



**SouthWest
Water CompanySM**

Conservation-Oriented Water Rates – A Research Study

**Bob Kelly
Vice President Regulatory Affairs
SouthWest Water Company**

NAWC Annual Management Innovation Contest – Third Place Winner



National Association of Water Companies

Annual Management Innovation Competition Award

Third Place

Presented to

Suburban Water Systems

In Recognition of the Innovative Suggestion to the Association

which is in Keeping with the Association's Theme of Better

Water Service Through Investor Ownership

Signed and Sealed at Orlando, Florida

October 13, 2009

Executive Director

Michael Deane

President

Donald L. Arrell

The Southwest Water Company Research Study



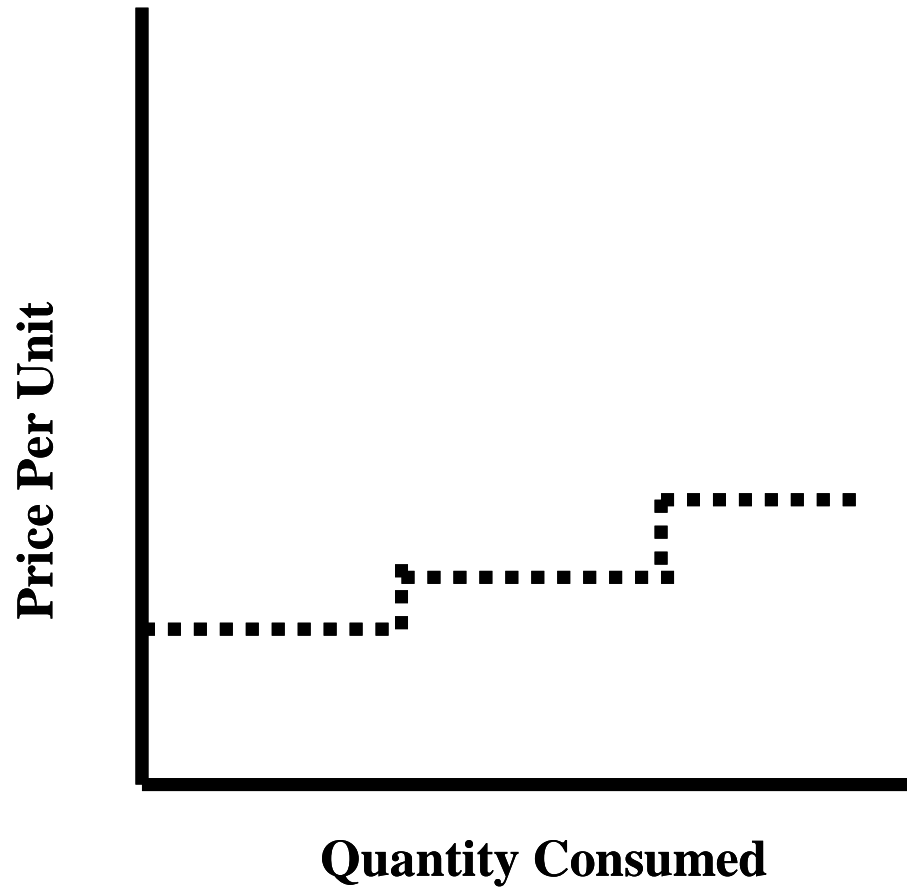
- Why Did We Do It?
- Why Is It Important?
- Why Did We Use CUWCC Members For The Study?

Objectives In Designing Water Rates

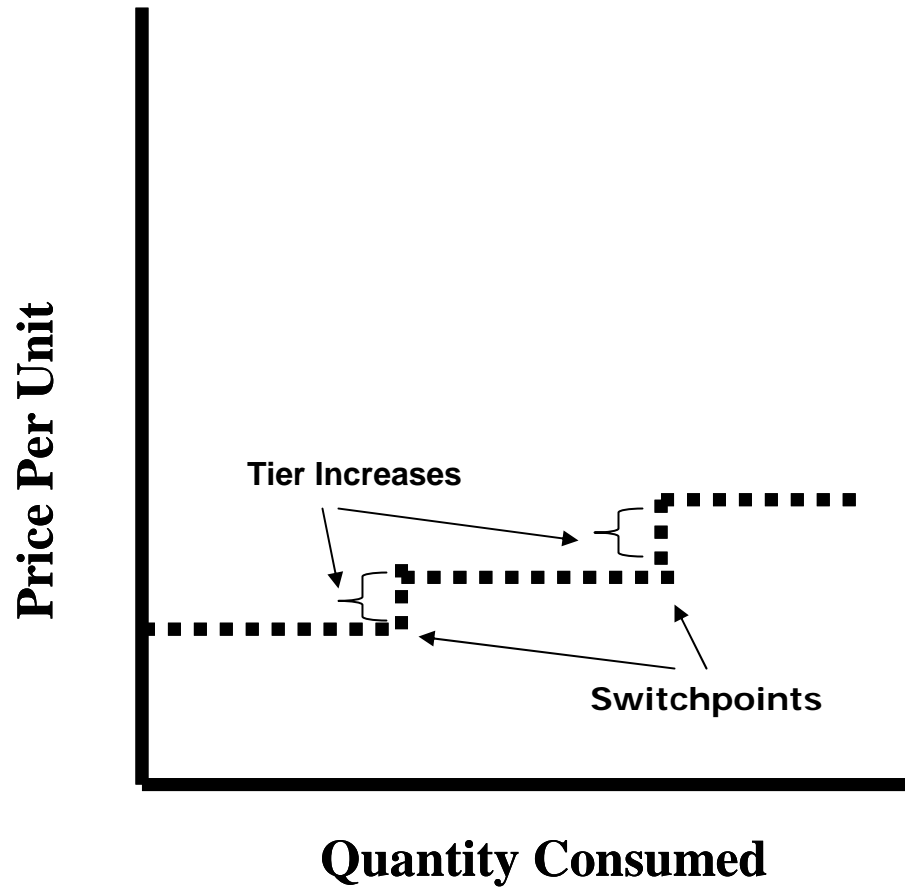


- Rates Should Generate Revenue Sufficient To Cover Costs
- Rates Should Provide Customers An Incentive To Conserve Water

Inclining Block Rates



Inclining Block Rates



Rules Of Thumb For Designing Inclining Block Rates



- First Switchpoint Alternatives . . .
 - Median Winter Water Use (A Rough Measure of Indoor Non-Discretionary Water Use), Or . . .
 - Mid-Point Between Median and Average Winter Water Use, Or . . .
 - At A “Memorable” Round Number, Like 15 Ccf, 20 Ccf, etc.

- Second Switchpoint Alternatives . . .
 - Median Summer Water Use, Or . . .
 - Mid-Point Between the Weather Adjusted Average Annual and Summer Water Use

Rules Of Thumb For Designing Inclining Block Rates



- Long-Run Marginal Cost Pricing . . .
 - Set Highest Block Rate To Marginal Cost, Or Average Incremental Cost

Rules Of Thumb For Designing Inclining Block Rates



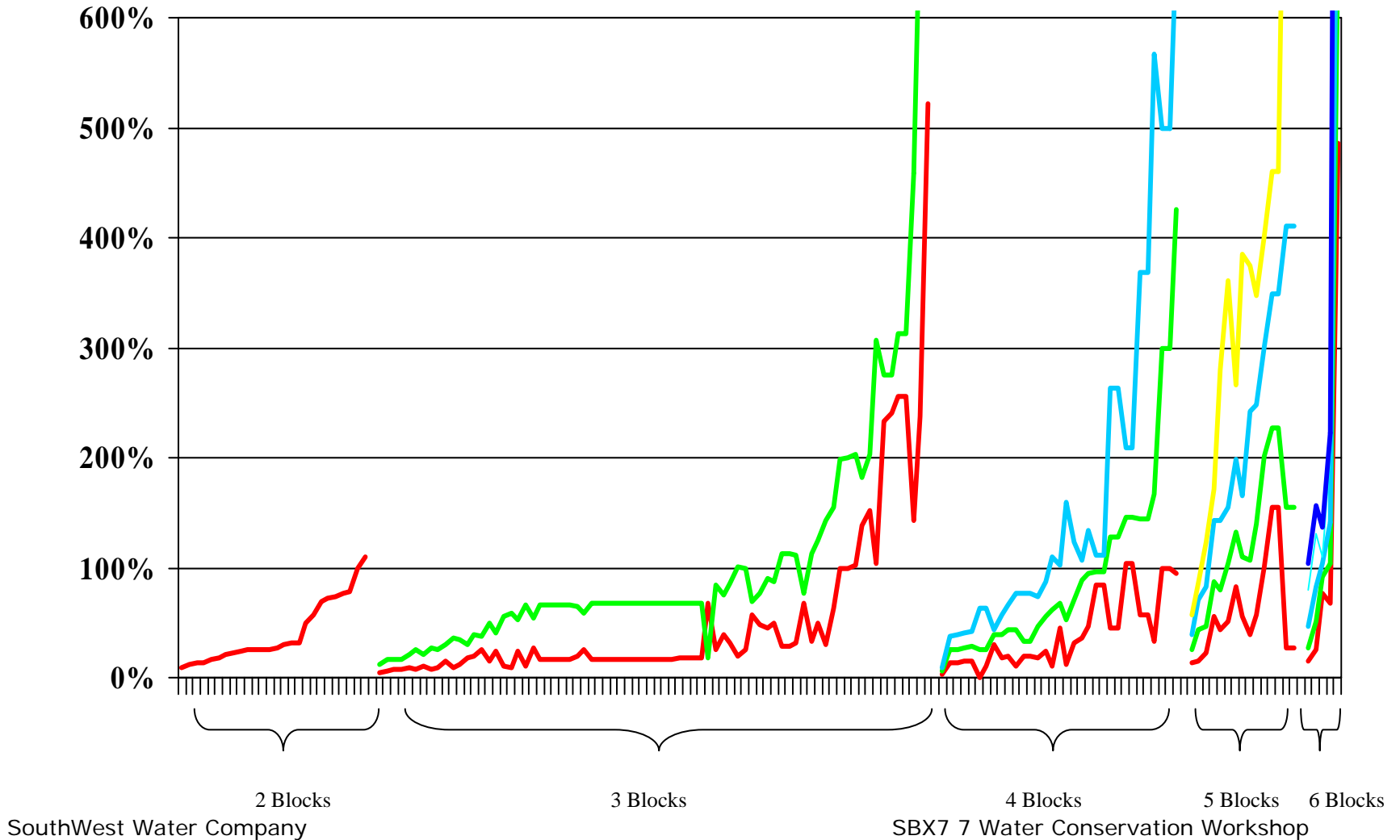
- Set Tier Increases Based On Percentage Deviations From Current Uniform Rate . . .
 - Set First Tier Rate Set At 95% of Single Quantity Rate
 - Set Second Tier Rate Initially At Current Quantity Rate, Then Adjust To Achieve Revenue Neutrality
 - Set Third Tier Rate Set 20% Above Second Tier Rate

Water Utilities' Vulnerability To Demand-Side Risk

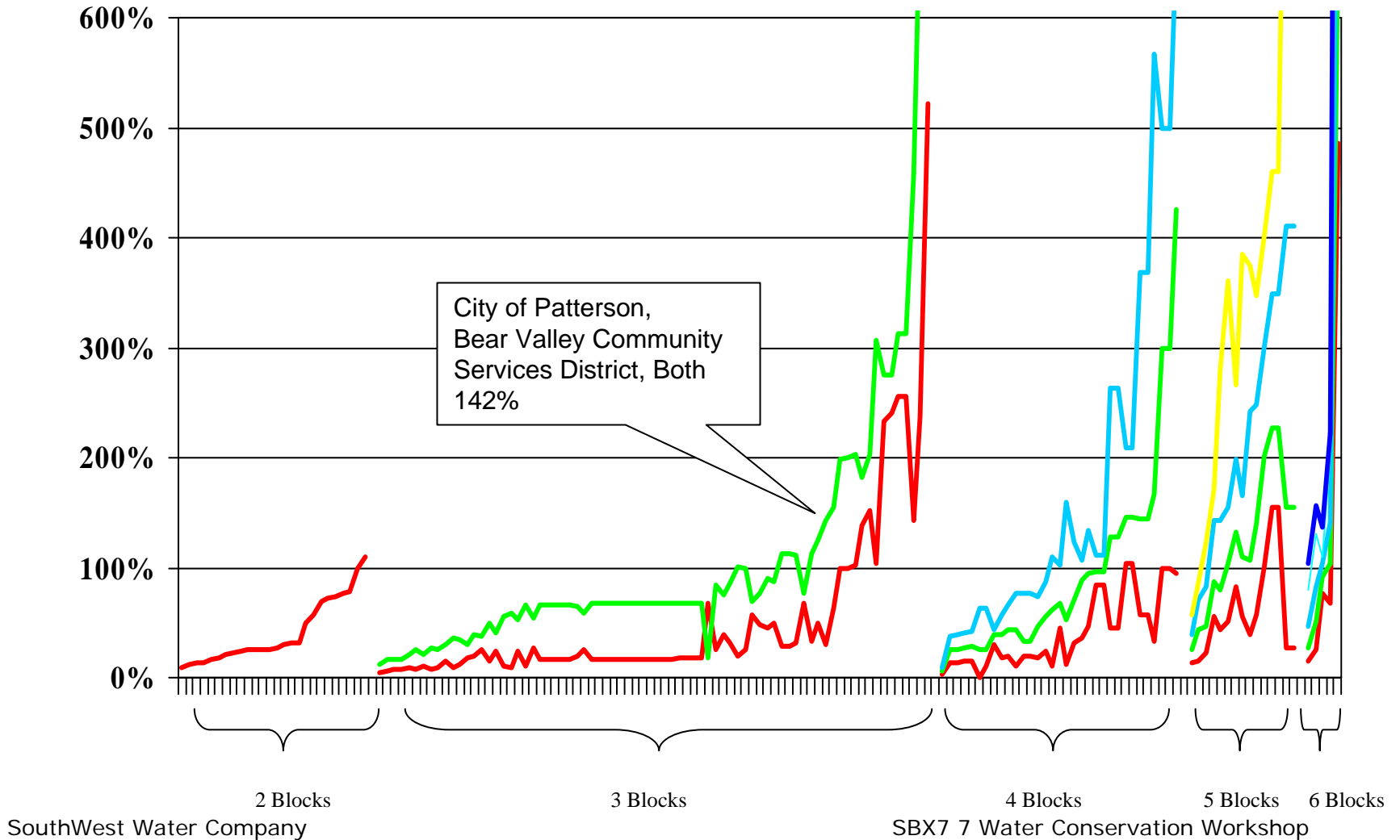


Greatly Differing Risks For
Utilities **With** and **Without** Full
Decoupling Revenue
Adjustment Mechanisms

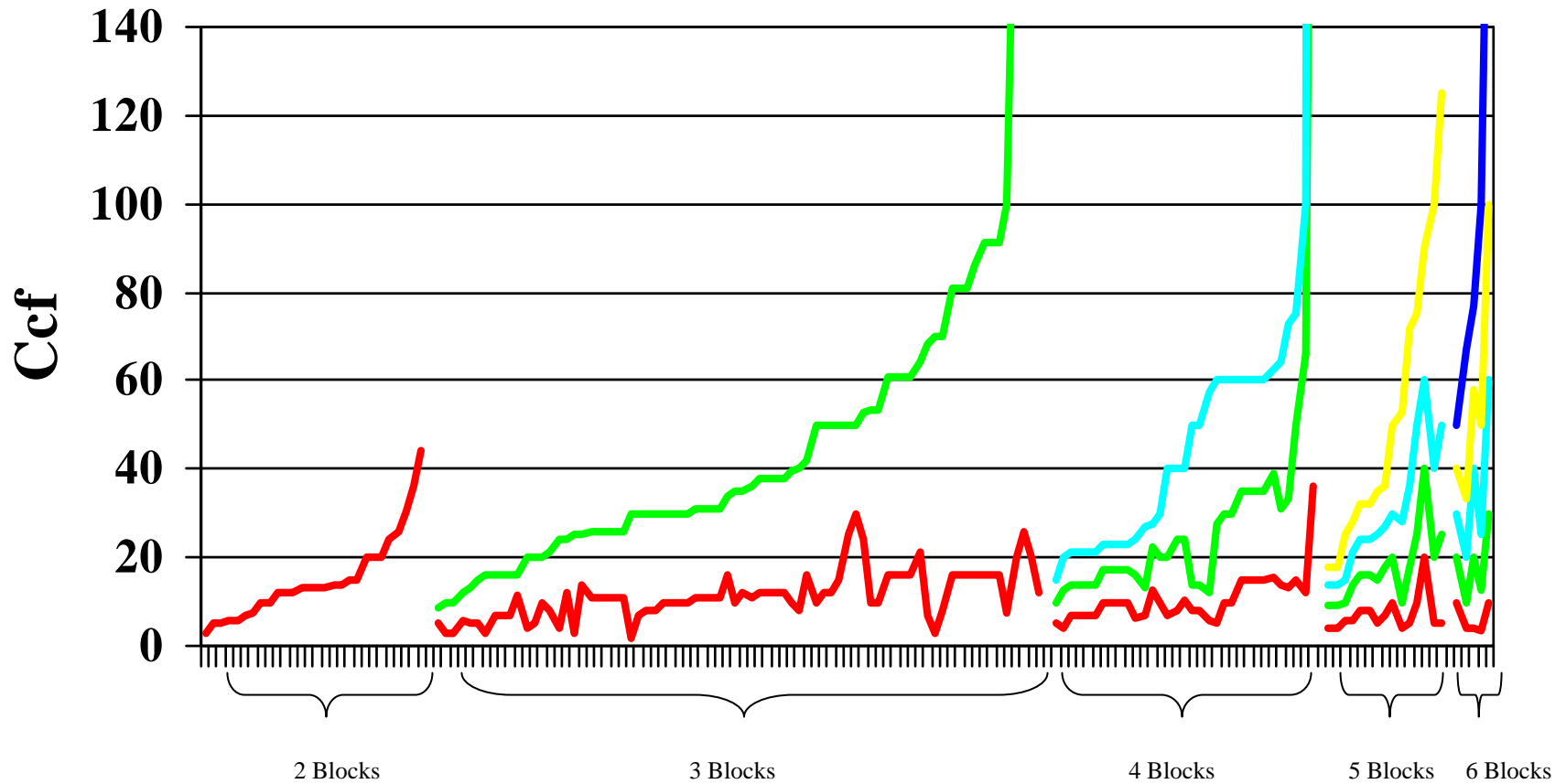
Percent Increase In Each Block's Quantity Rate As Compared To The First Block's Quantity Rate



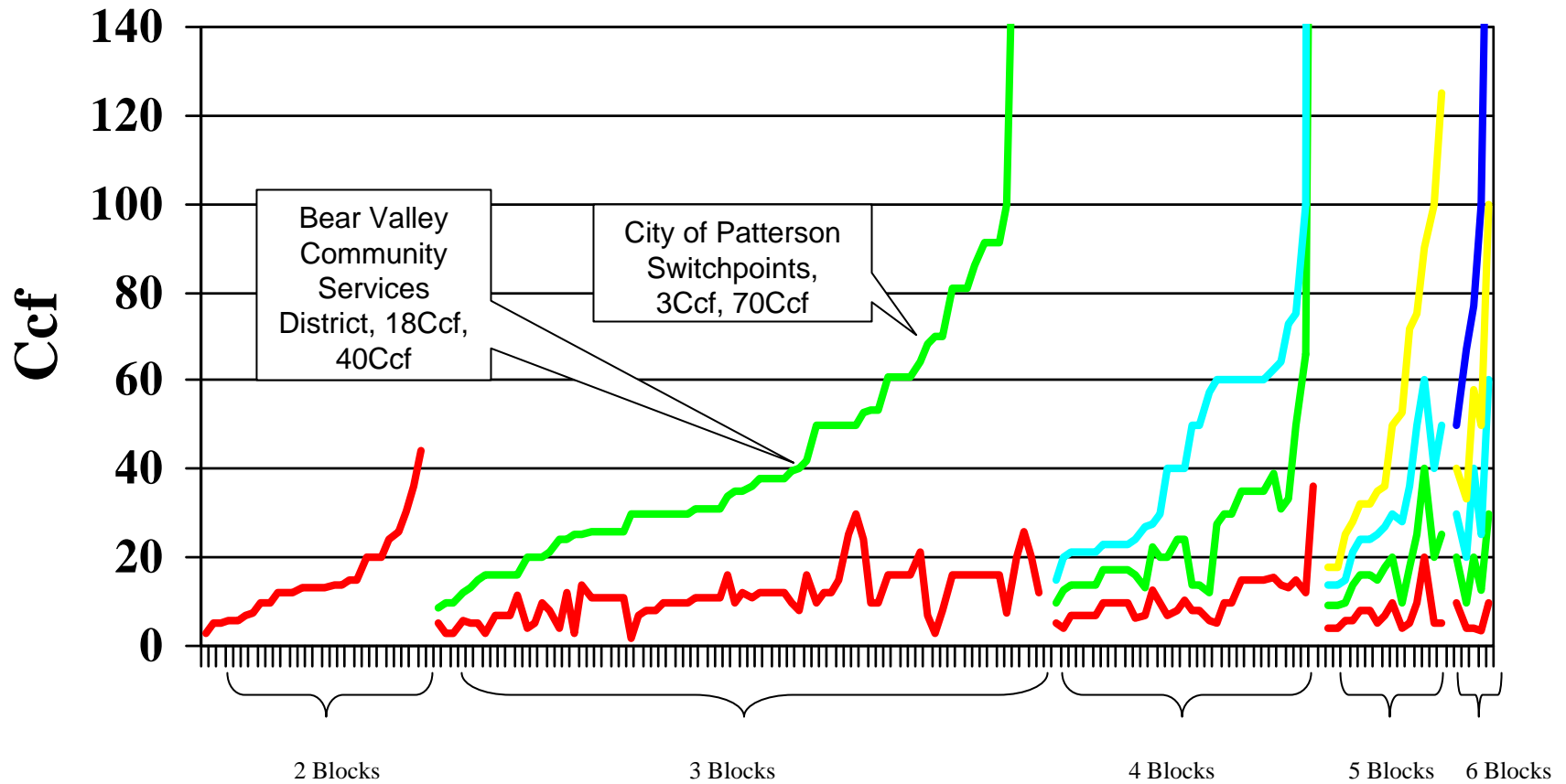
Percent Increase In Each Block's Quantity Rate As Compared To The First Block's Quantity Rate



Switchpoints



Switchpoints



The Suburban Residential Price Signal Index



What Does All This
Really Mean?

The Suburban Residential Price Signal Index

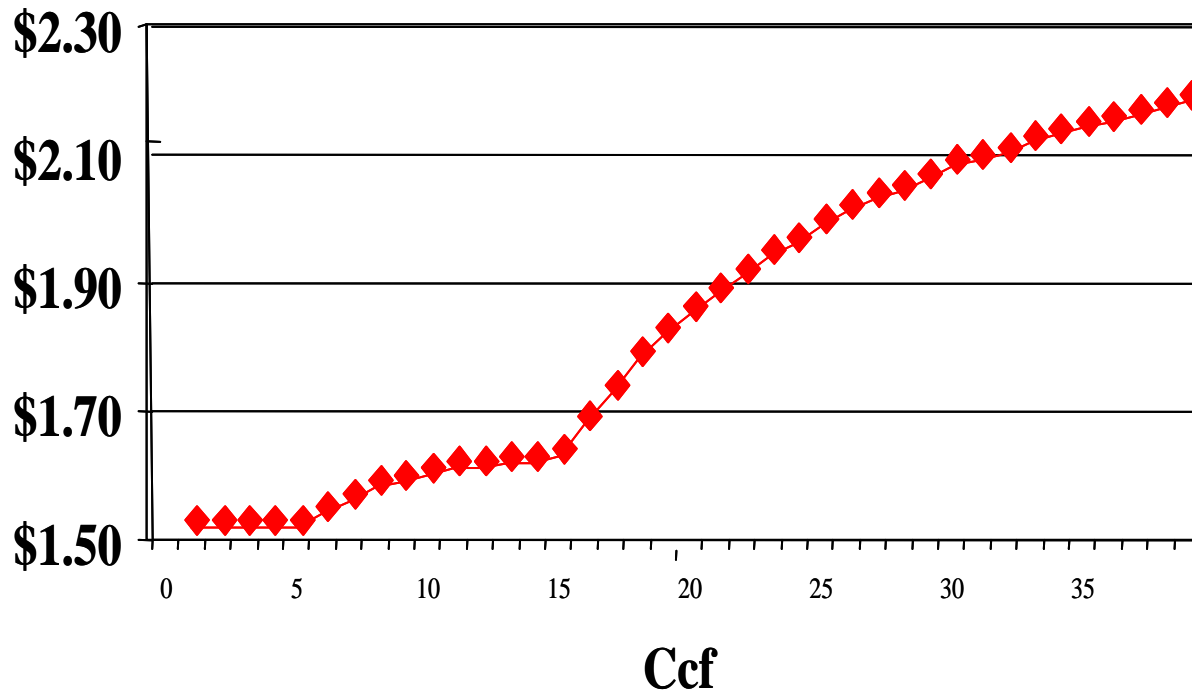


“A rate structure is assumed to provide a strong pricing signal to consumers if the average price elasticity, calculated based on the average price per unit at any given level of demand, is equal to or greater than that for benchmark average CUWCC retailers with an identical number of usage blocks.”
(Billings 1990, Hogarty and Mackay 1975, Foster and Beattie 1981)

The Suburban Residential Price Signal Index



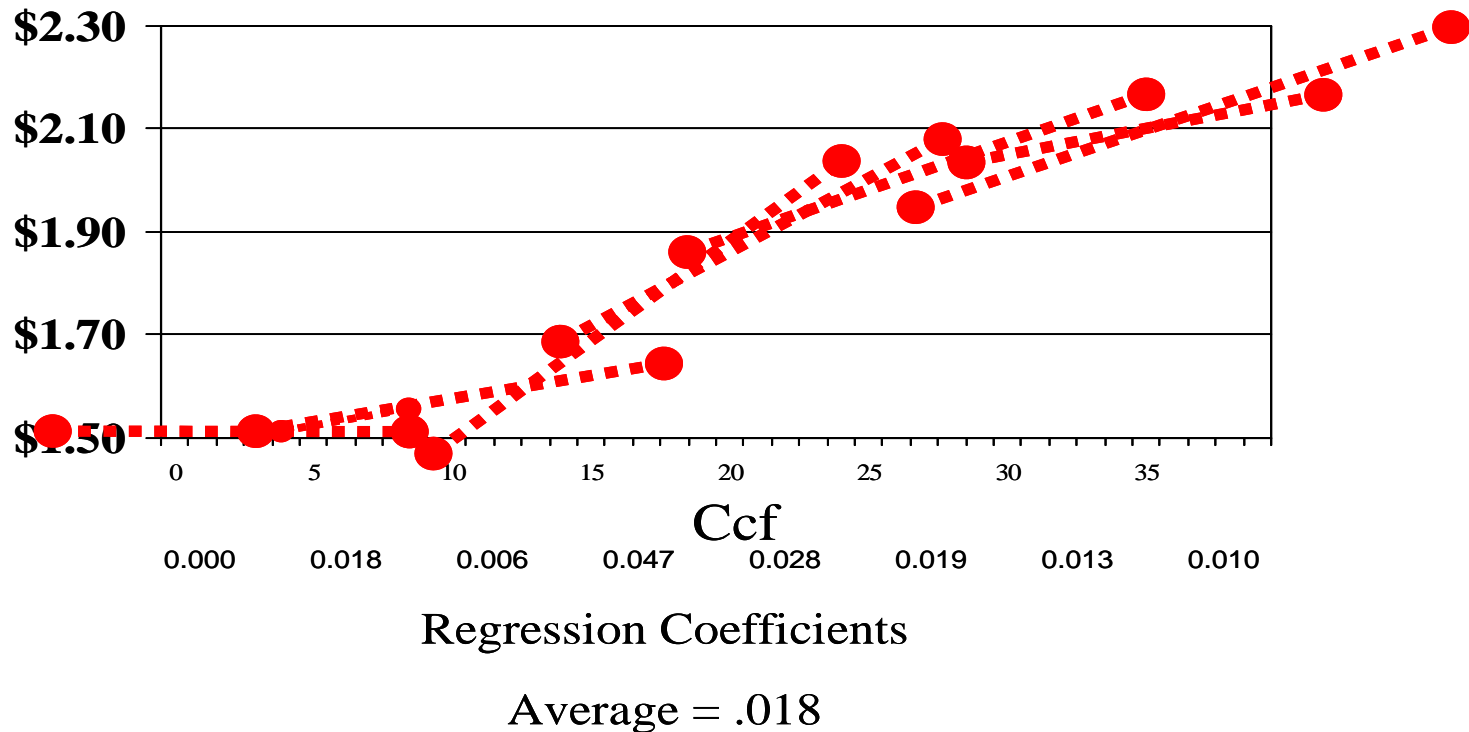
· Average Price Per Ccf
Long Beach Water Department



The Suburban Residential Price Signal Index



Least Squares Regressions In 5 Ccf Increments Long Beach Water Department



The Suburban Residential Price Signal Index



Input Parameters

Enter Rate Design To Be Evaluated

Block 1		Block 2		Block 3		Block 4		Block 5		Block 6	
Ccf	\$	Add'l Ccf	\$	Add'l Ccf	\$	Add'l Ccf	\$	Add'l Ccf	\$	Add'l Ccf	\$

Note: For the highest usage block, enter "100" in the "Ccf" Field

The Suburban Residential Price Signal Index



Input Parameters

Enter Rate Design To Be Evaluated

Block 1		Block 2		Block 3	
Ccf	\$	Add'l Ccf	\$	Add'l Ccf	\$
5	\$1.5150	10	\$1.6830	100	\$2.5250

Note: For the highest usage block, enter "100" in the "Ccf" Field

The Suburban Residential Price Signal Index



CALCULATION RESULTS USING SRPSI USAGE MATRIX

(1 Ccf to 39 Ccf in 5 Ccf Increments, Except For First Block Which is 4 Ccf)

Compare Amounts In **Red**

Blocks	Structures Reported	No. of Rate SRPSI Index	Average							
			1-4 Ccf	5-9 Ccf	10-14 Ccf	15-19 Ccf	20-24 Ccf	25-29 Ccf	30-34 Ccf	35-39 Ccf

SRPSI For Rate Design Being Evaluated

3	N/A	0.018	0.000	0.018	0.006	0.047	0.028	0.019	0.013	0.010
---	-----	--------------	-------	-------	-------	-------	-------	-------	-------	-------

Comparison SRPSI's For The 172 Inclining Block Rate Structures Used By CUWCC Members

2	23	0.013	0.002	0.009	0.028	0.025	0.016	0.011	0.010	0.008
3	91	0.022	0.006	0.053	0.029	0.022	0.017	0.018	0.016	0.013
4	37	0.031	0.018	0.035	0.030	0.031	0.037	0.039	0.033	0.029
5	17	0.050	0.009	0.061	0.052	0.055	0.056	0.055	0.060	0.055
6	4	0.053	0.028	0.122	0.075	0.049	0.039	0.039	0.037	0.035
All	172	0.026	0.009	0.046	0.032	0.028	0.026	0.026	0.024	0.021

Note: The higher the SRPSI index, the stronger the price signal customers are receiving about their usage.

The Suburban Residential Price Signal Index

