July 15, 2016

WATER USE SURVEY REPORT

Juan Cabrillo Elementary
30237 Morning View Dr.
Malibu, CA 90265

Account: 29-316-02550

Meters: 60104900

WaterWise Consulting, Inc.

LACWD

WaterWise Consulting, Inc.

"Conserving our natural resources for future generations"

july 15, 2016

Juan Cabrillo Elementary School
Virginia Hyatt
1651 16th Street
Santa Monica, CA 90404

Re: Water Use Survey Report

Dear Ms. Hyatt,

Los Angeles County Water District provides this Indoor/Outdoor Water Use Survey Report of your facility as part of the city's on-going efforts to assist local water consumers with water use efficiency programs.

The onsite survey was conducted on June 24, 2016 by WaterWise Consulting, Inc. (WaterWise). This report is based on the observations and data collected during the onsite inspection and subsequent interviews with site staff. The attached Water Use Survey Report includes the following items:

- Facility Description
- Evaluation of Landscape Water Use
- Survey Findings and Recommendations
- Summary of Recommendations

Implementation of the measures recommended in this report will reduce this facility's overall annual water use by approximately 490 CCF* (366,520 gallons). The corresponding water savings realized would be approximately $2,429 per year at 2015 rates. Our goal is to provide the most accurate data possible. This is only a survey-level analysis and your actual savings may differ.

Please contact Angel Juarez with WaterWise Consulting at (888) 987-9473 or via e-mail at ajuarez@waterwise-consulting.com if you have questions regarding this survey or if you need additional information. Rebates may or may not be available to your specific property. Thank you for participating in this water use survey.

Respectfully,

Angel Juarez
Programs Director
WaterWise Consulting, Inc.

**CCF is the general unit of measurement for water consumption.*
One CCF is equivalent to 748 gallons.

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Juan Cabrillo Elementary School

Report Contents

I. Executive Summary

WaterWise conducted a water use survey of the premise on June 24, 2016. Our team inspected indoor water-using fixtures and irrigation system. The section below summarizes our findings and recommendations.

- WaterWise reviewed water consumption history for this facility (July 2013 through June 2014).
- Annual total water usage is approximately 2,328 CCF (1,741,344 gallons).
- The facility experienced high water use spikes during the months of May and June.
- Allocation of water use is as follows: 80% is for landscape/irrigation, 16% is for sanitary water use, 1% for kitchen water use and 1% for janitorial water use.
- For indoor water use, we identified a total potential water savings of 145 CCF (108,460 gallons). The primary recommendations include:

  Replace twenty-two lavatory faucet aerators flowing at 2.2 gallons per minute (gpm) with 0.5 gpm models.

  Replace twenty-two flush valve toilets flowing at 1.6 gallons per flush (gpf) or more with single flush toilets flushing at 1.28 gallons per flush (gpf) or less.

- For outdoor water use, we identified a total potential water savings of 345 CCF (258,060 gallons). The primary recommendations for this facility include:

  Fix irrigation system problems.

  Replace irrigation controllers with weather based irrigation controllers (Smart Controllers).

  Upgrade irrigation controllers with rain sensors.

The implementation cost is $9,852. The estimated annual savings is $2,429. The simple payback is 3.5 years.

II. Facility Description

Aerial photograph of Malibu High School. *Source: Google Earth.*

This site is located at 30237 Morning View Dr. in Malibu, California. The property size is approximately 197,400 square feet (4.53 acres).

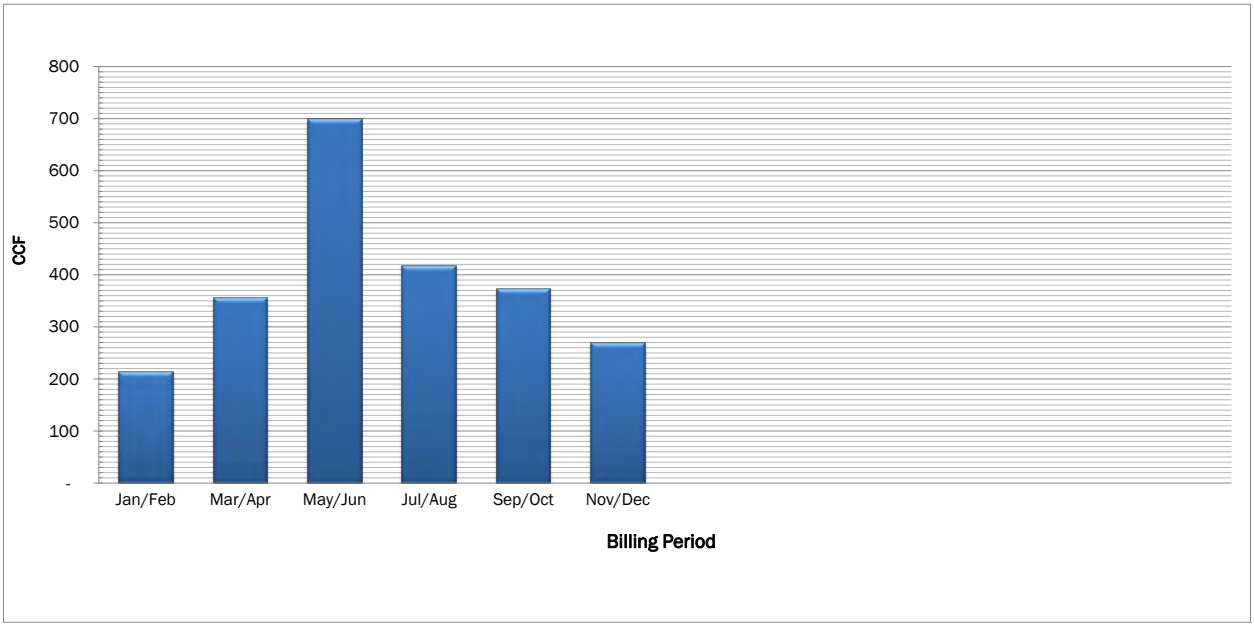
The majority of the landscape irrigation is set to overwater

The site has one mixed use meters servicing both the indoor and outdoor/landscape irrigation of the entire campus.

Water service is provided by the Los Angeles County Water District a rate of $4.95 per CCF. The sewer rate charges will not be incorporated into the cost analysis. These are the rates used in the cost analysis figures found later in this report.

III. Water Use Patterns

This facility's water is serviced by two mixed use water meters. Water use data was analyzed for the following account: 29-316-02550. This meter is read on a monthly basis. In order to accurately assess the water use and potential savings at this facility, WaterWise reviewed historical water use data in order to set a base water consumption. For this survey, WaterWise reviewed monthly water consumption records between July 2013 to June 2014.



The twelve-month water use at this facility is 2,328 CCF (1,741,344 gallons). Monthly average water use is approximately 1,700 CCF (1,271,600 gallons).

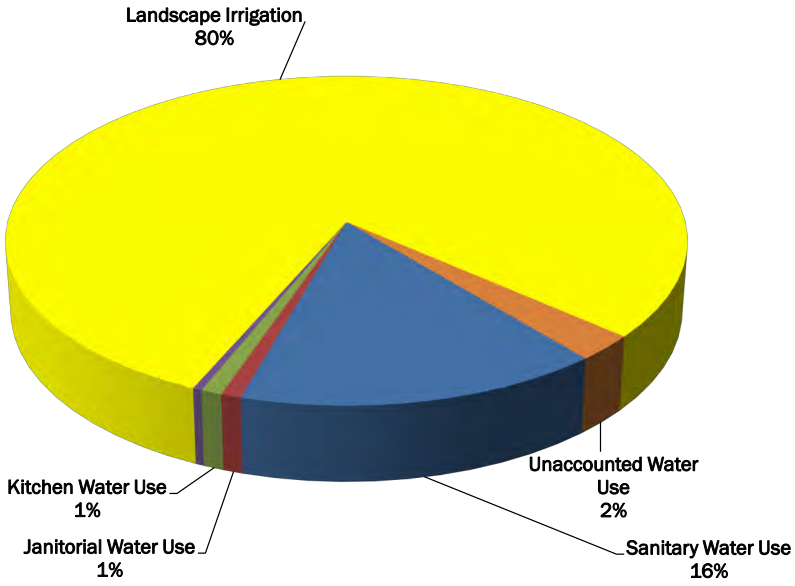
The months with the highest water use were in May and June with 699 CCF (522,852 gallons). The surveyor did not visually observe any leaks at the meter while conducting the on-site evaluation.

The months with the lowest water use were in January and February during which the facility used 214 CCF (160,072 gallons).

This is the base year water consumption established by reviewing water use history.

Water Use Allocation - Indoor and Outdoor Consumption

WaterWise was able to create an estimated water use allocation for this facility based on the site inspection and water use analysis. An allocation provides a glimpse of the water using categories for a facility. During the survey the team collected an inventory of the water using fixtures at the entire site. The pie chart below illustrates all of the main water use categories for this facility.



The estimated allocation of water use chart above shows water use at this site. The total water use is 2,328 CCF (1,741,344 gallons). The breakdown of water use per category is listed below. This allocation of water use may be helpful when deciding which recommendations should be implemented.

Landscape irrigation makes up 89%, sanitary use makes up 16%, janitorial use makes up 1% and kitchen use makes up 1%.

Category	% of Total	Annual Use (gal)	Annual Use (CCF)
Sanitary Water Use	16%	271,524	363
Janitorial Water Use	1%	14,960	20
Kitchen Water Use	1%	15,708	21
Classroom Water Use	0%	6,732	9
Landscape Irrigation	80%	1,387,540	1,855
Unaccounted Water Use	3%	44,880	60
Total Water Use	**100%**	**1,741,344**	**2,328**

Landscape Water Budget

Water budgeting is a valuable tool to further water conservation efforts. The Landscape Water Budget is an allocation of how much water a site should use for irrigation. The budget is calculated by evaluating the irrigated landscape area, the types of plant material, the weather and the irrigation efficiency. The landscape water budget provided below is based on data collected during the field survey and the factors listed below.

Plant materials have different water needs according to their drought tolerance. A plant's drought tolerance will determine Plant Factor. The higher the plant factor, the higher the water requirement. The plant factor scale ranges from 0.1 to 0.9 for most landscape plants. The plant factor is also affected for the density among landscape planting and the microclimate. The size of landscape and the types of plant materials directly affect the water budget for a site.

Weather is a factor that is evaluated as Evapotranspiration (ET). ET is a measurement of water loss from a reference plant material. The rate of water loss is affected by weather factors such as solar radiation, temperature, wind, and humidity. Reference ET is measured in inches of water loss. For this site, an annual ET of **49.6** inches was used.

Irrigation efficiency includes the efficiency of the irrigation system (Distribution Uniformity) and the efficiency of the people managing the system (Management Efficiency). Both efficiency factors are evaluated as percentages.

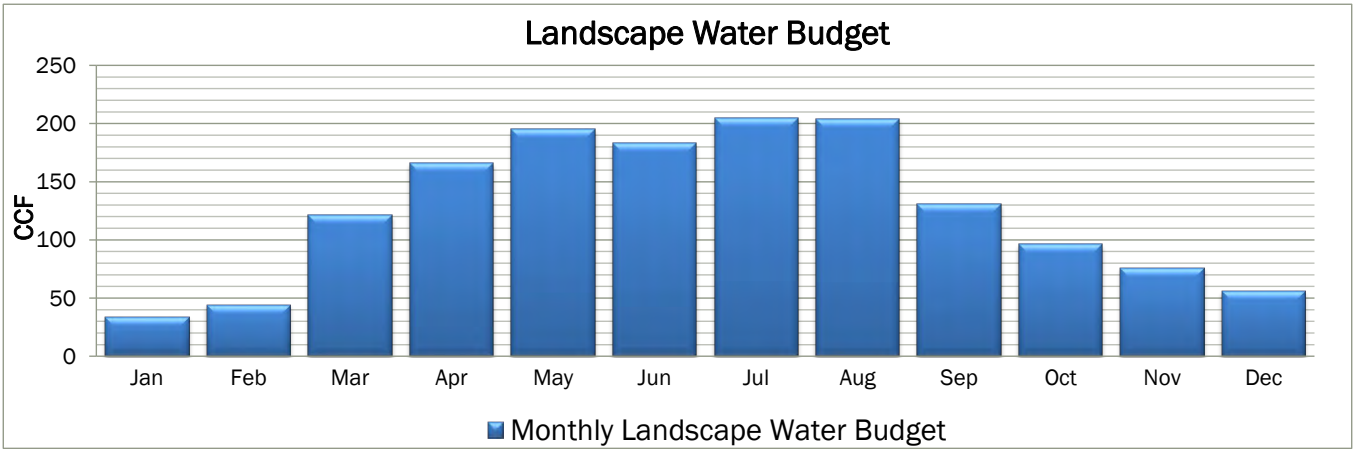
The plant factor used for the water budgets is 0.5 and the Irrigation Efficiency used is 0.85 (drip irrigation). ET is calculated monthly using 3 regional weather sensors (coast, foothills, inland).

The next section provides a site specific landscape water budget that incorporates all the factors listed

Landscape Water Budget											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
34	44	121	166	195	183	205	204	131	96	76	56
Total Site Landscape Water Budget:					1,511 CCF		or		1,130,228 gallons		

*Minimun Distribution Uniformity (DU) Spray Systems, 65%, Rotor Systems, 80%, Micro Spray and Bubbler Systems, 80%, Drip Systems, 90%

*Calculated Based on Local Weather, Landscape Area, Types of Plant Materials, and Irrigation System Variables (Type, Condition, Management).

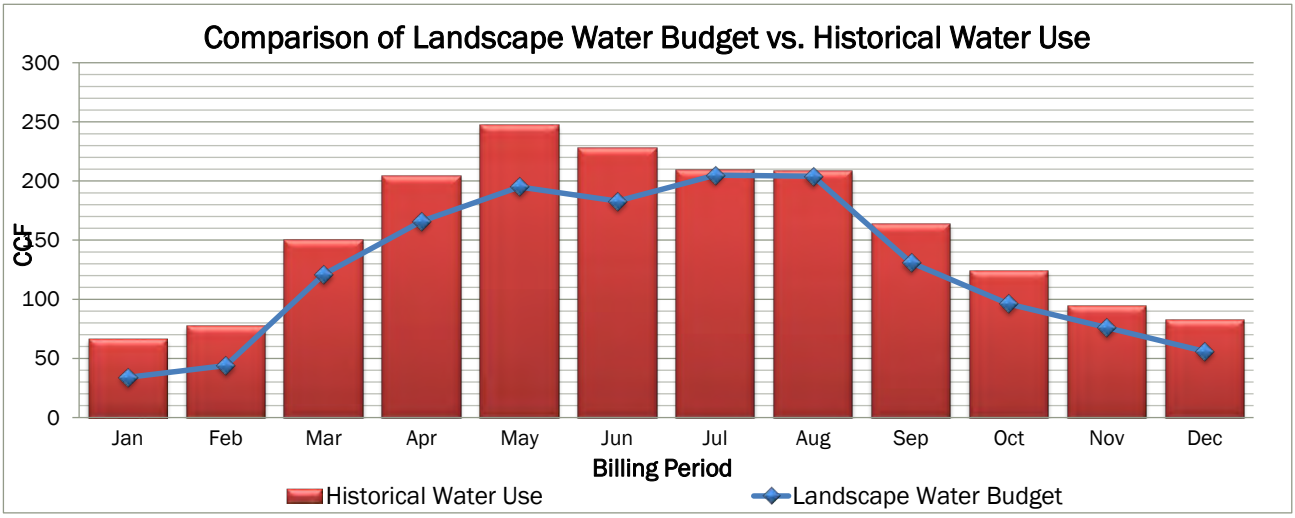


Historical Water Use vs. Landscape Water Budget

WaterWise reviewed water use records for this meter from July 2013 to June 2014 in order to establish a baseline for comparison purposes. The established baseline serves as the historical water use for this water use analysis. This facility has one mixed-use water meter for tracking indoor and outdoor water use.

The landscape water budget from the previous page is 1,511 CCF (1,130,228 gallons). WaterWise can estimate the potential water savings by comparing historical water use to the landscape water budget. According to our calculations this landscape is using approximately 344 CCF (257,312 gallons) over the budget. The table below provides a comparison of historical water use versus landscape water budget for each month of the year.

Comparison of Landscape Water Budget vs. Historical Water Use												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Landscape Water Budget	34	44	121	166	195	183	205	204	131	96	76	56
Historical Water Use	66	77	150	205	247	228	209	209	164	124	94	82
Usage Above Budget	32	33	29	39	52	45	4	5	33	28	18	26
Total Site Landscape Water Usage Above Budget:						344	CCF	or		257,312	gallons	



The following pages will provide recommendations for improving the condition of the system and the water management at this site.

IV. Survey Findings & Recommendations

The table below summarizes our recommendations for improving water use efficiency at this facility. This analysis includes the costs associated with implementing each water efficiency measure, any available rebates or incentives, total annual water savings, and the estimated annual financial savings resulting from improved efficiency in water, sewer, and energy use. The "simple payback" is the number of years it will take for the cost savings to pay for the cost of implementing the measure. Payback calculations do not account for inflation, equipment life, or operation and maintenance costs.

Summary of Recommended Water Efficiency Measures

Water Efficiency Measures	Units	Initial Cost	Rebates & Incentives	Water Savings (Gal/Yr)	Water Savings (CCF/Yr)	Annual Savings[1]	Simple Payback[2] (Years)
Sanitary Water Efficiency Recommendations							
Replace Flush Valve Toilets 1.6 gpf with Single Flush HET 1.28	22	$ 8,800	$ 880	37,400	50	$ 248	31.9
Replace Lavatory Faucet Aerators with 0.5 gpm Models	22	$ 110	$ -	71,060	95	$ 470	Less than One Year
Landscape Irrigation Recommendations							
Fix Irrigation Systems Problems	9	$ 272	$ -	142,120	190	$ 941	Less than One Year
Replace Conventional Irrigation Controller with Weather Based Irrigation Controller	3	$ 550	$ 385	66,572	89	$ 442	Less than One Year
Upgrade Irrigation Controller with Rain Sensor	3	$ 120	$ -	49,368	66	$ 328	Less than One Year
Totals:		**$ 9,852**	**$ 1,265**	**366,520**	**490**	**$ 2,429**	**3.5**

1) *The total simple payback period is based on the total implementation costs and the total savings amount (the bottom line), it is not an average of the payback periods of each recommended measure.*

Water Efficiency Recommendation:
Low Flow Lavatory Faucet Aerators

This site has 22 lavatory faucets in the public and staff restrooms that have flow rates of 2.2 gpm.

We recommend the replacement of these lavatory faucet aerators with new efficient models which have flow rates of 0.5 gpm.

The total potential water savings for replacing the faucet aerators is 95 CCF (71,060 gallons). The annual cost savings is estimated to be $470.

Lavatory Faucet

Low flow faucet aerators can be purchased at most plumbing supply distributors.

Low Flow Faucet Aerator (0.5 gpm)

Low Flow Faucet Aerators (0.5 gpm)	
Estimated Annual Water Savings	95 CCF (71,060 gallons)
Estimated Annual Cost Savings*	$470
Simple Payback in Years	Less than One Year

**Low flow aerators have an average cost of $5; Installation is not included.*

Water Efficiency Recommendation:

High Efficiency Toilets

The facility has 22 flush valve toilets located in the public and staff restrooms that flush at 1.6 gpf. These toilets should be replaced with High Efficiency Toilets (HETs) that have a flush rate of 1.28 or less gpf.

These 1.28 or less gpf toilets save water with every flush since there is only a single flush option. These models use about 20% less water than a standard 1.6 gpf toilet.

The estimated water savings from this replacement is equal to 50 CCF (37,400 gallons) per year, which will yield an estimated annual cost savings of approximately $248.

HETs can be purchased at most plumbing supply distributors.
Rebates of $40 per HET are available from Metropolitan Water District's SoCalWaterSmart Rebate Program. For more information visit:

http://socalwatersmart.comhttp://socalwatersmart.com

High Efficiency Toilet (HET)

High Efficiency Toilets	
Estimated Annual Water Savings	50 CCF (37,400 gallons)
Estimated Annual Cost Savings	$248
Estimated Cost of Fixtures	$8,800
Simple Payback in Years	25.1

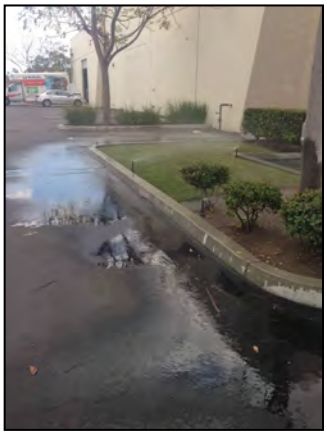
Water Efficiency Recommendation:

Irrigation System Improvements—Fix Irrigation System Problems Identified

During the inspection, WaterWise surveyors inspected three irrigation controllers and a total of 11 active irrigation stations. A total of 75 sprinkler heads were inspected. At least 9 sprinklers of the sprinkler heads have problems and need repairs. Water will be wasted with every irrigation cycle until the irrigation problems are repaired.

- The WaterWise inspection team was able to locate multiple irrigation problems at this site, such as misaligned, overspraying, clogged and blocked sprinklers.

The total potential annual water savings for fixing the irrigation system problems is 190 CCF (142,120 gallons) or approximately $941.



Overspraying Sprinklers

Example of Broken Sprinkler

Fix Irrigation System Problems	
Estimated Annual Water Savings	190 CCF (142,120 gallons)
Estimated Annual Cost Savings	$941
Estimated Implementation Cost	$272
Simple Payback in Years	Less than One Year

Water Efficiency Recommendation:
Irrigation Management Efficiency—Smart Controllers

Weather Based Irrigation Controllers (Smart Controllers) work by using specific information about the site, including weather patterns, plant types, soil type, slope, and irrigation system application rate to automatically adjust irrigation schedules. Smart Controllers help to improve the management efficiency of the irrigation system.

The irrigation system at this site is operated by three conventional irrigation controllers. We recommend retrofitting the conventional controllers to Smart Controllers.

The total potential annual water savings for improving the management of the irrigation system with Smart Controllers is 89 CCF (66,572 gallons). This is equal to approximately a $442 cost savings per year.

Smart Controllers can be purchased at most irrigation supply distributors.

Rebates of $35 per station are available from Metropolitan Water District's SoCalWaterSmart Rebate Program. For more information visit:

http://socalwatersmart.comhttp://socalwatersmart.com

Weather Based Irrigation Controller (Smart Controller)

Smart Controllers	
Estimated Annual Water Savings	89 CCF (66,572 gallons)
Estimated Annual Cost Savings	$442
Estimated Cost of Smart Controllers*	$550
Estimated Rebate Amount	$385
Simple Payback in Years	Less than One Year

*The controller cost does not include labor costs to install it. Some Smart Controllers charge a monthly or annual service fee for weather data download or communication. Smart Controllers with onsite weather monitors do not charge a service fee. The cost of retrofitting the manual control valves into automatic valves is included.

Water Efficiency Recommendation:
Irrigation Management Efficiency—Rain Sensors

A rain sensor is a water conservation device that is set to automatically shut off the irrigation system when there is rainfall. A rain sensor will automatically interrupt the watering schedule of any irrigation controller. It can be manually adjusted to become activated at various rates of rainfall. Some rain sensors will shut off the irrigation after sensing one-eighth of an inch of rainfall or less. After rainfall, the rain sensor will automatically activate the irrigation controller to resume normal operation.

We recommend upgrading the existing irrigation controllers with rain sensors. The total potential annual water savings for improving the management of the irrigation system with rain sensors is 66 CCF (49,368 gallons). This is equal to a savings of approximately $328 per year.

Rain Sensors can be purchased at most irrigation supply distributors.

Rain Sensor

Rain Sensors	
Estimated Annual Water Savings	66 CCF (49,368 gallons)
Estimated Annual Cost Savings	$328
Estimated Cost of Rain Sensors *	$120
Simple Payback in Years	Less than One Year

*Rain sensor is estimated to cost approximately $40 per unit.

V. Appendices

Appendix A: Fixture Inventory & Water Use

Existing Equipment	Number of Units	Volume of Use Use	Volume of Use Units	Annual Use (gal)	Annual Use (CCF)
Flush Valve Toilets	22	1.6	gpf	180,268	241
Waterless Urinal	9	0.0	gpf	-	-
Lavatory Faucet Aerator	1	0.5	gpm	748	1
Lavatory Faucet Aerators	22	2.2	gpm	89,760	120
Drinking Fountains	8	0.5	gpm	748	1
Bathroom Cleaning Activities				8,228	11
Utility-Janitorial Faucet	3	2.5	gpm	6,732	9
Pre-Rinse Spray Valves	1	2.0	gpm	6,732	9
Handwashing Faucets	1	2.5	gpm	2,244	3
Mixed Use Faucet	3	2.5	gpm	6,732	9
Classroom Utility Sink Faucet	5	2.5	gpm	6,732	9
Landscape Irrigation (Mixed Meter)				1,387,540	1,855
Unaccounted Water Use				44,880	60
Total Water Use:				**1,741,344**	**2,328**

Notes:
1. *CCF is equivalent to 748 gallons, a standard billing unit for water*
2. *GAL: gallons*
3. *GPF: gallons per flush*
4. *GPM: gallons per minute*
5. *GPD: gallons per day*

Appendix B: Location of Plumbing Fixtures

Toilet Location for Recommended Retrofits					
Restroom Description/Location	No. of Restrooms	Toilets per Restroom	Current Toilets		Recommendation
			Type	GPF	
Girl's 1	1	4	Flush Valve Toilet	1.6	Replace with Flush Valve Toilet 1.28 gpf
Boy's 1	1	1	Flush Valve Toilet	1.6	Replace with Flush Valve Toilet 1.28 gpf
Girl's 2	1	3	Flush Valve Toilet	1.6	Replace with Flush Valve Toilet 1.28 gpf
Boy's 2	1	1	Flush Valve Toilet	1.6	Replace with Flush Valve Toilet 1.28 gpf
Staff 1	1	1	Flush Valve Toilet	1.6	Replace with Flush Valve Toilet 1.28 gpf
Principle	1	1	Flush Valve Toilet	1.6	Replace with Flush Valve Toilet 1.28 gpf
Preschool Unisex	1	2	Flush Valve Toilet	1.6	Replace with Flush Valve Toilet 1.28 gpf
Girl's Kindergarten	1	4	Flush Valve Toilet	1.6	Replace with Flush Valve Toilet 1.28 gpf
Boy's Kindergarten	1	1	Flush Valve Toilet	1.6	Replace with Flush Valve Toilet 1.28 gpf
Staff 2	1	1	Flush Valve Toilet	1.6	Replace with Flush Valve Toilet 1.28 gpf
Nurse's Office	1	1	Flush Valve Toilet	1.6	Replace with Flush Valve Toilet 1.28 gpf
Boy's Auditorium	1	1	Flush Valve Toilet	1.6	Replace with Flush Valve Toilet 1.28 gpf
Girl's Auditorium	1	1	Flush Valve Toilet	1.6	Replace with Flush Valve Toilet 1.28 gpf

Lavatory Faucet Location for Recommended Retrofits					
Restroom Description/Location	No. of Restrooms	Lavatory Faucets per Restroom	Current Lavatory Faucets		Recommendation
			Type	GPM	
Girl's 1	1	3	Lavatory Faucet Aerator	2.2	Replace with 0.5 gpm
Boy's 1	1	3	Lavatory Faucet Aerator	2.0+	Replace with 0.5 gpm
Girl's 2	1	2	Lavatory Faucet Aerator	2.0+	Replace with 0.5 gpm
Boy's 2	1	3	Lavatory Faucet Aerator	2.2	Replace with 0.5 gpm
Staff 1	1	1	Lavatory Faucet Aerator	2.0+	Replace with 0.5 gpm
Principle	1	1	Lavatory Faucet Aerator	2.0+	Replace with 0.5 gpm
Preschool Unisex	1	1	Lavatory Faucet Aerator	2.0+	Replace with 0.5 gpm
Girl's Kindergarten	1	2	Lavatory Faucet Aerator	2.0+	Replace with 0.5 gpm
Boy's Kindergarten	1	2	Lavatory Faucet Aerator	2.0+	Replace with 0.5 gpm
Staff 2	1	1	Lavatory Faucet Aerator	2.0+	Replace with 0.5 gpm
Nurse's Office	1	1	Lavatory Faucet Aerator	2.0+	Replace with 0.5 gpm
Boy's Auditorium	1	1	Lavatory Faucet Aerator	2.2	Replace with 0.5 gpm
Girl's Auditorium	1	1	Lavatory Faucet Aerator	2.2	Replace with 0.5 gpm

Notes:
1. *CCF is Hundred Gallons, a standard billing unit for water, and is equivalent to 100 gallons.*
2. *GAL: gallons*
3. *GPF: gallons per flush*
4. *GPM: gallons per minute*
5. *GPD: gallons per day*

Appendix C: Irrigation System Inspection Summary
Controller One

Meter Number:		Choose "Yes" for the Month that the Controller is Shut Off:	No	No	No	No	No	No	No	No	No	No	No	No	Date:	November	9	
Auditor Name:	Charlie		Area Description:	Field														
Irrigation Controller Make & Model:	Irritrol MC8		Controller Type:	Conventional Controller	Existing Sensor:	None	Total Stations:	6	Active Stations:	6	Stations Inspected:	6						
Controller Location:	On Field		Programs:	1	Start Times:	1	Booster Pump:	No	HP Electric Motor:		Total Area:	30,000						

Water Management Proposed	
Replace Irrigation Controller:	Smart Controller (Weather Based)
Upgrade Smart Controller (Weather Based) with a Rain Sensor:	Yes

Station Number	Landscape Area								Irrigation System Type							Controller Programs		Sprinkler Problems									System Condition					Landscape and System Upgrades Proposed	
	Area per Station (sq ft)	Plant Material	Microclimate	Plant Density	Stress Factor	Root Zone Depth (if it is known)	Soil Type	Slope Condition	Irrigation System Primary Type	Total # Sprinklers	Irrigation System Secondary Type	Total # Sprinklers	Precipitation Rate Over the Area (in/hr)	Sprinklers Factor for Rotors	% Wetted Soil (Drip or Bubbler)	Assign Program (Current System)	Assign Program (System Upgraded)	Low	Tipped	Arc Misaligned	Overspray	Clogged	Spray Blocked	Leaking	Broken	No-Rotation	Pressure Reading	Broken Irrigation Line	Valve Malfunction	System Condition or Distribution Uniformity	Picture #	Replace Unused Area of Lawn	System Upgrades Proposed
1	5,000	Warm Season Turfgrass	A	A			CL	SL	R	9						A	A													G			
2	5,000	Warm Season Turfgrass	A	A			CL	SL	R	7						A	A													G			
3	5,000	Warm Season Turfgrass	A	A			CL	SL	R	7						A	A													G			
4	5,000	Warm Season Turfgrass	A	A			CL	SL	R	4						A	A													G			
5	5,000	Warm Season Turfgrass	A	A			CL	SL	R	4						A	A													G			
6	5,000	Warm Season Turfgrass	A	A			CL	SL	R	4						A	A													G			

Appendix C: Irrigation System Inspection Summary
Controller Two

Meter Number:		Choose "Yes" for the Month that the Controller is Shut Off:	No	No	No	No	No	No	No	No	No	No	No	No	Date:				Water Management Proposed	
Auditor Name:	Charlie		Area Description:	CAMPUS															Replace Irrigation Controller:	Smart Controller (Weather Based)
Irrigation Controller Make & Model:	IRRITROL RD900		Controller Type:	Conventional Controller		Existing Sensor:	None		Total Stations:	2	Active Stations:	2	Stations Inspected:	2					Upgrade Smart Controller (Weather Based) with a Rain Sensor:	Yes
Controller Location:	CAMPUS		Programs:	1		Start Times:	1		Booster Pump:	No	HP Electric Motor:	n	Total Area:	4,200						

Station Number	Landscape Area								Irrigation System Type							Controller Programs		Sprinkler Problems									System Condition					Landscape and System Upgrades Proposed	
	Area per Station (sq ft)	Plant Material	Microclimate	Plant Density	Stress Factor	Root Zone Depth (if it is known)	Soil Type	Slope Condition	Irrigation System Primary Type	Total # Sprinklers	Irrigation System Secondary Type	Total # Sprinklers	Precipitation Rate Over the Area (in/hr)	Sprinklers Factor for Rotors	% Wetted Soil (Drip or Bubbler)	Assign Program (Current System)	Assign Program (System Upgraded)	Low	Tipped	Arc Misaligned	Overspray	Clogged	Spray Blocked	Leaking	Broken	No-Rotation	Pressure Reading	Broken Irrigation Line	Valve Malfunction	System Condition or Distribution Uniformity	Picture #	Replace Unused Area of Lawn	System Upgrades Proposed
1	2,100	Planter Medium	A	A			CL	SL	S	11	R	1				A	A				2									A			
2	2,100	Warm Season Turfgrass	A	A			CL	SL	R	15	S	1				A	A			1	3		1							A			

Appendix C: Irrigation System Inspection Summary Controller Three

Meter Number:		Choose "Yes" for the Month that the Controller is Shut Off:	No	No	No	No	No	No	No	No	No	No	No	No	Date:			**Water Management Proposed**
Auditor Name:	Charlie		Area Description:	Inner Campus														Replace Irrigation Controller: Smart Controller (Weather Based)
Irrigation Controller Make & Model:	IRRITROL RD600		Controller Type:	Conventional Controller		Existing Sensor:	None		Total Stations:	3	Active Stations:	3	Stations Inspected:	3				Upgrade Smart Controller (Weather Based) with a Rain Sensor: Yes
Controller Location:	Side of Building		Programs:	1		Start Times:	1		Booster Pump:	No	HP Electric Motor:		Total Area:	4,500				

Station Number	Area per Station (sq ft)	Plant Material	Microclimate	Plant Density	Stress Factor	Root Zone Depth (if it is known)	Soil Type	Slope Condition	Irrigation System Primary Type	Total # Sprinklers	Irrigation System Secondary Type	Total # Sprinklers	Precipitation Rate Over the Area (in/hr)	Sprinklers Factor for Rotors	% Wetted Soil (Drip or Bubbler)	Assign Program (Current System)	Assign Program (System Upgraded)	Low	Tipped	Arc Misaligned	Overspray	Clogged	Spray Blocked	Leaking	Broken	No-Rotation	Pressure Reading	Broken Irrigation Line	Valve Malfunction	System Condition or Distribution Uniformity	Picture #	Replace Unused Area of Lawn	System Upgrades Proposed
	Landscape Area								Irrigation System Type							Controller Programs		Sprinkler Problems									System Condition					Landscape and System Upgrades Proposed	
1	1,500	Warm Season Turfgrass	A	A			CL	SL	R	4						A	A					1								P			
2	1,500	Warm Season Turfgrass	A	A			CL	SL	R	3	S	1				A	A													P			
3	1,500	Warm Season Turfgrass	A	A			CL	SL	R	4						A	A				1									P			

Appendix D: Inventory of Irrigation Equipment

Inventory of Controllers

Controller Index	Controller Brand & Model	Area (sq ft)	Total Stations	Active Stations	Stations Inspected	Irrigation Controller Type	Existing Sensor	Booster Pump	Electric Motor (HP)
1	Irritrol MC8	30,000	6	6	6	Conventional Controller	None	No	0
2	IRRITROL RD900	4,200	2	2	2	Conventional Controller	None	No	n
3	IRRITROL RD600	4,500	3	3	3	Conventional Controller	None	No	0

Inventory of Sprinklers

Controller Index	Controller Brand & Model	Total Sprinklers	Rotors	Impact Rotors	Stream Rotors	Rotary Nozzles	Precision Nozzles	Sprays	Stream Sprays	Bubblers	Micro Sprays	Drip Stations
1	Irritrol MC8	35	35	0	0	0	0	0	0	0	0	0
2	IRRITROL RD900	28	16	0	0	0	0	12	0	0	0	0
3	IRRITROL RD600	12	11	0	0	0	0	1	0	0	0	0

Inventory of Irrigation Problems

Controller Index	Controller Brand & Model	Total Problems	Low	Tipped	Arc Misaligned	Over-Spray	Clogged	Spray Blocked	Leaking Sprinklers	Broken Sprinklers	Broken Lines	None-Operating Valve
1	Irritrol MC8	0	0	0	0	0	0	0	0	0	0	0
2	IRRITROL RD900	7	0	0	1	5	0	1	0	0	0	0
3	IRRITROL RD600	2	0	0	0	1	1	0	0	0	0	0

Appendix E: Certified Landscape Irrigation Auditor

Disclaimer

The intent of this report is to estimate water savings associated with recommended upgrades to water-using fixtures at the surveyed site. Appropriate details are included in this report to make decisions about implementing water-use efficiency measures at the facility. However, this report is not intended to serve as a detailed engineering design document, for the description of the improvements are diagrammatic in nature only. The report documents the basis of cost estimates and savings and demonstrates the feasibility of implementing the improvements.

It should be noted that detailed design efforts may be required in order to implement several of the improvements evaluated as part of this water-use analysis. While the recommendations in this report have been reviewed for technical accuracy and are believed to be reasonable and accurate, the findings are estimates and actual results may vary. As a result, WaterWise is not liable if projected estimated savings or economics are not actually achieved.

All savings and cost estimates in the report are for informational purposes, and are not to be construed as a design document. The report and its recommendations do not constitute any warranties, expressed or implied. In no event will WaterWise be liable for the failure of the customer to achieve a specified amount of water savings, the operation of customer's facilities, or any incidental or consequential damages of any kind in connection with this report or the installation of recommended measures.