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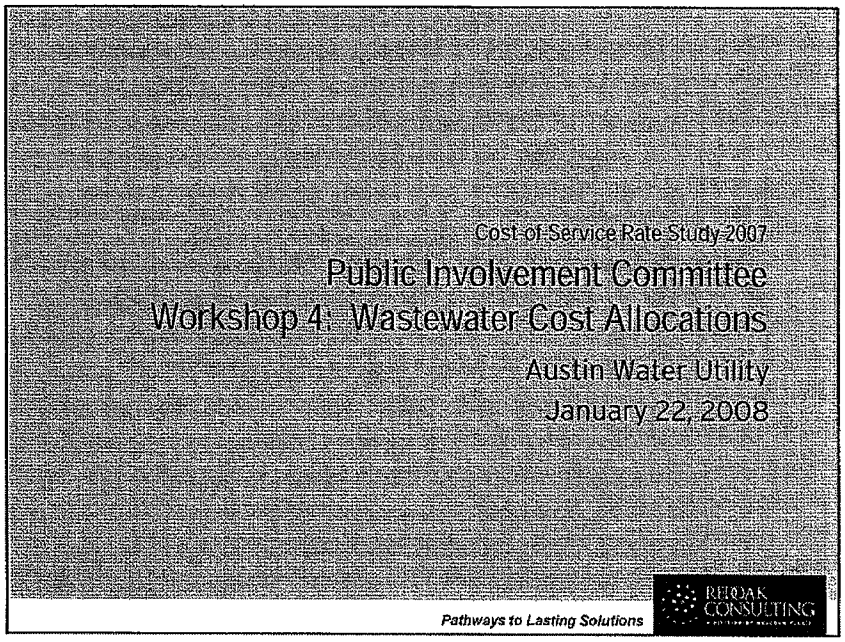
Cost of Service Rate Study 2007
Public Involvement Committee
Workshop 4: Wastewater Cost Allocations
Austin Water Utility
January 22, 2008
Pathways to Lasting Solutions
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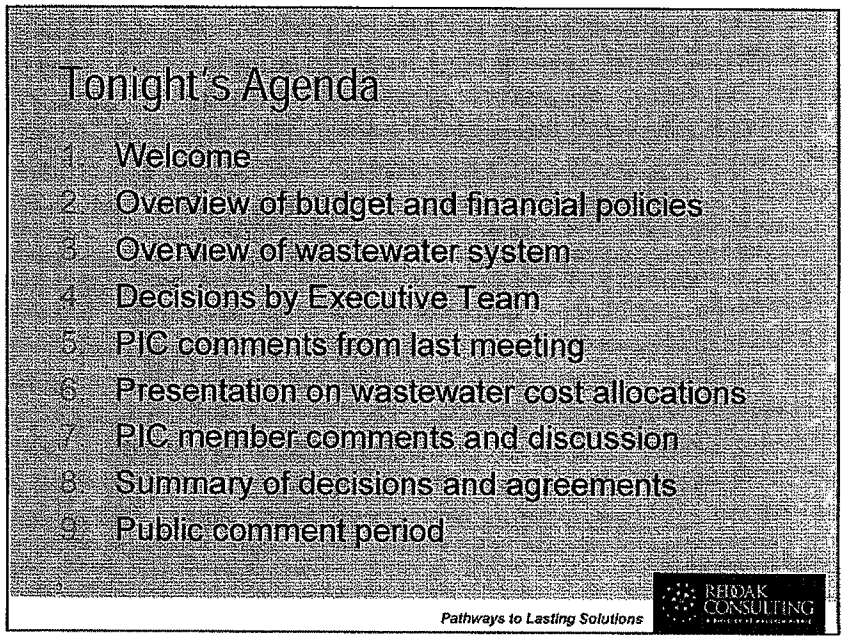
Tonight's Agenda
1. Welcome
2. Overview of budget and financial policies
3. Overview of wastewater system
4. Decisions by Executive Team
5. PIC comments from last meeting
6. Presentation on wastewater cost allocations
7. PIC member comments and discussion
8. Summary of decisions and agreements
9. Public comment period
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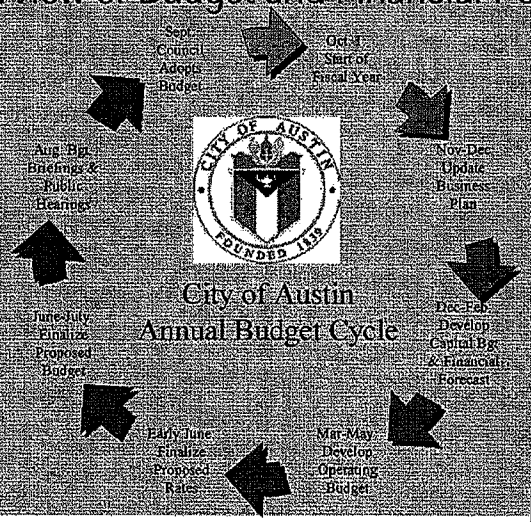
Overview of Budget and Financial Policies



3

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Austin Service Area

- Estimated served population
  - Current: ~840,000
  - 2060 Projected: ~2 million
- Approximately 190,000 current accounts
- Current city limits land area: ~285 sq. mi.
- Utility service area boundary: ~537 sq. mi.
- Retail and wholesale, inside and outside city limits
- Wholesale service includes municipal utility districts, cities, and private companies

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Wastewater Treatment

- Two major wastewater treatment plants
- Treatment capacity: 150 MGD
  - South Austin Regional WWTP: 75 MGD
  - Walnut Creek WWTP: 75 MGD
- Discharge water quality consistently better than required by TCEQ permits
- Currently return flow wastewater discharges average roughly 100,000 acre-ft./year
- Govalle WWTP built in 1937 was decommissioned in late 2006
- System has ~2,500 mi. of wastewater main

Austin WATER

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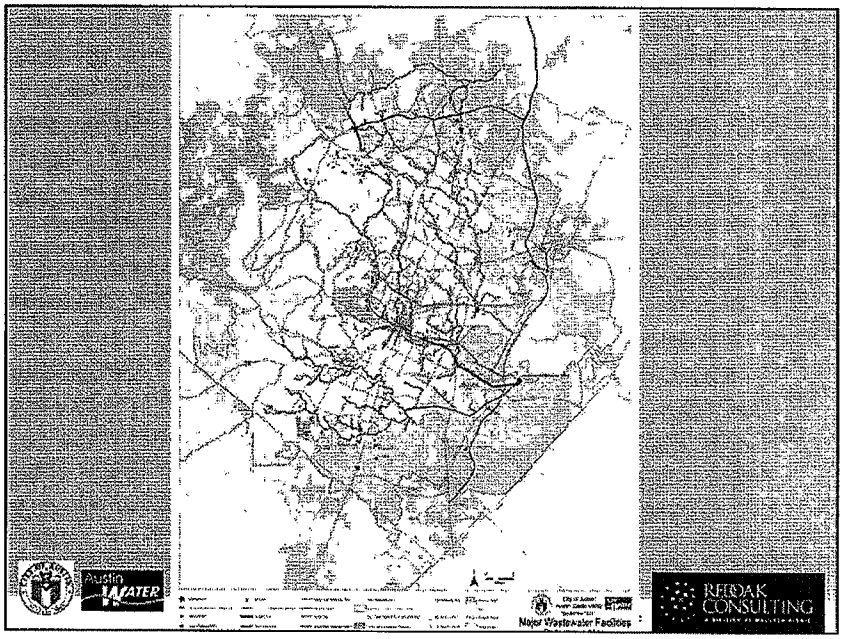

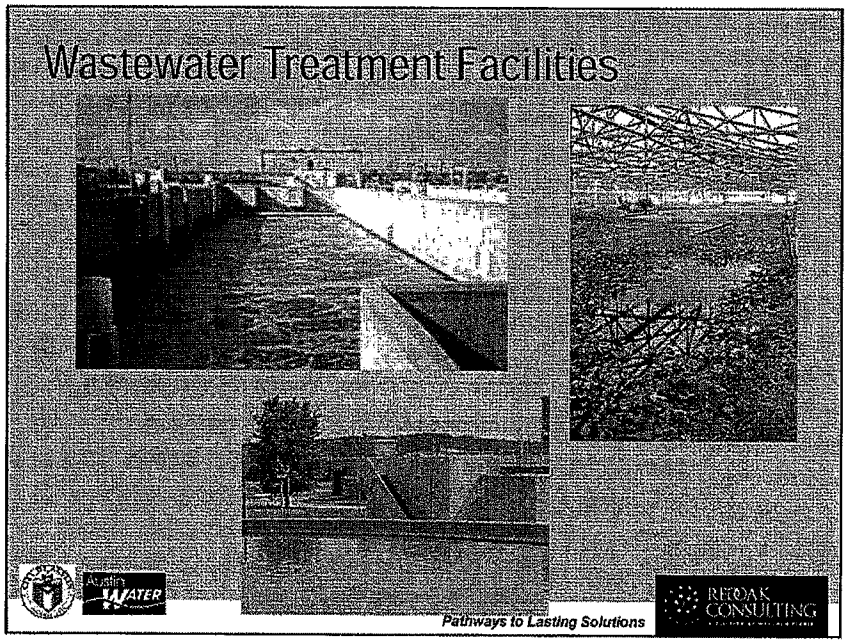
Wastewater Treatment Facilities
Austin WATER
Pathways to Lasting Solutions
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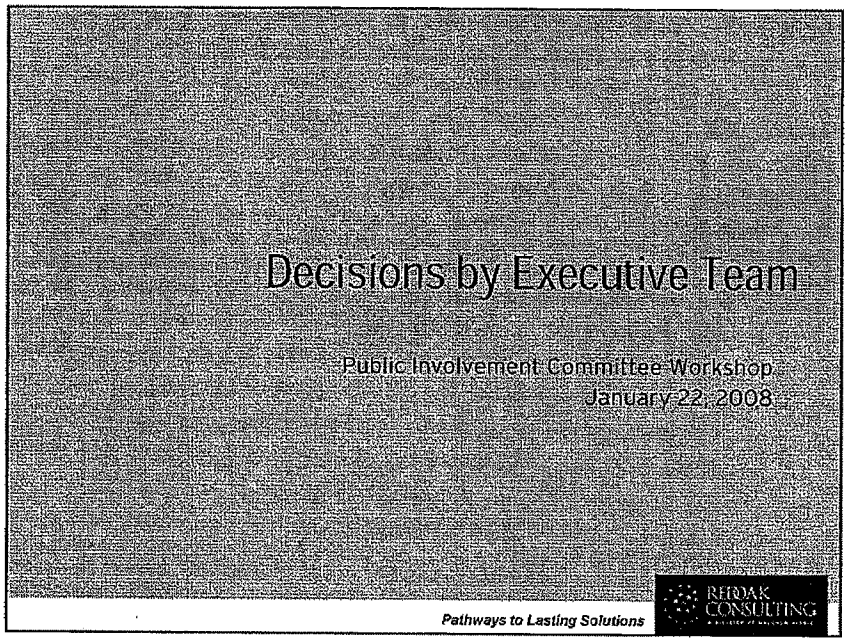
Decisions by Executive Team
Public Involvement Committee Workshop
January 22, 2008
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Executive Team Decisions

- *Revenue Requirements Issue 1* - cash basis will be used
- *Revenue Requirements Issue 2* - future budgets will be used
- *Revenue Requirements Issues 3-5* – not applicable because cash basis will be used

PIC Comments From Last Meeting

Public Involvement Committee Workshop
January 22, 2008

Comments from Individual PIC Members

- Base/Extra-Capacity and Commodity/Demand methods of allocating water costs appear to produce same results
- A portion of capital and O&M costs associated with water transmission and distribution system should be allocated to all water usage, not peak only
- Economies of scale should be considered, especially for pipelines and pump stations
- Fire charges based on meter size may not accurately represent fire flow needs
- Recommend use of demand data collected by industrial customers
- Disagree with the creation of separate fire charges

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Requests from PIC Members

- More innovative and sophisticated method of allocating capital costs should be developed to fairly allocate costs *and benefits* of facilities to customer classes
- Detailed customer class peak demand calculations
- Fire charges should be studied further outside the PIC cost-of-service process
- Model outputs should be provided in Excel (as values with no formulas), not Adobe Acrobat PDF

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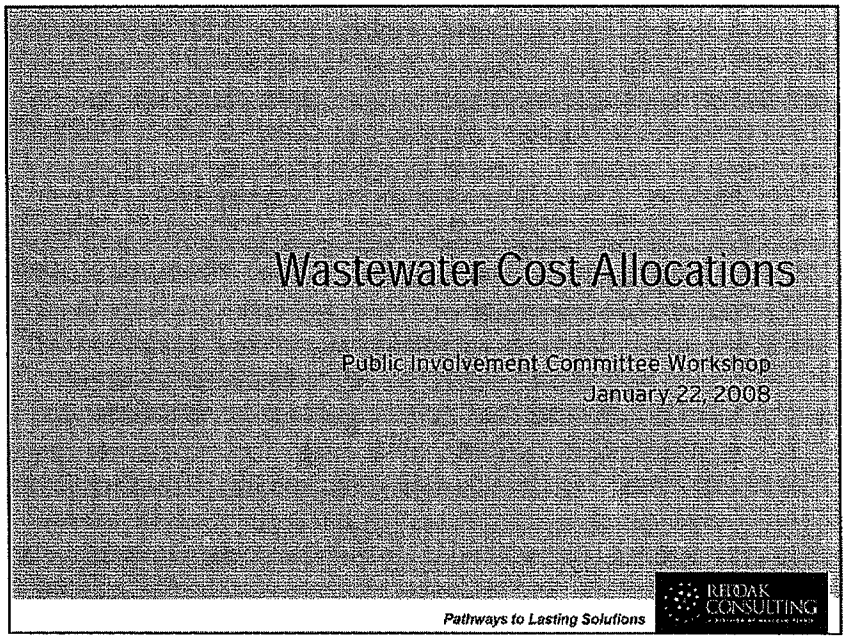
Wastewater Cost Allocations
Public Involvement Committee Workshop
January 22, 2008
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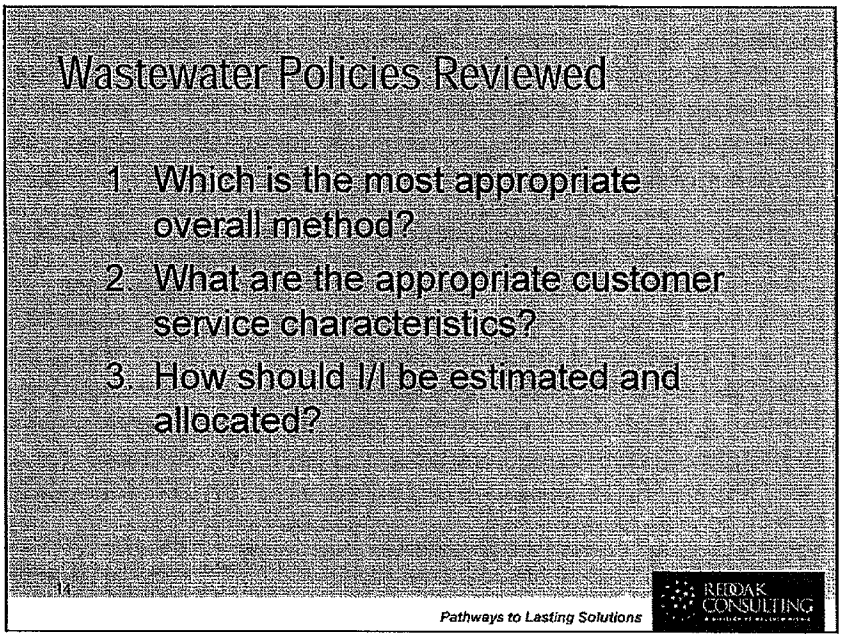
Wastewater Policies Reviewed
1. Which is the most appropriate overall method?
2. What are the appropriate customer service characteristics?
3. How should I/I be estimated and allocated?
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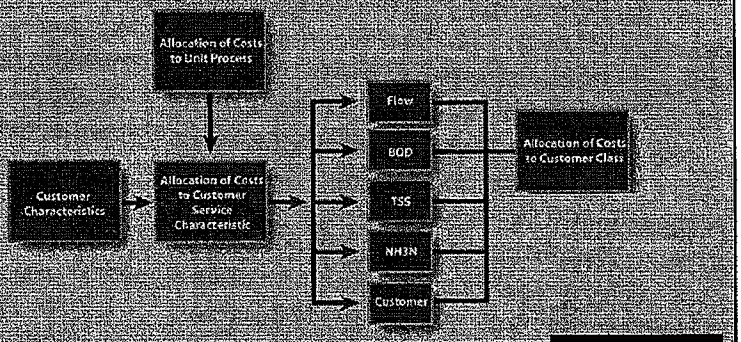
Wastewater Cost Allocation in the Broader Perspective



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Issue 1: Wastewater Cost Allocation Options

- Design Basis*
- Functional Basis
- Hybrid Approach

* AWU's current methodology

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Design Basis

- AWU's current methodology
- Allocates costs based on engineering design criteria
- Less administrative burden
- Least implementation risk
- Potential positive impact on conservation due to increased unit cost for wastewater treatment and disposal

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Functional Basis

- Allocates costs based on operational or functional purposes
- Minimal administrative burden

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Hybrid Approach

- Allocates O&M costs based on function and capital costs based on design
- More acceptable to public and political officials
- Increased administrative burden
- Improved interclass and intraclass equity
- Improved sustainability
- Recommended by consulting team

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Issue 2: Customer Service Characteristics

- Flow, BOD, and TSS only*
- Add Total Kjeldahl Nitrogen (TKN)
- Add Phosphorus

*AWU's current methodology

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Flow, BOD, and TSS Only

- AWU's current methodology
- Least administrative burden
- Most common approach

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Add Total Kjeldahl Nitrogen (TKN)

- Difficult to implement without additional data
- Likely to become increasingly important in future (policy durability)
- Improved interclass and intraclass equity
- Improved sustainability
- Recommended by consulting team (once sufficient data is available from industrial pretreatment sampling program)

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Add Phosphorus

- Difficult to implement without additional data
- Likely to become increasingly important in future (policy durability)
- Improved interclass and intraclass equity
- Improved sustainability
- Recommended by consulting team (once sufficient data is available from industrial pretreatment sampling program)

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Issue 3: I/I Estimation and Allocation

- Combined connections and volume*
- Contributed wastewater volume
- Number of connections
- Land area

*AWU's current methodology

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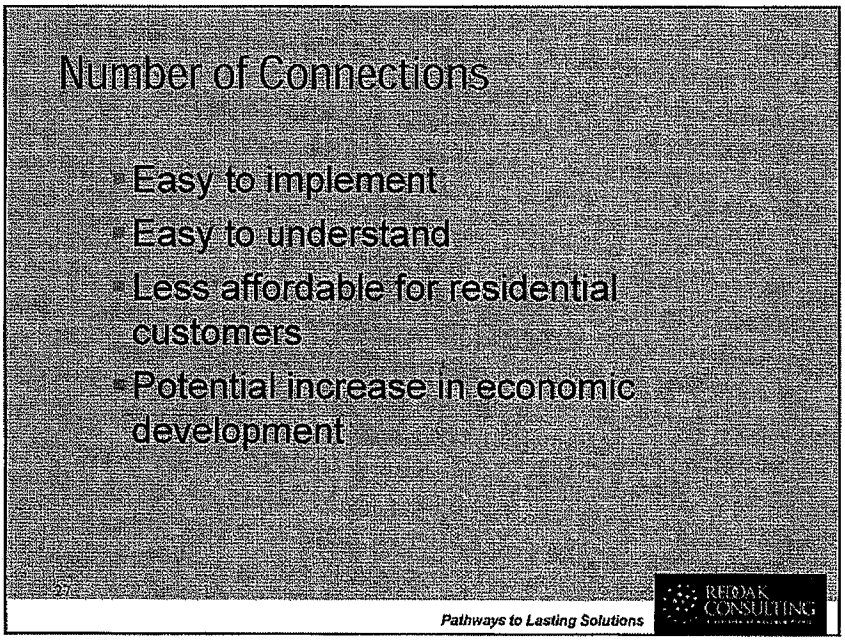
Combined Connections and Volume

- AWU's current methodology (50% connections, 50% volume)
  - Minimal administrative burden
  - Less affordable for residential customers
  - Potential increased economic development

Contributed Wastewater Volume

- Easy to implement
- Easy to understand
- More affordable for residential customers
- Potential negative impact on economic development
- Recommended by consulting team


Number of Connections
Easy to implement
Easy to understand
Less affordable for residential customers
Potential increase in economic development
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Land Area
Greatest administrative burden
Greatest risk of implementation
Least common approach
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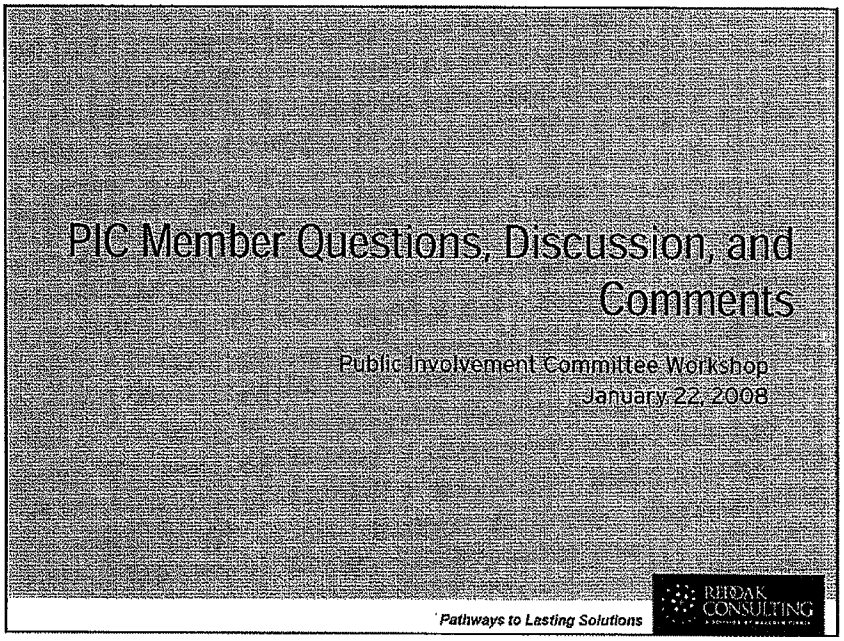
PIC Member Questions, Discussion, and Comments
Public Involvement Committee Workshop
January 22, 2008
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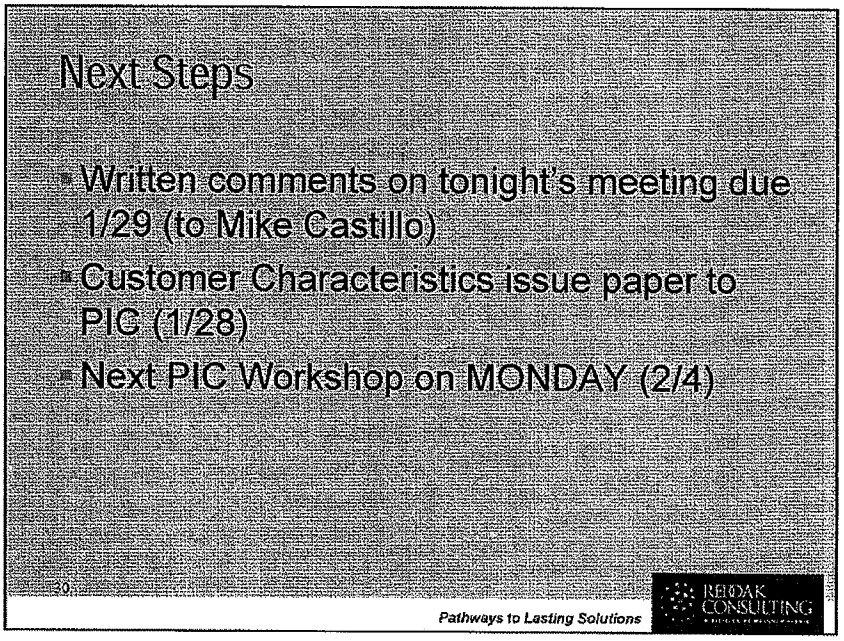
Next Steps
Written comments on tonight's meeting due 1/29 (to Mike Castillo)
Customer Characteristics issue paper to PIC (1/28)
Next PIC Workshop on MONDAY (2/4)
30
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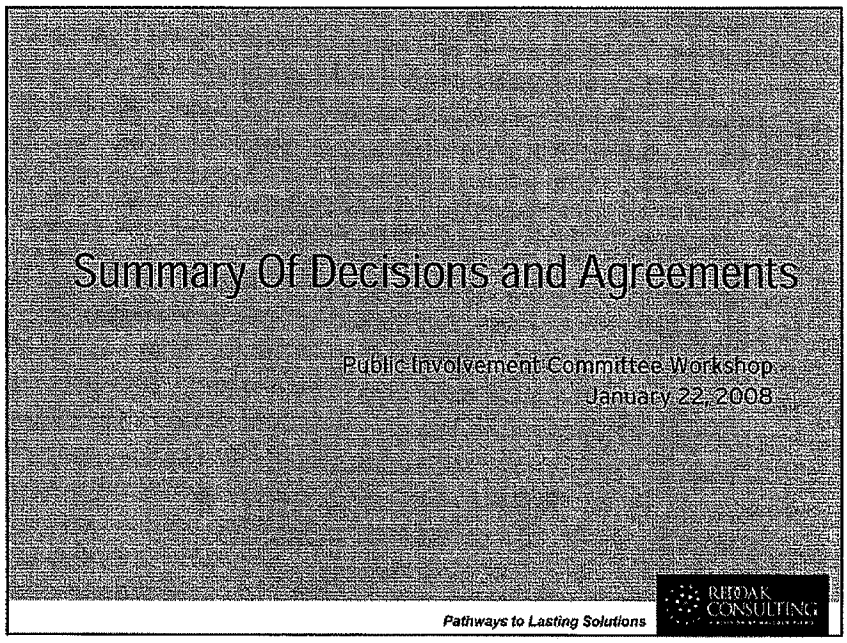
Summary Of Decisions and Agreements
Public Involvement Committee Workshop
January 22, 2008
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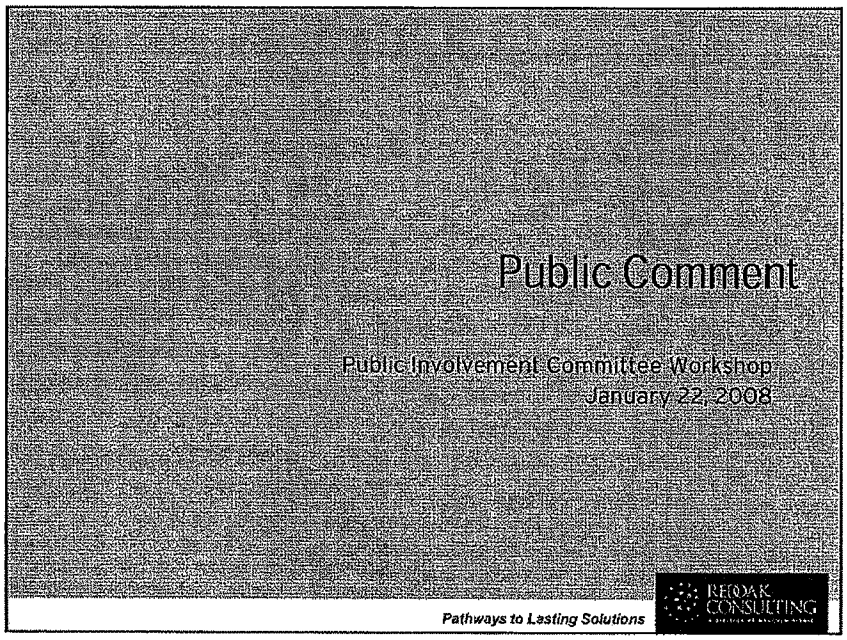
Public Comment
Public Involvement Committee Workshop
January 22, 2008
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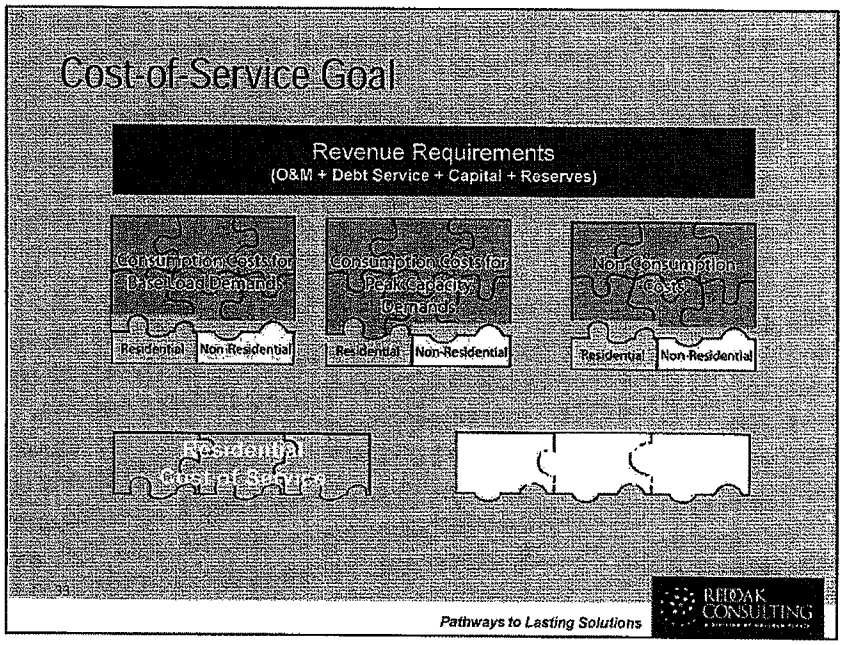
Cost-of-Service Goal
Revenue Requirements
(O&M + Debt Service + Capital + Reserves)
Consumption Costs for Base Load Demands
Residential
Non-Residential
Consumption Costs for Peak Capacity Demands
Residential
Non-Residential
Non-Consumption Costs
Residential
Non-Residential
Residential Cost of Service
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Cost of Service Rate Study 2007

Public Involvement Committee
Workshop 5: Customer Classifications

Austin Water Utility

February 19, 2008

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Tonight's Agenda

1. Welcome
2. Decisions by Executive Team
3. PIC comments from last meeting
4. Presentation on customer classifications
5. PIC member comments and discussion
6. Summary of decisions and agreements
7. Public comment period

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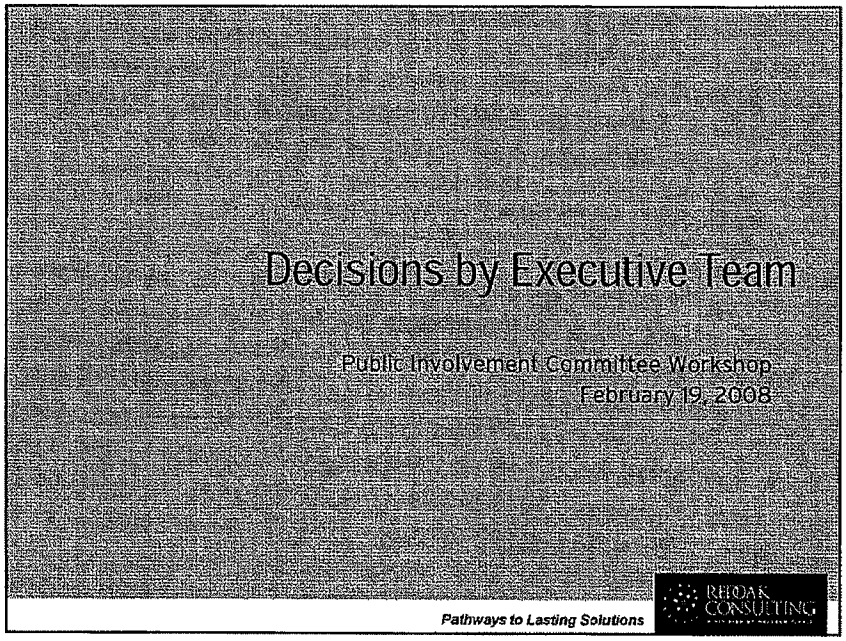
Decisions by Executive Team
Public Involvement Committee Workshop
February 19, 2008
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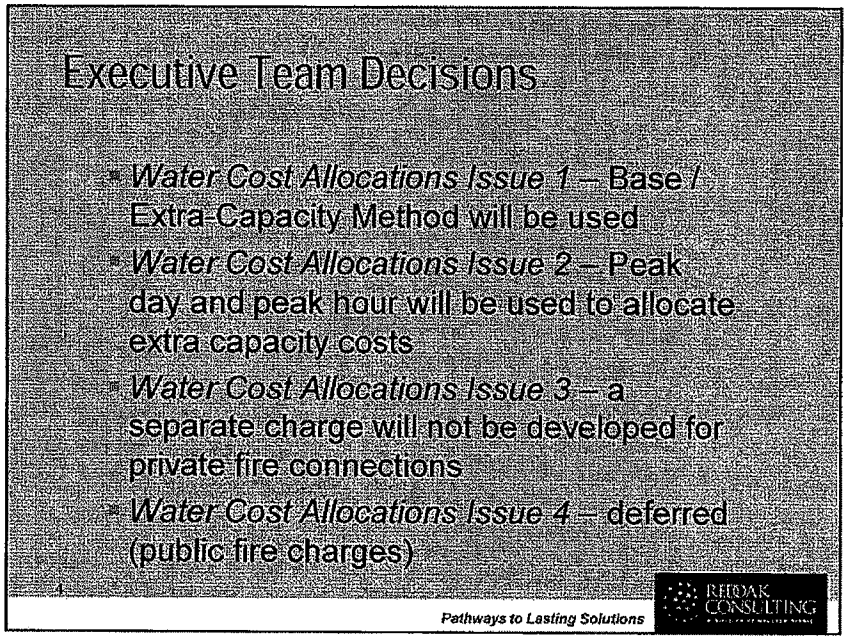
Executive Team Decisions
Water Cost Allocations Issue 1 – Base / Extra-Capacity Method will be used
Water Cost Allocations Issue 2 – Peak day and peak hour will be used to allocate extra capacity costs
Water Cost Allocations Issue 3 – a separate charge will not be developed for private fire connections
Water Cost Allocations Issue 4 – deferred (public fire charges)
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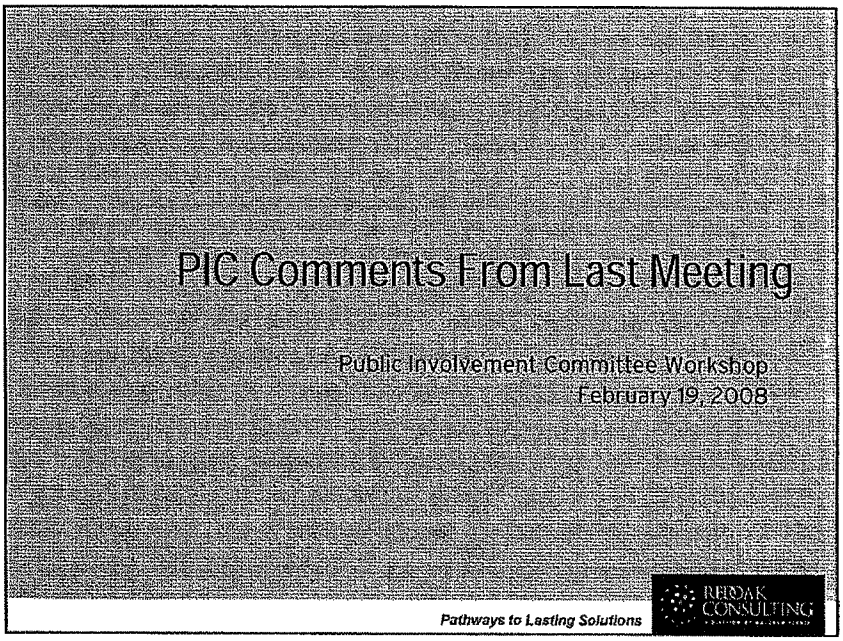
PIC Comments From Last Meeting
Public Involvement Committee Workshop
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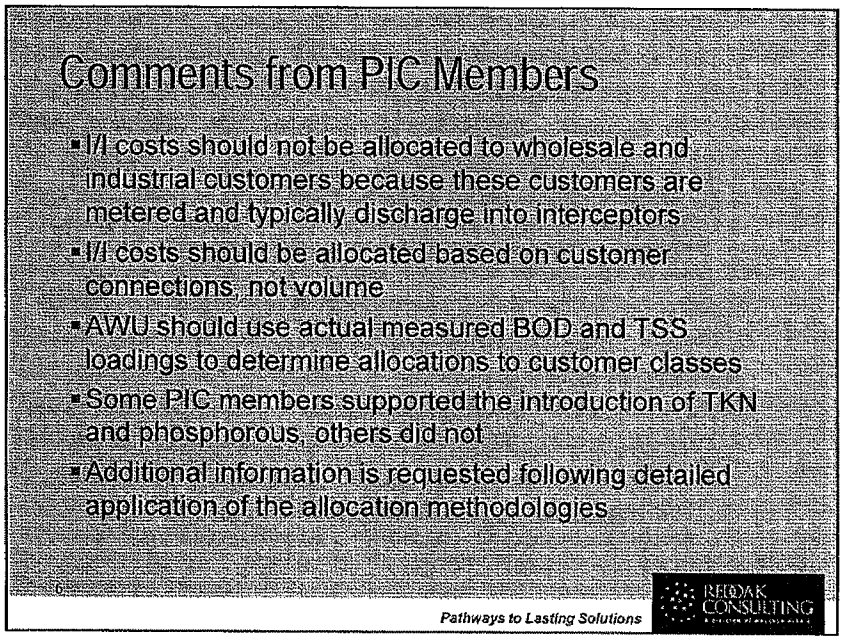
Comments from PIC Members
▪ I/I costs should not be allocated to wholesale and industrial customers because these customers are metered and typically discharge into interceptors
▪ I/I costs should be allocated based on customer connections, not volume
▪ AWU should use actual measured BOD and TSS loadings to determine allocations to customer classes
▪ Some PIC members supported the introduction of TKN and phosphorous, others did not
▪ Additional information is requested following detailed application of the allocation methodologies
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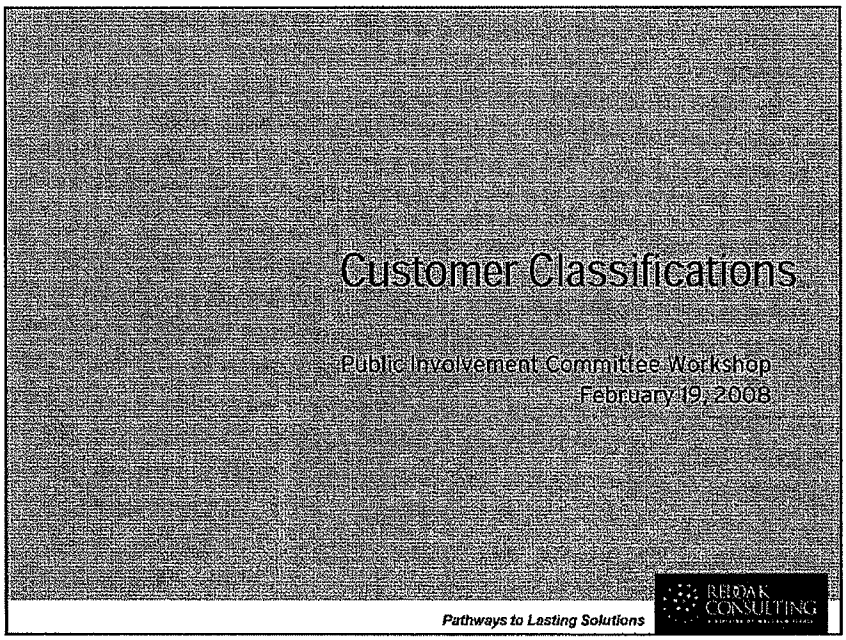
Customer Classifications
Public Involvement Committee Workshop
February 19, 2008
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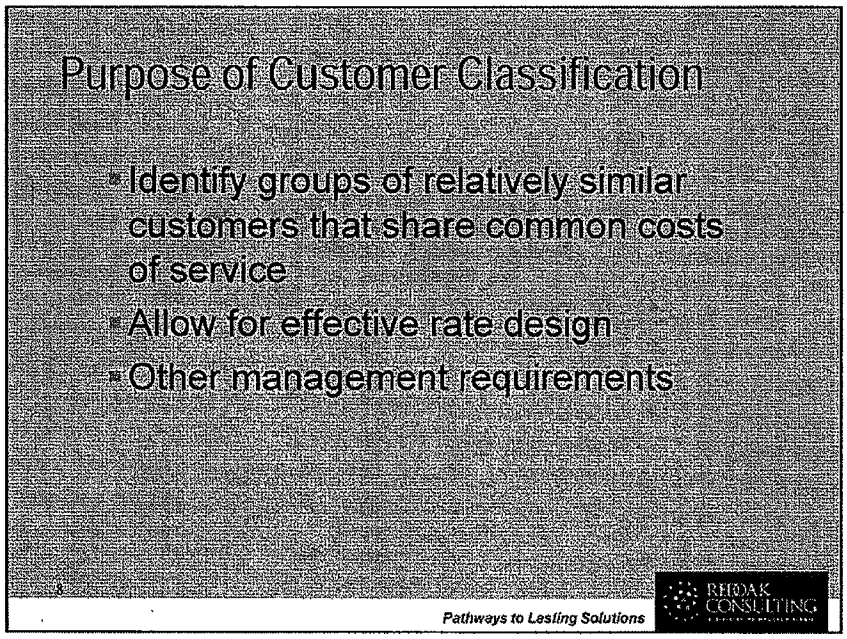
Purpose of Customer Classification
Identify groups of relatively similar customers that share common costs of service
Allow for effective rate design
Other management requirements
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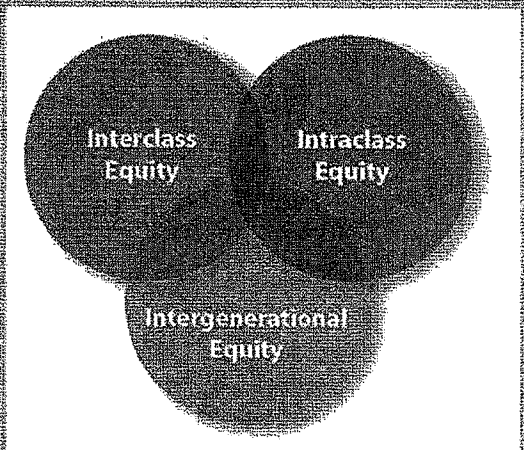
Factors for Classifying Customers

- General service requirements
- Demand patterns or usage characteristics
- Geographical locations for wholesale and outside-city customers

Customer Classification and Equity



Rate Design and Customer Classes

- Rate design and classification should be consistent to enhance equity
- Provide conservation incentives
- Complex rate designs may enhance equity with fewer classes

Wastewater Rate Designs and Customer Classification

- Surcharge approach
- Strength-based classification or Quantity/Quality approach


Common Customer Classes
Single-family residential
Multifamily residential
Commercial
Industrial
Wholesale
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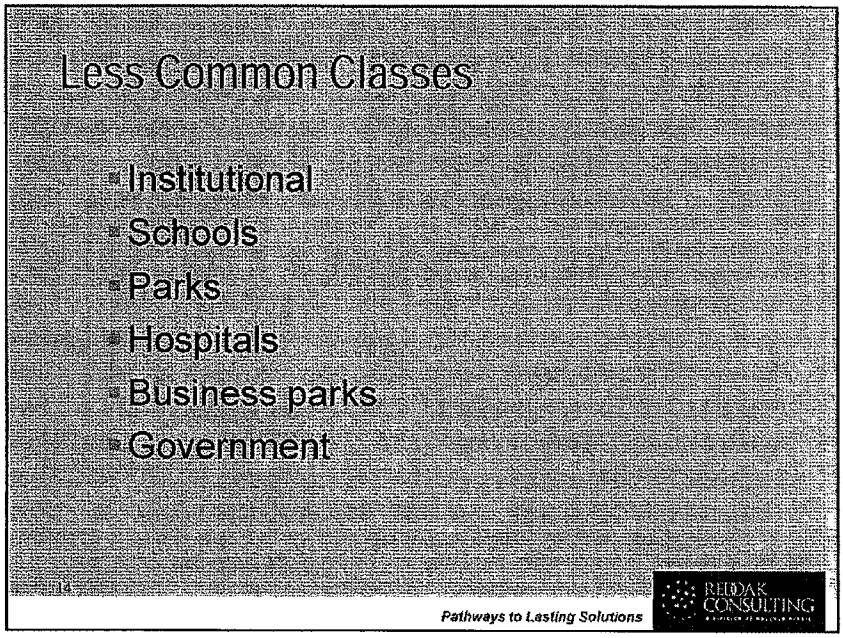
Less Common Classes
Institutional
Schools
Parks
Hospitals
Business parks
Government
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Estimating Customer Characteristics

- Water
  - Peak-day factor
  - Peak-hour factor
- Wastewater
  - BOD concentrations
  - TSS concentrations

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Prorating Peaking Factors

$$\text{Class Peak Day Factor} = \left(\frac{\text{Class Peak Month Demand}}{\text{Class Average Month Demand}} \times \frac{\text{System Peak Day Demand}}{\text{System Peak Month Demand}}\right)$$

$$\text{Class Peak Hour Factor} = \left(\frac{\text{Class Peak Month Demand}}{\text{Class Average Month Demand}} \times \frac{\text{System Peak Hour Demand}}{\text{System Peak Month Demand}}\right)$$

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Preliminary Findings on Peaking Factors

Customer Class	Estimated Peak Season Factor	Estimated Peak Day Factor	Estimated Peak Hour Factor
Inside City Residential	1.28	1.69	2.54
Inside City Multi-Family	1.11	1.36	2.11
Inside City Commercial	1.23	1.56	2.45
Inside City Industrial	1.06	1.08	1.08
Inside City Golf Course	1.52	2.20	3.42
Utility	1.05	1.41	2.18
Outside City Residential	1.99	1.68	2.55
Outside City Multi-Family	1.16	1.42	2.20
Outside City Commercial	1.22	1.77	2.74
Outside City Golf Course	0.67	8.39	13.00
Anderson Mill	1.20	1.47	2.27
Creekmont Mobile	1.18	1.55	2.40
High Valley	1.32	1.55	2.40
Lost Creek	1.44	1.77	2.74
Mount Carmel	1.02	5.08	7.86
Manville WSC	1.31	1.75	2.71
Morgan Water	1.16	1.39	2.15
Northwest	1.14	1.36	2.11
North Austin MUD	1.31	1.65	2.53
Pedernales MUD	1.24	1.68	2.57
Rancho	1.31	1.65	2.55
Ridgetop	1.42	1.94	3.01
Sandy Brook	1.40	1.91	2.96
Sunset Valley MUD	1.37	1.66	2.57
Water District 10	1.34	1.76	2.72
West Bee Cave MUD	1.21	1.46	2.26
Windermere	2.06	5.05	7.82
System Wide Peaking Factor	1.22	1.55	2.40

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Mass Balance Analysis

- Use known and estimated concentrations to assign loadings to particular classes
- Balance the residual loadings to the other class(es)
- Published data by economic activity is often used

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Preliminary Findings for Austin

Treatment Plant	Inflow (MG)	BOD Lbs	BOD mg/L	TSS Lbs	TSS mg/L
Walnut	20,795	23,579,719	136	34,652,639	200
South Austin Regional	15,845	30,578,479	231	40,206,260	304
Total System	36,641	54,152,198	177	74,854,898	245
Industrial Customers					
Freescale Semiconductor, Inc	588.5	446,664	91	63,638	13
Freescale Semiconductor, Inc	323.2	318,282	118	234,885	87
Samsung Austin Semiconductor	464.6	279,325	72	118,302	30
Spansion LLC	607.9	106,520	21	65,941	13
University of Texas	0.9	604	80	785	104
University of Texas	26.8	8,080	36	3,562	16
Total Industrial Customers	2,012	1,159,455	69	485,114	29
System Less Industrial Customers	34,629	52,992,743	183	74,373,785	258

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Policies Reviewed

1. Should the large-volume customer class be disaggregated?
2. Should the threshold for inclusion in the large-volume class be adjusted?
3. Should an irrigation customer class be created?

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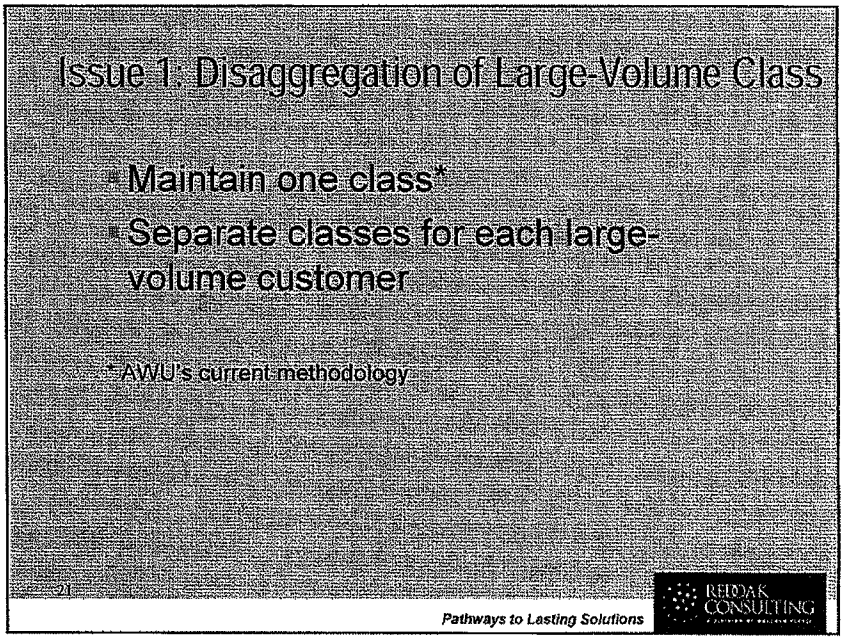

Historical Monthly Peaking Factors

Industrial Customers	2003	2004	2005	2006	Average Peak Factor
Applied Materials	1.54	1.34	2.20	1.56	1.66
Freescale	1.24	1.15	1.11	1.52	1.33
Samsung Austin Semiconductor	1.18	1.13	1.31	1.22	1.21
Sematech	1.12	1.14	1.33	1.46	1.24
Sokansion	1.11	1.23	1.16	1.18	1.17
University Of Texas	1.33	1.26	1.34	1.53	1.37
Hospira Inc	2.72	2.07	1.40	1.35	1.88
Average	1.46	1.33	1.39	1.45	1.41
Standard Deviation	0.573	0.333	0.368	0.222	0.265

Maintain One Large-Volume Class

- AWU's current methodology
- Less administrative burden
- More common in the industry
- Less equitable among large-volume customers (intraclass equity)

Disaggregate Large-Volume Class

- Slightly higher administrative burden
- Improves intraclass equity
- Less common in the industry
- Potential increase in water conservation
- Recommended by consulting team

Issue 2: Large-Volume Class Threshold

- 85 MG per year*
- 100 MG per year
- 50 MG per year

*AWU's current methodology

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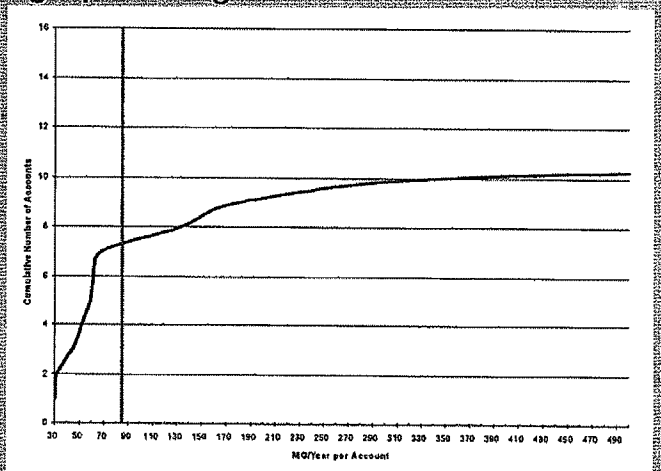
Usage per Large-Volume Customer



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Issue 2 Evaluation

- Reducing threshold may increase administrative burden
- Reducing threshold may increase water conservation
- Consulting team recommends maintaining threshold of 85 MG per year

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Issue 3: Irrigation Class

- Do not implement irrigation class*
- Implement irrigation class

*AWU's current methodology

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No Irrigation Class

- AWU's current methodology
  - Less administrative burden
  - May benefit customers without irrigation meter
  - May not encourage additional water conservation
  - Increased revenue stability
  - New billing system may allow rate design that makes separate irrigation class less important
  - Recommended by consulting team

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Implement Irrigation Class

- Increased administrative burden
- More acceptable to public and elected officials—consistent with Water Conservation Task Force recommendations
- May increase or decrease intraclass equity
- Possible rate shock for irrigation customers
- Increased water conservation
- Reduced revenue stability

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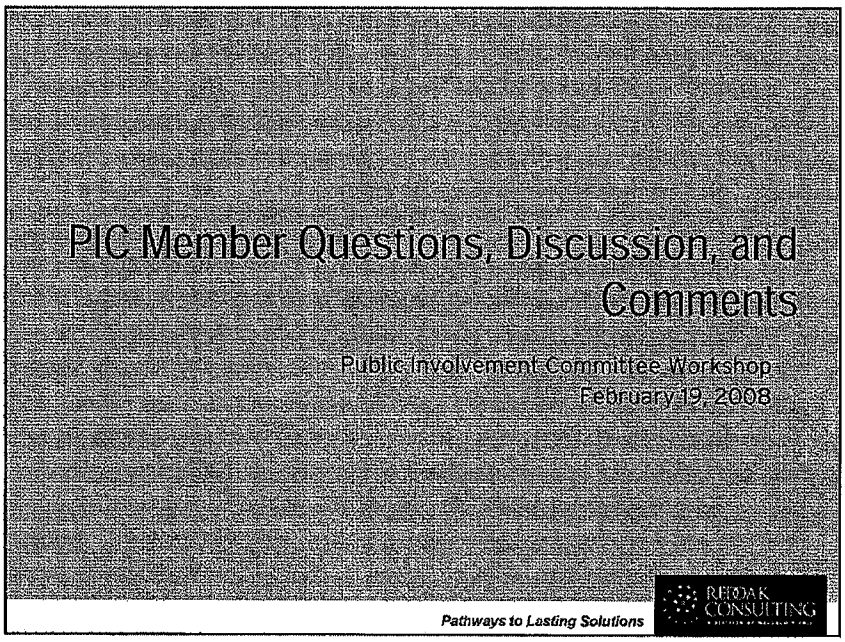
PIC Member Questions, Discussion, and Comments
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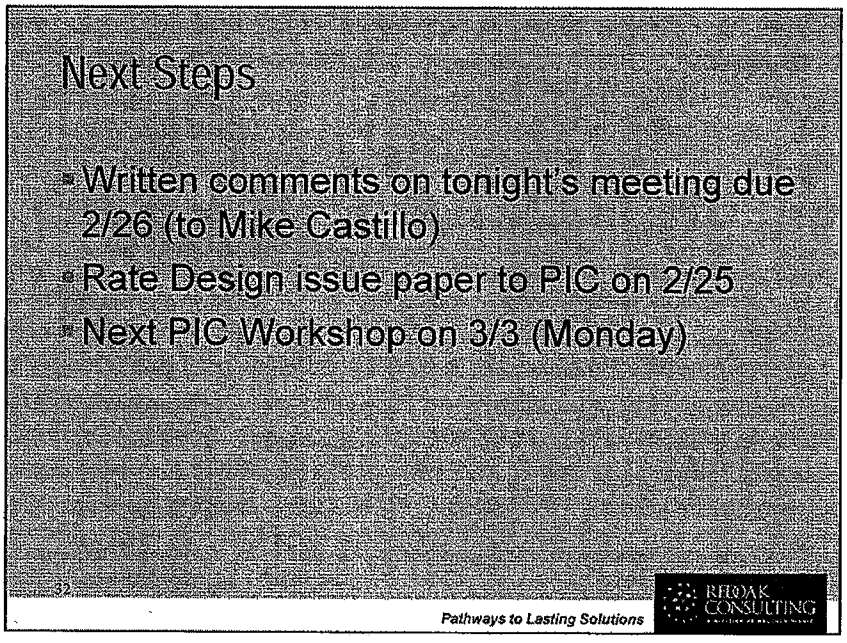
Next Steps
Written comments on tonight's meeting due 2/26 (to Mike Castillo)
Rate Design issue paper to PIC on 2/25
Next PIC Workshop on 3/3 (Monday)
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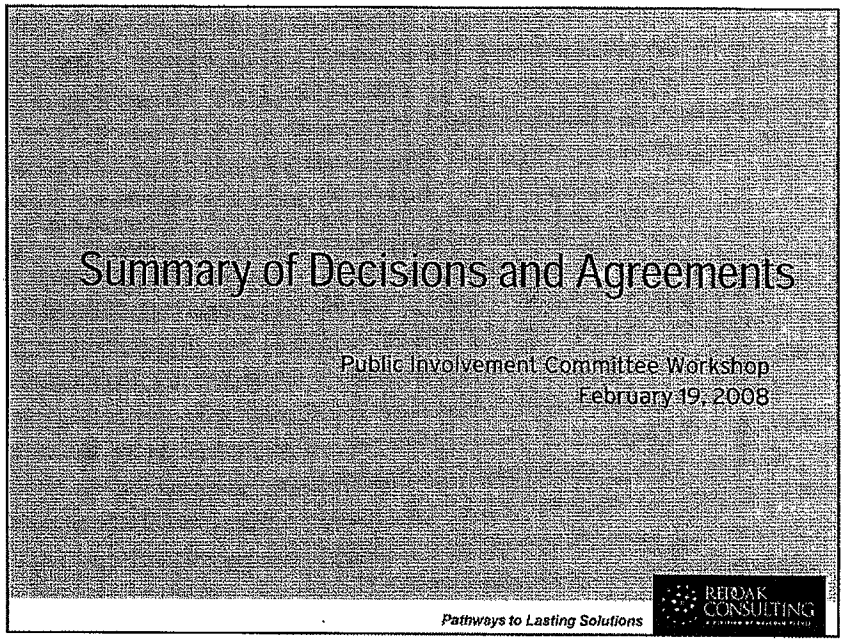
Summary of Decisions and Agreements
Public Involvement Committee Workshop
February 19, 2008
Pathways to Lasting Solutions
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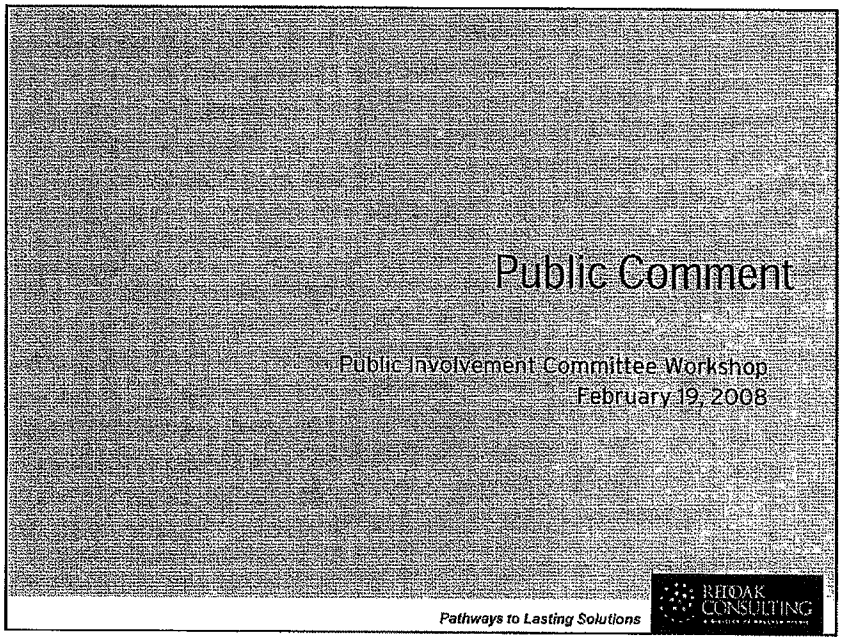
Public Comment
Public Involvement Committee Workshop
February 19, 2008
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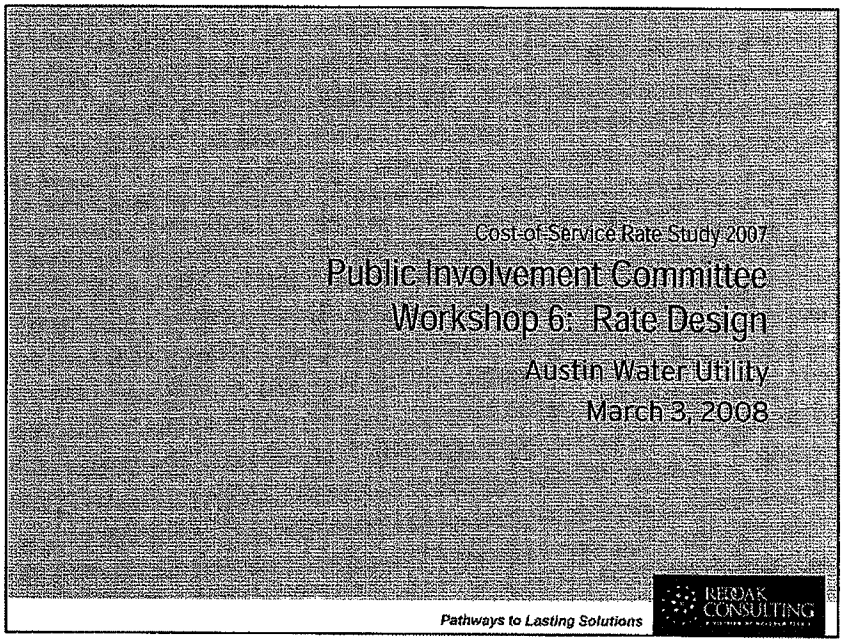
Cost of Service Rate Study 2007
Public Involvement Committee
Workshop 6: Rate Design
Austin Water Utility
March 3, 2008
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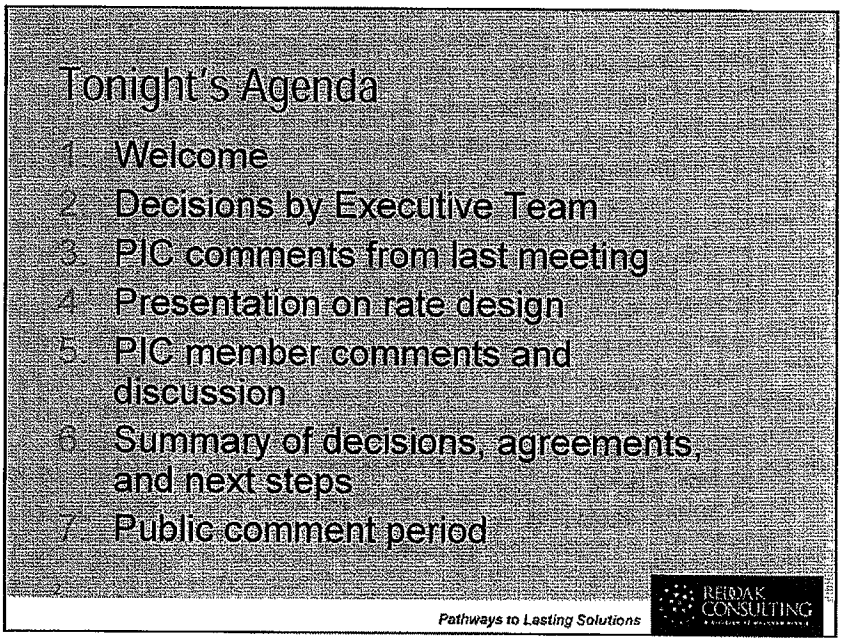
Tonight's Agenda
1. Welcome
2. Decisions by Executive Team
3. PIC comments from last meeting
4. Presentation on rate design
5. PIC member comments and discussion
6. Summary of decisions, agreements, and next steps
7. Public comment period
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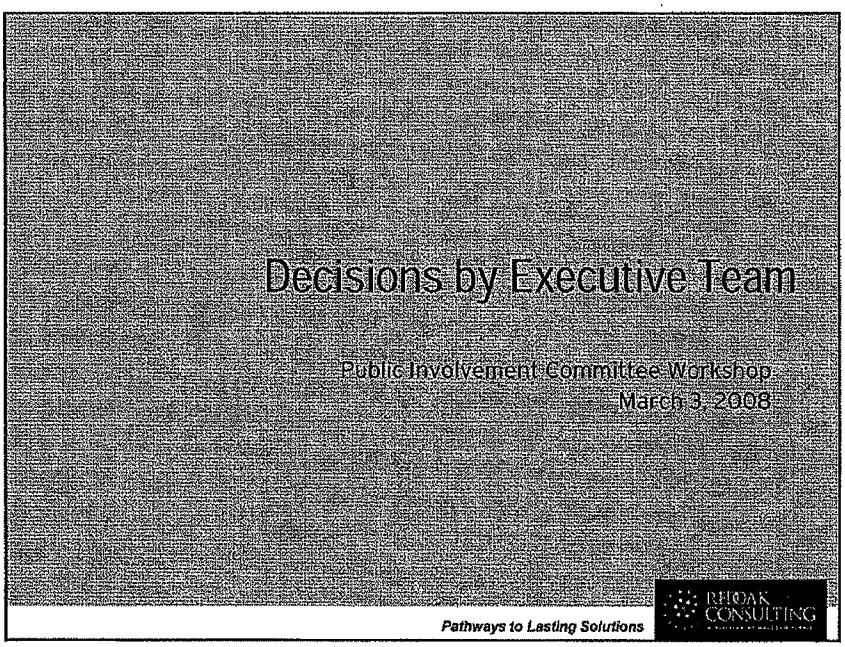
Decisions by Executive Team
Public Involvement Committee Workshop
March 3, 2008
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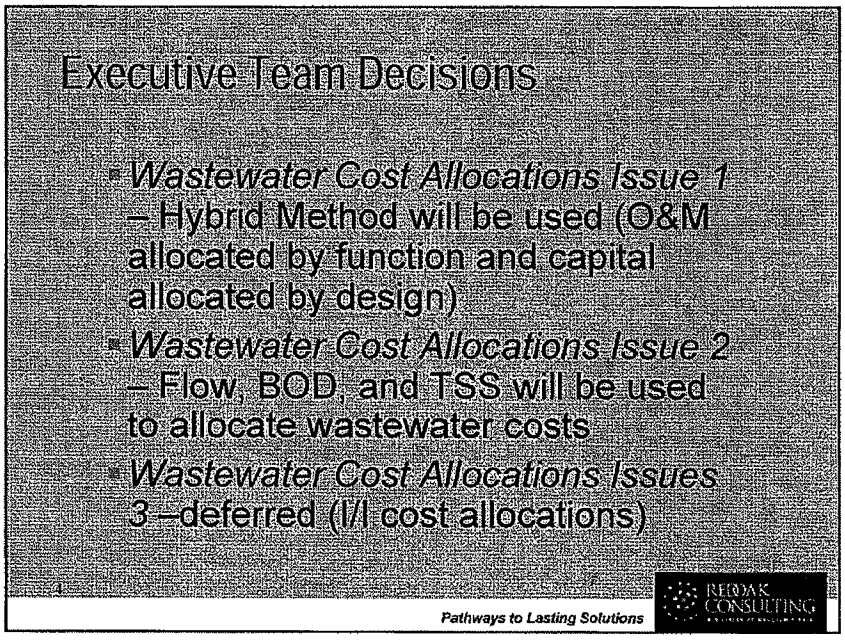
Executive Team Decisions
Wastewater Cost Allocations Issue 1 – Hybrid Method will be used (O&M allocated by function and capital allocated by design)
Wastewater Cost Allocations Issue 2 – Flow, BOD, and TSS will be used to allocate wastewater costs
Wastewater Cost Allocations Issues 3 –deferred (I/I cost allocations)
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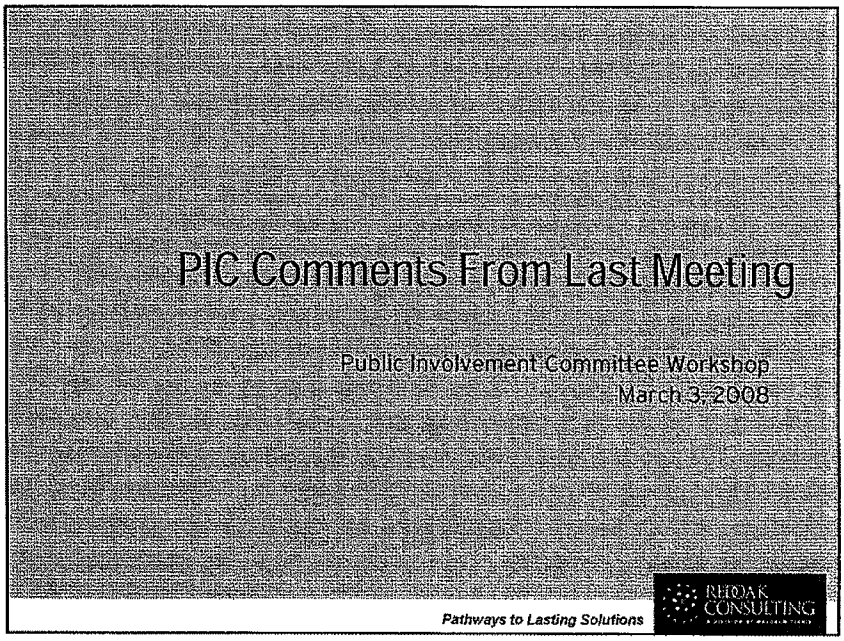
PIC Comments From Last Meeting
Public Involvement Committee Workshop
March 3, 2008
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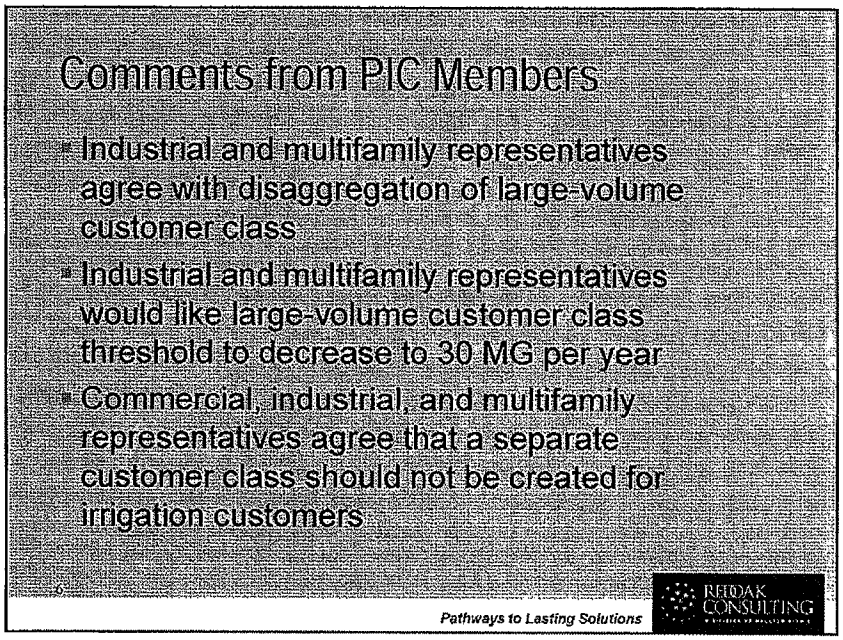
Comments from PIC Members
Industrial and multifamily representatives agree with disaggregation of large-volume customer class
Industrial and multifamily representatives would like large-volume customer class threshold to decrease to 30 MG per year
Commercial, industrial, and multifamily representatives agree that a separate customer class should not be created for irrigation customers
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Requests from PIC Members

- Glossary of terms
- More detail on allocation of extra-capacity costs to customer classes
- Tables from Issue Paper #4 in Excel format
- More detailed explanation of tables and figures in issue papers

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Rate Design

Public Involvement Committee Workshop
March 3, 2008

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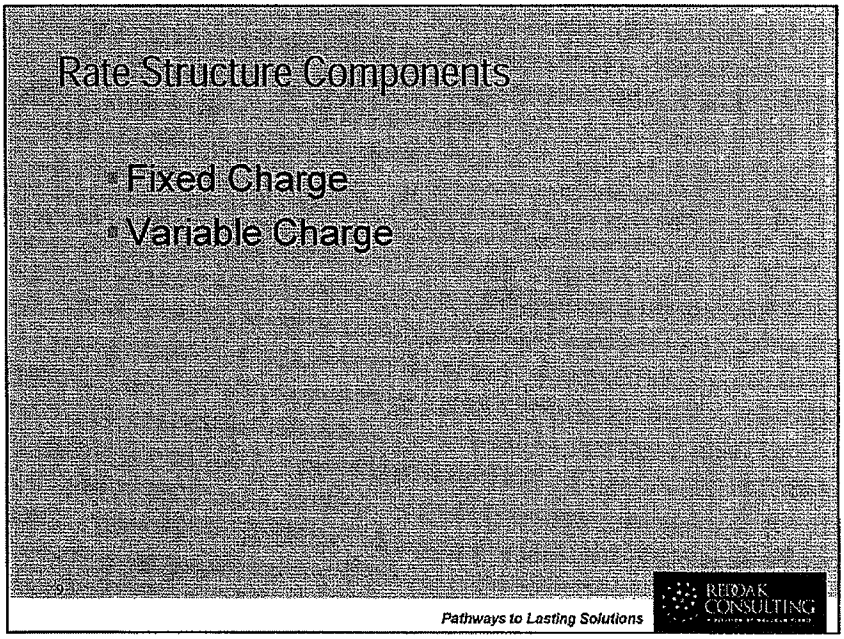
Rate Structure Components
Fixed Charge
Variable Charge
9
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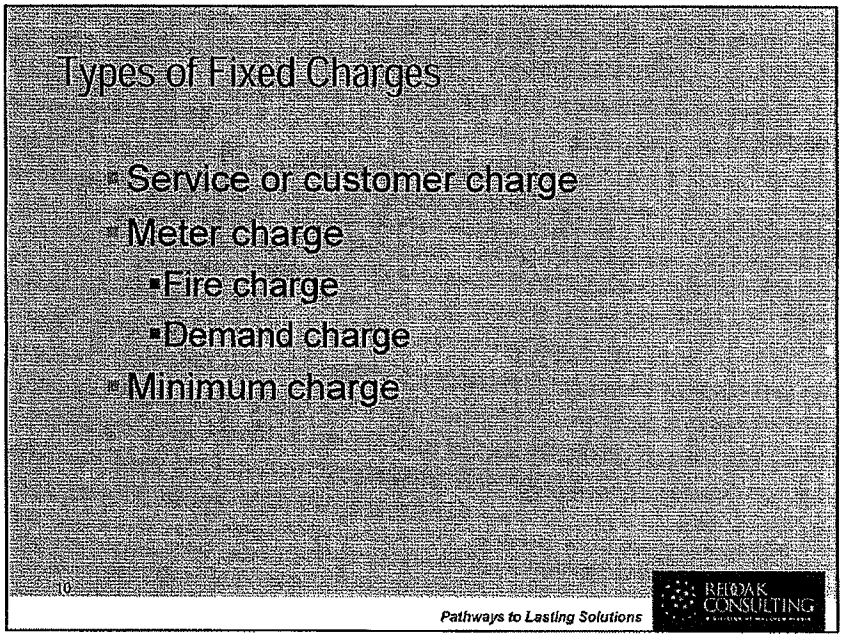
Types of Fixed Charges
Service or customer charge
Meter charge
Fire charge
Demand charge
Minimum charge
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Common Water Rate Structures

- Uniform
- Declining Block
- Inclining Block
- Seasonal

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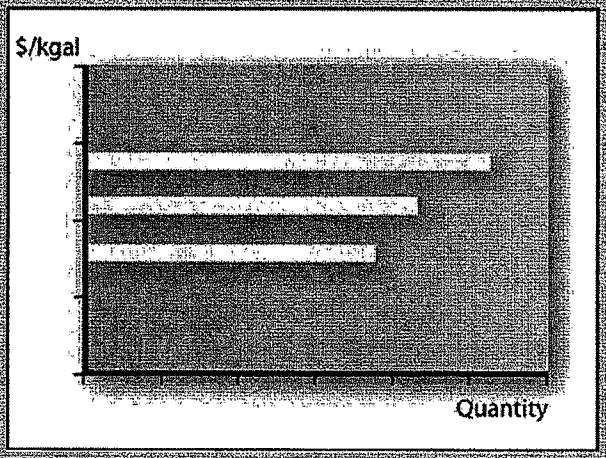
Uniform Rate Structure



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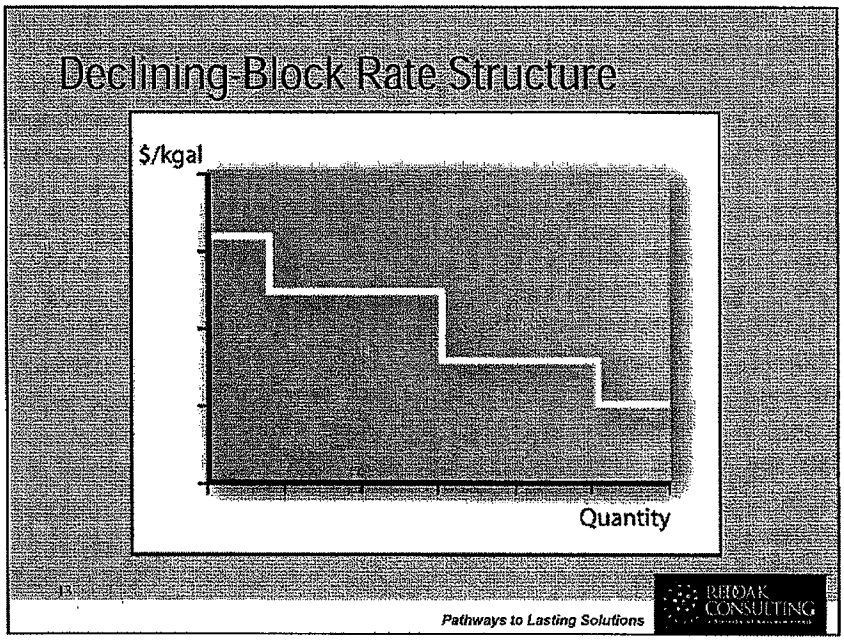
Declining-Block Rate Structure
$/kgal
Quantity
13
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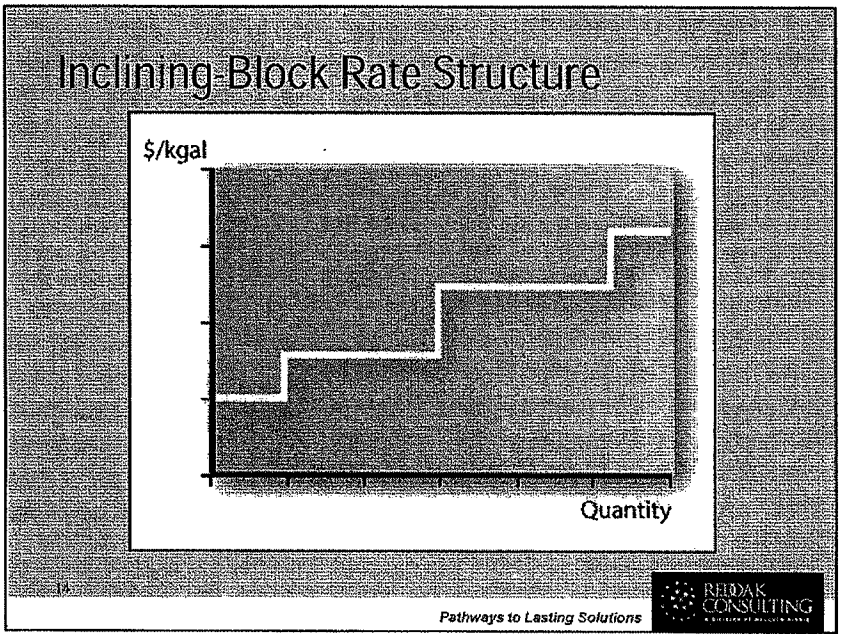
Inclining-Block Rate Structure
$/kgal
Quantity
14
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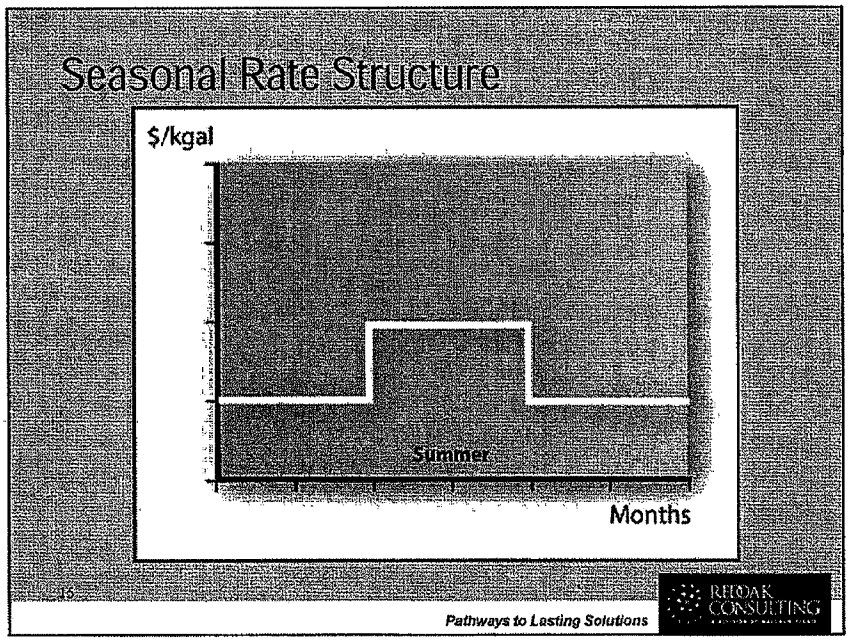
Seasonal Rate Structure
$/kgal
Summer
Months
16
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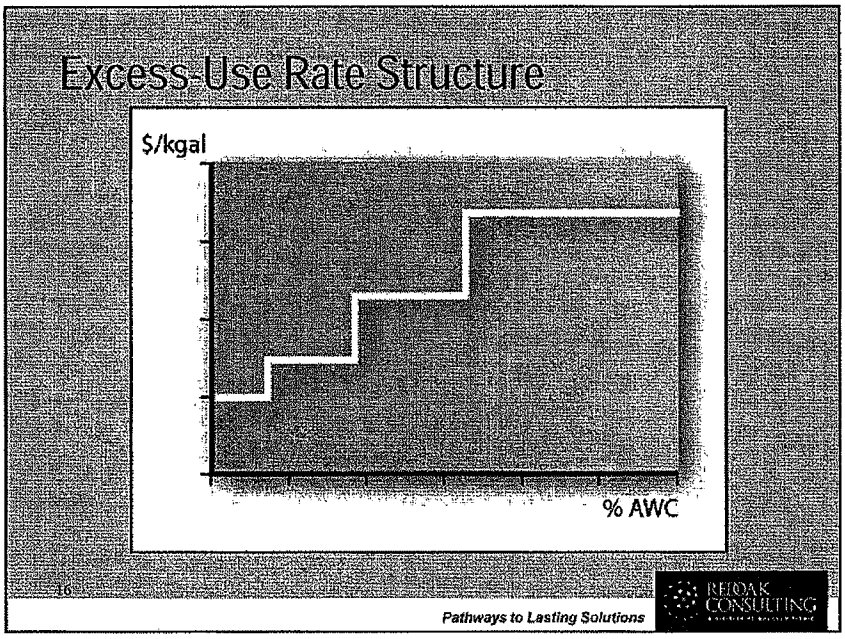
Excess-Use Rate Structure
$/kgal
% AWC
16
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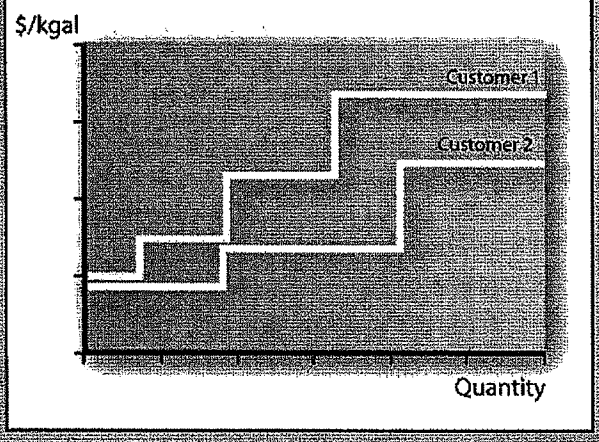
Water-Budget Rate Structure



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Common Wastewater Rate Structures

- Quantity/quality rates
- Extra-strength surcharges

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Policies Reviewed

1. What is the best method for providing a subsidy to low-income customers?
2. How should AWU recover a subsidy to low-income customers?
3. Should AWU introduce a 5th block for single-family residential customers?
4. What conservation incentives should exist for wholesale customers?
5. How should customers with separate irrigation meters be treated?

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Issue 1: Low-Income Subsidy

- Discounted rates for Blocks 1 and 2*
- Waive the fixed charge for qualified low-income customers

*AWU's current methodology

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Discounted Rates for Blocks 1 and 2

- AWU's current methodology
  - No additional effort to implement
  - Discount applies to all customers regardless of income
  - More common in the industry
  - Resulting higher block 3 and 4 rates increase revenue volatility

Waived Fixed Charge

- Potential administrative burden
- Easy to understand
- More affordable for large families
- Reduced likelihood of rate shock
- May decrease rates in upper blocks
- Increased rate stability
- Recommended by consulting team

Issue 2: Recovery of Low-Income Subsidy

- Recover the subsidy within the single-family residential class*
- Recover the subsidy from all customer classes

*AWU's current methodology

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Recover Subsidy within Residential Class

- AWU's current methodology
- Understood by public
- Maintains interclass equity
- Less affordable for residential customers who do not qualify
- Encourages conservation within residential customer class

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Subsidized by All Customer Classes

- May be more acceptable to public
- Improves intraclass equity
- Decreases rate volatility
- May improve revenue sufficiency and stability
- Recommended by consulting team

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Issue 3: Fifth Block for Residential

- Current 4-block structure*
- 5-block structure
- Revised 4-block structure

*AWU's current methodology

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