

# IDAHO WASHINGTON AQUIFER COLLABORATIVE

- WHAT IS THE IDAHO WASHINGTON AQUIFER COLLABORATIVE (IWAC)?
- WHO ARE THE IWAC MEMBERS?
- WHY ARE WE HERE TODAY?
- WHY DO WE CARE?
- WHAT PROJECTS WE ARE INVOLVED WITH?



MODEL EFFICIENT IRRIGATION AND LANDSCAPE DESIGN GUIDELINES

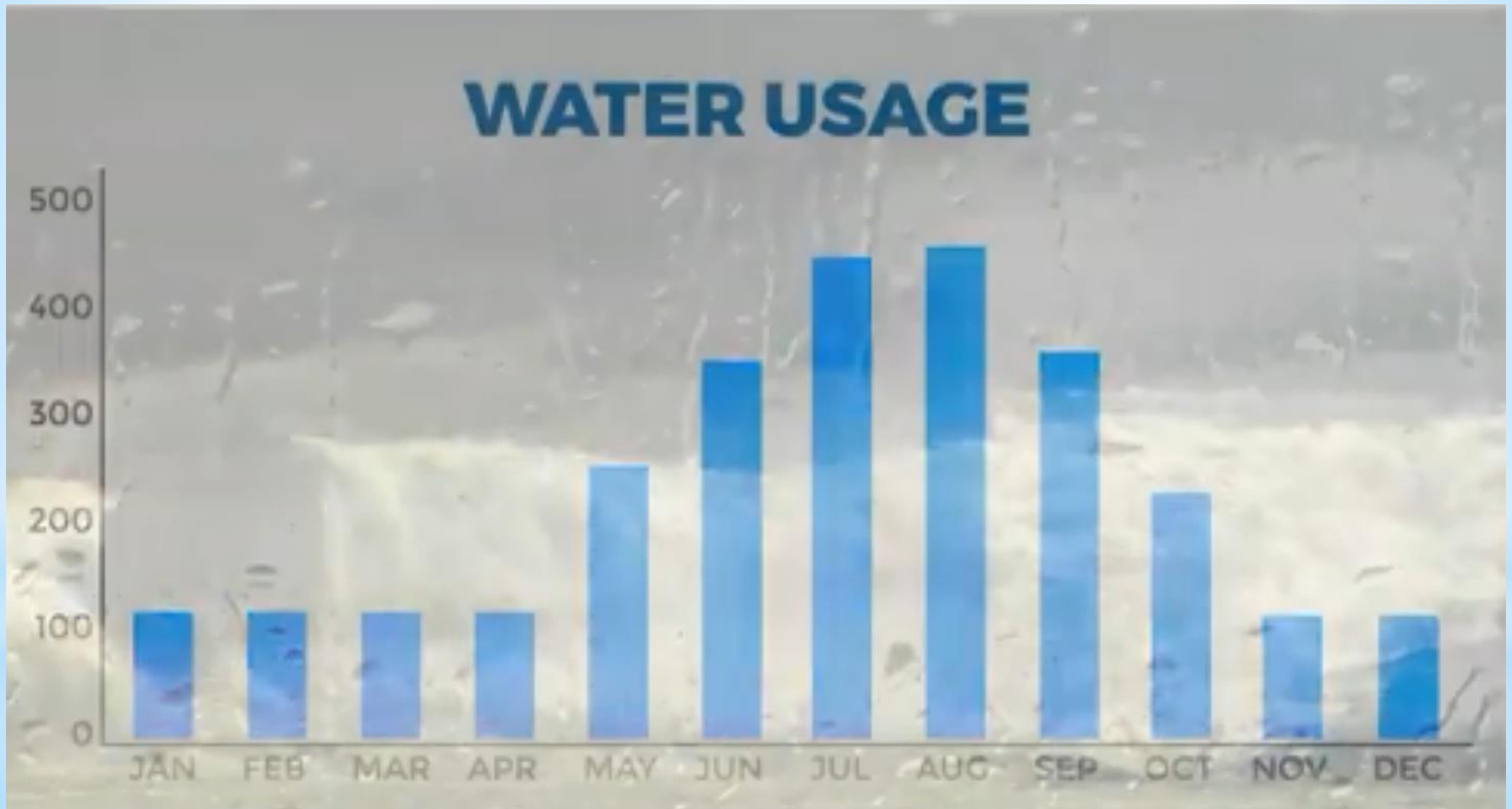
# IDAHO WASHINGTON AQUIFER COLLABORATIVE



- DO YOU REALIZE THAT 50% TO 70% OF AVERAGE SUMMER USE IS ATTRIBUTED TO OUTDOOR USE SUCH AS MAINTENANCE, RECREATION, BUT MOSTLY IRRIGATION?
- HOW DOES THIS AFFECT YOUR BOTTOM LINE?



# WATER USAGE ACROSS THE SVRP AQUIFER TRIPLES DURING THE SUMMER



# IDAHO WASHINGTON AQUIFER COLLABORATIVE



- HOW OFTEN DO YOU RECEIVE COMPLAINTS FROM THE PUBLIC ABOUT THIS PROBLEM?
- WHAT ISSUES CAN THIS CAUSE?
  - STORMWATER POLLUTION
  - PROPERTY DAMAGE
- REMEMBER, “ONLY RAIN DOWN THE DRAIN!”



# IRRIGATION AND LANDSCAPE DESIGN STANDARDS

- LANDSCAPE IRRIGATION INDUSTRY LACKS NATIONAL OR INTERNATIONAL STANDARDS FOR CONSTRUCTION AND OPERATION.
- MOST JURISDICTIONS DO NOT HAVE STRONG PROVISIONS FOR WATER EFFICIENCY WITHIN THEIR LANDSCAPE CODES.



# Importance of Distribution Uniformity

DU measures how uniformly an irrigation system applies water to the landscape.

<b>DU %</b>	<b>Water the plant needs</b>	<b>÷</b>	<b>DU Decimal</b>	<b>=</b>	<b>Amount of water you need to keep the dry areas green</b>
30%	1 inch	÷	0.3	=	3.33 inches
50%	1 inch	÷	0.5	=	2.00 inches
70%	1 inch	÷	0.7	=	1.42 inches

<b>Excellent (Achievable)</b>	<b>Good (Expected)</b>	<b>Poor (Common)</b>
75%	60%	50%



**Irrigation Inefficiencies**  
Betty Kiefer Elementary - Rathdrum

Google Earth

300 ft

8/2011 - BETTY KIEFER ELEMENTARY SCHOOL RATHDRUM, ID



**8/2011 - WOODLAND MIDDLE SCHOOL COEUR D'ALENE, ID**





**Irrigation Inefficiencies**  
Highlands Golf Course - Post Falls

**8/2011 - HIGHLANDS GOLF COURSE POST FALLS, ID**



**Irrigation Inefficiencies**  
Liberty Lake Elementary - Liberty Lake

Google Earth

300 ft



**8/2011 - LIBERTY LAKE ELEMENTARY LIBERTY LAKE, WA**

**Irrigation Inefficiencies**  
Valley Christian School - Spokane Valley



Google Earth

300 ft

**8/2011 - VALLEY CHRISTIAN SCHOOL SPOKANE VALLEY, WA**



# Irrigation Inefficiencies

Whitman Elementary - Spokane

8/2011 - WHITMAN ELEMENTARY SCHOOL SPOKANE, WA



**VS.**



## TRADITIONAL SPRAY HEAD

FLOW (GPM) = 0.1 TO 5.52

EXAMPLE:

TRADITIONAL 1.85 X 20 MIN = 37 GAL

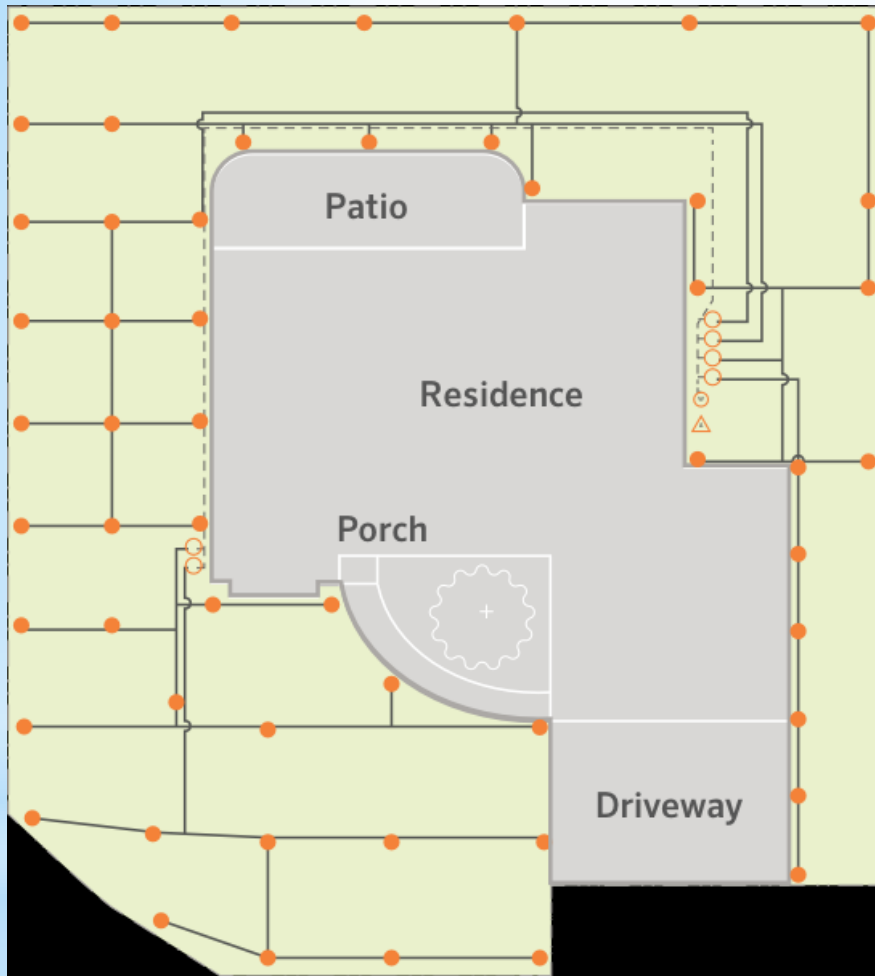
MP ROTATOR 0.50 X 20 MIN = 10 GAL

= 73% REDUCTION

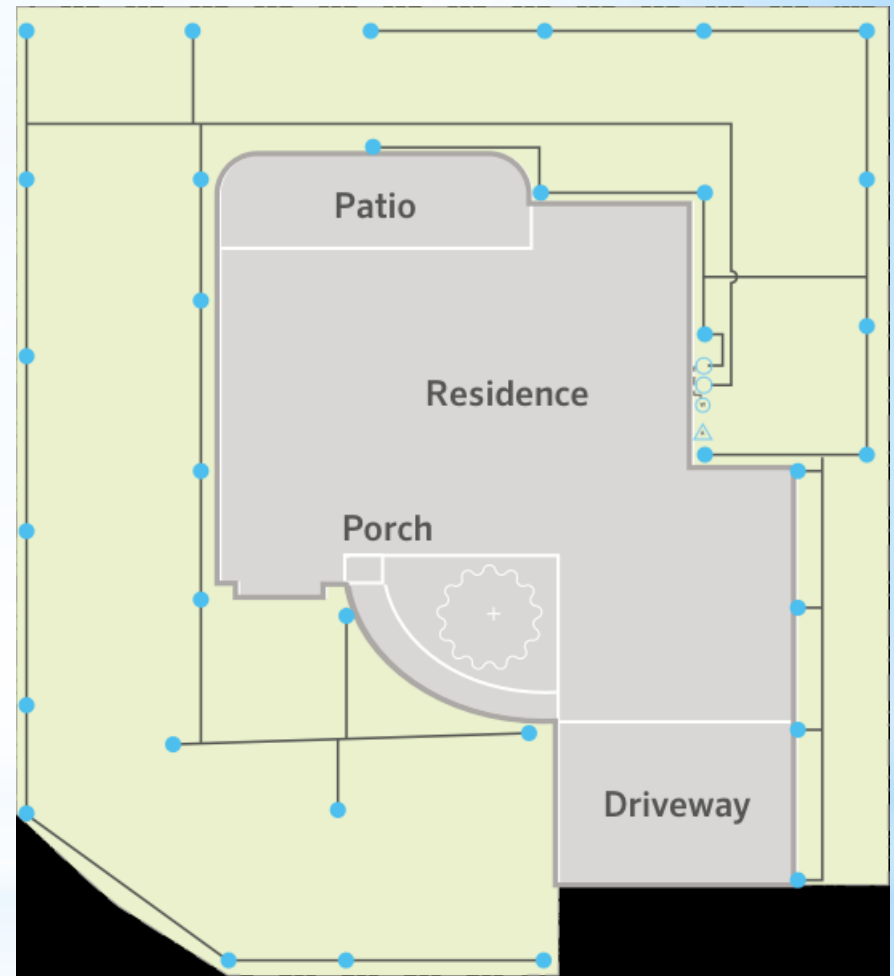
## MP ROTATOR

FLOW (GPM) = 0.17 TO 1.01

## DESIGN USING TRADITIONAL SPRAYS



## DESIGN USING MP ROTATORS



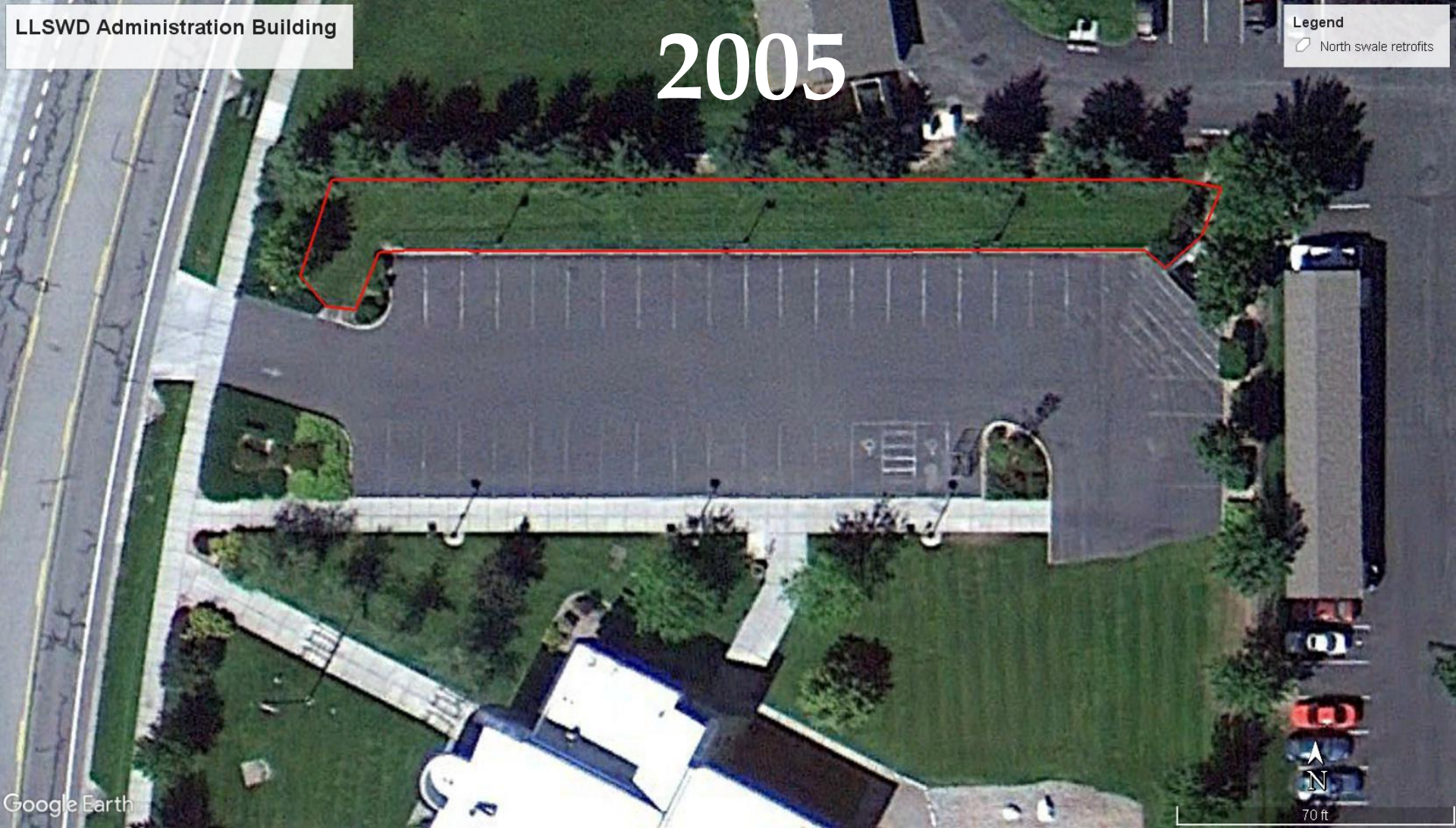
<https://www.hunterindustries.com/mp-smarter-faster-better>



# LIBERTY LAKE SEWER AND WATER DISTRICT EXAMPLE

- 2.4 ACRES. AUDITED IN JUNE 2005. SYSTEM EFFICIENCY (DU) WAS 44%
- IMPLEMENTED LANDSCAPE MEASURES (PRESSURE REGULATION, MATCHED AND ALIGNED ROTOR HEADS, AND INSTALLED SENSOR-BASED TECHNOLOGY)
- COST UNDER \$500 (INCLUDING SOIL SENSOR)
- 8/2011 • REDUCED WATER BY 36% THE FOLLOWING YEAR AND IMPROVED DU TO 61%

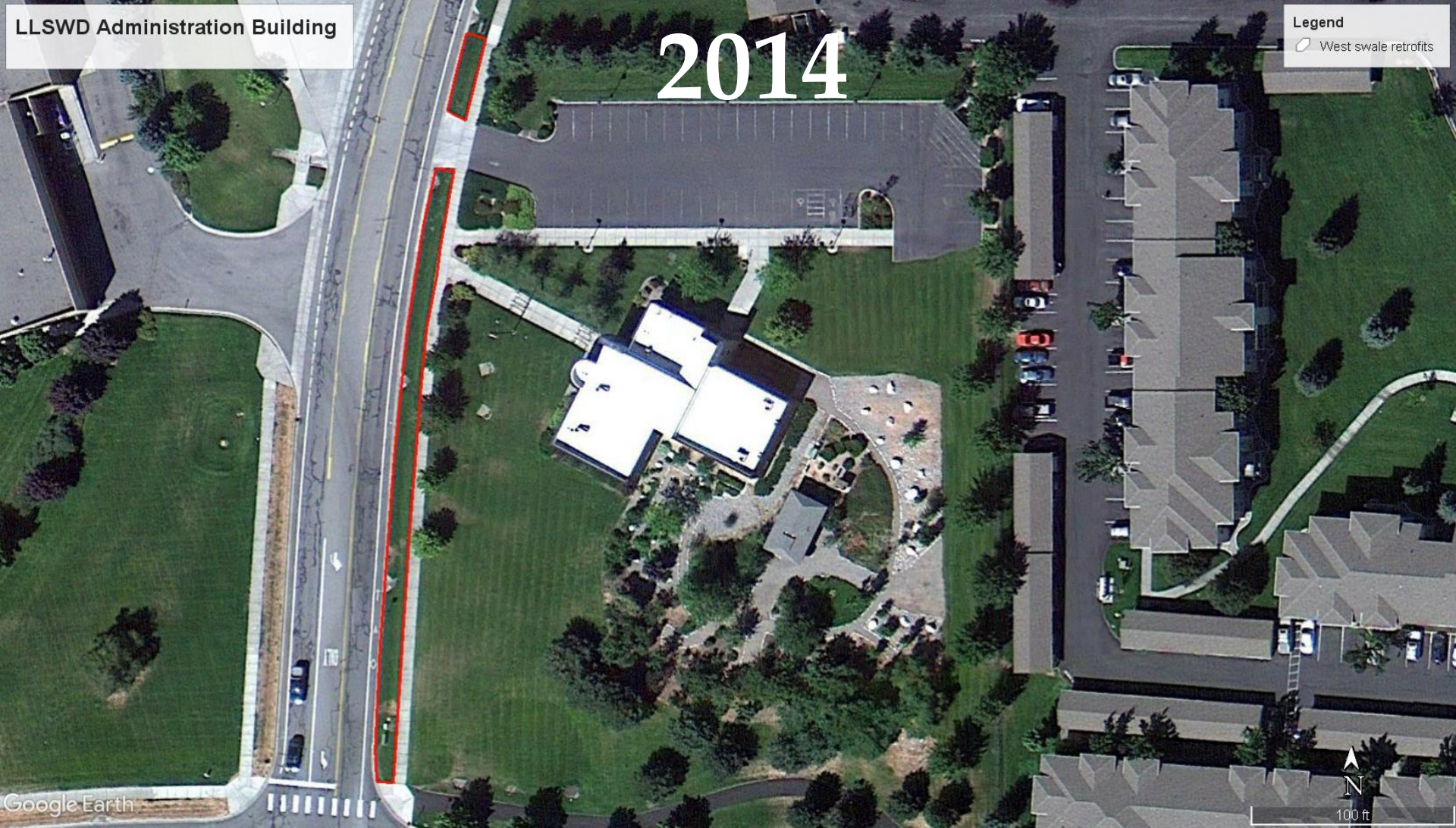
# 2005



- **RETROFITTED 22 SPRAY HEADS TO MP2000 ROTATORS**
- **OBSERVED WATER SAVINGS WAS 2.66 GPM TO 0.71 GPM PER HEAD**
- **RECOGNIZED SAVINGS = 42.9 GALLONS PER MINUTE THE SYSTEM RUNS**



2014



Google Earth

- 61 SPRAY HEADS - 34 WERE RETROFITTED TO MP1000 ROTATORS AND 27 WERE ELIMINATED.
- OBSERVED WATER SAVINGS WAS 1.85 GPM TO 0.50 GPM PER HEAD
- RECOGNIZED SAVINGS = 95.85 GALLONS PER MINUTE THE SYSTEM RUNS

# WATER EFFICIENT LANDSCAPE DESIGN



- Traditional turf landscapes require extensive watering, fertilization, and pesticide application.
- Drought-tolerant and water-smart landscaping can be designed to be aesthetically pleasing, save water, and protect the environment.

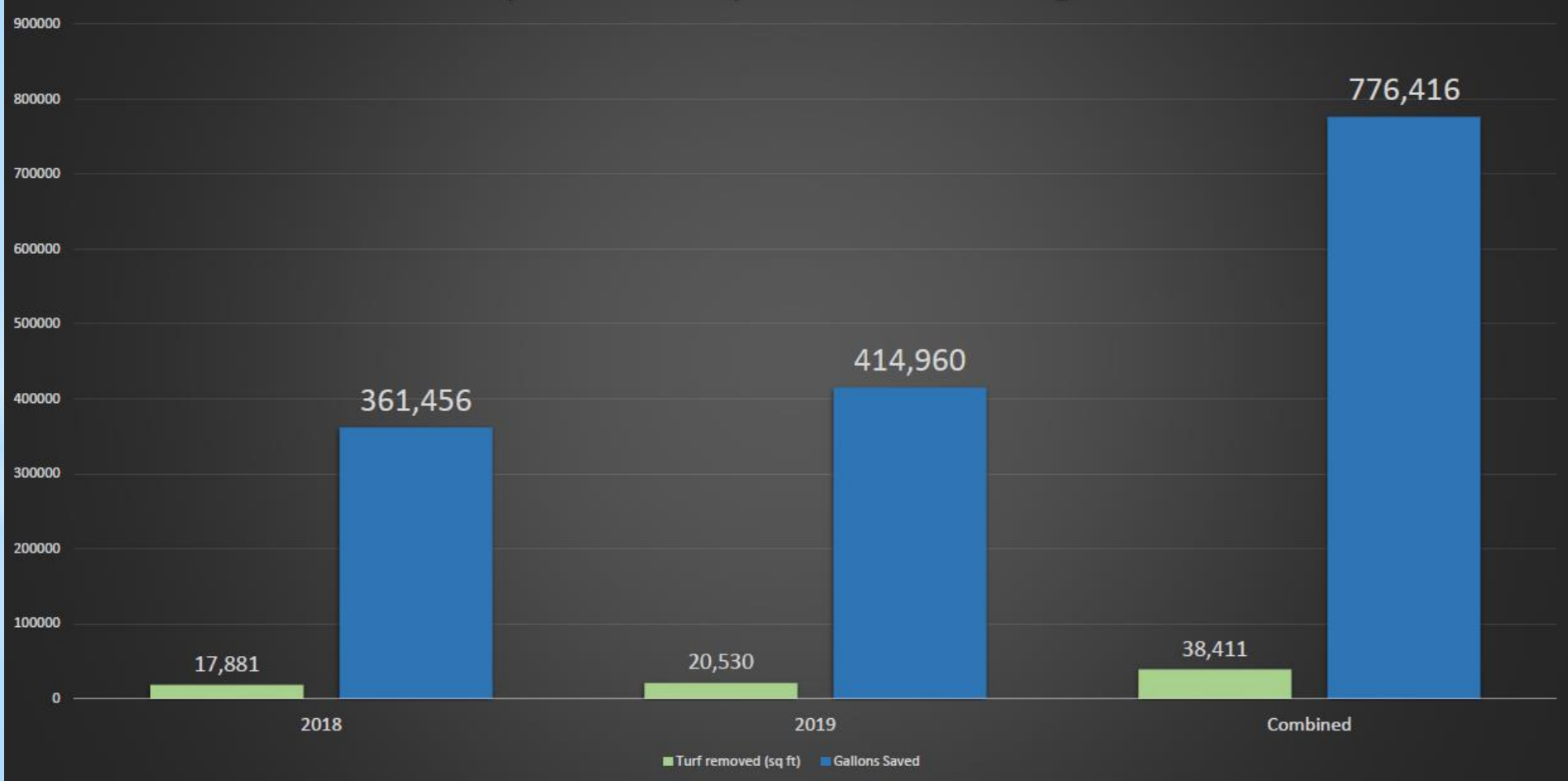


## Case Study: SpokaneScape

- The City of Spokane established a turf replacement rebate program for water customers in 2018
  - Incentivizes customers to replace turf with drought tolerant plantings, efficient irrigation and mulch.
  - Offers \$0.50/square foot for converted space, up to \$500

SpokaneScape is water-efficient landscape that has been designed specifically for the **unique climate of the Inland Northwest**- it's a landscape that **works for where you live.**

## SpokaneScape Water Savings

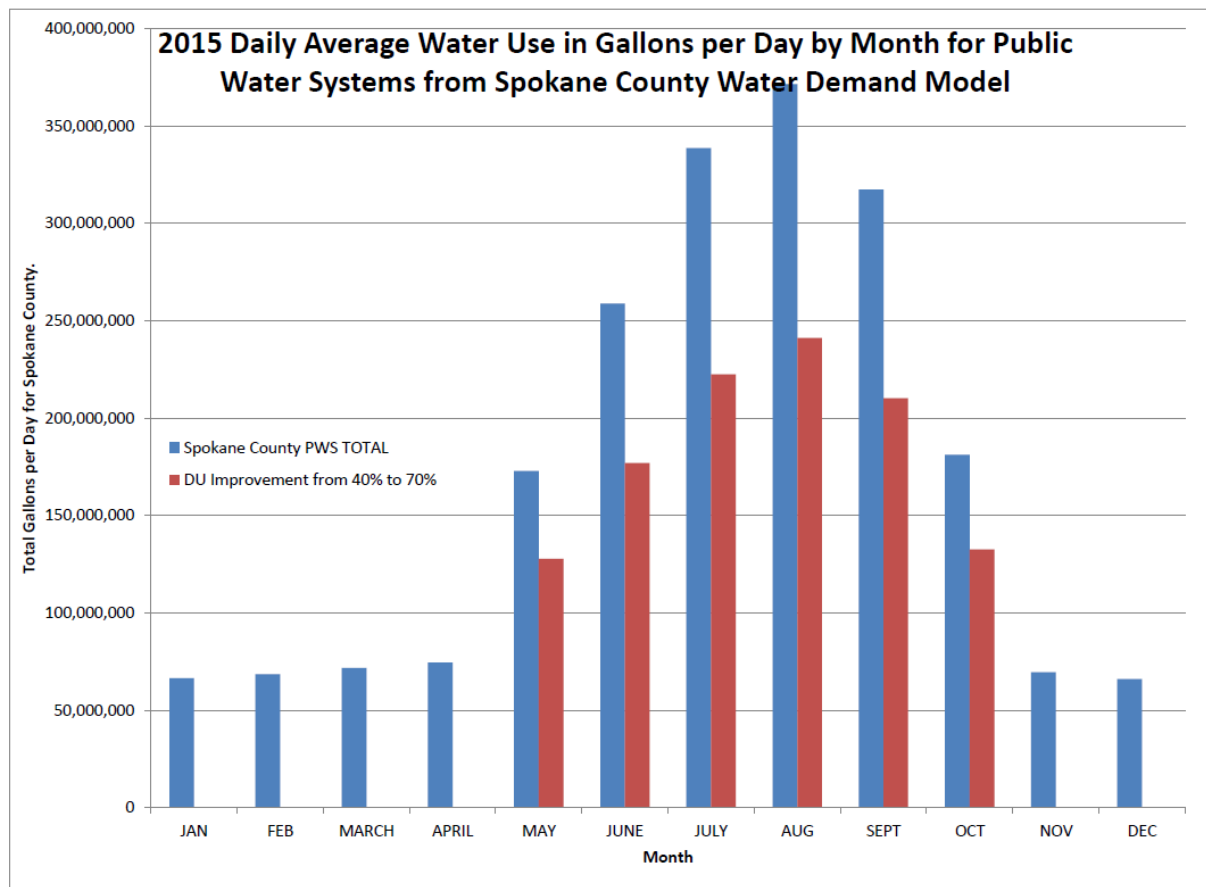


\*SpokaneScape Saves: 133 gpd/1,000sf

The Inland Northwest is different—our weather, precipitation, climate, and even culture are unique from other parts of the country. So, it only makes sense that to grow right, **our landscapes need to be different too.**



# IDAHO WASHINGTON AQUIFER COLLABORATIVE



- WHAT IF WE COULD DOUBLE IRRIGATION SYSTEM EFFICIENCY?
- WE COULD CUT OUR PEAK USE BY A THIRD AT THE VERY LEAST!



# IDAHO WASHINGTON AQUIFER COLLABORATIVE



EVEN SIMPLE ADJUSTMENTS AND SOME RELATIVELY INEXPENSIVE HEAD REPLACEMENTS CAN HAVE A SIGNIFICANT EFFECT ON IRRIGATION PERFORMANCE.



# IDAHO WASHINGTON AQUIFER COLLABORATIVE



- UPGRADES DO NOT HAVE TO COST A FORTUNE.
- THEY CAN BE RELATIVELY QUICK, EASY AND INEXPENSIVE.





# MODEL EFFICIENT IRRIGATION AND LANDSCAPE DESIGN GUIDELINES

- PROVIDE LOCAL JURISDICTIONS, AGENCIES, AND WATER PURVEYORS WITH AN UNDERSTANDING OF THE IMPORTANCE OF DESIGNING, INSTALLING, AND MAINTAINING EFFICIENT LANDSCAPES.
- ENACT WATER EFFICIENT IRRIGATION AND LANDSCAPE REQUIREMENTS FOR NEW AND REHABILITATED LANDSCAPE PROJECTS TO ADDRESS IRRIGATION EFFICIENCY AND DESIGN STANDARDS.
- THIS GUIDE PROVIDES THE RECOMMENDED ELEMENTS THAT AN ORDINANCE OR DESIGN STANDARD SHOULD INCLUDE, TO ENSURE LANDSCAPES ARE DESIGNED WITH WATER EFFICIENCY IN MIND.



# MODEL EFFICIENT IRRIGATION AND LANDSCAPE DESIGN GUIDELINES



## LAWN AND YARD CHECKLIST:

- EFFICIENT IRRIGATION UPGRADES
- PROPER INSTALLATION AND MAINTENANCE
- SEASONAL ADJUSTMENTS
- NATIVE AND DROUGHT TOLERANT PLANTS



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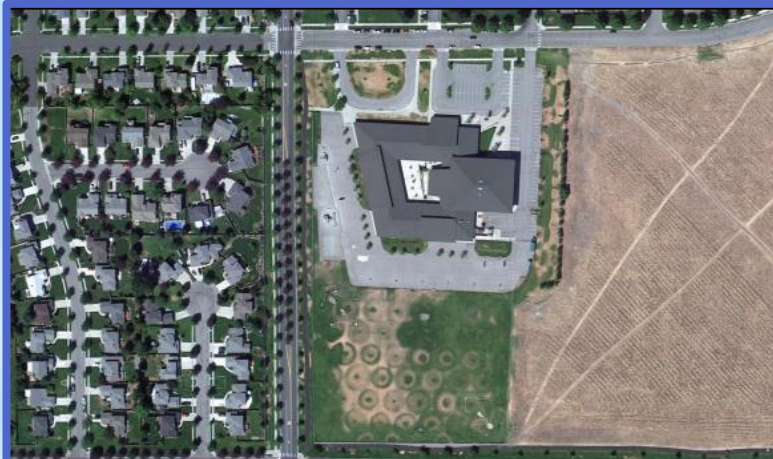


## IWAC'S GOALS FOR IRRIGATION GUIDELINES:

1. REDUCE REGIONAL SUMMER IRRIGATION PEAK USAGE
2. ENHANCE REGIONAL EFFICIENCY STANDARDS
3. PROTECT WATER QUALITY AND QUANTITY
4. PROVIDE A MENU OF IMPLEMENTATION OPTIONS FROM WHICH MUNICIPALITIES CAN CHOOSE



# MODEL EFFICIENT IRRIGATION AND LANDSCAPE DESIGN GUIDELINES



**MODEL EFFICIENT IRRIGATION AND LANDSCAPE DESIGN STANDARDS**



AS ELECTED OR APPOINTED OFFICIALS, HOW COULD THE MODEL EFFICIENT IRRIGATION AND LANDSCAPE DESIGN GUIDELINES SUPPORT YOUR COMMUNITY?



# IDAHO WASHINGTON AQUIFER COLLABORATIVE



THANK YOU!

FOR MORE INFORMATION, PLEASE CONTACT US AT:

[info@iwac.us](mailto:info@iwac.us) or [www.iwac.us](http://www.iwac.us)