficial use of this water within the metropolitan area. Preliminary investigations began in Fiscal Year 2011, construction of the facility is scheduled for Fiscal Year 2017. Fifty percent of the total project cost will be reimbursed by Pima County. Total project cost is \$8,466,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	7,085	7,085	-	-	-	-	7,085



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RECLAIMED STORAGE

CIP#	FY 2016 CYFWD	YEAR 1 2016-17	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	5 YEAR TOTAL
W135 Houghton Reclaimed Reservoir Rehabilitation	-	-	2,837	-	-	-	2,837
W157 Tertiary Effluent Forebay Roof Improvements	-	558	3,370	-	-	-	3,928
TOTAL RECLAIMED STORAGE	-	558	6,207	-	-	-	6,765

RECLAIMED STORAGE

Houghton Reclaimed Reservoir Rehabilitation							W135
DESCRIPTION:							
Design and construct solutions to: increase site security, redesign the reservoir roof for water-tightness, add a new roof and structural upgrades. Site work will be performed to address access road repairs and general site renewal. This project will begin in Fiscal Year 2016 and construction will be completed in Fiscal year 2018. Total project cost is \$2,887,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	2,837	-	-	-	2,837

Tertiary Effluent Forebay Roof Improvements							W157
DESCRIPTION:							
Design and construct a Forebay Reservoir roof, approximately 20,400 square feet, at the Roger Road Chlorine Contact Chamber, a newly acquired asset from Pima County Wastewater. The roof will be added to maintain effluent quality, prevent algae growth and enable flexibility in the proper operations of the plant. Failing to add the roof will prevent the use of the asset and hinder the reclaimed plant operation. The forebay will also have minor repairs to the existing concrete and will be cleaned prior to operation. This project will begin in Fiscal Year 2016 and be completed in Fiscal Year 2018. The total project cost is \$3,928,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	558	558	3,370	-	-	-	3,928



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RECLAIMED PUMPING PLANT

CIP#	FY 2016 CYFWD	YEAR 1 2016-17	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	5 YEAR TOTAL
W049 Effluent Pump Station Expansion	1,500	-	-	-	-	-	1,500
W761 Reclaimed Booster Expansion	-	-	-	-	-	329	329
TOTAL RECLAIMED PUMPING PLANT	1,500	-	-	-	-	329	1,829

RECLAIMED PUMPING PLANT

Effluent Pump Station Expansion							W049
DESCRIPTION:							
This project expands the existing Tertiary / Secondary Effluent Pumping Station (T/SEPS) wetwell at Roger Road to match the filtration system upgrade (W774). Pumping capacity will be increased, a new pipeline will deliver the increased flow to the existing chlorine contact basin and a secondary gravity pipeline will be added from the basin to the existing reclaimed reservoir to reduce the likelihood of basin overflow. Construction will be completed in Fiscal Year 2017. Total project cost is \$1,583,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
1,500	-	1,500	-	-	-	-	1,500

Reclaimed Booster Expansion							W761
DESCRIPTION:							
Addition of booster pumps and appurtenances to increase reclaimed discharge capacity and modifications to adjacent piping to allow for higher flow rates and mitigate excessive piping velocities. Additional pumping capacity is needed to meet increasing reclaimed system demand which has historically grown about 1 MGD per year. This project will begin in Fiscal Year 2021 and will be completed in Fiscal Year 2023. Total project cost is \$4,579,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	-	-	-	-	-	329	329



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RECLAIMED TRANSMISSION

CIP#	FY 2016 CYFWD	YEAR 1 2016-17	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	5 YEAR TOTAL
W043 24" CCP Roger Rd. Reclaim Line Wash CX Mod	100	-	-	-	-	-	100
TOTAL RECLAIMED TRANSMISSION	100	-	-	-	-	-	100

RECLAIMED TRANSMISSION

24" CCP Roger Rd. Reclaim Line Wash CX Mods

W043

DESCRIPTION:

Replace existing 24-inch concrete cylinder pipe (CCP) with Ductile Iron Pipe (DIP) within the Roger and Sweetwater Washes. The new pipe will be placed 14 feet below the scour depth (per report) and one in-line 24-inch butterfly valve will be replaced and relocated away from the scour limits. Failure to perform this project will allow rain and flooding to erode and expose the existing pipeline, subjecting the pipe to a possible failure and release of reclaimed water. This project will begin and be completed in Fiscal Year 2017. Total project cost is \$250,000.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
100	-	100	-	-	-	-	100



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RECLAIMED DISTRIBUTION MAINS

CIP#	FY 2016 CYFWD	YEAR 1 2016-17	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	5 YEAR TOTAL
W130 Review/Inspect Developer Financed Reclaimed I	-	67	67	70	72	74	350
W645 System Enhancements: Reclaimed	-	279	281	290	300	310	1,460
TOTAL RECLAIMED DISTRIBUTION MAINS	-	346	348	360	372	384	1,810

RECLAIMED DISTRIBUTION MAINS

Review/Inspect Developer Financed Reclaimed Projects							W130
DESCRIPTION:							
This on-going project reviews plans and inspect developer constructed reclaimed systems to ensure compliance with Water Department standards. These systems are donated to the City when completed. Associated costs are recovered from fees.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	67	67	67	70	72	74	350

System Enhancements: Reclaimed							W645
DESCRIPTION:							
Design and construct reclaimed water mains during city, county, state, and other agency road improvement projects, including Regional Transportation Authority (RTA) funded projects. Intergovernmental agreements determine City of Tucson costs. This on-going project increases system capacity while reducing the cost of pavement removal and replacement by coordinating construction with the roadway projects.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	279	279	281	290	300	310	1,460



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RECLAIMED NEW SERVICES

CIP#	FY 2016 CYFWD	YEAR 1 2016-17	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	5 YEAR TOTAL
W131 New Metered Services	-	56	56	58	60	62	292
TOTAL RECLAIMED NEW SERVICES	-	56	56	58	60	62	292

RECLAIMED NEW SERVICES

W131

New Metered Services

DESCRIPTION:

This on-going project installs new metered reclaimed water services upon customer request and payment for work and connection fees.

PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	56	56	56	58	60	62	292



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RECLAIMED TREATMENT

CIP#	FY 2016 CYFWD	YEAR 1 2016-17	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	5 YEAR TOTAL
W774 Reclaimed Plant Filtration Modifications	200	558	786	-	-	-	1,544
TOTAL RECLAIMED TREATMENT	200	558	786	-	-	-	1,544

RECLAIMED TREATMENT

Reclaimed Plant Filtration Modifications							W774
DESCRIPTION:							
Filters must be expanded for the reclaimed water plant at Roger Road because Pima County has permitted its new "Agua Nueva" wastewater treatment plant as a B+ facility. The existing filter plant will be reconfigured to increase the capacity from 10 MGD to 15 MGD with provision for eventual expansion to 20 MGD. This will provide additional reliability for the reclaimed plant. Needed programming upgrades will be coordinated with ongoing SCADA work, and the wetwell will be expanded as a separate project (W049). Design began in Fiscal Year 2014 and construction will be completed in Fiscal Year 2017. Total project cost \$2,447,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
200	558	758	786	-	-	-	1,544



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RECLAIMED PROCESS CONTROL

CIP#	FY 2016 CYFWD	YEAR 1 2016-17	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	5 YEAR TOTAL
W959 Control Panels: Reclaimed	-	167	169	174	180	186	876
W783 SCADA Reclaimed Upgrades	200	270	483	-	-	-	953
TOTAL RECLAIMED PROCESS CONTROL	200	437	652	174	180	186	1,829

RECLAIMED PROCESS CONTROL

Control Panels: Reclaimed							W959
DESCRIPTION:							
This on-going project is for the design and construction of controls for reclaimed water facilities and modification of existing controls at booster stations, reservoirs, and storage facilities. These controls are needed to electronically monitor and transmit pressure, flow rates and other site condition data to the reclaimed water treatment plant where they are used to make operational decisions.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
-	167	167	169	174	180	186	876

SCADA Reclaimed Upgrades							W783
DESCRIPTION:							
The Supervisory Control and Data Acquisition (SCADA) communication infrastructure is obsolete and needs upgrading. This project provides for the installation of field instrumentation, controllers, and communications equipment needed to communicate reclaimed water system flows, levels, and pressures to system operators. Improved technology will replace existing Master Station hardware and software. Budget includes a new control center in an existing TW facility, allowing control operations of from a central location and ensuring operational efficiency. This project began in Fiscal Year 2012 and will be completed in Fiscal Year 2018. Total project cost is \$2,128,000.							
PROPOSED 2016 - 2017			PROJECTED REQUIREMENTS				FIVE YEAR TOTAL
CARRY FORWARD	NEW FUNDING	YEAR 1 TOTAL	YEAR 2 2017-18	YEAR 3 2018-19	YEAR 4 2019-20	YEAR 5 2020-21	
200	270	470	483	-	-	-	953