

PROJECT CASE STUDY

WATER EFFICIENCY PROJECT

Doubletree Newark
39900 Balentine Dr,
Newark, CA 94560

318 Guest rooms
78% Projected Occupancy

At the Request of: Mark Kopke



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

Reduce Utility Costs (water, sewer & energy)	\$ 19,649	per year
Investment	\$ 21,839	ROI 13.3 months

Reduce Water Consumption	1,035,658	gallons per year
Reduce Energy Consumption	1,035,658	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 conducted a Post Installation audit to verify effectiveness of the solution.

PROJECT ACHIEVEMENTS



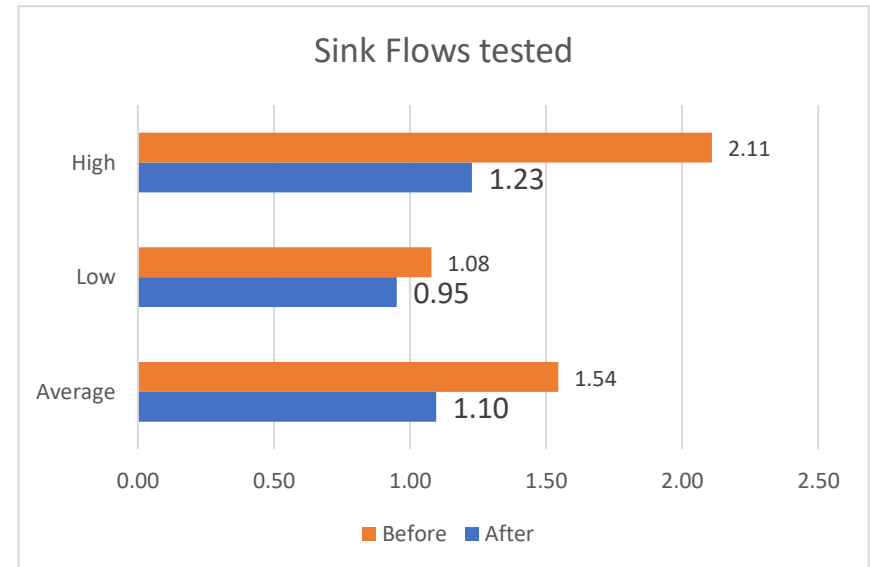
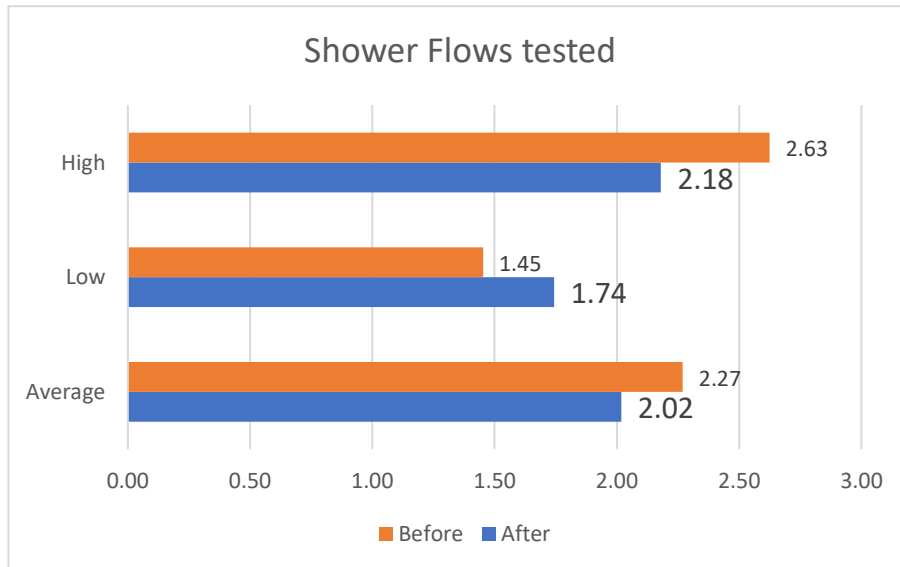
PROBLEM - SOLVED

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

		COST
Excess Water Use	1,035,658 gallons per year	\$ 12,184 Water & Sewer
Excess Energy Use	1,035,658 therms per year	\$ 7,465 Energy
Excess Water, Sewer & Energy Costs		\$ 19,649 Annually

SOLUTION

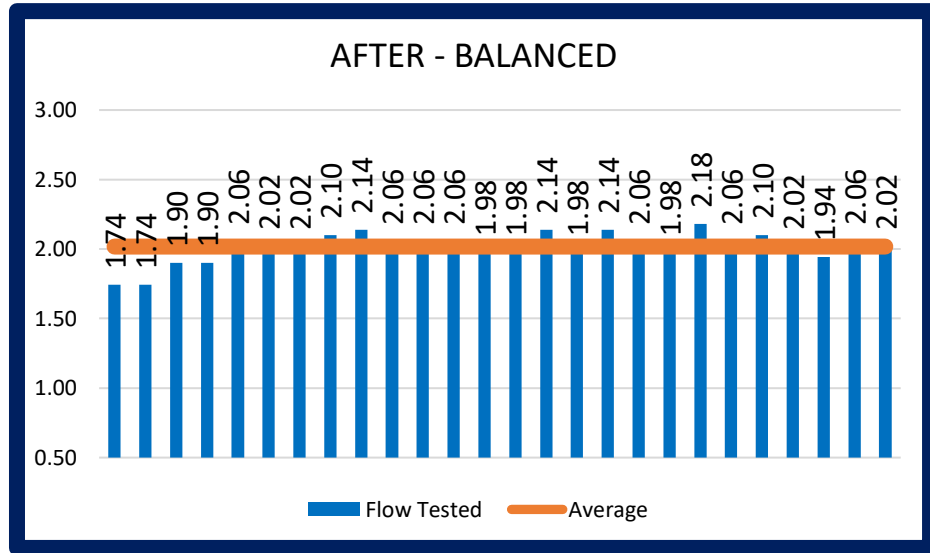
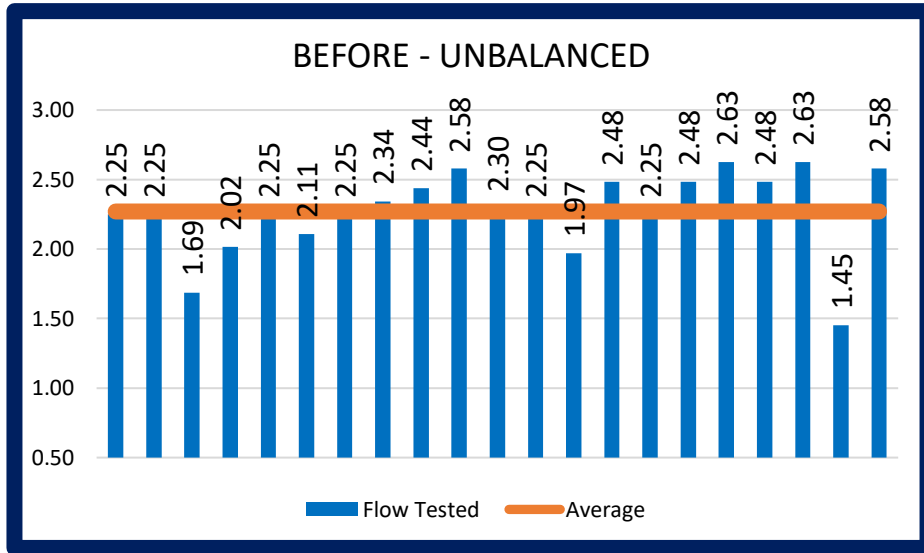
IWC Balanced flows in sinks and showers, delivering the same efficient flow in every room on every floor.





OVERHEAD SHOWER FLOW COMPARISON

Flows are reported in gallons per minute



Comparitive Chart - gallons per minute

Shower	Before	After	Delta
High	2.63	2.18	0.45
Low	1.45	1.74	-0.29
Ave	2.27	2.02	0.25
Spread	1.17	0.44	0.74

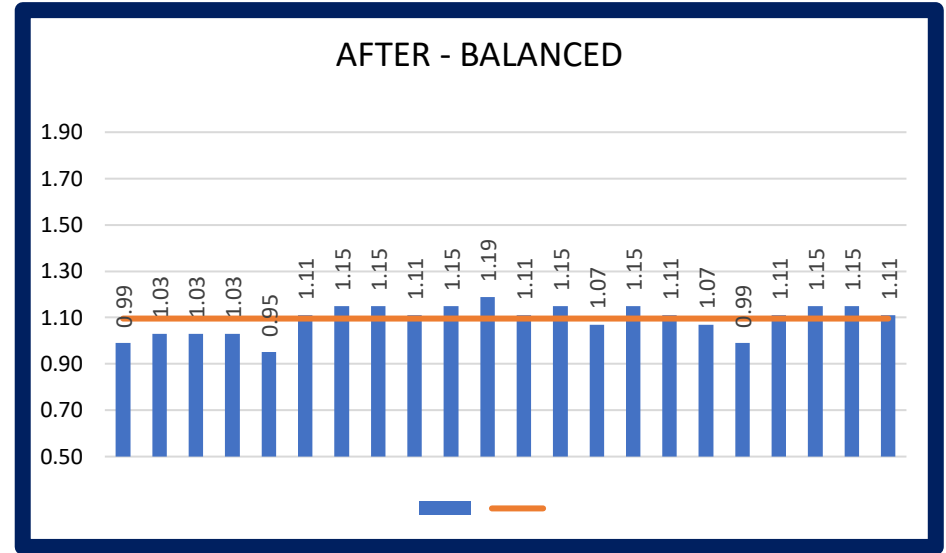
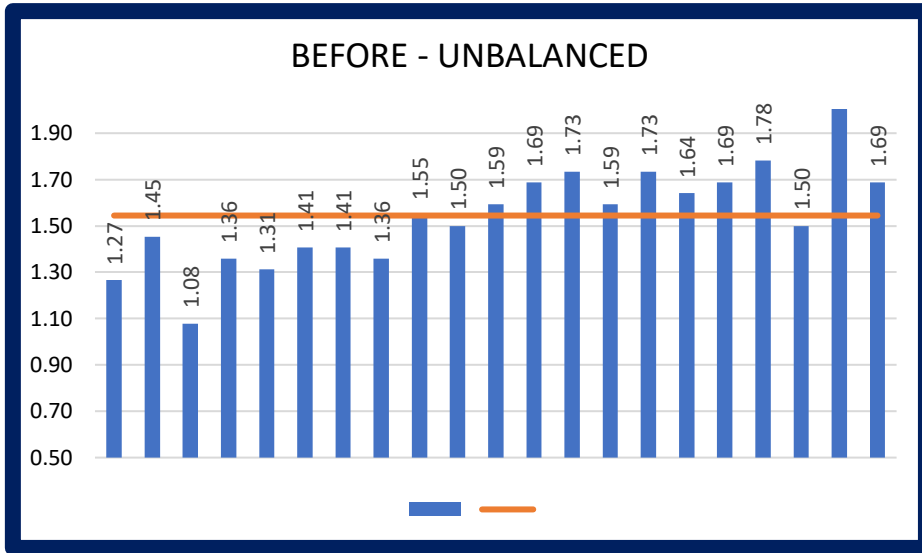
Reduced highest "before" flow by 0.45 gpm

Increased lowest "before" flow 0.29 gpm.

Overall tested average flow reduced by 0.25 gpm

Reduced the difference between high and low flows by 0.74 gpm

BATH SINK FLOW COMPARISON DETAIL



Comparitive Chart - gallons per minute

Shower	Before	After	Delta
High	2.11	1.23	0.88
Low	1.08	0.95	0.13
Ave	1.54	1.10	0.45
Spread	1.03	0.28	0.75

COST & FLOW REDUCTION



COST REDUCTION - costs reduction for fixtures with Balanced Flows, most recent average utility rates.

	BEFORE	AFTER	SAVINGS	
Water Cost	\$ 40,385	\$ 34,058	\$ 6,327	16%
Sewer Cost	\$ 37,384	\$ 31,527	\$ 5,857	16%
Energy Cost	\$ 47,650	\$ 40,185	\$ 7,465	16%
Total Costs	\$ 125,419	\$ 105,770	\$ 19,649	16%

FLOW REDUCTION

FLOWS TESTED

	Sink	Overhead	
BEFORE - Unbalanced flows average	1.54	2.27	gpm
AFTER - Balanced flows average	<u>1.10</u>	<u>2.02</u>	gpm
Savings per fixture	0.45	0.25	gpm
	29%	11%	

USAGE VARIABLES

Guests per room	2.00	2.00	
Usage per Guest (minutes)	<u>6.00</u>	<u>12.00</u>	
Total usage per room/day	12.00	24.00	minutes
Savings per fixture	<u>0.45</u>	<u>0.25</u>	gallons

Savings POR per day - gallons	5.39	6.05	11.44
Savings % per fixture	47%	53%	100%