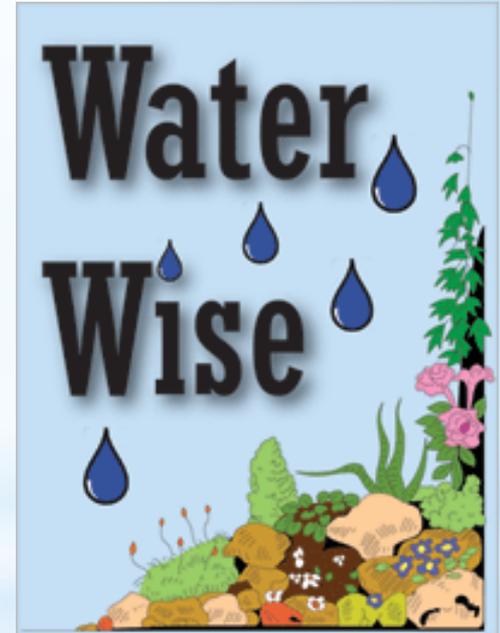


IDAHO/WASHINGTON AQUIFER COLLABORATIVE

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



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MODEL EFFICIENT IRRIGATION AND LANDSCAPE DESIGN GUIDELINES



GUIDELINES FOR
PREPARING AND
ADOPTING YOUR
ORDINANCE
OR
STANDARDS



- IWAC IS SEEKING REGIONAL SUPPORT FOR A UNIFORM DESIGN GUIDELINE

MODEL EFFICIENT IRRIGATION AND
LANDSCAPE DESIGN GUIDELINES



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- 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?

MODEL EFFICIENT IRRIGATION AND
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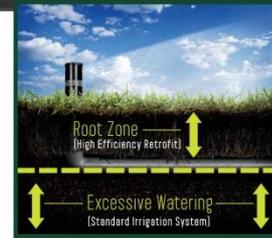
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EFFICIENCY & SUSTAINABILITY, THE NEW INDUSTRY STANDARD

Retrofit
ROI
LESS THAN
12 MONTHS

Escalating water costs and recent advances in irrigation products have made water use one of the easiest areas to impact bottom lines. Using smart controller technology and high efficiency irrigation systems, companies can reduce the effects of water supply and demand on their business.



- DID YOU KNOW THAT MOST IRRIGATIONS SYSTEMS ARE ONLY 30% TO 40% EFFICIENT?
- REASONS - LACK OF DESIGN REQUIREMENTS, POOR OR IMPROPER INSTALLATION, AND INCORRECT MAINTENANCE/PROGRAMMING.

MODEL EFFICIENT IRRIGATION AND
LANDSCAPE DESIGN GUIDELINES



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INSERT COMPARISON CHART

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

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- HOW OFTEN DO YOU RECEIVE COMPLAINTS FROM THE PUBLIC ABOUT THIS PROBLEM?
- WHAT ISSUES CAN THIS CAUSE?

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- THIS IS AN ALL TOO COMMON THEME SEEN BY PUBLIC WATER SYSTEMS.
- REMEMBER, “ONLY RAIN DOWN THE DRAIN!”

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- PROVISION OF GREENSPACE IS A TYPICAL DEVELOPMENT REQUIREMENT.
- HAVE YOU CONSIDERED HOW THIS AFFECTS THE WATER DEMAND?

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- SERVICES THAT MAY BE AVAILABLE:
 - a. IRRIGATION AUDITS - DESIGNED TO MEASURE UNIFORMITY
 - b. DESIGN REQUIREMENTS - TO MAXIMIZE EFFICIENCIES

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LANDSCAPE DESIGN GUIDELINES



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



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

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Background

- Landscape irrigation is the single largest use of potable water in the U.S.
- Water purveyors must increase supply to meet irrigation needs, sometimes as much as three to four times the amount used for domestic needs during the winter.
- Nationwide, landscape irrigation is estimated to account for nearly one-third of all residential water use.
- As much as 50% of water used for irrigation is wasted due to evaporation, wind, and overwatering caused by inefficient irrigation methods and systems.
- Through education and planning, it is estimated that landscapes can be well maintained using 20-50% less water.

Irrigation Inefficiencies

Athol Elementary - Athol



8/2011

Irrigation Inefficiencies

Betty Kiever Elementary - Rathdrum



8/2011

Irrigation Inefficiencies

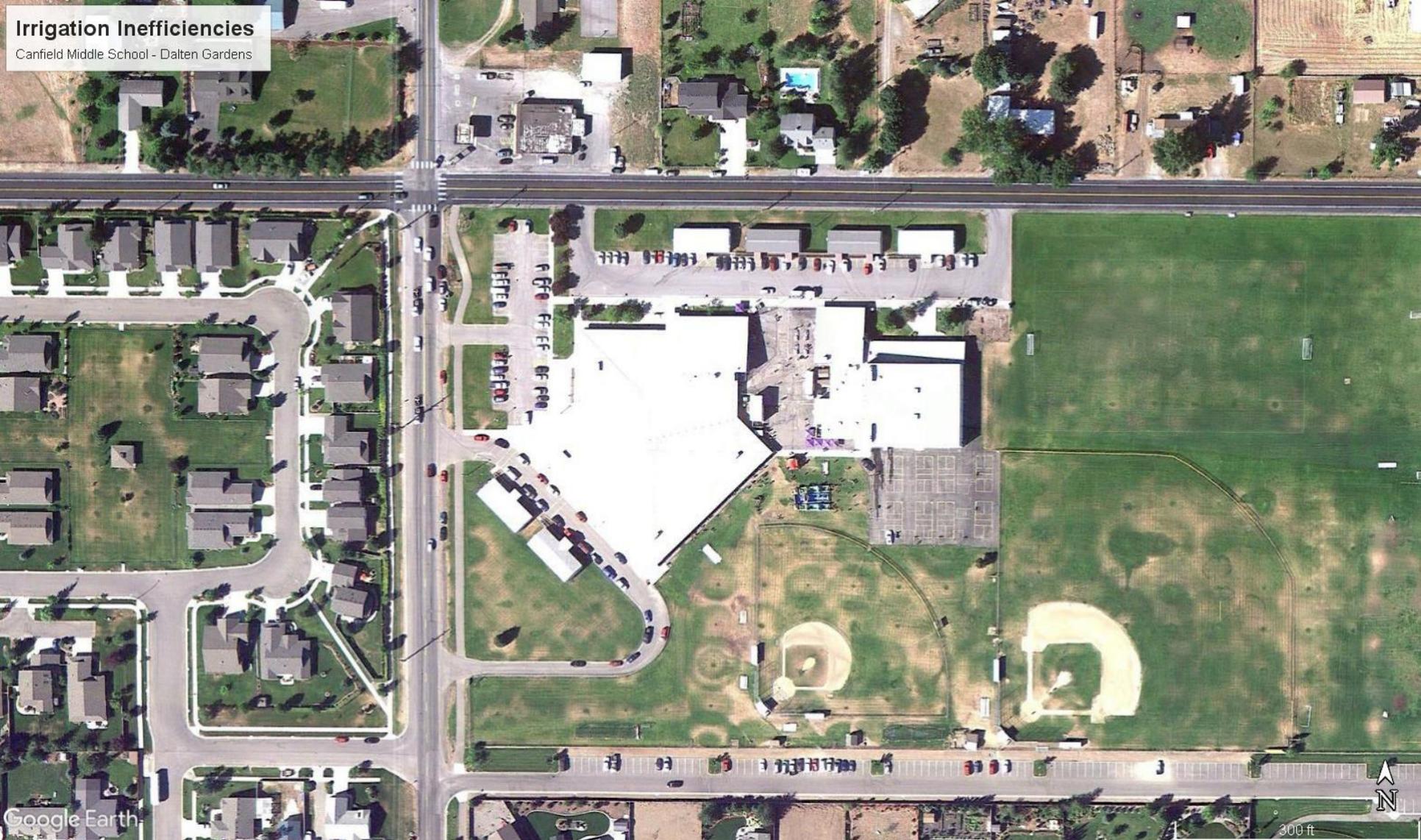
Dalton Elementary - Dalton Gardens



8/2011

Irrigation Inefficiencies

Canfield Middle School - Dalton Gardens



Google Earth

8/2011



Irrigation Inefficiencies

Ramsey Park - Coeur d'Alene

8/2011

Irrigation Inefficiencies

Woodland Middle School - Coeur d'Alene



Google Earth

8/2011



Irrigation Inefficiencies
Highlands Golf Course - Post Falls

Google Earth

8/2011

Irrigation Inefficiencies

Spokane County Sheriff's Training Center - Newman Lake



Google Earth

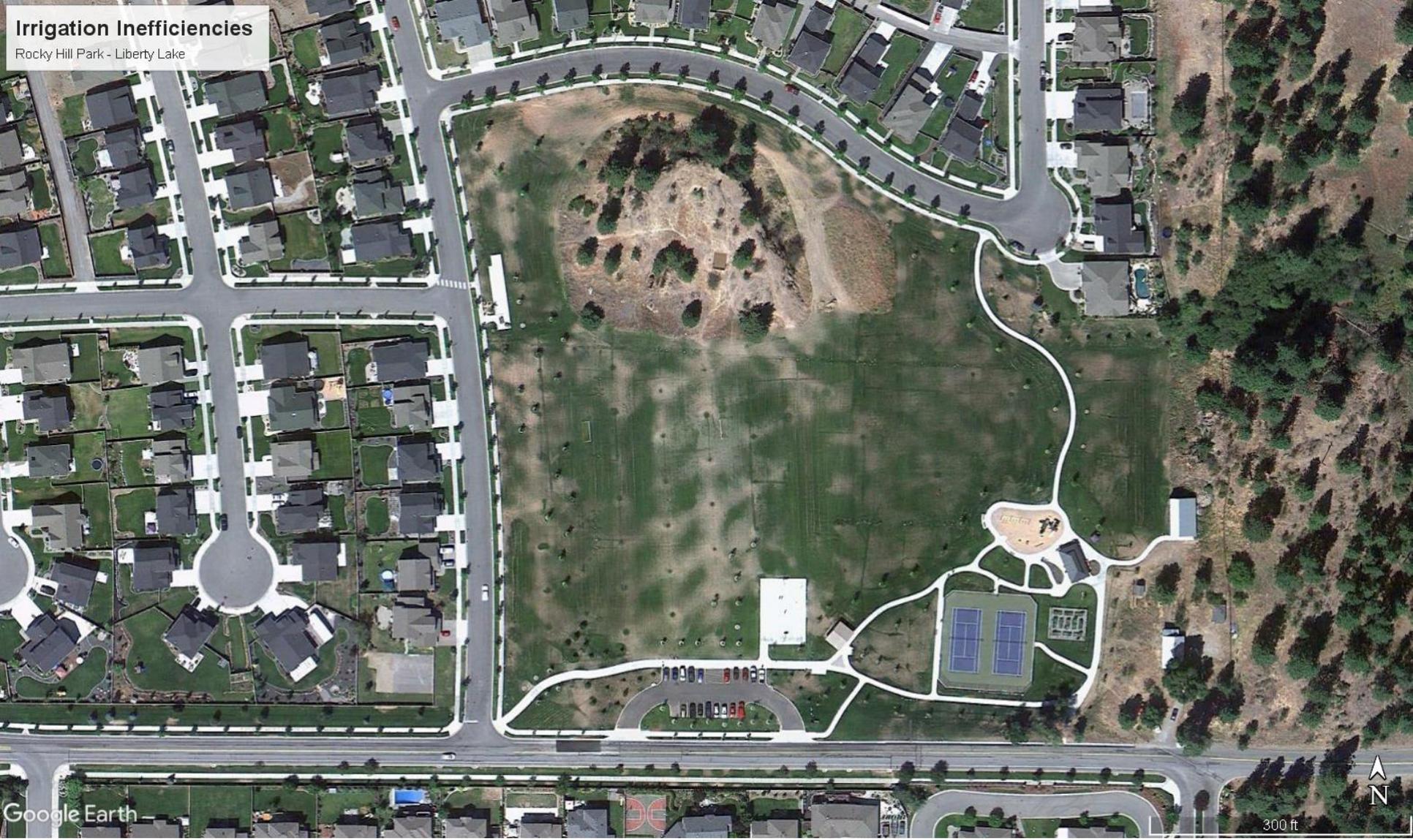
500 ft



8/2011

Irrigation Inefficiencies

Rocky Hill Park - Liberty Lake



8/2011

Irrigation Inefficiencies

Liberty Lake Elementary - Liberty Lake



Google Earth

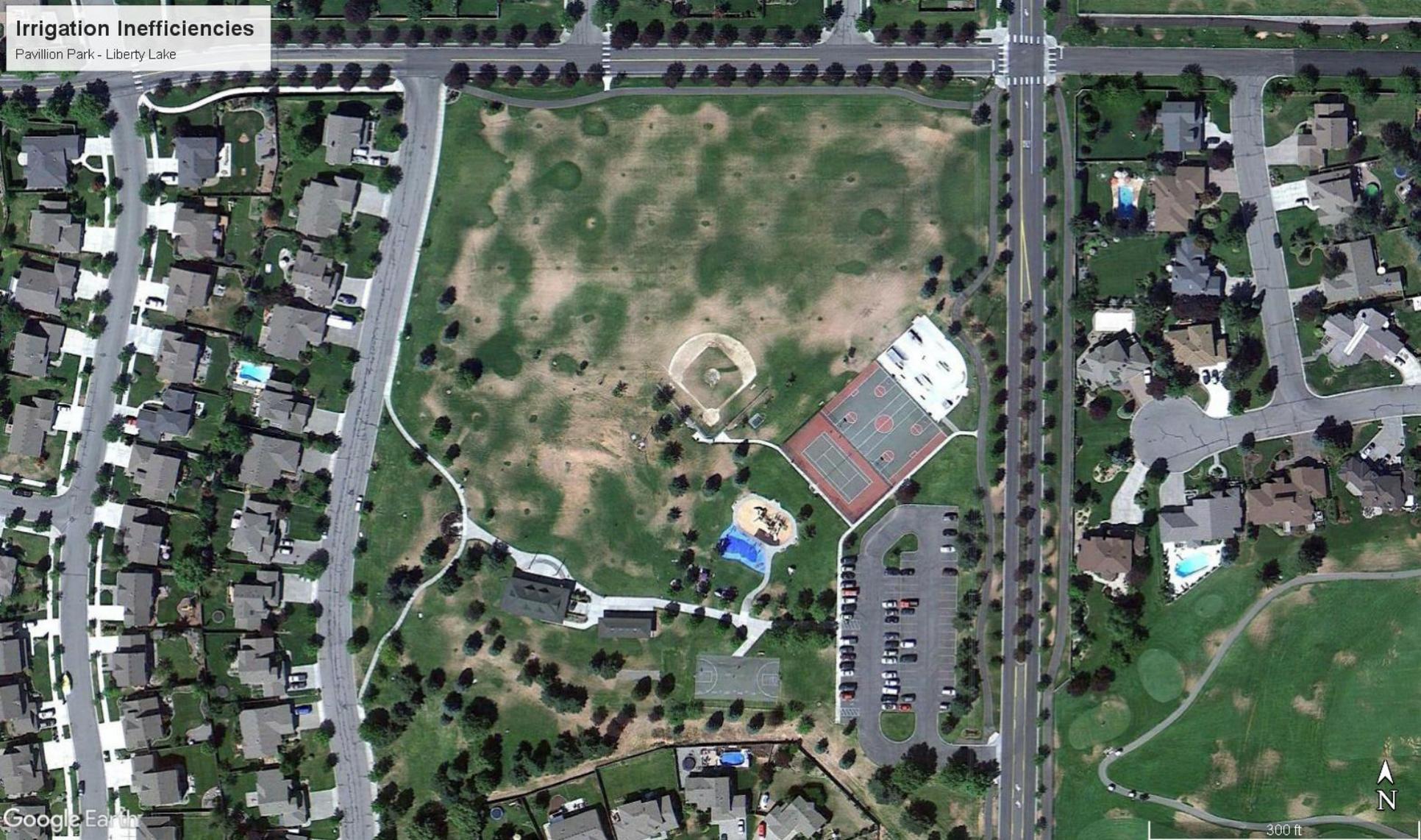
300 ft



8/2011

Irrigation Inefficiencies

Pavillion Park - Liberty Lake



8/2011



Irrigation Inefficiencies

Central Valley High School - Spokane Valley

8/2011

Irrigation Inefficiencies

Spokane Valley Adventist School - Spokane Valley



8/2011

Irrigation Inefficiencies

Evergreen Middle School - Spokane Valley



8/2011

Irrigation Inefficiencies

Chester Elementary - Spokane Valley



8/2011

Irrigation Inefficiencies

Valley Christian School - Spokane Valley



Google Earth

300 ft

8/2011

Irrigation Inefficiencies

Whitman Elementary - Spokane



8/2011

Irrigation Inefficiencies

St. Charles Parish School - Spokane



8/2011

Irrigation Inefficiencies

Airway Heights Correction Center - Airway Heights



Google Earth

400 ft



8/2011

Importance of Distribution Uniformity

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

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

Excellent (Achievable)	Good (Expected)	Poor (Common)
75%	60%	50%



Traditional Spray Head

Flow (GPM) = 0.1 to 5.52

Precipitation Rate (in/hr) = 1.21 to 9.15

VS.

Example:

1.85 X 20 min = 37 Gal

0.50 X 20 min = 10 Gal

=73% reduction

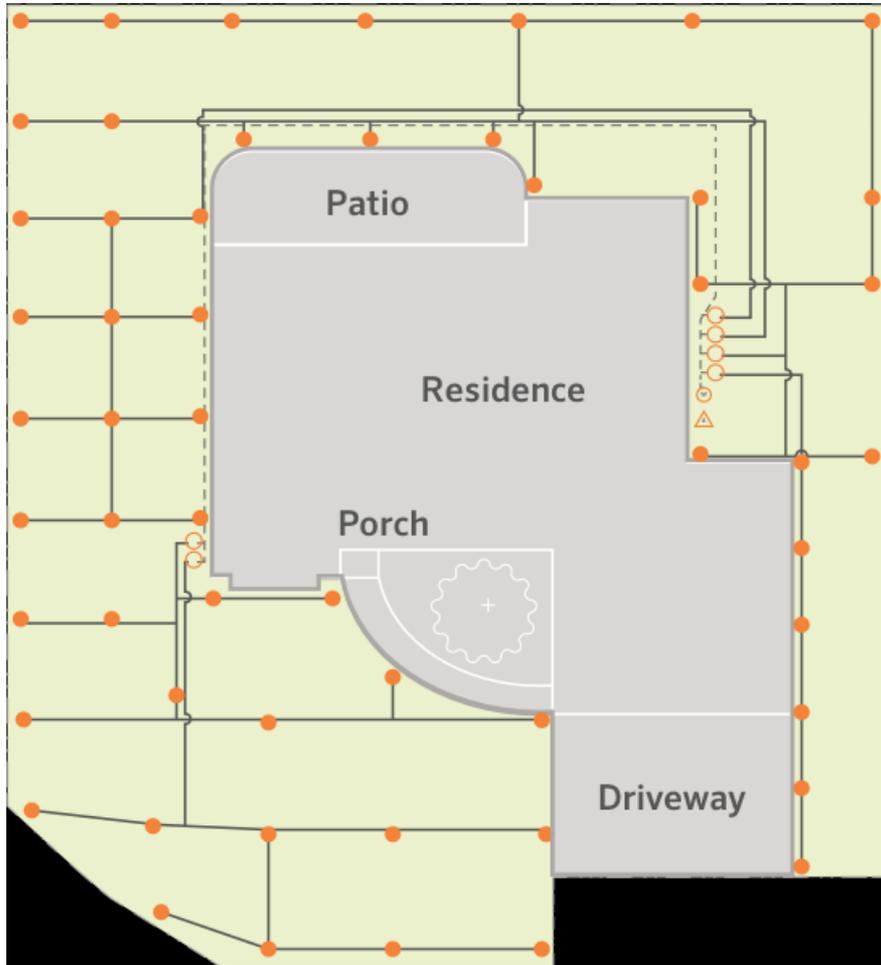


MP Rotator

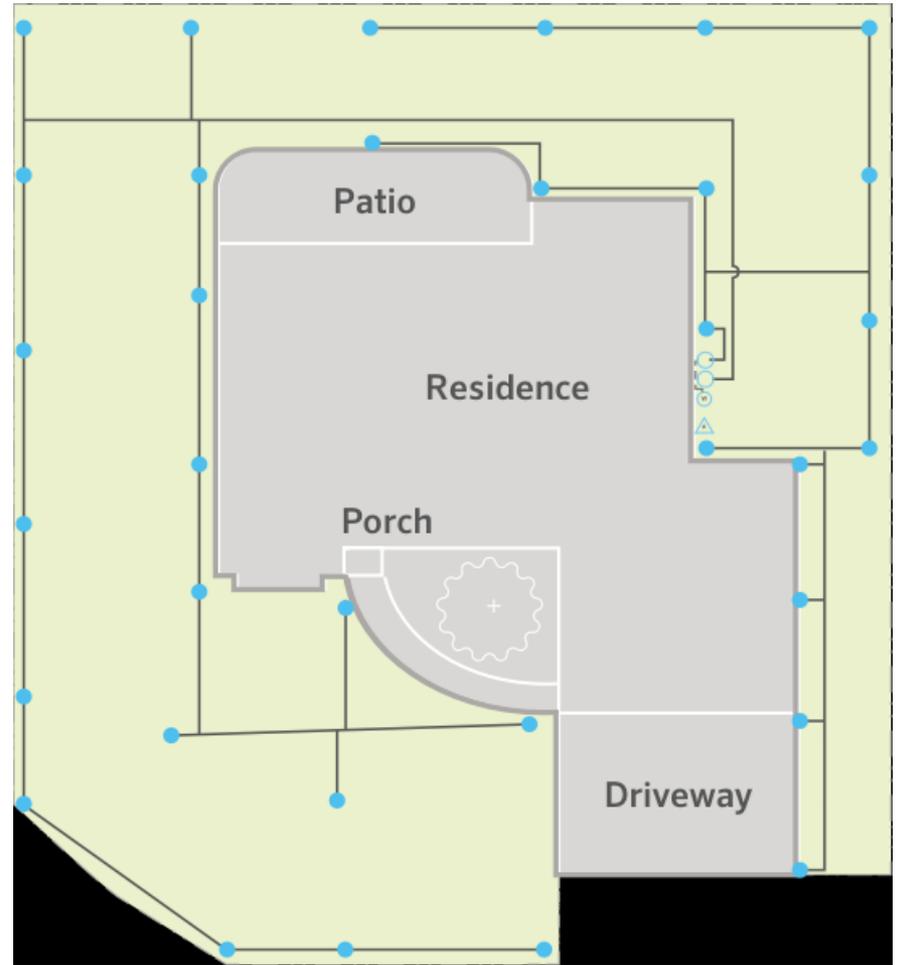
Flow (GPM) = 0.17 to 1.01

Precipitation Rate (in/hr) = 0.46 to 0.53

Design Using Traditional Sprays



Design Using MP Rotators



Pilot Project Examples

- LLSWD
- SpokaneScape
- Coming:
 - Coeur d'Alene school or park
 - Indian Canyon Golf Course
 - Others?

Irrigation Inefficiencies

Write a description for your map.

Legend

▣ Liberty Lake Sewer and Water District #1



- 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)
- Reduced water by 36% the following year and improved DU to 61%**

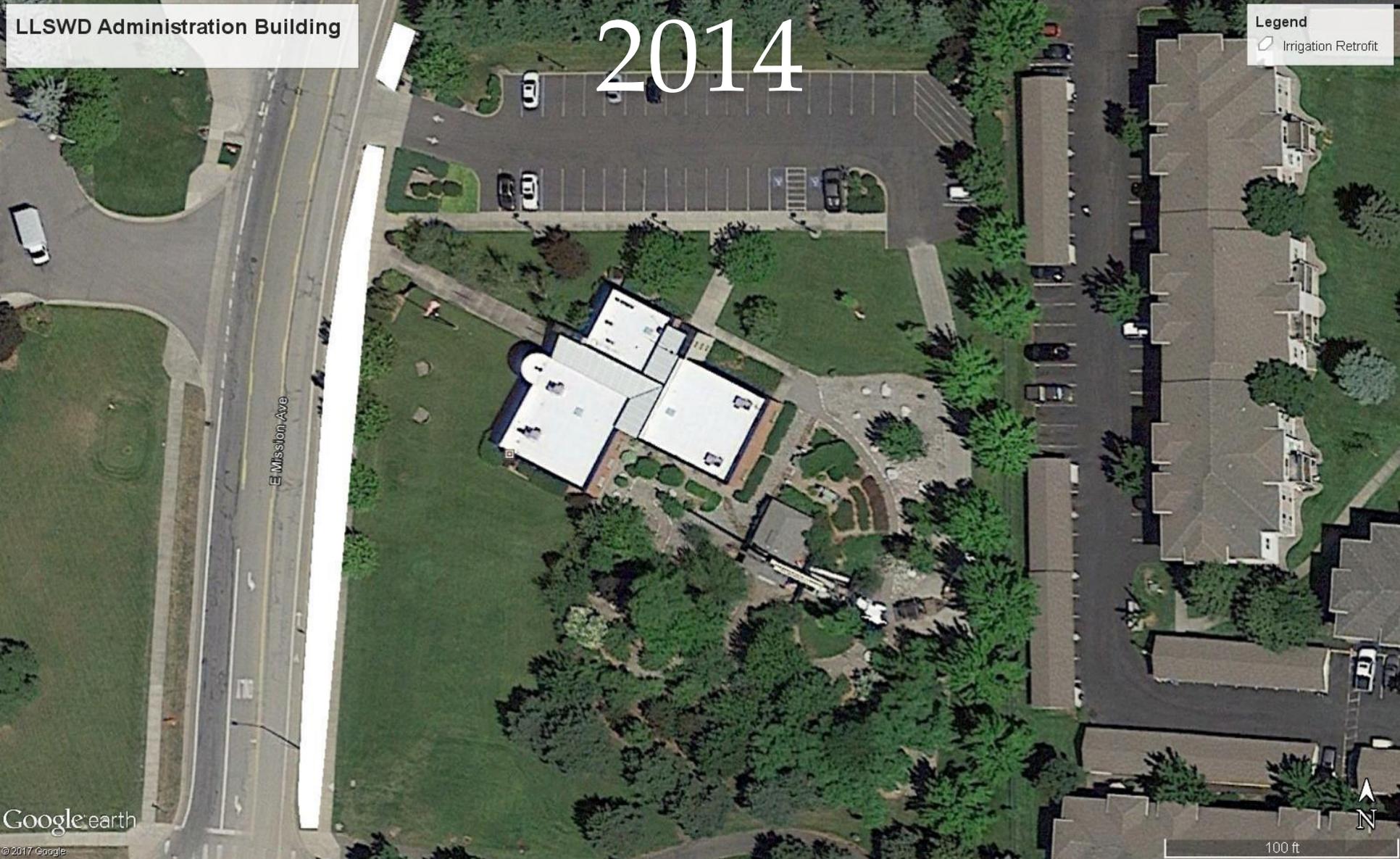
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2005



- 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

2014



- Retrofitted 34 spray heads to MP1000 Rotators and eliminated 27 heads
- Observed water savings was 1.85 GPM to 0.50 GPM per head
Recognized savings = 95.85 gallons per minute

Spokane Scape

IWAC's Initiative

- Landscape irrigation industry lacks national or international standards for construction and operation.
- Enact water efficient irrigation and landscape requirements for new and rehabilitated landscape projects to address irrigation efficiency and design standards.
- IWAC developed a regional Model Efficient Irrigation and Landscape Design Standards guidance document.

Model Efficient Irrigation and Landscape Design Standards

- Provide local jurisdictions, agencies, and water purveyors with an understanding of the importance of designing, installing, and maintaining landscapes with water efficiency in mind.
- Most jurisdictions do not have strong provisions for water efficiency within their landscape codes.
- This guide provides the recommended elements that an ordinance or design standard should include, to ensure landscapes are designed with water efficiency in mind.

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- **LAWN AND YARD CHECKLIST:**
 - a. EFFICIENT IRRIGATION UPGRADES
 - b. PROPER INSTALLATION AND REPAIRS
 - c. EFFECTIVE PRUNING METHODS
 - d. PROPER SEASONAL YARD CARE AND CLEAN UP

MODEL EFFICIENT IRRIGATION AND
LANDSCAPE DESIGN GUIDELINES



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- WHERE DO WE GO FROM HERE?
- WHAT CAN IWAC DO THAT WOULD HELP YOU?



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- IWAC'S GOALS FOR THESE GUIDELINES:
 - a. REDUCE REGIONAL IRRIGATION USAGE
 - b. ENHANCE REGIONAL EFFICIENCY STANDARDS
 - c. PROTECT WATER QUALITY AND QUANTITY



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MODEL EFFICIENT IRRIGATION AND LANDSCAPE DESIGN GUIDELINES



- AS ELECTED OR APPOINTED OFFICIALS, WOULD YOU RECOMMEND TO YOUR LOCAL PURVEYOR TO USE GUIDELINES SUCH AS THESE?

MODEL EFFICIENT IRRIGATION AND LANDSCAPE DESIGN GUIDELINES



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- PLEASE JOIN ME IN THANKING THE IWAC MEMBERS FOR TAKING TIME TO BE PRESENT TODAY.
- AND THANK YOU FOR YOUR VALUABLE TIME.



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THANK YOU!

FOR MORE INFORMATION, PLEASE CONTACT US AT:
iwacinfo4@gmail.com

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