

PROJECT CASE STUDY

WATER EFFICIENCY PROJECT

Residence Inn Beverly Hills

186 Guest rooms

At the Request of: Eric Ryan

1177 South Beverly Drive

87% Projected Occupancy

Los Angeles, Ca 90035



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

Reduce Utility Costs (water, sewer & energy)	\$	9,954	per year
Investment	\$	8,664	ROI 10.4 months

Reduce Water Consumption	490,508	gallons per year
Reduce Energy Consumption	2,182	therms per year

Summary

IWC's Water Use Assessment identified inefficiencies working with Management regarding water and energy usage.

IWC's Technicians measured variations in water pressure, source flow volumes, flow volumes and fixtures flows through the property to calibrate Flow Controller sizes.

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

PROJECT SUMMARY



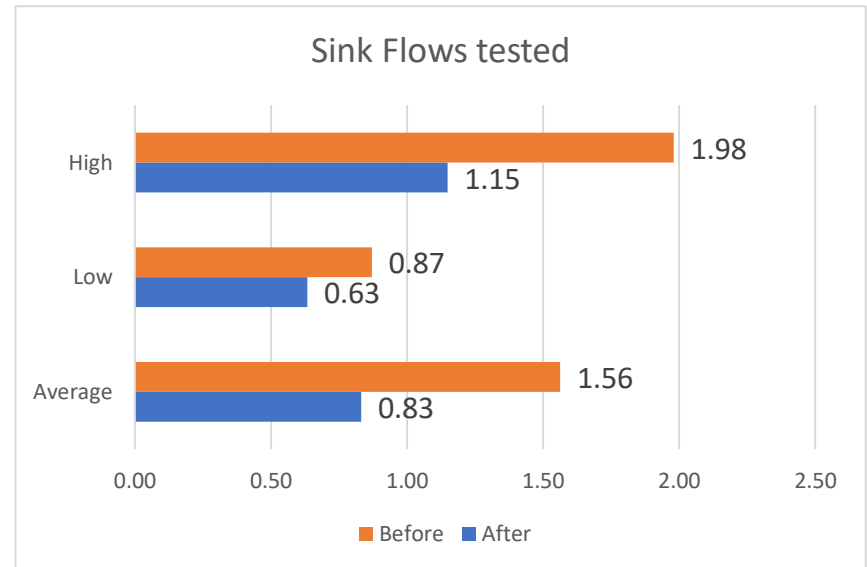
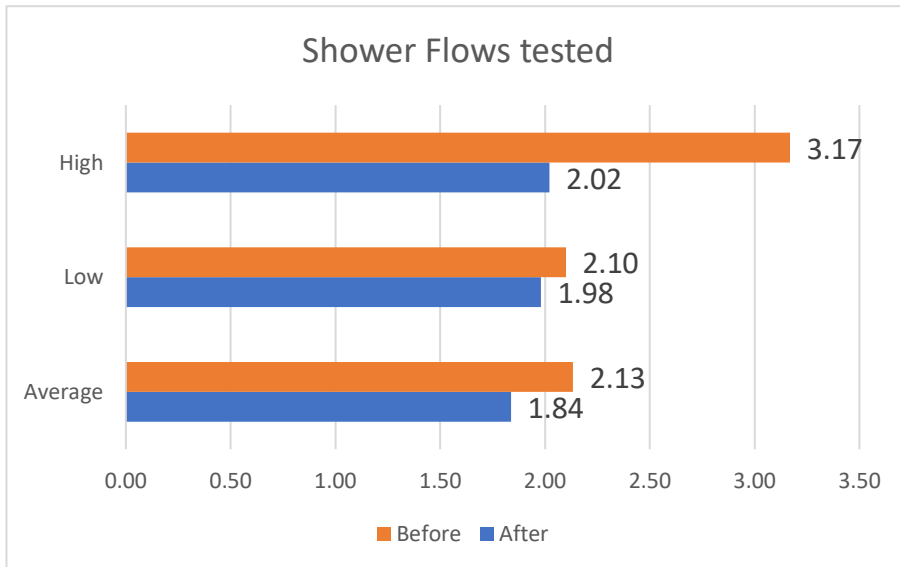
PROBLEM

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

		COST
Excess Water Use	490,508 gallons per year	\$ 7,990 Water & Sewer
Excess Energy Use	2,182 therms per year	\$ 1,964 Energy
Excess Water, Sewer & Energy Costs		\$ 9,954 Annually

SOLUTION

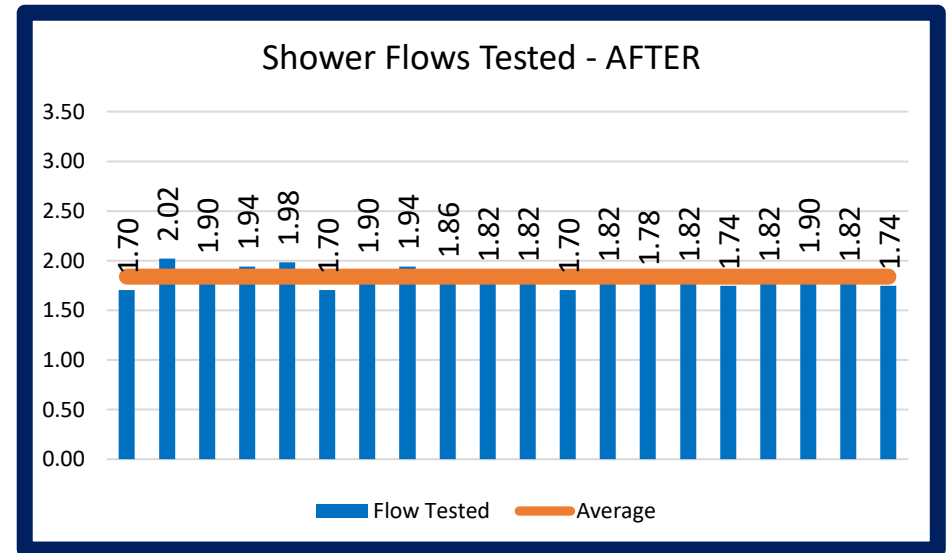
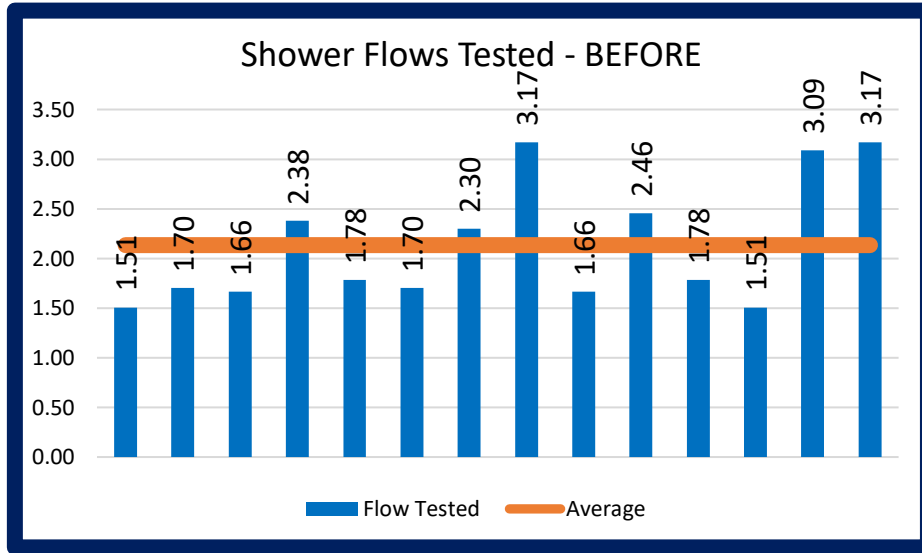
IWC Balanced flows in sinks and showers, delivering the same efficient flow in every room on every floor.





OVERHEAD SHOWER FLOW COMPARISON

Flows are reported in gallons per minute

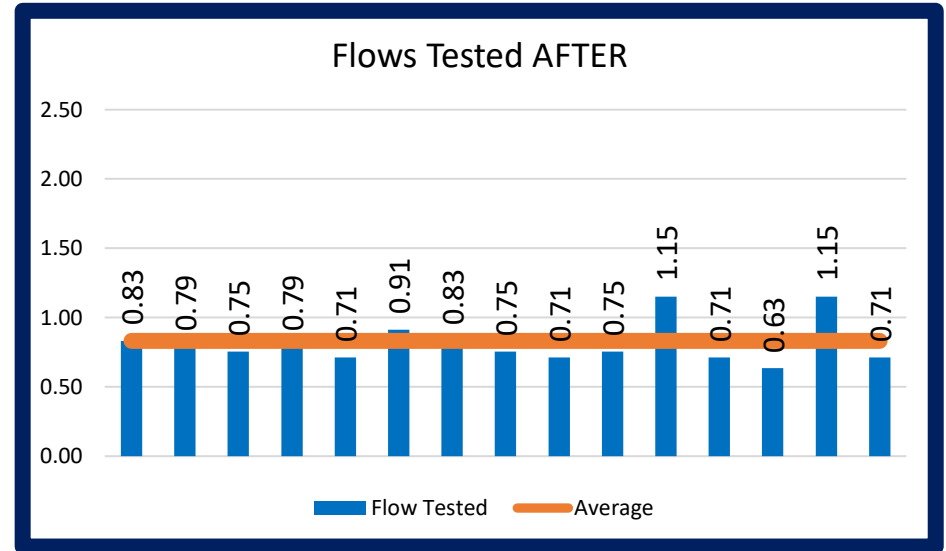
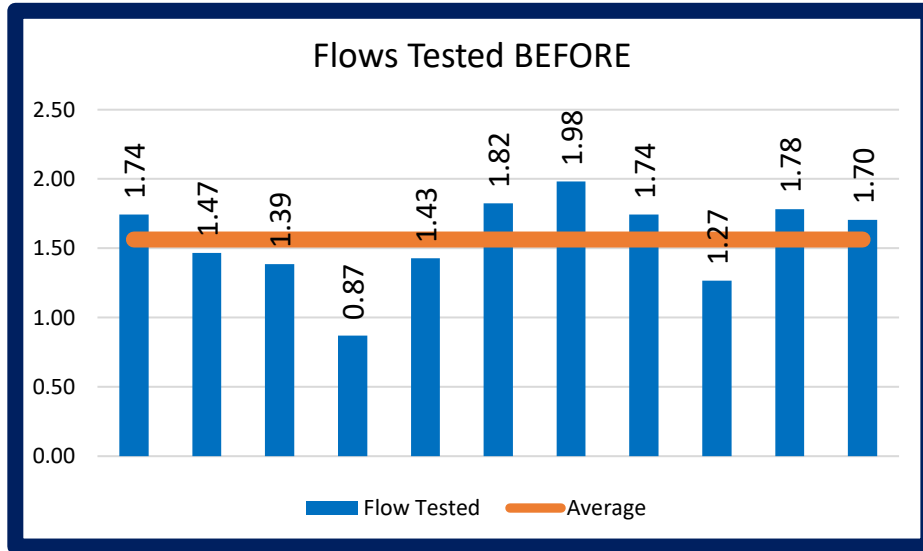


Comparitive Chart - gallons per minute

Shower	Before	After	Delta	
High	3.17	2.02	1.15	Decreased high flow by 2.62 gpm, lowering utility costs
Low	1.51	1.70	-0.20	Decreased low flow by 0.12 gpm improving guest satisfaction
Ave	2.13	1.84	0.30	Balanced flows to 2.09 gpm, reducing average flows by 1.04 gpm
Spread	1.66	0.32	1.35	Reduced Gap in flows 2.50 gpm



BATH SINK FLOW COMPARISON



Bath Sink

Comparitive Chart - gallons per minute

	Before	After	Delta	
High	1.98	1.15	0.83	Decreased high flow by 0.71 gpm, lowering utility costs
Low	0.87	0.63	0.24	Increased low flow by 0.95 gpm improving guest satisfaction
Ave	1.56	0.83	0.73	Balanced flows to 1.02 gpm
Spread	1.11	0.52	0.59	Reduce Gap by 0.87 gpm

COST & FLOW REDUCTION



Savings per Occupied room in gallons per day		7.51 gallons per day
Times: Water, sewer & energy rate per gallon	\$	0.0203 combined utility rate per gallon
SAVINGS PER OCCUPIED ROOM PER DAY	\$	0.15
Times: Estimated Occupied rooms per year		<u>59,064</u> (based on data provided by Management)
ANNUAL UTILITY COST SAVINGS - BALANCED FLOWS	\$	9,005 (estimated)

FLOWS TESTED	Sink	Overhead	
BEFORE - Unbalanced flows average gpm	1.56	2.13	gpm
AFTER - Balanced flows average gpm	<u>0.83</u>	<u>1.84</u>	gpm
Savings per fixture - gpm (gallons per minute)	0.73	0.30	gpm
	47%	14%	
USAGE VARIABLES			
Guests per room	1.00	1.50	
Usage per Guest (minutes)	<u>3.00</u>	<u>12.00</u>	
Total usage in minutes per room/day	3.00	18.00	minutes
Savings per fixture - gpm (gallons per minute)	<u>0.73</u>	<u>0.30</u>	gallons
Savings POR per day - gallons	2.19	5.32	7.51 gallons per day POR
Savings % per fixture	29%	71%	100%