Workshop

March 31, 2016
9:00 a.m.

Board Members Present: *Chair* Laurie Ho, Larry Dill, Clyde Nakaya, Sherman Shiraishi and Mike Dahilig *(entered at 9:09 a.m.).*

Excused: Wallace Rezentes, Jr.

Staff Present: Manager and Chief Engineer Kirk Saiki, Marites Yano, Dustin Moises, Val Reyna, Eddie Doi, Keith Aoki, Jeff Mendez, Sandi Nadatani-Mendez, Kim Tamaoka, Carl Arume, Deb Peay, Jonell Kaohelaulii, Rose Navea, Fay Tateishi, Anne Parrott, Karen Delgado, Analyn Flores, Christine Erorita, Deputy County Attorney, Andrea Suzuki

Guests: Raftelis Financial Consultants, Mr. Sudhir Pardiwala, Ms. Hannah Phan, Ms. Nancy Kanna, Kaua'i Board of Realtors

AGENDA

Mr. Dill moved to approve the Agenda as circulated; seconded by Mr. Nakaya; with no objections motion carried with 4 ayes.

NEW BUSINESS

1. ***Rates 101* - Utility Management Workshop presented by Raftelis Financial Consultants, Inc. included the following topics:**
   a. Rate Study Approach
   b. Financial Plan
      i. Financial Policies – Debt and Reserves
   c. Cost of Service Analysis
   d. Rate Structure Alternatives
      i. Current Customer Characteristics
   e. Pricing Objectives Exercise

BACKGROUND:

Mr. Sudhir Pardiwala is the Project Manager with Raftelis Financial Consultants for 11 years and practiced for over 30 years. Ms. Hannah Phan is the lead consultant who developed the rate study model.

At 9:09 a.m., Mr. Dahilig entered the meeting.

Developing rates was covered as well as the rate study objectives, how to conduct the study in general, and policies in pricing objectives in the rate study.

At 9:16 a.m., Mr. Dahilig exited the meeting.

The Financial Plan is the revenue adjustments needed and what the rate increase would look like. Cost of Service Analysis identifies the cost that should be allocated to different customer classes by meters. The rate study would determine the needs to meet equity and fairness requirements for all customers.

At 9:20 a.m., Mr. Dahilig re-entered the meeting.

(Please refer to the comments from the <u>updated Rates 101 PowerPoint presentation</u> on slides – 18, 53, 54, 56, 58 & 59.)

Respectfully submitted,

Edie Ignacio Neumiller
Commission Support Clerk

Approved,

Sherman Shiraishi
Secretary – Board of Water Supply

COUNTY OF KAUAI

DEPARTMENT OF WATER

Rates 101 Workshop

March 31, 2016

OUTLINE

- » Overview of a Rate Study
  - › Objectives of a Rate Study
  - › Rate Study Approach
  - › Rate Setting Principles: Financial Goals and Pricing Objectives
- » Financial Plan Development
- » Cost of Service Allocation
- » Rate Design
- » Q&A

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OBJECTIVES OF A RATE STUDY

Main Objective:

» Recovery of full revenue requirement in a fair and equitable manner

Other Underlying Objectives:

» Effectiveness in yielding full cost recovery
» Stability of rates to deal with unexpected and adverse changes
» Defensibility and compliance with legal regulations
» Fairness of rates amongst different ratepayers
» Avoidance of undue discrimination (subsidies) within the rates
» Simplicity and ease of understanding and administration
» Promotion of efficient water use

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RATE STUDY APPROACH

PHASE 1 | POLICY REVIEW

- Project Initiation
- Review Pricing Objectives
- Policy Review
- Usage Analysis

PHASE 2 | MODEL DEVELOPMENT

- Policy Review
- Financial Plan
- Cost of Service Analysis
- Rate Calculations
- Impact Analysis

PHASE 3 | IMPLEMENTATION

- Comprehensive Report
- Community Participation
- Easy to Understand Presentation
- Public Hearing

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COMMON PRICING OBJECTIVES

Conservation	Funding Mechanism	Affordability	Equity and Allocation Methodologies	Administration
• Reduce total annual demand • Reduce water waste • Reduce peak demand • Reduce outdoor water usage	• Ensure financial sufficiency • Enhance revenue stability • Provide funding mechanisms for alternative water supply, conservation program	• Minimize customer impacts • Maintain low average customer bills • Craft rates that provide affordable water for essential uses	• Allocate water supply equitably • Provide conservation incentives • Allocate capital costs equitably • Comply with government regulations and guidelines	• Allow cost-effective administration • Allow easy implementation • Enhance customer understanding • Billing system capability

Some Pricing Objectives conflict with others and there needs to be a balance

From Water and Wastewater Finance and Pricing: The Changing Landscape, 4th Edition

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FINANCIAL GOALS

» To ensure financial sufficiency
» To manage and mitigate risks
» To minimize rate fluctuations
» To achieve/maintain a certain credit rating

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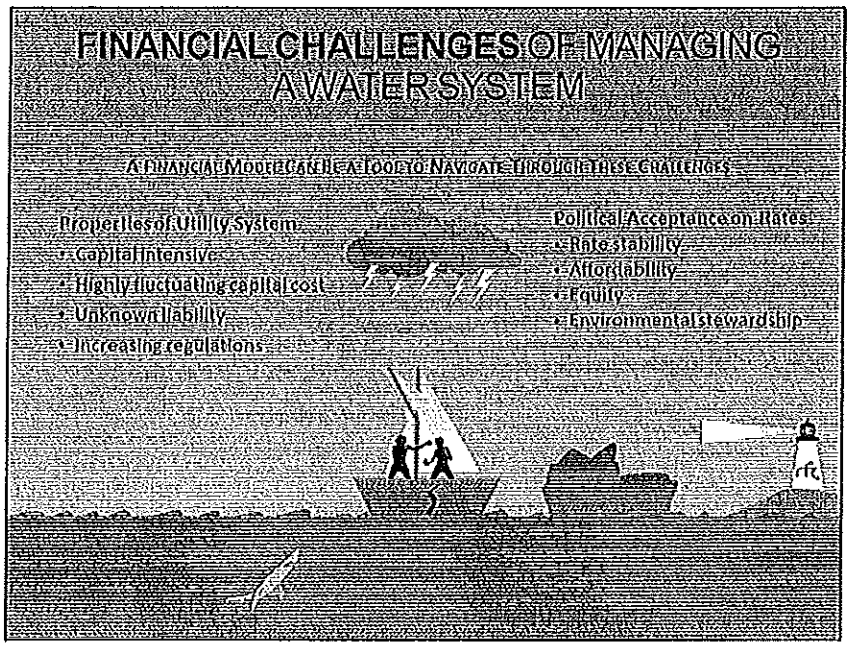
FINANCIAL CHALLENGES OF MANAGING A WATER SYSTEM
A FINANCIAL MODEL CAN BE A TOOL TO NAVIGATE THROUGH THESE CHALLENGES
Properties of Utility System
Capital intensive
Highly fluctuating capital cost
Unknown liability
Increasing regulations
Political Acceptance on Rates
Rate stability
Affordability
Equity
Environmental stewardship

FINANCIAL PLAN DEVELOPMENT

WHY FINANCIAL PLANNING?

Financial Sufficiency for the Short- and Long-Term

» Operating expenses
» Anticipated capital expenditures

Preparation for the Future

» Identify known facts and variables
» Anticipate unknown variables and evaluate associated risks

Tool for Agencies

» Minimize rate fluctuations from year to year
» Develop and assess financial policies, budget goals and objectives

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FINANCIAL HEALTH INDICATORS

Reserve Requirements

- Operating – funds used to meet working capital requirements
- Rate Stabilization – funds used during periods of revenue shortages
  - Probability analysis required to determine the appropriate reserve levels
- CIP Reserves – Funding requirements to award contract and variances from estimated costs
- Emergency – funds available in case of asset failure
  - Critical asset replacement analysis is required to determine the appropriate reserve level

Coverage Ratio Requirements

- Exceed Official Statement requirements
- Achieve / Maintain good credit ratings
- If there is no debt, what is your debt capacity?
  - How much debt are you able to issue with your current rates?

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OVERVIEW OF FINANCIAL POLICIES

Goals of Financial Policies

» To mitigate risk due to
- Rate / revenue instability
- Emergency with asset failure
- Volatility in working capital

» To achieve/maintain a certain credit rating

» To determine when to issue debt

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(At 9:30 a.m., Mr. Nakaya exited the meeting.)

OVERVIEW OF FINANCIAL POLICIES

Importance of Financial Policies

» To maintain financial solvency

- Provide a basis for coping with fiscal emergencies (revenue short-falls, asset failure, emergency, etc. ...)

» To provide guidelines for sound financial management with an overall long-range perspective

» To enhance financial management transparency

- Improve public's confidence and elected officials' credibility

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CREDIT RATING CRITERIA ON LIQUIDITY

» Unrestricted cash balances available to meet working capital needs

› Unrestricted cash balances include all cash and investments dedicated for working capital, rate stabilization or R&R needs

» Criteria – measures in Days Cash

› Days Cash = Unrestricted balances / average daily O&M expenses for the year

Median Ratings	Days Cash on Hand
BBB	226
A	239
AA	354
AAA	415

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DEBT COVERAGE REQUIREMENTS

» Debt Coverage = Net Revenues * / Debt Service

» Criteria used by Standards & Poor's (S&P) for credit ratings:

- Insufficient <1.00x
- Adequate 1.01x to 1.20x
- Strong 1.21x to 1.60x
- Very Strong >1.60x

* Net Revenues = operating revenues – operating expenses

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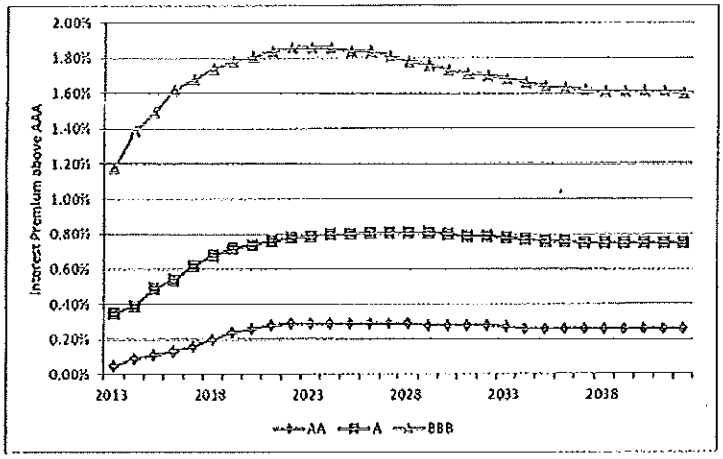
(At 9:35 a.m., Mr. Nakaya re-entered the meeting.)

VALUE OF HIGH CREDIT RATING



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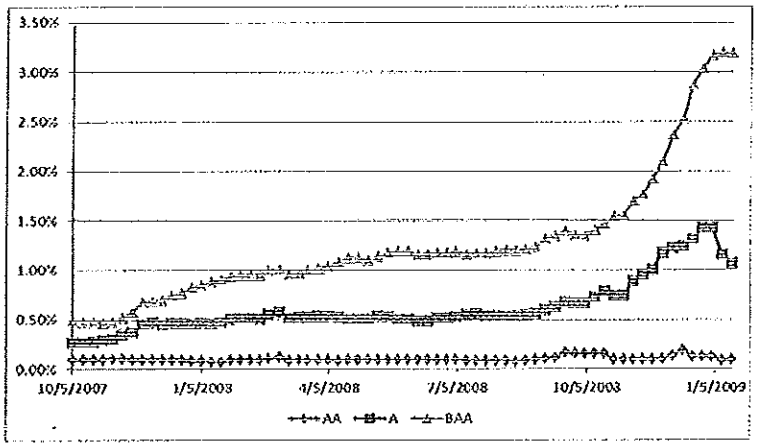
MARKET VOLATILITY AFFECTS THE PREMIUM



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CURRENT DEPARTMENT POLICIES

- Emergency Reserve Fund (ERF)
  - Purpose: to be used during emergencies or disasters, not for normal business purposes
  - Set to 25% of Total Operating Expenses Budget, excluding interest and non-cash expenses
- Debt Service Reserve Fund (DSRF)
  - Purpose: to service outstanding debt
  - Set to 50% of the upcoming fiscal year's debt service requirement

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INDUSTRY POLICIES

- Operating Reserve
  - Typically 30 to 90 days of operating expenses
- Rate Stabilization Reserve
  - Typically 10 to 20 percent of rate revenue
- Capital Reserve
  - Typically 100% of replacement CIP
- Emergency Reserve
  - Based on mitigating failure of critical asset cost

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Mr. Dill inquired how the policies compare to the Hawai'i industry? Mr. Pardiwala said this would be discussed with the Board and staff at the next rates meeting.

PROJECTING REVENUES

- » Historical data as a basis for projecting future revenues
- » Projection considerations:
  - › Growth in accounts and usage
  - › Price elasticity
  - › Weather / conservation normalization
  - › Nonrecurring revenues: grants, rebates

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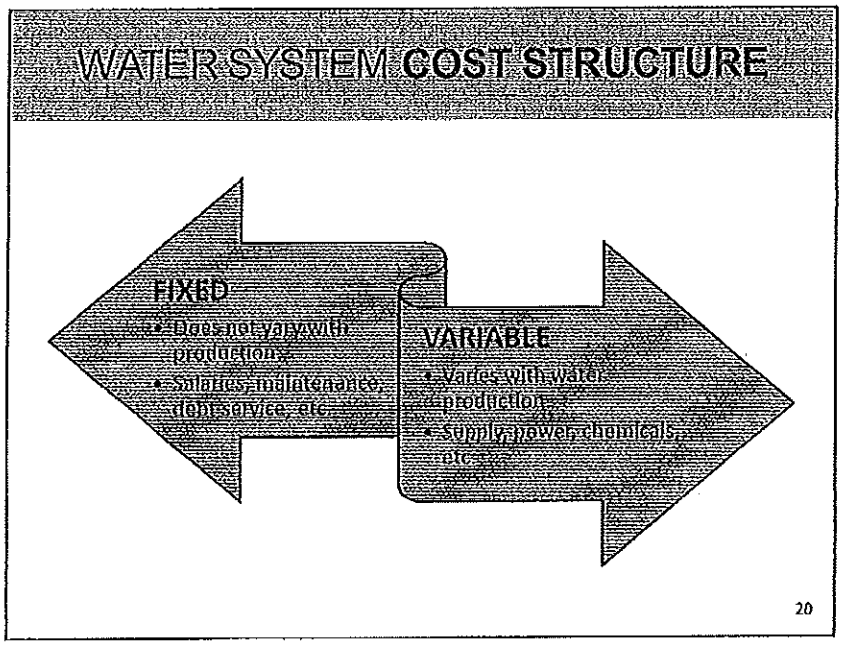
WATER SYSTEM COST STRUCTURE
FIXED
• Does not vary with production
• Salaries, maintenance, debt service, etc.
VARIABLE
• Varies with water production
• supply, power, chemicals, etc.
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WATER SYSTEM COST STRUCTURE

Fixed Costs are High

75 TO 90%
of total annual costs

Variable Costs are Low

10 TO 25%
of total annual costs

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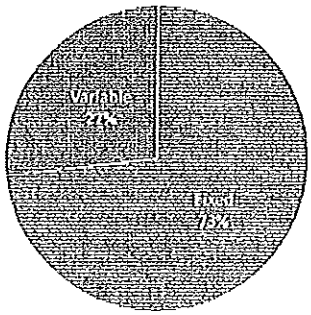
WATER SYSTEM COST AND REVENUE CONUNDRUM

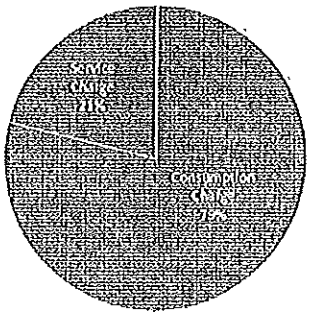
FY 2015 Operating Budget



Total operating budget = $17,059,117*

*excludes debt service payments

FY 2015 Revenues



Total rate revenue = $26,075,123*

*excludes public fire revenue

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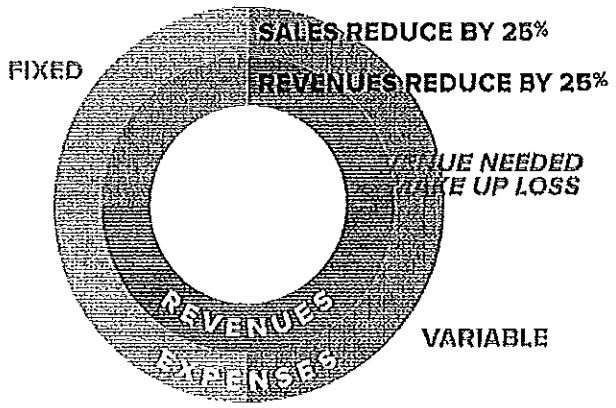
WATER SYSTEM COST AND REVENUE CONUNDRUM



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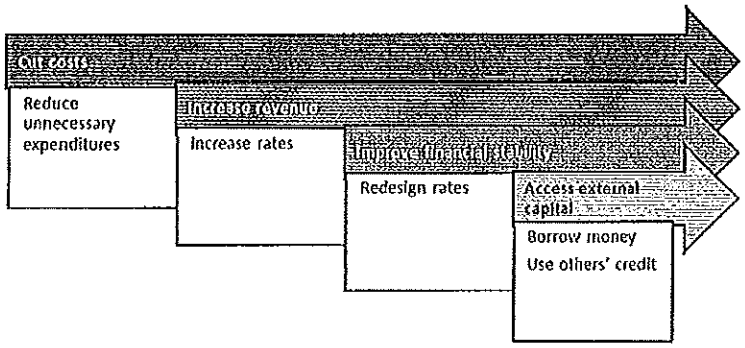
OPTIONS TO INCREASE FINANCIAL STABILITY



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DEBT FUNDED CIP

ADVANTAGES	DISADVANTAGES
» Cheaper short-term option relative to rate-funded financing » Provides intergenerational equity » Far less impactful on current ratepayers » Historically low interest rate environment	» More costly (in absolute dollars) in the long term, relative to rate-funded financing » Obliges the agency to maintain minimum revenue/liquidity levels for debt coverage requirements

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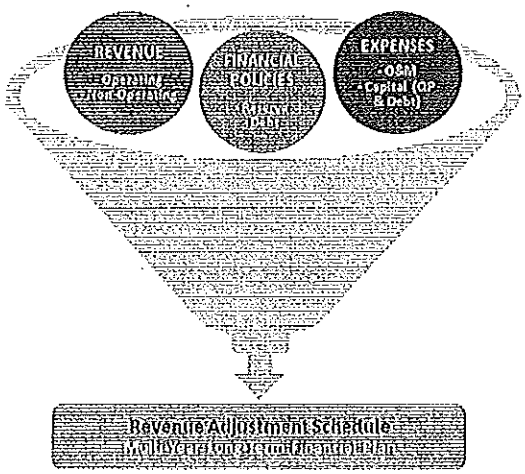
PROJECT APPROACH

FINANCIAL PLAN APPROACH



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PROJECTING O&M EXPENSES

» Historical data as basis for projections
  › Actual (CAFR), Estimated or Budget

Projection Considerations:

» Inflations: salary, benefits, energy, general, etc.
» Water supply portfollo changes
» Growth
» Non-recurring O&M expenses
» Interdepartmental O&M expenses

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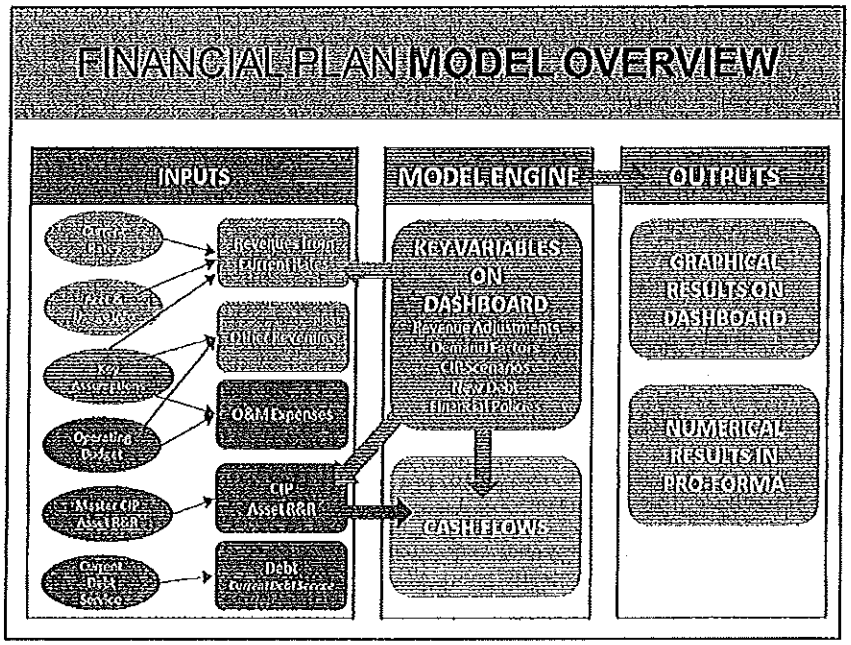
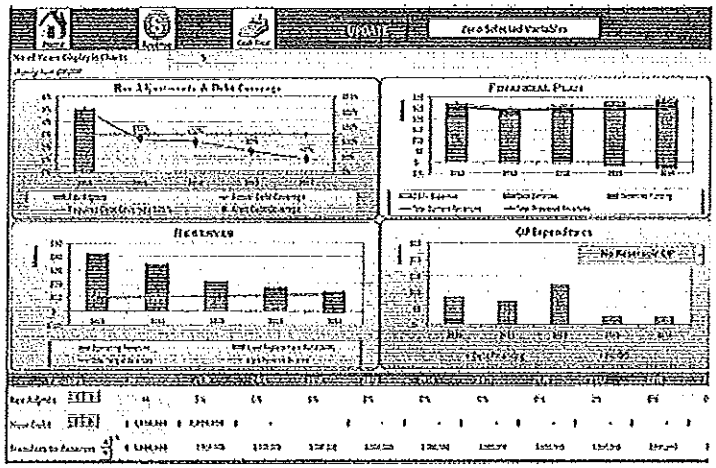

FINANCIAL PLAN MODEL OVERVIEW
INPUTS
MODEL ENGINE
OUTPUTS
Revenue Inputs
Other Revenues
O&M Expenses
CIP
Asset R&R
Debt
KEY VARIABLES
ON
DASHBOARD
Revenue Adjustments
Demand Factor
Discounts
New Debt
Interest Rates
CASH FLOWS
GRAPHICAL
RESULTS ON
DASHBOARD
NUMERICAL
RESULTS IN
PRO FORMA

FINANCIAL PLANNING DASHBOARD



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COST OF SERVICE ALLOCATION

WHAT IS COST OF SERVICE?

» The method to recover costs from users in proportion to their use of the system, recognizing the impact of each class on system facilities and operations
  - A cost-based process of converting revenue requirements into unit costs
  - Allocation of cost of service to customer classes is based on customer usage characteristics

» Cost of service is the fundamental benchmark used to establish utility rates in the United States

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RATIONALE FOR COST OF SERVICE

Rationale:

» Different types of customers generate different costs because their patterns of use or characteristics are different

» Cost of service allows the matching of rates charged to each group with the costs of serving them

» Each group will "pay its own way"; no subsidies

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COST OF SERVICE ALLOCATION PROCESS AWWA *MANUAL M1* 6TH EDITION

» Identify annual revenue requirements by function or activity

» Allocate these functionalized costs to appropriate cost causation components

» Determine customer class characteristics

» Develop unit costs for each cost component

» Distribute costs to customer classes

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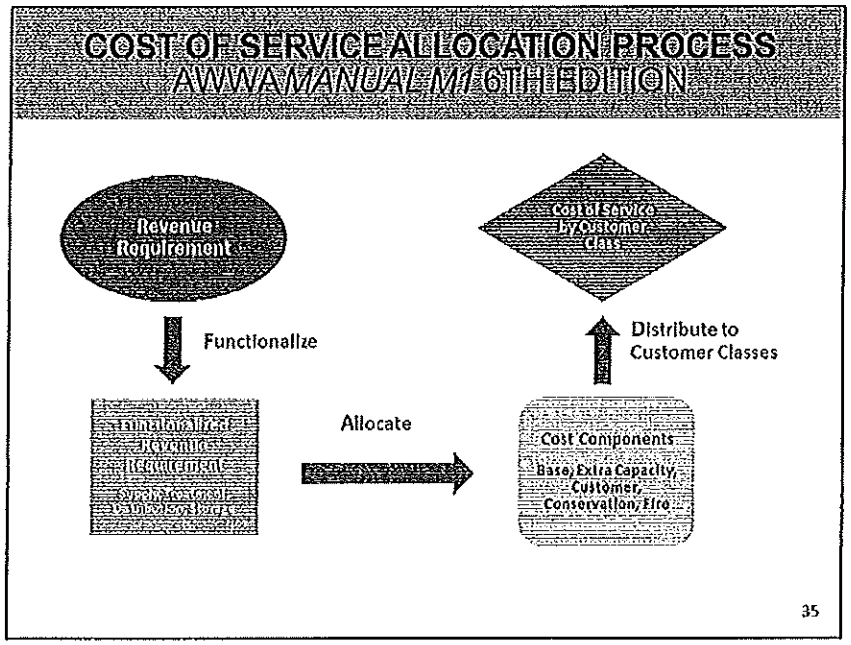
COST OF SERVICE ALLOCATION PROCESS
AWWA MANUAL M1 6TH EDITION
Revenue Requirement
Functionalize
Allocate
Cost Components
Base, Extra Capacity, Customer, Conservation, Fire
Distribute to Customer Classes
Cost of Service by Customer Class
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BASE-EXTRA CAPACITY METHOD

Cost Causation Components

- Base Water Supply: Variable costs that vary with total quantity of water used
- Base Delivery: O&M expenses and capital costs associated with service to customers under average load conditions (base use)
- Peaking (or Extra Capacity) Costs: costs associated with meeting peak demand rate of use in excess of base use
  - Max day extra demand
  - Max hour extra demand
- Meter Maintenance: maintenance and capital costs related to meters
- Customer Service: costs associated with serving customers, irrespective of the amount or rate of use
  - Meter reading, billing, customer accounting, customer service, collecting expense
- Fire: costs that apply solely to the fire protection function
  - Public hydrants
  - Related branch mains and valves

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STEP 1: ALLOCATION OF REVENUE REQUIREMENT BY FUNCTION/ACTIVITY

OPERATING REVENUE REQUIREMENTS

- Water Supply
- Storage
- Treatment
- Pumping
- Transmission
- Distribution
- Hydrants/Fire Protection
- Meters
- Customer Service/Billing & Collections
- General & Administration

CAPITAL REVENUE REQUIREMENTS

- Water Supply
- Storage
- Treatment
- Pumping
- Transmission
- Distribution
- Hydrants/Fire Protection
- Meters
- Customer Service/Billing & Collection
- General & Administration

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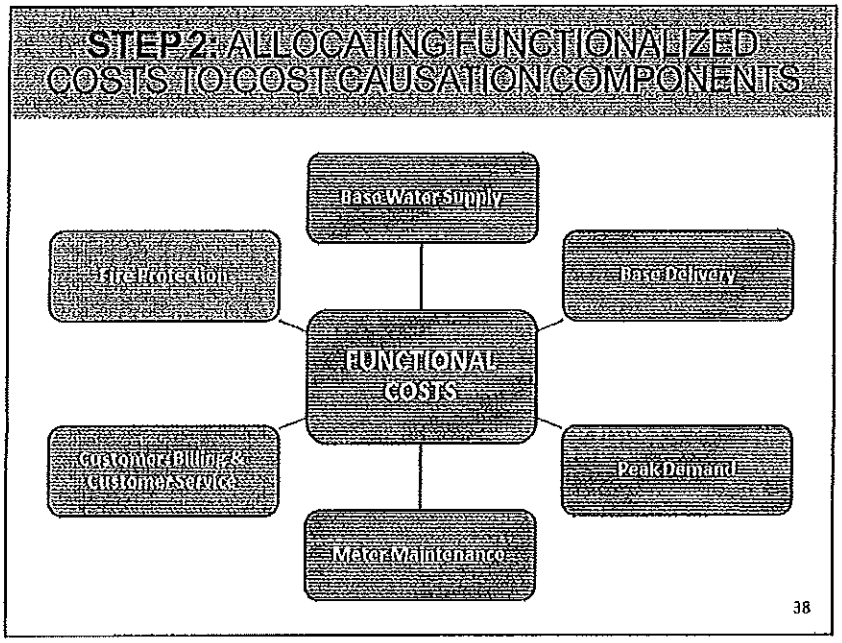
STEP 2: ALLOCATING FUNCTIONALIZED COSTS TO COST CAUSATION COMPONENTS
Base Water Supply
Fire Protection
Base Delivery
FUNCTIONAL COSTS
Customer Billing & Customer Service
Peak Demand
Meter Maintenance
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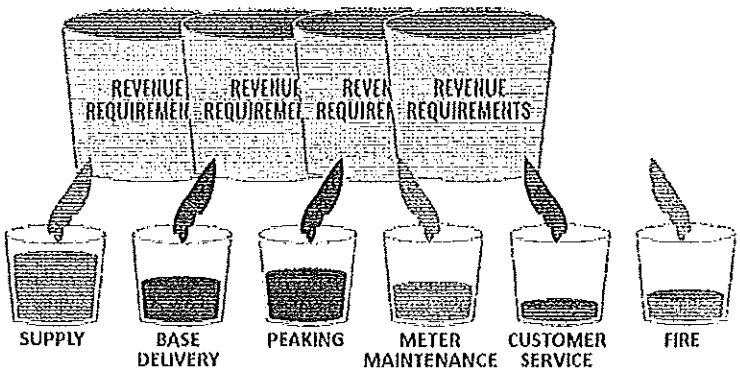
BASE-EXTRA CAPACITY METHOD
AWWA *MANUAL M1* 6TH EDITION



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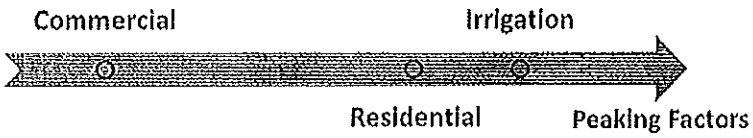
PEAKING FACTORS

- Peaking factors:
  - Indoor Use: lower peaking factors
  - Outdoor Use: higher peaking factors
  - Commercial / Industrial: lower peaking factor
- Peaking factors by customer class are used to distribute peaking costs to each class



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EQUIVALENT METER RATIOS

» Meter service costs can be distributed to customers in proportion to the investment in meters and services installed (i.e. meter costs)

» Capacity (Peaking) related costs can be distributed to customers in proportion to the hydraulic capacity of installed meters

	Based on Meter Costs	Based on * Hydraulic Capacity
5/8 - in	1.0	1.0
3/4 - in	1.1	1.5
1 - in	1.4	2.5
1 1/2 - in	1.8	5.0
2 - in	2.9	8.0
3 - in	11.0	17.5
4 - in	14.0	31.5
6 - in	21.0	70.0
8 - in	29.0	120.0

* From AWWA Manual M22
Sizing Water Lines and Meters

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STEP 3: DEVELOP UNITS OF SERVICE BY CUSTOMER CLASS FOR EACH COST COMPONENT

For Each Customer Class:

» Annual Usage or Base Units

» Max Day Units

› Extra Capacity Max Day Units

» Max Hour Units

› Extra Capacity Max Hour Units

» Customer Units:

› Number of bills

› Equivalent meters

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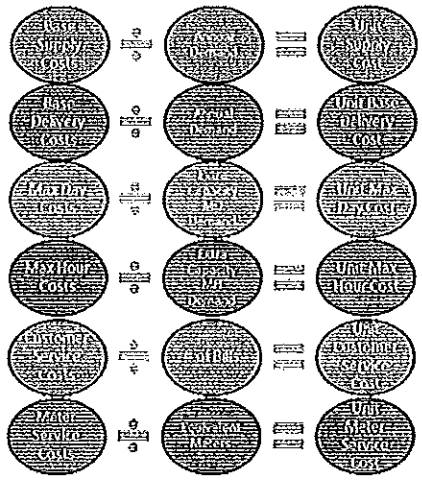
STEP 4: DEVELOP UNIT COSTS OF SERVICE FOR EACH COST COMPONENT



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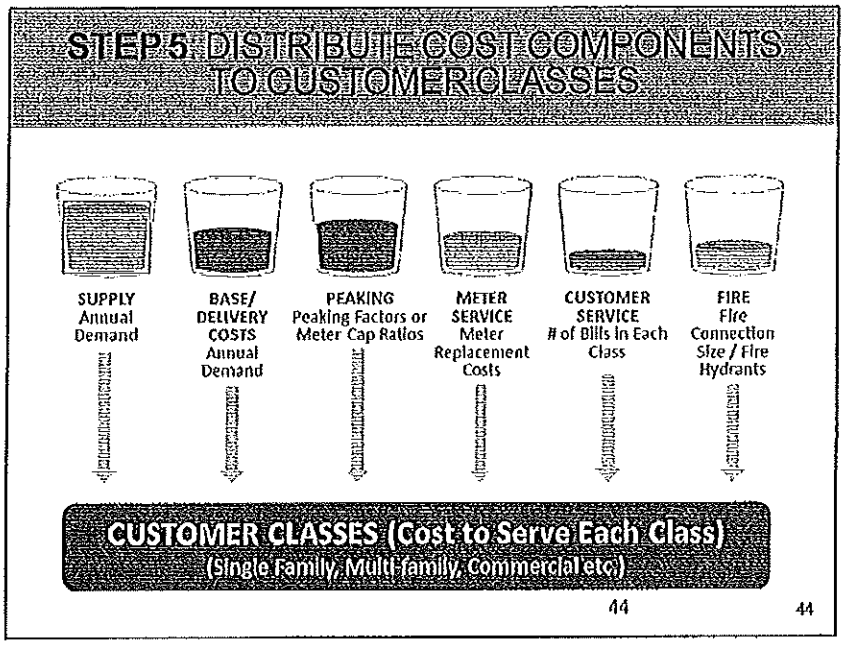
STEP 5: DISTRIBUTE COST COMPONENTS TO CUSTOMER CLASSES
SUPPLY Annual Demand
BASE/ DELIVERY COSTS Annual Demand
PEAKING Peaking Factors or Meter Cap Ratios
METER SERVICE Meter Replacement Costs
CUSTOMER SERVICE # of Bills in Each Class
FIRE Fire Connection Size / Fire Hydrants
CUSTOMER CLASSES (Cost to Serve Each Class)
(Single Family, Multi-family, Commercial etc.)
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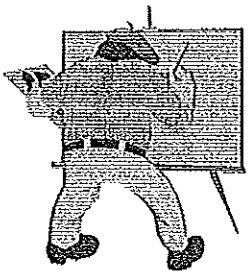
RATE DESIGN

RATE DESIGN

- » Common Pricing Objectives
- » Existing Water Rates
  - › Customer Data Analysis
- » Alternative Water Rate Structures
  - › Simple to understand and administer
  - › Billing system capability
- » Revenue Stability Options



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COMMON PRICING OBJECTIVES

Conservation	Funding Mechanism	Affordability	Equity and Allocation Methodologies	Administration
• Reducing total annual demand • Reducing water waste • Reducing peak demand • Reducing outdoor water usage	• Enhancing revenue stability • Ensuring financial sufficiency • Providing funding mechanisms for alternative water supply, conservation program	• Minimizing customer impacts • Maintaining low average customer bills • Crafting rates that provide affordable water for essential uses	• Allocating water supply equitably • Providing conservation incentives • Allocating capital costs equitably • Complying with government regulations and guidelines	• Allowing cost-effective administration • Allowing easy implementation • Enhancing customer understanding • Billing system capability

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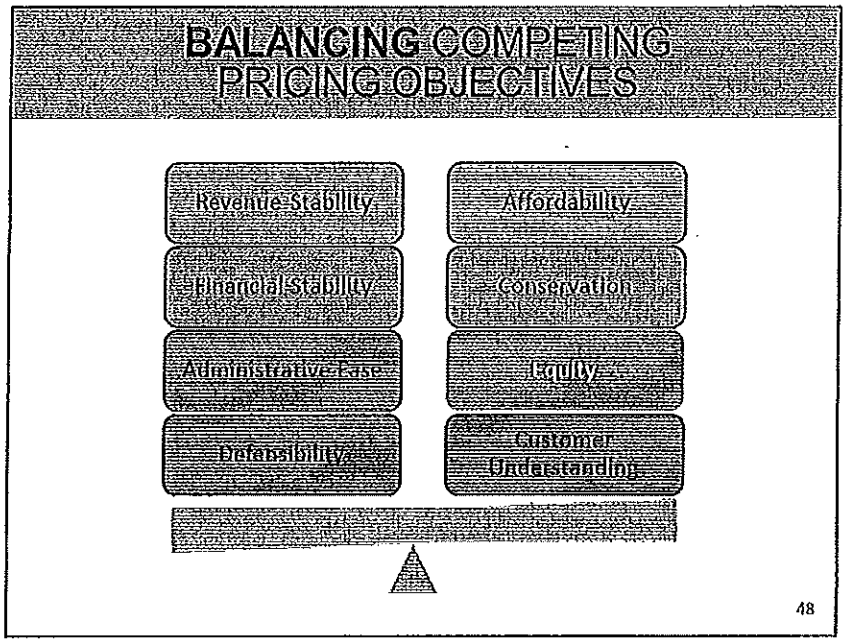
BALANCING COMPETING PRICING OBJECTIVES
Revenue Stability
Financial Stability
Administrative Ease
Defensibility
Affordability
Conservation
Equity
Customer Understanding
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EXISTING WATER RATES

» Monthly service charge + 4-tier consumption rate

› Tiers are based on meter size

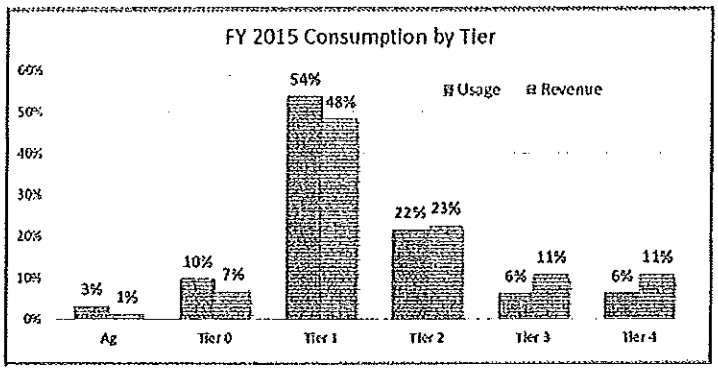
› Agriculture customers have uniform rate of $2.20/kgal

Monthly Tiers (kgal)	No. of Meters	Service Charge	Tier 0 Min	Tier 1	Tier 2	Tier 3	Tier 4
			$3.80	$4.85	$5.65	$9.50	$10.00
5/8"	20,784	$17.75	1	7	14	18	18 +
3/4"	108	$24.75	2	29	57	65	65 +
1"	211	$36.50	3	68	137	175	175 +
1 1/2"	209	$65.50	10	169	337	387	387 +
2"	199	$100.00	12	400	750	925	925 +
3"	53	$181.00	50	600	1,200	1,750	1,750 +
4"	40	$297.00	175	1,000	2,500	2,750	2,750 +
6"	59	$587.00	225	4,000	7,500	10,000	10,000 +
8"	56	$934.00	250	1,000	2,500	12,500	12,500 +

FY 2015 CUSTOMER DATA

Meter Size	Usage (kgal)	Number of Meters	Average Monthly Use (kgal)
5/8 Inch	2,160,717	20,784	9
3/4 inch	48,851	108	38
1 inch	117,981	211	47
1-1/2 Inch	273,491	209	109
2 Inch	362,748	199	152
3 Inch	343,110	53	539
4 Inch	200,570	40	418
6 Inch	411,961	59	582
8 Inch	82,843	56	123
TOTAL	4,002,272	21,719	15

FY 2015 CUSTOMER DATA



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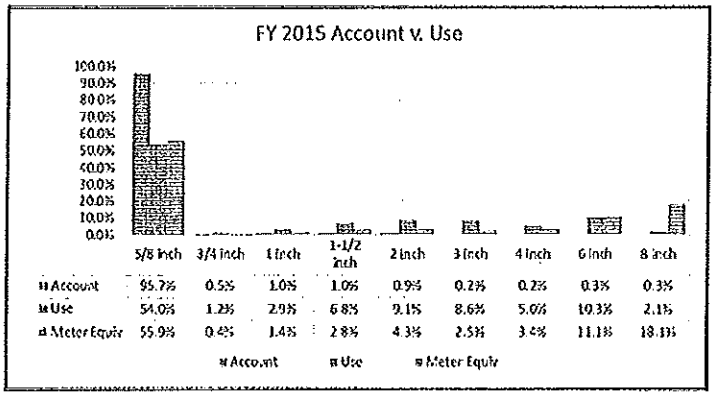
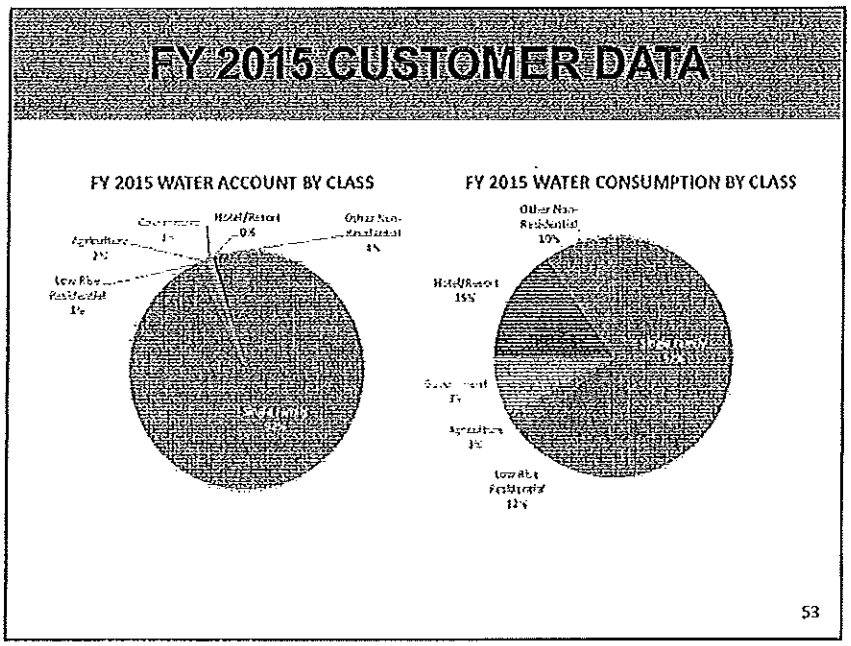
FY 2015 CUSTOMER DATA



	5/8 inch	3/4 inch	1 inch	1-1/2 inch	2 inch	3 inch	4 inch	6 inch	8 inch
Account	95.7%	0.5%	1.0%	1.0%	0.9%	0.2%	0.2%	0.3%	0.3%
Use	54.0%	1.2%	2.9%	6.8%	9.1%	8.6%	5.0%	10.3%	2.1%
Meter Equiv	55.9%	0.4%	1.4%	2.8%	4.3%	2.5%	3.4%	11.1%	18.3%

S2



Information Technology Specialist, Ms. Nadatani-Mendez said the Low Rise Residential category was part of an old billing system; some categories may not be correct. Some of the Government categories could be under Single Family. Categories are currently being corrected because there were a lot of accounts. Mr. Dahilig asked if the Hotel/Resort category included vacation rentals? He requested research be done to parse out single family vs. single family vacation rentals. Planning Department could provide permitting information to assist with the research. Chair Ho commented water usage would go up with single family vacation rentals. These could be second homes. Mr. Pardiwala said it depends if single family vacation rentals are year round seasonal. (At 10:37 a.m., Mr. Shiraishi exited the meeting.) Mr. Dahilig suggested to redo the rate structure by type of user as part of the adjustment on the rate policy. Hotel/Resort usage within single family areas could be helpful. (At 10:40 a.m., Mr. Shiraishi re-entered the meeting.) Chief of Water Resources & Planning, Mr. Doi said input on the classification may have or may not have included the category. Ms. Phan added if there is a rate structure by customer class, she would make sure the classification data is correct. Ms. Ho referred to big discrepancies in the charts on the residential rate based on equity.

ALTERNATIVE RATE STRUCTURES

- » Current structure
  - › Tiers by meter size
  - › Uniform for Agriculture customers
- » Uniform rate by customer class
  - › Residential
  - › Non-Residential
  - › Agriculture
- » Tiered rate by customer class
  - › Residential only

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Mr. Dill asked what is in the ag rate subsidy industry through customers? Mr. Pardiwala commented that the Department regulations has the ability to set ag rates which could be subsidized by other users as a policy. Marijuana growers cannot get an ag rate subsidy. Deputy County Attorney, Andrea Suzuki added that the Department is not regulated by PUC regulations but with the Hawai'i Revised Statues (HRS) 54. Chair Ho is the President of the Kaua'i County Farm Bureau and commented that ag water is subsidized. She would like to know how many ag customers are there. To her knowledge, there are very few ag customers.

OTHER CRITERIA TO CONSIDER

- » Should rate structures be simple to understand and administer?
  - › If so, rate structures such as uniform rate and tiers by customer class may be more desirable
- » Mitigate customer impacts?
  - › Leave rate structure unchanged
- » What is the current billing system capability?
  - › If it's not capable of change, then alternative rate structures are not possible

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REVENUE STABILITY OPTIONS

1. Increase the fixed service charge to cover all fixed costs
2. Recover fixed costs from core water sales
   - Determine the appropriate water usage level
     - Using either efficiency standards, sustainable use or conservation goals
   - Develop the commodity rate structure based on this level of water sales
3. Recover peaking costs as a separate component in the fixed service charges
   - Capital peaking costs are allocated based on historical peaking factors for each customer
   - Individualized peaking charge for each customer

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Mr. Dahilig asked if the Department's system could capture peaking and to charge appropriately? Manager Saiki answered that the information could be taken off Operation's Supervisory Control & Data Acquisition (SCADA) to differentiate the peak from a multi-family residence. Ms. Nadatani-Mendez mentioned the Beacon transponders can determine peaking and is included in the proposed upcoming budget. It was noted that peaking usually happens in April, May or August which could be from the tourist traffic.

LAST STEPS OF WATER RATE STUDY

Report Development

» Document the support / justifications for the rates
» Convey the "story" behind the rates to customers in layman's terms
» Connects the budget with the rates and shows the math on how the rates are developed

Public Outreach

» Proactive outreach and messaging to educate key stakeholders about the new rates

Implementation

» Develop phase-in implementation strategy
» Test billing system
» Train customer support staff about new rates

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RECAP OF KEY STEPS

- » Understand what are the goals of the rate study
  - › What are the critical items that needs to be accomplished
    - – What can be delayed?
- » Develop a sound financial plan
  - › Understand the relationship between water sales and cost structure
- » Develop a rate structure that achieves the utility's goals
- » Have internal dialogue on the short and long term cost structure of the utility
  - › How can we develop a rate structure that mirrors this?
- » Develop extensive administrative record that clearly shows the steps taken to develop the rate structure
  - › Connect the budget to the rates

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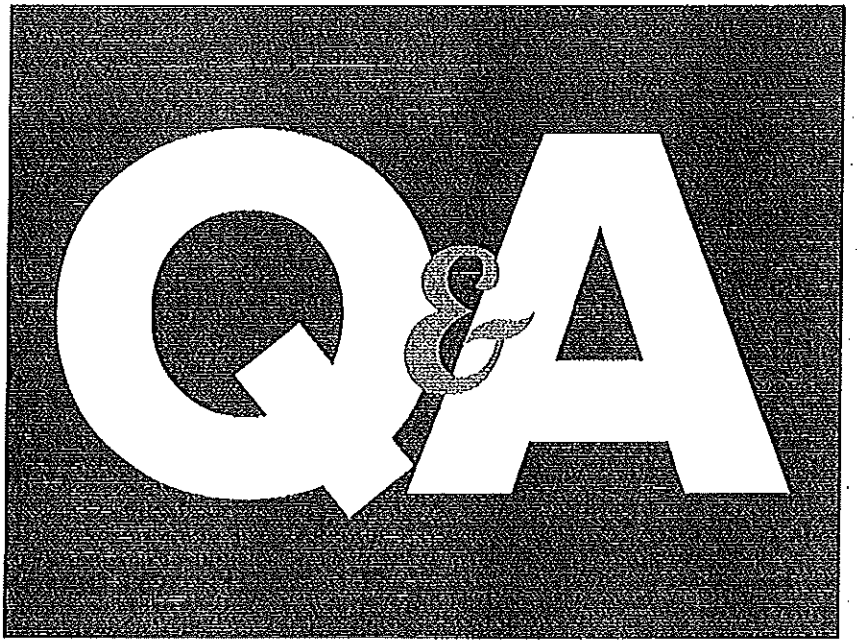
The Board and staff will complete the Pricing Objectives on the priority rates and structure. The results will be prioritized for the rate structure.

<u>The 9 Pricing Objectives are</u>:

1) Equability/Cost of Service Based Allocations, 2) Minimization of Customer Impacts, 3) Rate Stability, 4) Affordability, 5) Simple to Understand & Explain, 6) Administrative Ease of Implementation, 7) Revenue Stability, 8) Conservation, & 9) Agriculture Subsidy.



In May, Raftelis Financial Consultants will meet with the Board and staff to go over the results of the rate study and objectives. Mr. Dill confirmed that the Board has the final approval of the rate structure but would like to hear the staff's results as well.