

# PROJECT CASE STUDY

# WATER EFFICIENCY PROJECT

Residence Inn - LAX

231 Guest rooms

At the Request of: Eric Ryan

5933 West Century Blvd

80% Projected Occupancy

Los Angeles, Ca 90045



How this property used Indoor Water Conservation's (IWC) Balanced Flow technology to:

Reduce Utility Costs (water, sewer & energy)	\$ 18,328 per year
	ROI 6.6 months

Reduce Water Consumption	903,126 gallons per year
Reduce Energy Consumption	4,018 therms per year

## Summary

IWC's Water Use Assessment identified inefficiencies working with Management re: usage

IWC's Technicians measured variations in water pressure

flow volumes and fixtures flows through the property to calibrate Flow Controller sizes.

IWC managed the Rebate process to obtain SoCal Watersmart's device rebate.

IWC conducted a Post Installation audit to verify effectiveness of the solution.

# PROJECT ACHIEVEMENTS



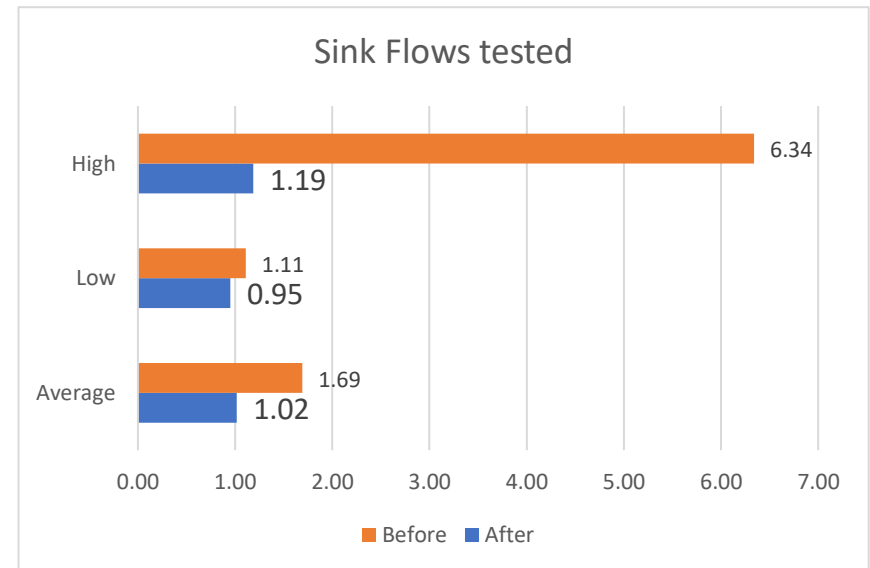
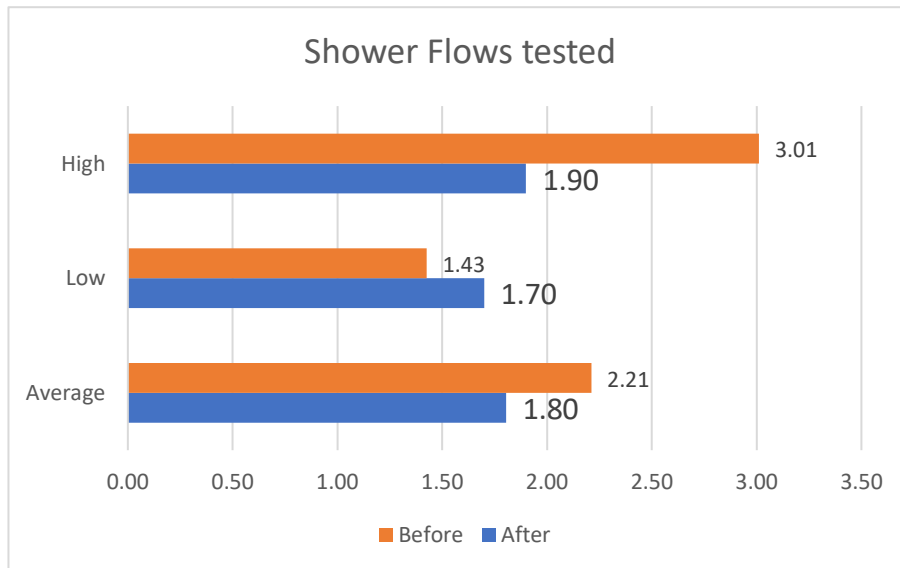
## PROBLEM

Unbalanced Shower and Sink flows were causing inefficient water and energy use

		COST
Excess Water Use	919,259 gallons per year	\$ 14,974 Water & Sewer
Excess Energy Use	4,090 therms per year	\$ 3,681 Energy
<b>Excess Water, Sewer &amp; Energy Costs</b>		<b>\$ 18,656 Annually</b>

## SOLUTION

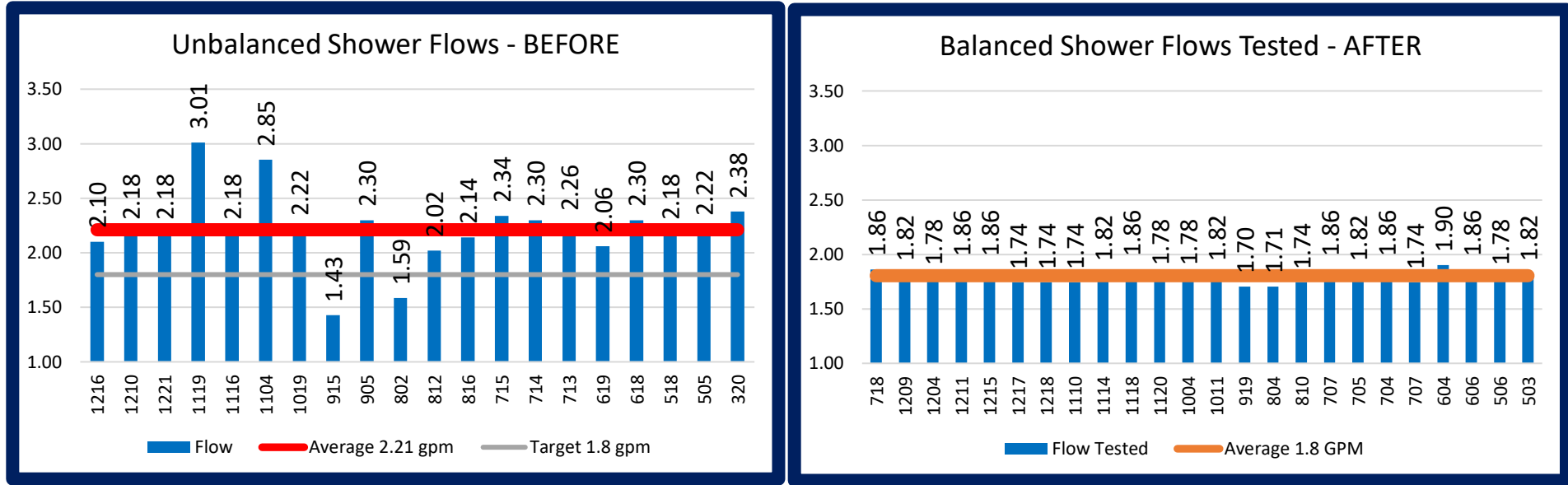
IWC Balanced flows in sinks and showers, delivering the same efficient flow in every room on every floor.



# OVERHEAD SHOWER FLOW COMPARISON



Flows are reported in gallons per minute

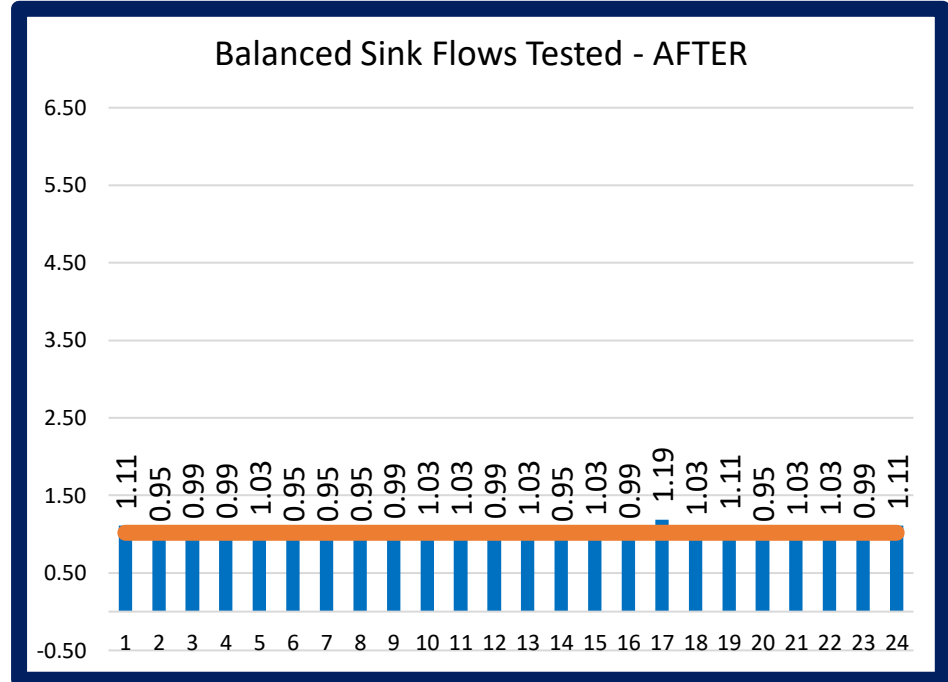
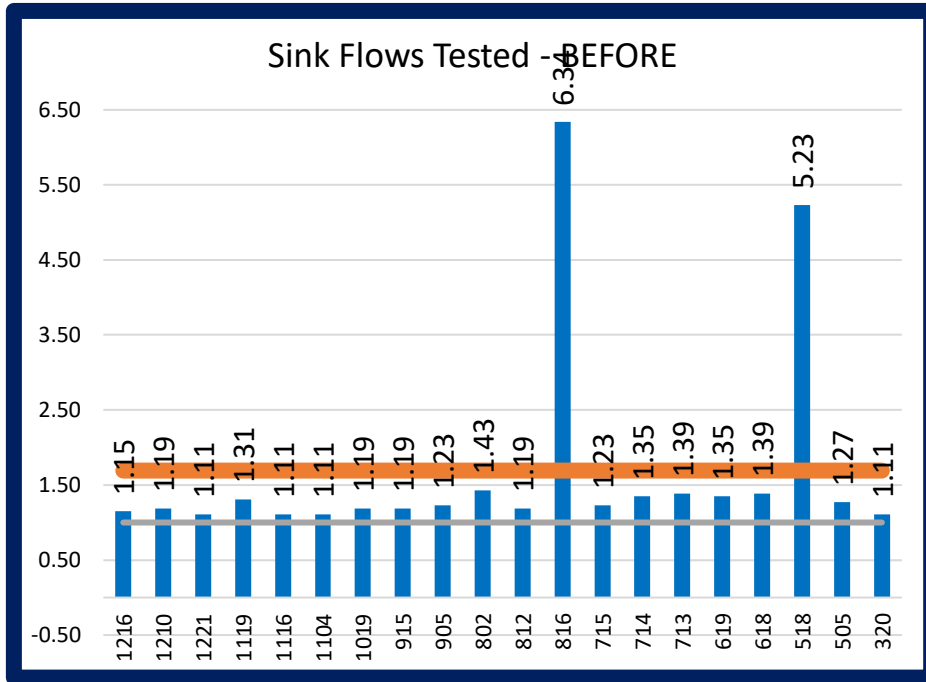


\*Speakman Anystream showerheads were not replaced, just balanced.

Comparitive Chart - gallons per minute

Shower	Before	After	Delta	
High	3.01	1.90	1.11	Decreased high flow by 1.11 gpm, lowering utility costs
Low	1.43	1.70	-0.28	Increased low flow by 0.28 gpm improving guest satisfaction
Ave	2.21	1.80	0.41	Balanced flows to 1.8 gpm, reducing flows by 0.41 gpm
Spread	1.59	0.20	1.39	Reduced Gap in flows 1.39 gpm

# OVERHEAD SHOWER FLOW COMPARISON DETAIL



## Bath Sink

Comparitive Chart - gallons per minute

Shower	Before	After	Delta	
High	6.34	1.19	5.15	Decreased high flow by 5.15 gpm, lowering utility costs
Low	1.11	0.95	0.16	Decreased low flow by 0.16 gpm improving guest satisfaction
Ave	1.69	1.02	0.67	Balanced flows to 1.02 gpm
Spread	5.23	0.24	4.99	Reduce Gap by 4.99 gpm

## COST & FLOW REDUCTION



<b>Savings per Occupied room in gallons per day</b>		<b>13.39 gallons per day</b>
Times: Water, sewer & energy rate per gallon	\$	0.0203 combined utility rate per gallon
<b>SAVINGS PER OCCUPIED ROOM PER DAY</b>	\$	<b>0.27</b>
Times: Estimated Occupied rooms per year		<u>67,452</u> (based on data provided by Management)
<b>ANNUAL UTILITY COST SAVINGS</b>	\$	<b>18,328</b> (estimated)

<b>FLOWS TESTED</b>	<b>Sink</b>	<b>Overhead</b>	
BEFORE - Unbalanced flows average	1.69	2.21	gpm
AFTER - Balanced flows average	<u>1.02</u>	<u>1.80</u>	gpm
Savings per fixture	0.67	0.41	gpm
	40%	18%	
<b>USAGE VARIABLES</b>			
Guests per room	1.50	1.50	
Usage per Guest (minutes)	<u>6.00</u>	<u>12.00</u>	
Total usage per room/day	9.00	18.00	minutes
Savings per fixture	<u>0.67</u>	<u>0.41</u>	gallons
Savings POR per day - gallons	6.07	7.31	<b>13.39</b> gallons per day POR
Savings % per fixture	45%	55%	100%