Transcript Exhibit(s)

Docket #(s): SW-20445A-19-0077

W-02451A-19-0078

W-01732A-19-0079

W-20446A-19-0080

W-02450A-19-0081

W-01812A-19-0082

Exhibit # : ALL

Arizona Court Reporters Association

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Suite 502
2200 North Central Avenue
Phoenix, AZ 85004-1481
MAIN (602) 274-9944
FAX (602) 277-4264

To: Docket Control

Date: January 11, 2010

Re: Global Water – Palo Verde Utilities / Rates
SW-20445A-09-0077, et al.
Volumes I through V, Concluded
December 14 through 28, 2009

STATUS OF ORIGINAL EXHIBITS

FILED WITH DOCKET CONTROL

Global Utilities (A Exhibits)

1 through 52

Residential Utility Consumer Office (RUCO Exhibits)

1 through 8

Staff (S Exhibits)

1 through 11

LATE-FILED EXHIBITS

Global Utilities (A Exhibits)

53

Copy to:

Ms. Teena Wolfe, Administrative Law Judge
Mr. Timothy Sabo, Global Utilities
Mr. Wesley Van Cleve, Staff
Mr. Daniel Pozefsky, RUCO

ORIGINAL NEW **EXHIBIT A-6**

BEFORE THE ARIZONA CORPORATIC

RECEIVED

2009 FEB 20 P 2: 26

AZ CORP COMMISSION
DOCKET CONTROL

COMMISSIONERS
KRISTIN K. MAYES, Chairman
GARY PIERCE
PAUL NEWMAN
SANDRA D. KENNEDY
BOB STUMP

EXHIBIT
A-6
ADMITTED

W-01732A-09-0079

IN THE MATTER OF THE APPLICATION OF WILLOW VALLEY WATER COMPANY FOR THE ESTABLISHMENT OF JUST AND REASONABLE RATES AND CHARGES FOR UTILITY SERVICE DESIGNED TO REALIZE A REASONABLE RATE OF RETURN ON THE FAIR VALUE OF ITS PROPERTY THROUGHOUT THE STATE OF ARIZONA	DOCKET NO. W-01732A-09-

APPLICATION

Arizona Corporation Commission
DOCKETED
FEB 20 2009
DOCKETED BY

1. Willow Valley Water Co. ("Willow Valley") applies for a rate increase. A description of the proposed rate increase, an explanation of why it is necessary, and an explanation of the actions taken to limit the impact on customers (including elderly, low-water users, and low income customers) is included in the testimony that is being filed with this application. In addition, a complete set of rate case schedules is included in accordance with A.A.C. R14-2-103.

2. This application is being submitted at the same time as rate applications for 5 of Willow Valley's sister utilities: Global Water – Palo Verde Utilities Company, Global Water – Santa Cruz Water Company, Valencia Water Company – Town Division, Valencia Water Company – Greater Buckeye Division (formerly Water Utility of Greater Buckeye), and Water Utility of Greater Tonopah (collectively, the "Global Utilities", and together with their unregulated affiliates and parent companies, "Global Water"). Willow Valley requests that the Commission consolidate these 6 rate dockets.

3. This application requests an increase in average residential bills of approximately 95.3%. Under the proposed rates, a residential customer with average usage and 5/8 inch meter would see an increase in their monthly bill from $21.91 to $37.64. Willow Valley recognizes that these are large and difficult increases. However, they are necessary. Willow Valley is earning a rate of return of approximately (4.24%) on an adjusted rate base of more than $ 2.5 million.

Steps to Limit Rate Impact

4. The Global Utilities recognize the hardship that this rate increase will impose on its customers. The Global Utilities have taken numerous steps to limit the impacts of the rate increases requested in the six rate applications, as described below.

5. The Global Utilities have excluded 84% of executive compensation, as well as all lobbying and conservation oriented education and outreach activities from rates.

6. The Global Utilities propose phased-in rates for Palo Verde which will move Palo Verde to a reasonable return over the next 4 years. In the first year, the rate phase-in will save customers approximately $4,726,000.

7. The Global Utilities are excluding $32,391,318 in plant[1] from the rate bases of Santa Cruz and Palo Verde. The excluded plant relates to the Southwest Service Area near Maricopa, Arizona. Excluding this plant results provides a savings to customers of approximately $5,674,000 per year.

8. Global Water has aggressively worked to reduce expenditures, including laying off more than 20% of its workforce, implementing energy and chemical efficiency measures, eliminating all bonuses, deferring capital projects (when possible), renegotiating contracts for services and office space, and eliminating non-essential travel. These cost-cutting measures total more than $2.6 million per year.

[1] $17,941,342 for Santa Cruz and $14,449,976 for Palo Verde.

9. The proposed rate design for Palo Verde shifts revenue requirements away from residential customers and increasingly towards large users of recycled water. By increasing the cost of recycled water the Commission can:

a. Reduce the rate increase needed from residential ratepayers, and

b. Encourage large users to conserve Arizona's only growing source of water, recycled water.

10. The Global Utilities propose a new rate design for water rates – Rebate Threshold Rates. The new rate design is designed to encourage conservation and to allow customers to reduce their bills by reducing their usage. The rate design includes the following:

a. An increased number of tiers; and

b. A provision for a rebate for customers that reduce usage. In the case of Santa Cruz, the majority of residential customers would qualify for the Rebate Threshold due to their already low consumption.

11. The Global Utilities are not asking for rates based on "fair value" rate base, and are limiting their rate requests to original cost rate base.

12. The Global Utilities are imputing the Global Parent tax-free bond debt to Santa Cruz and Palo Verde, thereby lowering their overall rate of return.

13. The Global Utilities are stipulating to Staff's return on equity methodology, as proposed in recent water and wastewater cases, rather than asking for a higher return.

14. The Global Utilities are proposing to consolidate the rates of three utilities[2] in the West Valley Region, in order to limit the impact of the rate increases on the customers of the smaller utilities.

[2] Valencia Water Company – Town Division, Valencia Water Company – Greater Buckeye Division, Water Utility of Greater Tonopah

Summary of Testimony

15. The Global Utilities are presenting the Direct Testimony of five witnesses. The Direct Testimony is included with Palo Verde's application, but is applicable to each of the 6 rate applications.

16. The testimony of Trevor Hill, Global Water's President, provides an overview of the rate applications. Mr. Hill also describes the economic situation in the areas served by the Global Utilities, and how the economic situation is impacting the Global Utilities. Mr. Hill also provides a description of Global Water's cost-cutting efforts. He also describes Global Water's Total Water Management strategy, which is based on recognizing the scarcity of groundwater and promoting the use of recycled water. Mr. Hill also explains Global Water's Public Private Partnerships with the cities served by the Global Utilities. Mr. Hill also explains Global Water's regional approach to infrastructure, describes the conservation and efficiency benefits of that approach, and explains how Global Water's Infrastructure Coordination and Financing Agreements (ICFA) allow Global Water to follow its regional, Total Water Management strategy.

17. Mr. Graham Symmonds, Global Water's Chief Technical Officer, explains the Global Utilities' approach to conservation-focused, regional and efficient infrastructure and testifies that the Global Utilities' facilities are used and useful. He explains how this approach leads to lower long term costs and promotes water conservation. He describes the Global Utilities green billing system, and their renewable energy study. He describes the Global Utilities' experience in addressing the infrastructure problems of small water utilities acquired by Global Water. He introduces Global Water's innovative rate design, which promotes water conservation and allows customers to reduce their bills by conserving. He also addresses changes to specific fees and tariffs.

18. Mr. Greg Barber, Global Water's Chief Financial Officer, testifies concerning cost allocation, test year expenses and rate base and the Global Utilities' cost of debt.

19. Mr. Matthew Rowell of Desert Mountain Analytical Services, and formerly Chief Economist of the Commission, explains the importance of consolidating the many small,

inefficient and poorly capitalized water utilities in Arizona. He describes the Global Utilities' Single Tariff Pricing proposal for the West Valley, and he demonstrates how Single Tariff Pricing promotes consolidation of small utilities. He explains how the ICFA agreements create appropriate regulatory incentives to pursue consolidation, and to emplace regional water infrastructure in the face of growth and water scarcity. He also testifies concerning the regulatory and ratemaking treatment of the ICFA agreements. Finally, he testifies concerning the Global Utilities' cost of capital.

20. Mr. Jamie Moe, Global Water's regulatory accountant, and formerly a rate analyst for the Commission, will testify concerning the Global Utilities' requested adjustment mechanisms, including their groundbreaking request for a renewable energy adjustor to support renewable, distributed energy facilities at their water recycling plants. He also testifies in support of the various adjustments made in the rate schedules.

Contact Information

21. The Global Utilities' attorneys are:

Roshka DeWulf & Patten, PLC
One Arizona Center
400 East Van Buren Street, Suite 800
Phoenix, Arizona 85004
(602) 256-6100

All data requests or other requests for information should be directed to:

Michael W. Patten
Timothy J. Sabo
Roshka DeWulf & Patten, PLC
One Arizona Center
400 East Van Buren Street, Suite 800
Phoenix, Arizona 85004

With a copy to:

Mr. Graham Symmonds
Senior Vice President and Chief Technical Officer
Global Water Management
21410 North 19th Avenue, Suite 201
Phoenix, Arizona 85027

Compliance Information

22. The Global Utilities are currently in compliance with all requirements of the Commission, ADEQ and ADWR. Copies of ADEQ Compliance Status Sheets for each utility are included as Attachments to Mr. Symmonds' direct testimony.

Test Year

23. This rate application is based on a test year of 2008. No post test year plant or construction work in progress is included in the proposed rate base.

WHEREFORE, Willow Valley respectfully requests that the Commission:

A. Consolidate this case with the Rate Applications of the other 5 Global Utilities;

B. Schedule a hearing on this Application as soon as possible; and thereafter

C. Issue a final order:

1. Granting the rate increase requested herein;

2. Approving the adjustment mechanisms requested herein; and

3. Granting such other and further relief as may be appropriate under the circumstances herein.

RESPECTFULLY SUBMITTED this 10 day of February 2009.

ROSHKA DEWULF & PATTEN, PLC

By _____

Michael W. Patten
Timothy J. Sabo
One Arizona Center
400 East Van Buren Street, Suite 800
Phoenix, Arizona 85004

Original + 13 copies of the foregoing
filed this 10 day of February 2009, with:

Docket Control
ARIZONA CORPORATION COMMISSION
1200 West Washington
Phoenix, AZ 85007

Copies of the foregoing hand-delivered/mailed
this 10 day of February 2009, to:

Lyn Farmer, Esq.
Chief Administrative Law Judge
ARIZONA CORPORATION COMMISSION
1200 West Washington
Phoenix, AZ 85007

Janice Alward, Esq.
Chief Counsel, Legal Division
ARIZONA CORPORATION COMMISSION
1200 West Washington
Phoenix, AZ 85007

Ernest J. Johnson
Director, Utilities Division
ARIZONA CORPORATION COMMISSION
1200 West Washington
Phoenix, AZ 85007

By _____

Symmonds Exhibits

GSS 4

Maricopa County
Environmental Services Department

PUBLIC WATER SYSTEM COMPLIANCE STATUS REPORT

System Name: 07-179
PWS ID#: ***Granite Mountain Ranch***

Type of System: Community Number of POE's: 1 Surface Water: No
Number of Service Connections: 50 Population Served: 155

Assigned Monitoring Dates - Initial: 1/1/2003 Phase II: 1/1/2003 Phase V: 1/1/2003

Does the water system have a Certified Operator? yes

Does the system have major treatment plant deficiencies? No
Please describe: _____

Date of last inspection: 11/28/2006

Does the system have major O & M deficiencies? No
Please describe:

Does the system have water quality monitoring/reporting deficiencies? No
Please describe: _____

General Public Water System Compliance Status? **Compliant**

Date of compliance review: **1/24/07** By: **Laura Moorhead** Initials: _____
Phone: **(602) 506-6631**

Requested By: ACC Fax Number/ Contact: _____ Tracking Number: 1235
Supervisor Initials: GY Date: 1/24/07

Drinking Water Program
John Kolman, Manager
1001 N. Central Ave., Suite 150Phoenix, Arizona 85004-1940 Phone: (602) 506-6666 Fax: (602) 506-6925

Maricopa County

Environmental Services

Water and Waste Management Division
1001 N. Central Avenue #250
Phoenix, Arizona 85004
Phone: (602) 506-6666
Fax: (602) 372-0866
TDD 602 372-0622

Sanitary Survey Deficiencies Corrected.

December 22, 2008

Global Water.
Attn: Susan Armijo
21410 N. 19th Ave Suite 201
Phoenix, AZ 85027

Re: PWS 07-733

Dear Ms. Armijo:

On October 14, 2008 I performed a sanitary survey of the West Phoenix Estates #6 water system, which included a list of deficiencies that needed to be corrected. This department has received your documentation of deficiencies corrected. Based on the information available, we currently show the water system is in **Compliance** with the Safe Drinking Water Rule for this date.

If this department is made aware of new or different information, the compliance status may change. If you have any questions or need additional information on the requirements for a public water system operating in Maricopa County, please feel free to contact me at (602) 506-5173.

Sincerely,

Duncan Wright
Environmental Specialist, Drinking Water Program

cc ADEQ (with enclosures)
PWS File
Michael Mallette

Maricopa County
Environmental Services Department

PUBLIC WATER SYSTEM COMPLIANCE STATUS REPORT

System Name: Valencia Water Company
PWS ID#: 07-078

Type of System: Community Number of POE's: 3 Surface Water: N/A
Number of Service Connections: 3735 Population Served: 11578

Assigned Monitoring Dates - Initial: 1/1/94 Phase II: 1/1/94 Phase V: 1/1/94

Does the water system have a Certified Operator? Yes

Does the system have major treatment plant deficiencies? No
Please describe: _____

Date of last inspection: February 9, 2006

Does the system have major O & M deficiencies? No
Please describe: _____

Does the system have water quality monitoring/reporting deficiencies? No
Please describe:

General Public Water System Compliance Status? **Compliant**

Date of compliance review: **2/14/07** By: **Duncan Wright** Initials: _____
Phone: **(602) 506-5173**

Requested By: ACC Fax Number/ Contact: _____ Tracking Number: 1246
Supervisor Initials: GY Date: 2/21/07

Drinking Water Program
John Kolman, Manager
1001 N. Central Ave., Suite 150Phoenix, Arizona 85004-1940 Phone: (602) 506-6666 Fax: (602) 506-6925

Maricopa County
Environmental Services Department

PUBLIC WATER SYSTEM COMPLIANCE STATUS REPORT

System Name: Sweet Water II
PWS ID#: 07-129

Type of System: Community Number of POE's: 1 Surface Water: no
Number of Service Connections: 94 Population Served: 291

Assigned Monitoring Dates - Initial: 1/1/95 Phase II: 1/1/95 Phase V: 1/1/98

Does the water system have a Certified Operator? yes

Does the system have major treatment plant deficiencies? no
Please describe: _____

Date of last inspection: June 1, 2007

Does the system have major O & M deficiencies? no
Please describe: _____

Does the system have water quality monitoring/reporting deficiencies? no
Please describe: _____

General Public Water System Compliance Status? **Compliant**

Date of compliance review: May 7, 2008 By: **Laura Moorhead** Initials: _____
Phone: **(602) 506-6631**

Requested By: Susan Armijo Fax Number/ Contact: _____ Tracking Number: 1496
Supervisor Initials: GY Date: 5/12/08

Drinking Water Program
John Kolman, Manager
1001 N. Central Ave., Suite 250 Phoenix, Arizona 85004-1940 Phone: (602) 506-6666 Fax: (602) 372-0866

Maricopa County
Environmental Services

Water and Waste Management
Division
1001 N. Central Avenue #250
Phoenix, Arizona 85004
Phone: (602) 506-6666
Fax: (602) 372-0866
TDD 602 372-0622

Sanitary Survey Deficiencies Corrected.

December 22, 2008

Global Water.
Attn: Susan Armijo
21410 N. 19th Ave Suite 201
Phoenix, AZ 85027

Re: PWS 07-071

Dear Ms. Armijo:

On October 14, 2008 I performed a sanitary survey of the Sunshine water system, which included a list of deficiencies that needed to be corrected. This department has received your documentation of deficiencies corrected. Based on the information available, we currently show the water system is in **Compliance** with the Safe Drinking Water Rule for this date.

If this department is made aware of new or different information, the compliance status may change. If you have any questions or need additional information on the requirements for a public water system operating in Maricopa County, please feel free to contact me at (602) 506-5173.

Sincerely,

Duncan Wright
Environmental Specialist, Drinking Water Program

cc ADEQ (with enclosures)
PWS File
Michael Mallette

Maricopa County
Environmental Services Department

PUBLIC WATER SYSTEM COMPLIANCE STATUS REPORT

System Name: Sun Valley Ranch
PWS ID#: 07-195

Type of System: Community Number of POE's: 1 Surface Water: n/a
Number of Service Connections: 383 Population Served: 1156

Assigned Monitoring Dates - Initial: 1/1/98 Phase II: 1/1/98 Phase V: 1/1/98

Does the water system have a Certified Operator? Yes

Does the system have major treatment plant deficiencies? No
Please describe: _____

Date of last inspection: November 14, 2006

Does the system have major O & M deficiencies? No
Please describe: _____

Does the system have water quality monitoring/reporting deficiencies? No
Please describe: _____

General Public Water System Compliance Status? **Compliant**

Date of compliance review: **05/15/2008** By: **Duncan Wright** Initials: **dw**
Phone: **(602) 506-5173**

Requested By: Susan Armijo Fax Number/ Contact: _____ Tracking Number: 1498
Supervisor Initials: MA Date: 5-16-08

Drinking Water Program
John Kolman, Manager
1001 N. Central Ave., Suite 250 Phoenix, Arizona 85004-1940 Phone: (602) 506-6666 Fax: (602) 372-0866

Maricopa County
Environmental Services Department

PUBLIC WATER SYSTEM COMPLIANCE STATUS REPORT

System Name: Roseview Water System
PWS ID#: 07-082

Type of System: Community Number of EPDS's: 1 Surface Water: N/A
Number of Service Connections: 17 Population Served: 30

Assigned Monitoring Dates - Initial: 1/1/02 Phase II: 1/1/02 Phase V: 1/1/02

Does the water system have a Certified Operator? Yes

Does the system have major treatment plant deficiencies? Minor.
Please describe: ATC for POU System for arsenic removal issued 10/18/07. AOC has not yet been issued by MCESD. Two POU samples dated 12/3/2007 show levels less than .002 mg/l.

Date of last Sanitary Survey: September 25, 2007

Does the system have major O & M deficiencies? No
Please describe: _____

Does the system have water quality monitoring/reporting deficiencies? Minor.
Please describe: Arsenic running annual average at EPDS is .0225 mg/l, above the MCL of .01 mg/l. Samples at POU have been below the MCL but will not be entered into SDWIS until AOC has been issued.

General Public Water System Compliance Status? **Non-compliant, minor**

Date of compliance review: **May 27, 2008** By: **Rob Collins** Initials: RC
Phone: **(602) 506-0719**

Requested By: Susan Armijo, Global Fax Number/ Contact: e-mail Tracking Number: 1527
Supervisor Initials: MM Date: 5-30-8

Drinking Water Program
John Kolman, Manager
1001 N. Central Ave., Suite 150Phoenix, Arizona 85004-1940 Phone: (602) 506-6666 Fax: (602) 506-6925

Janice K. Brewer
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.azdeq.gov

January 29, 2009

Arizona Corporation Commission
Ms. Dorothy Hains, Utilities Engineer
1200 W. Washington
Phoenix, Arizona 85007

RE: Compliance Status for Palo Verde Utilities WRF, Inventory number 105228, Place ID: 5048, Permit number: 34986 and 43460.

Dear Ms. Hains;

Your request for evaluation of compliance status for the above facility is completed. Our records indicate that Palo Verde Utilities, WRF has Aquifer Protection Permit number 34460 and AZPDES permit number 37120 issued on 11/05/2007 and 6/5/2006 respectively.

Both, the Aquifer Protection and AZPDES Permit reporting requirements and monitoring results which have been submitted indicate the facility **is in compliance** based on the current information that is available to ADEQ. No enforcement actions are pending.

It should be understood that the compliance status of a facility may change from time to time based upon monitoring results or a facility inspection. Therefore this is based on the most current information available.

Sincerely,

Fred Vakili, EHS- II
Water Quality Data Unit
Water Quality Compliance Section
FAV@AZDEQ.GOV

Maricopa County

Environmental Services

RECEIVED
DEC 0 1 2008

Water and Waste Management Division
1001 N. Central Avenue #250
Phoenix, Arizona 85004
Phone: (602) 506-6666
Fax: (602) 372-0866
TDD 602 372-0622

Sanitary Survey Deficiencies Corrected.

November 24, 2008

Garden City Water System
Attn: Susan Armijo
21410 North 19th Ave, Suite 201
Phoenix, AZ 85027

Re: PWS 07-037

Dear Ms. Armijo:

On October 14, 2008 I performed a sanitary survey of the Garden City Water System, which included a list of deficiencies that needed to be corrected. This department has received your documentation of deficiencies corrected. Based on the information available, we currently show the water system is in **Compliance** with the Safe Drinking Water Rule for this date.

If this department is made aware of new or different information, the compliance status may change. If you have any questions or need additional information on the requirements for a public water system operating in Maricopa County, please feel free to contact me at (602) 506-5173.

Sincerely,

Duncan Wright
Environmental Specialist

cc ADEQ
PWS File
Michael Mallette

Maricopa County
Environmental Services Department

PUBLIC WATER SYSTEM COMPLIANCE STATUS REPORT

System Name: Dixie Water Company
PWS ID#: 07-030

Type of System: Community Number of POE's: 1 Surface Water: n/a
Number of Service Connections: 26 Population Served: 81

Assigned Monitoring Dates - Initial: 1/1/99 Phase II: 1/1/99 Phase V: 1/1/99

Does the water system have a Certified Operator? Yes

Does the system have major treatment plant deficiencies? n/a
Please describe: _____

Date of last inspection: February 13, 2004

Does the system have major O & M deficiencies? No
Please describe: _____

Does the system have water quality monitoring/reporting deficiencies? No
Please describe: System has performed public notice for total coliform MCL in November 2005 and for missed monitoring. Other corrective action also completed.

General Public Water System Compliance Status? **Compliant**

Date of compliance review: **09/11/2006** By: **Genevieve Young** Initials: **GY**
Phone: **(602) 506-0462**

Requested By: Robyn Wymer Fax Number/ Contact: _____ Tracking Number: 1184

Drinking Water Program
John Kolman, Manager
1001 N. Central Ave., Suite 150Phoenix, Arizona 85004-1940 Phone: (602) 506-6666 Fax: (602) 506-6925

Maricopa County
Environmental Services Department

PUBLIC WATER SYSTEM COMPLIANCE STATUS REPORT

System Name: Bulfur Water
PWS ID#: 07-114

Type of System: Community Number of POE's: 1 .Surface Water: n/a
Number of Service Connections: 82 Population Served: 246

Assigned Monitoring Dates - Initial: 1/1/95 Phase II: 1/1/95 Phase V: 1/1/98

Does the water system have a Certified Operator? Yes

Does the system have major treatment plant deficiencies? No
Please describe: _____

Date of last inspection: November 1, 2006

Does the system have major O & M deficiencies? No
Please describe: System submitted documentation on 5/16/2008 that Backflow Prevention plan has been implemented.

Does the system have water quality monitoring/reporting deficiencies? No
Please describe: _____

General Public Water System Compliance Status? **Compliant**

Date of compliance review: **05/20/2008** By: **Duncan Wright** Initials: **dw**
Phone: **(602) 506-5173**

Requested By: Susan Armijo Fax Number/ Contact: _____ Tracking Number: 1530
Supervisor Initials: [illegible] Date: 5-23-08

Drinking Water Program
John Kolman, Manager
1001 N. Central Ave., Suite 250 Phoenix, Arizona 85004-1940 Phone: (602) 506-6666 Fax: (602) 372-0866

Maricopa County
Environmental Services Department

PUBLIC WATER SYSTEM COMPLIANCE STATUS REPORT

System Name: B&D Buckeye Ranch

PWS ID#: 07-618

Type of System: Community Number of POE's: 1 Surface Water: 0
Number of Service Connections: 92 Population Served: 285

Assigned Monitoring Dates - Initial: 1/1/98 Phase II: 1/1/98 Phase V: 1/1/98

Does the water system have a Certified Operator? Yes

Does the system have major treatment plant deficiencies? No
Please describe: _____

Date of last inspection: February 20, 2007

Does the system have major O & M deficiencies? No
Please describe: _____

Does the system have water quality monitoring/reporting deficiencies? No
Please describe: ____

General Public Water System Compliance Status? **Compliant**

Date of compliance review: **05/8/08** By: **Mike Mallette** Initials: **MKM**
Phone: **(602) 506-6644**

Requested By: Jenny Fax Number/ Contact: _____ Tracking Number: 1500
Supervisor Initials: GY Date: 5/12/08

Drinking Water Program
John Kolman, Manager
1001 N. Central Ave., Suite 150Phoenix, Arizona 85004-1940 Phone: (602) 506-6666 Fax: (602) 506-6925

Arizona Department of Environmental Quality
Drinking Water Monitoring and Protection Unit
Mail Code 5415B-2
1110 West Washington Street
Phoenix, AZ 85007

Drinking Water Compliance Status Report

System Name		System Type		Is system consecutive?	
SANTA CRUZ WATER COMPANY	X	Community			Yes,
System ID #		Non-transient Non-community			to PWS #
11131		Transient Non-community		X	No

Overall compliance status	X	No major deficiencies		Major deficiencies
Monitoring and Reporting status	X	No major deficiencies		Major deficiencies
Comments: None				

Operation and Maintenance status	X	No major deficiencies			Major deficiencies
Date of last Sanitary Survey	5/31/07	**Inspector**	Karen Berry, CRO		

Major unresolved/ongoing operation and maintenance deficiencies:

[ ] unable to maintain 20psi
[ ] cross connection/backflow problems
[ ] treatment deficiencies
[ ] certified operator
[ ] inadequate storage
[ ] surface water treatment rule
[ ] approval to construct/of construction
[ ] other

Comments: None

Is an ADEQ administrative order in effect?		Yes	X	No
Comments: None				

System Information				
Population Served	39,367			
Service Connections	14,689			
Number of Entry Points to the Distribution System	1			
Number of Sources	4			
Initial Monitoring Year	2003			
Monitoring Assistance Program (MAP) System		Yes	X	No

Evaluation completed by	Donna Calderon, Manager Drinking Water Monitoring and Protection Unit		
Phone	602-771-4641	**Date**	December 9, 2008

X	Based upon data submitted by the water system, ADEQ has determined that this system **is** currently delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4.
	Based upon the monitoring and reporting deficiencies noted above, ADEQ **cannot determine** if this system is currently delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4.
	Based upon the operation and maintenance deficiencies noted above, ADEQ **cannot determine** if this system is currently delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4.

This compliance status report does not guarantee the water quality for this system in the future, and does not reflect the status of any other water system owned by this utility company.

Arizona Department of Environmental Quality
Drinking Water Monitoring and Protection Unit
Mail Code 5415B-2
1110 West Washington Street
Phoenix, AZ 85007

Drinking Water Compliance Status Report

System Name	System Type	Is system consecutive?
WILLOW VALLEY WC-KING STREET	☒ Community	☐ Yes,
System ID #	☐ Non-transient Non-community	to PWS #
08040	☐ Transient Non-community	☒ No

Overall compliance status	☒	No major deficiencies	☐	Major deficiencies
Monitoring and Reporting status	☒	No major deficiencies	☐	Major deficiencies
Comments: None				

Operation and Maintenance status	☒ No major deficiencies	☐ Major deficiencies	
Date of last Sanitary Survey	12/20/06	**Inspector**	Marti Blad, NRO

Major unresolved/ongoing operation and maintenance deficiencies:

- [☐] *unable to maintain 20psi*
- [☐] cross connection/backflow problems
- [☐] treatment deficiencies
- [☐] certified operator
- [☐] inadequate storage
- [☐] surface water treatment rule
- [☐] atc/aoc
- [☐] other =

Comments: None

Is an ADEQ administrative order in effect?	☐ Yes	☒ No	
Comments: None			

System Information	
Population Served	4353
Service Connections	1451
Number of Entry Points to the Distribution System	2
Number of Sources	2
Initial Monitoring Year	1994
Monitoring Assistance Program (MAP) System	☒ Yes ☐ No

Evaluation completed by	Donna Calderon, Manager Drinking Water Monitoring and Protection Unit		
Phone	602-771-4641	**Date**	February 13, 2009

☒	Based upon data submitted by the water system, ADEQ has determined that this system **is** currently delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4.
☐	Based upon the monitoring and reporting deficiencies noted above, ADEQ **cannot determine** if this system is currently delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4.
☐	Based upon the operation and maintenance deficiencies noted above, ADEQ **cannot determine** if this system is currently delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4.

This compliance status report does not guarantee the water quality for this system in the future, and does not reflect the status of any other water system owned by this utility company.

Arizona Department of Environmental Quality
Drinking Water Monitoring and Protection Unit
Mail Code 5415B-2
1110 West Washington Street
Phoenix, AZ 85007

Drinking Water Compliance Status Report

System Name	System Type	Is system consecutive?
WILLOW VALLEY WC-LAKE CIMARRON	☒ Community	☐ Yes, to PWS #
System ID #	☐ Non-transient Non-community	
08129	☐ Transient Non-community	☒ No

Overall compliance status	☒	No major deficiencies	☐	Major deficiencies
Monitoring and Reporting status	☒	No major deficiencies	☐	Major deficiencies

Comments: None

Operation and Maintenance status	☒ No major deficiencies	☐ Major deficiencies	
Date of last Sanitary Survey	12/20/06	**Inspector**	Marti Blad, NRO

Major unresolved/ongoing operation and maintenance deficiencies:

[☐] unable to maintain 20psi
[☐] cross connection/backflow problems
[☐] treatment deficiencies
[☐] certified operator
[☐] inadequate storage
[☐] surface water treatment rule
[☐] atc/aoc
[☐] other =

Comments: None

Is an ADEQ administrative order in effect?	☐	Yes	☒	No

Comments: None

System Information				
Population Served	384			
Service Connections	112			
Number of Entry Points to the Distribution System	1			
Number of Sources	2			
Initial Monitoring Year	1995			
Monitoring Assistance Program (MAP) System	☒	Yes	☐	No

Evaluation completed by	Donna Calderon, Manager DC Drinking Water Monitoring and Protection Unit		
Phone	602-771-4641	**Date**	February 13, 2009

☒	Based upon data submitted by the water system, ADEQ has determined that this system **is** currently delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4.
☐	Based upon the monitoring and reporting deficiencies noted above, ADEQ **cannot determine** if this system is currently delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4.
☐	Based upon the operation and maintenance deficiencies noted above, ADEQ **cannot determine** if this system is currently delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4.

This compliance status report does not guarantee the water quality for this system in the future, and does not reflect the status of any other water system owned by this utility company.

GSS 5

COMPANY NAME: Global Water - Palo Verde Utilities Company	
Name of System: Palo Verde Utilities Company	Wastewater Inventory Number (if applicable):

WASTEWATER COMPANY PLANT DESCRIPTION
TREATMENT FACILITY

TYPE OF TREATMENT (Extended Aeration, Step Aeration, Oxidation Ditch, Aerobic Lagoon, Anaerobic Lagoon, Trickling Filter, Septic Tank, Wetland, Etc.)	1 x 3.0 MGD SBR Tertiary Treatment Facility 1 x 0.3 MGD Facultative Lagoon (not in use) 1 x 3.0 MGD SBR Tertiary Treatment Facility- not yet operational
DESIGN CAPACITY OF PLANT (Gallons Per Day)	3.0 MGD Permitted Capacity = 9.0 MGD (per APP 105228)

LIFT STATION FACILITIES

Location	Quantity of Pumps	Horsepower Per Pump	Capacity Per Pump (GPM)	Wet Well Capacity (gals)
Rancho El Dorado L/S	3	20HP	1000	23,095
Reclaimed Water Delivery System	3	50HP	2100	93,223
Cobblestone Lift Station	2	18HP	950	8,900
McDavid L/S	2	70HP	650	8,900
Maricopa Groves L/S	2	40HP	750	15,600
Alterra L/S	2	15HP	800 (no head)	13,200
Tortosa L/S	2	5 HP	300 (no head)	10,300
PVWR Influent L/S	2	100 HP	5,000	263,000

FORCE MAINS

Size	Material	Length (Feet)
6-inch	PVC	1850
8-inch	PVC	520
10 inch	PVC	6,552
14-inch	PVC	2,406
Reclaimed Water Lines	8" C-900	5957
	10"C-900	6260
	12"C-900	130
	16"C-905	5320
	18"C-905	31890
	24"C-905	20536
	24"C-900	9770
	10" DIP	30
	16" DIP	710
	18" DIP	240
	24"DIP	2115

MANHOLES

Type	Quantity
Standard	1497
Drop	35
Discharge	1

CLEANOUTS

Quantity
48

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Global Water - Palo Verde Utilities Company	
Name of System:	Wastewater Inventory Number (if applicable):

WASTEWATER COMPANY PLANT DESCRIPTION (CONTINUED)

COLLECTION MAINS

Size (in inches)	Material	Length (in feet)
6	PVC	115
8	PVC	458071
10	PVC	41379
12	PVC	32272
14	PVC	5080
15	PVC	16071
18	PVC	5926
24	PVC	9319
30	PVC	5084
36	PVC	7242
8	DIP	1903
10	DIP	490
12	DIP	2860
14	DIP	480
15	DIP	343
16	DIP	145
18	DIP	255
24	DIP	3200
30	DIP	2495
18	HDPE	2480
24	HDPE	14844
27	HDPE	1679
30	HDPE	11541
36	HDPE	10660
42	HDPE	11551
48	HDPE	4474
18	RGR Concrete	140
24	RIB	100
30	RIB	4260

SERVICES

Size (in inches)	Material	Quantity
4	PVC	14,276
8	PVC	8

FOR THE FOLLOWING FIVE ITEMS, LIST THE UTILITY OWNED ASSETS IN EACH CATEGORY PER WASTEWATER SYSTEM

SOLIDS PROCESSING AND HANDLING FACILITIES	2 x 1.5m Filter Belt Press 2 x Conveyor System for Biosolids 4 x ¼ in Influent Trash Removal Auger 2x Grit Classifier

	2 x Conveyor for Grit/Trash
DISINFECTION EQUIPMENT (Chlorinator, Ultra-Violet, Etc.)	2 x Low Pressure High Intensity UV 2 x Chlorination System 2 x Dechlorination System
FILTRATION EQUIPMENT (Rapid Sand, Slow Sand, Activated Carbon, Etc.)	6 x 1.0 MGD sand filters (gravity, traveling bridge)
STRUCTURES (Buildings, Fences, Etc.)	2 x Office/Lab/Storage - 1500 sq ft 2 x SBR Blower Building = 1400 sq ft 2 x Headworks Building = 2800 sq ft 2 x Blower/Solids Handling = 2400 sq ft 2 x Masonry Walls (Filtration + Odor Control) = 600 ft Chain Link Fence: Lagoon = 2450 ft, 2 x SBR = 800 ft
OTHER (Laboratory Equipment, Tools, Vehicles, Standby Power Generators, Etc.	Odor Scrubbers: 2 x Lift Station; 4 x SBR Systems 2 x Polymer Injection System 2 x 1500 kW D/G 2 x350kVAD/G 2 x80kVAD/G 2 x60kWD/G 2 x HACH Portable Water Test Kit (DR2000) 5 x ½ Ton Pick-up Truck

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Global Water - Palo Verde Utilities Company	
Name of System:	Wastewater Inventory Number (if applicable):

WASTEWATER FLOWS

MONTH/YEAR (Most Recent 12 Months)	NUMBER OF SERVICES	TOTAL MONTHLY SEWAGE FLOW	SEWAGE FLOW ON PEAK DAY
January	15,678	60,128,000	2,234,000
February	15,764	58,755,000	2,354,000
March	15,833	62,924,000	2,313,000
April	15,965	60,441,000	2,620,000
May	16,107	59,646,000	2,490,000
June	16,191	54,666,000	2,039,000
July	16,285	59,048,000	2,232,000
August	16,348	60,494,000	2,292,000
September	16,386	64,744,000	2,706,000
October	16,418	59,430,000	2,421,000
November	16,420	62,621,000	2,448,000
December	16,446	65,928,000	2,427,000

PROVIDE THE FOLLOWING INFORMATION AS APPLICABLE PER WASTEWATER SYSTEM

Method of Effluent Disposal (leach field, surface water discharge, reuse, injection wells, groundwater recharge, evaporation ponds, etc.)	Re- Use to Type 2 Reclaimed AzPDES
Groundwater Permit Number	
ADEQ Aquifer Protection Permit Number	APP 105228 APP 103558 APP 105668
ADEQ Reuse Permit Number	R103558 R105393 R105394 R105395 R105392 R105228 R105869 R105870 R105871 R105873
EPA NPDES Permit Number	AZ0025071

Note: If you are filing for more than one system, please provide separate sheets for each system

COMPANY NAME: Global Water - Santa Cruz Water Company

Name of System **ADEQ Public Water System Number 11-131**

WATER COMPANY PLANT DESCRIPTION

WELLS

ADWR ID Number*	Pump Horsepower	Pump Yield (gpm)	Casing Depth (Feet)	Casing Diameter (Inches)	Meter Size (inches)	Year Drilled
55-612737- Smith	100	1070	1000	20	8	1972
55-617336- Vance	250	1965	800	20	10	1973
55-621407 - Neely West	350	1980	700	12	10	1955
55-621406 - Neely North	400	2000	1000	12	10	1955
55-509941- Rancho Mirage @	400	2800	1100	16	N/A	1985
55-621410-Porter @	100	1000	400	20	10	1955
55-621408- Neely East #	350	2000	1000	12	10	1955
55-801069-Cobblestone@	200	1280	600	12	10	1957
55-624037-Glennwilde@	N/A	1380	1992	18	N/A	1965
55-622132-Maricopa Meadows #	UNK	1400	600	20	4	UNK
55-612741- Maricopa Groves#	N/A	1200	1675	20	N/A	UNK
55-612247- Amarillo Creek East	300	1800	1000	18	10	1973
55-612250- Sunset Canyon **	300	1500	1200	16	10	1978
55-624031-Homestead West**	UNK	860	1430	18		1976
55-624029 Homestead East**	UNK	1200	UNK	20		1960

Not Operational, ** Well undergoing rehabilitation
@ construction/irrigation use only

OTHER WATER SOURCES

Name or Description	Capacity (gpm)	Gallons Purchased or Obtained (in thousands)
None		

BOOSTER PUMPS		FIRE HYDRANTS	
Horsepower	Quantity	Quantity Standard	Quantity Other
150 HP	5	1181	0
40 HP	4		
75 HP	5		
50 HP	5		
200HP	1		

STORAGE TANKS		PRESSURE TANKS	
Capacity	Quantity	Capacity	Quantity
500,000	2	5,000	4
1,500,000	2	10,000	1
1,500,000	1		

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME : Global Water - Santa Cruz Water Company	
Name of System:	ADEQ Public Water System Number: 11-131

WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

Size (in inches)	Material	Length (in feet)
2	PVC	11,340
3	PVC	220
6	PVC	26,896
8	PVC	426,449
10	PVC	13,231
12	PVC	84,709
16	PVC	71,463
20	PVC	10,200
6	DIP	177
8	DIP	38,883
12	DIP	13,290
16	DIP	74,787
24	DIP	15,724

CUSTOMER METERS

Size (in inches)	Quantity
5/8 X ¾	1832
3/4	14414
1	198
1 1/2	51
2	151
3	3
Turbo 3	0
4	3
Turbo 4	0
Comp. 6	0
Turbo 6	0
Hydrant	59

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:
Chlorine Injection Systems at Main Water Distribution Center and at Groves WDC and Meadows WDC.

STRUCTURES:
Mobile Mini Trailer
Masonry Brick Walls (Vance Well, WTP, WDC's)
Office Trailer at Maricopa Meadows
Office/Customer Service Center 25,000 sf

OTHER:
SCADA Communications System & Video Monitoring System
ITRON 2.0 Radio AMR System (endpoints, MVRS mobile read system, handhelds)
ITRON Fixed Network 2.5 AMR System (CCUs, endpoints)
Trailer Mounted Emergency Generator
Switchgear for Distribution Systems & Well Sites
1 x 600 kW Emergency D/G
2 x Chevrolet Trailblazer
13 x Silverado Utility Vehicles
3 x Colorado Utility Vehicles
3 x Service Body Vehicles
1 x Econoline Van
2 x Toyota Utility Vehicles

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Valencia Water Company		
Name of System:	07-078	ADEQ Public Water System Number: 07-078

WATER COMPANY PLANT DESCRIPTION

WELLS

ADWR ID Number*	Pump Horsepower	Pump Yield (gpm)	Casing Depth (Feet)	Casing Diameter (Inches)	Meter Size (inches)	Year Drilled
55-207806(4th Central)	25	400	560	84		
55-607656(4th Baseline #1)	10	80	490	6	2	
55-577508(4th Baseline #2)	60	600	620	8	2	
55-607658(7th Alarcon #1)	15	80	625	6	2	
55-599950(7th Alarcon #2)	50	250	610	10		2004
55-202400 (Bales School)	50	30	620	11		
55-2001055(Riata West 1)	Not Active	425	640	11		
55-202399(Riata West 2)	Not Active	525	660	11		
55-203651(Evergreen #1)	Not Active	300	520	11		
55-203650(Evergreen #2)	Not Active	700	800	10		
55-205540(Evergreen #3)	Not Active	450	740	11		
55-599204(Blue Hills #1)	20	110				2004
55-592220(Blue Hills #2)	60	350	900	10 ¾		
55-595258(Sonoran Vista SW)	100	500				
55-200564(Sonoran Vista SE)	Not Active					
55-201740(Sonoran Vista NE)	150	750				
55-595289(AZ Machinery)	Not Active					
55-203643(Schult #1)	Not Active		535	11		
55-203620(Schult #2)	Not Active		200	3		
55-206355(Evergreen #4)	Not Active		760	11		
55-207988(Evergreen #5)	Not Active		820	11		
55-201739(Crystal Vista)	Not Active		650	11		
55-206042(Montana Vista)	Not Active		1,000	11		
55-201726(Miller Manor)	Not Active		800	10		

* Arizona Department of Water Resources Identification Number

OTHER WATER SOURCES

Name or Description	Capacity (gpm)	Gallons Purchased or Obtained (in thousands)

BOOSTER PUMPS		FIRE HYDRANTS	
Horsepower	Quantity	Quantity Standard	Quantity Other
25	8	164	
15	8		
5	2		
20	3		
30	3		
40	6		
50	4		
60	2		
100	2		
150	2		

STORAGE TANKS		PRESSURE TANKS	
Capacity	Quantity	Capacity	Quantity
750,000	1	5,000	5
500,000	2	4,000	1
190,000	1	2,000	1
180,000	1	1,000	1
100,000	1	6,000	1
215,000	1		
800,000	1		
1,000,000	1		

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Valencia Water Company	
Name of System: Valencia Water Company	ADEQ Public Water System Number: 07-0780

WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

Size (in inches)	Material	Length (in feet)
2	PVC	525
3	PVC	6,675
4	PVC	52,731
5		
6	PVC	51,850
8	PVC	85,930
10		
12	PVC	1906
6	DIP	382
8	DIP	155
16	DIP	16,123
18	DIP	60

CUSTOMER METERS

Size (in inches)	Quantity
5/8 X ¾	4787
3/4	380
1	118
1 1/2	18
2	129
Comp. 3	3
Turbo 3	0
Comp. 4	1
Turbo 4	0
Comp. 6	1
Turbo 6	0
Hydrant	29

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:
ArsenX treatment systems
- 7TH & Alarcon
- Bales
- Blue Hills
- 4th & Baseline
- 4th & Central

Coagulation Filtration System
- Sonoran Vista

STRUCTURES:
Local Office structure - storage, office space etc (201 E Coronado, Buckeye)
Block Walls around well sites and booster stations

OTHER:
10 Utility Vehicles
1 Dump Truck
1 Backhoe
1 Trackhoe
3 Trailers

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Buckeye		
Name of System:	CONSOLIDATED	ADEQ Public Water System Number:

WATER COMPANY PLANT DESCRIPTION

WELLS

ADWR ID Number*	Pump Horsepower	Pump Yield (gpm)	Casing Depth (Feet)	Casing Diameter (Inches)	Meter Size (inches)	Year Drilled
55-802328 (SWI)	3	30	513	18	1 ¼	
55-802333 (SW2)	5	40	279	8	1 ½	
55-800947 (Sun Valley)	20	300		16-20	1 ½	
55-618513 (Bulfer)	5	40	252	8	1 ½	
55-572657 (Sonoran R.)	5	150	850	6	1 ½	

* Arizona Department of Water Resources Identification Number

OTHER WATER SOURCES

Name or Description	Capacity (gpm)	Gallons Purchased or Obtained (in thousands)

BOOSTER PUMPS		FIRE HYDRANTS	
Horsepower	Quantity	Quantity Standard	Quantity Other
See Individual PWS			

STORAGE TANKS		PRESSURE TANKS	
Capacity	Quantity	Capacity	Quantity
See Individual PWS			

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Buckeye		
Name of System:	CONSOLIDATED	ADEQ Public Water System Number:

WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

Size (in inches)	Material	Length (in feet)
2	PVC	525
7	PVC	1,000
4	PVC	4,000
5		
6	PVC	29,134
8	PVC	900
10	PVC	800
12		

CUSTOMER METERS

Size (in inches)	Quantity
5/8 X ¾	523
3/4	74
1	54
1 1/2	
2	
Comp. 3	
Turbo 3	
Comp. 4	
Turbo 4	
Comp. 6	
Turbo 6	

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:
Arsenic Treatment System at Sonoran Ridge

STRUCTURES:

OTHER:

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Buckeye	
Name of System: 07-195 Sun Valley/SW 1	ADEQ Public Water System Number:

WATER COMPANY PLANT DESCRIPTION

WELLS

ADWR ID Number*	Pump Horsepower	Pump Yield (gpm)	Casing Depth (Feet)	Casing Diameter (Inches)	Meter Size (inches)	Year Drilled
55-802328 (SWI)	3	30	513	18	1 ¼	
55-800947 (Sun Valley)	20	300		16-20	1 ½	

* Arizona Department of Water Resources Identification Number

OTHER WATER SOURCES

Name or Description	Capacity (gpm)	Gallons Purchased or Obtained (in thousands)

BOOSTER PUMPS		FIRE HYDRANTS	
Horsepower	Quantity	Quantity Standard	Quantity Other
7.5	1		
10	2		

STORAGE TANKS		PRESSURE TANKS	
Capacity	Quantity	Capacity	Quantity
125,000	1	3,000	1

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Buckeye		
Name of System:	07-195 Sun Valley/SW 1	ADEQ Public Water System Number:

WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

Size (in inches)	Material	Length (in feet)
2		
3		
4		
5		
6		
8		
10		
12		

CUSTOMER METERS

Size (in inches)	Quantity
5/8 X ¾	
3/4	
1	
1 1/2	
2	
Comp. 3	
Turbo 3	
Comp. 4	
Turbo 4	
Comp. 6	
Turbo 6	

***This information is not available for individual PWS. See Consolidated report above.**

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:

STRUCTURES:

OTHER:

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Buckeye

Name of System: 07-129 Sweetwater II ADEQ Public Water System Number:

WATER COMPANY PLANT DESCRIPTION

WELLS

ADWR ID Number*	Pump Horsepower	Pump Yield (gpm)	Casing Depth (Feet)	Casing Diameter (Inches)	Meter Size (inches)	Year Drilled
55-802333 (SW2)	5	40	279	8	1 ½	

* Arizona Department of Water Resources Identification Number

OTHER WATER SOURCES

Name or Description	Capacity (gpm)	Gallons Purchased or Obtained (in thousands)

BOOSTER PUMPS		FIRE HYDRANTS	
Horsepower	Quantity	Quantity Standard	Quantity Other
7.5	1		
5	1		

STORAGE TANKS		PRESSURE TANKS	
Capacity	Quantity	Capacity	Quantity
11,000	4	2,000	1
147,000	1		

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Buckeye	
Name of System: Sweetwater II	ADEQ Public Water System Number:

WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

Size (in inches)	Material	Length (in feet)
2		
3		
4		
5		
6		
8		
10		
12		

CUSTOMER METERS

Size (in inches)	Quantity
5/8 X ¾	
3/4	
1	
1 1/2	
2	
Comp. 3	
Turbo 3	
Comp. 4	
Turbo 4	
Comp. 6	
Turbo 6	

***This information is not available for individual PWS. See Consolidated report above.**

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:

STRUCTURES:

OTHER:

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Buckeye

Name of System: 07-114 Bulfer/Primrose ADEQ Public Water System Number:

WATER COMPANY PLANT DESCRIPTION

WELLS

ADWR ID Number*	Pump Horsepower	Pump Yield (gpm)	Casing Depth (Feet)	Casing Diameter (Inches)	Meter Size (inches)	Year Drilled
55-618513 (Bulfer)	5	40	252	8	1 ½	

* Arizona Department of Water Resources Identification Number

OTHER WATER SOURCES

Name or Description	Capacity (gpm)	Gallons Purchased or Obtained (in thousands)

BOOSTER PUMPS		FIRE HYDRANTS	
Horsepower	Quantity	Quantity Standard	Quantity Other
25	1		
10	2		

STORAGE TANKS		PRESSURE TANKS	
Capacity	Quantity	Capacity	Quantity
200,000	1	2000	1

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Buckeye		
Name of System:	07-114 Bulfer/Primrose	ADEQ Public Water System Number:

WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

Size (in inches)	Material	Length (in feet)
2		
3		
4		
5		
6		
8		
10		
12		

CUSTOMER METERS

Size (in inches)	Quantity
5/8 X ¾	
3/4	
1	
1 1/2	
2	
Comp. 3	
Turbo 3	
Comp. 4	
Turbo 4	
Comp. 6	
Turbo 6	

***This information is not available for individual PWS. See Consolidated reported above**

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:

STRUCTURES:

OTHER:

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Buckeye	
Name of System: 07-732 Sonora Ridge	ADEQ Public Water System Number:

WATER COMPANY PLANT DESCRIPTION

WELLS

ADWR ID Number*	Pump Horsepower	Pump Yield (gpm)	Casing Depth (Feet)	Casing Diameter (Inches)	Meter Size (inches)	Year Drilled
55-572657 (Sonoran R)	5	150	850	6	1 ½	

* Arizona Department of Water Resources Identification Number

OTHER WATER SOURCES

Name or Description	Capacity (gpm)	Gallons Purchased or Obtained (in thousands)

BOOSTER PUMPS		FIRE HYDRANTS	
Horsepower	Quantity	Quantity Standard	Quantity Other
30	1	24	
20	2		

STORAGE TANKS		PRESSURE TANKS	
Capacity	Quantity	Capacity	Quantity
150,000	1	5,000	1

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Buckeye	
Name of System: 07-732 Sonora Ridge	ADEQ Public Water System Number:

WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

Size (in inches)	Material	Length (in feet)
2		
3		
4		
5		
6		
8		
10		
12		

CUSTOMER METERS

Size (in inches)	Quantity
5/8 X ¾	
3/4	
1	
1 1/2	
2	
Comp. 3	
Turbo 3	
Comp. 4	
Turbo 4	
Comp. 6	
Turbo 6	

*This information not available for individual PWS. See Consolidated reported above.

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:

Arsenic Treatment System

STRUCTURES:

OTHER:

Note: If you are filing for more than one system, please provide separate sheets for each system

COMPANY NAME: Water Utility of Greater Tonopah		
Name of System:	CONSOLIDATED	ADEQ Public Water System Number:

WATER COMPANY PLANT DESCRIPTION

WELLS

ADWR ID Number*	Pump Horsepower	Pump Yield (gpm)	Casing Depth (Feet)	Casing Diameter (Inches)	Meter Size (inches)	Year Drilled
55-803811 (B&D)	1.5	20	283	12	1 ½	
55-639586 (Dixie)	5	40	246	16	1 ½	
55-804131 (Garden C)	5	30	980	8	1 ½	
55-802143 (Roseview)	5	30	975	6	1 ½	
55-802141 (Sunshine)	7.5	130	153	8	1 ½	
55-802145 (WPE6)	7.5	20	570	8	1 ½	
55-802144 (Tufte)	2	20	400	8	1 ½	
55-802962 (Buckeye R)	5	125	900	16	2	2000
55-600209 (WPE 1)	10	20	790	8	1 ½	

* Arizona Department of Water Resources Identification Number

OTHER WATER SOURCES

Name or Description	Capacity (gpm)	Gallons Purchased or Obtained (in thousands)

BOOSTER PUMPS		FIRE HYDRANTS	
Horsepower	Quantity	Quantity Standard	Quantity Other
See Individual PWS		25	

STORAGE TANKS		PRESSURE TANKS	
Capacity	Quantity	Capacity	Quantity
See Individual PWS			

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Tonopah		
Name of System:	CONSOLIDATED	ADEQ Public Water System Number:

WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

Size (in inches)	Material	Length (in feet)
2	PVC	12,290
3	PVC	2,790
4	PVC	33,680
5		
6	PVC	10,561
8	PVC	13,700
10		
12		

CUSTOMER METERS

Size (in inches)	Quantity
5/8 X ¾	338
3/4	3
1	15
1 1/2	2
2	5
Comp. 3	1
Turbo 3	
Comp. 4	
Turbo 4	
Comp. 6	
Turbo 6	1

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:
Chlorinator installed at each well site.
Arsenic/Fluoride Treatment at WPE #6
Arsenic Treatment System at B&D/Buckeye Ranch and Sunshine.
Point of Use System at Tufte, Roseview and WPE #1

STRUCTURES:

OTHER:
1 Company Vehicle

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Tonopah	
Name of System: 07-618 B&D/Buckeye Ranch	ADEQ Public Water System Number: 07-618

WATER COMPANY PLANT DESCRIPTION

WELLS

ADWR ID Number*	Pump Horsepower	Pump Yield (gpm)	Casing Depth (Feet)	Casing Diameter (Inches)	Meter Size (inches)	Year Drilled
55-803811 (B&D)	1.5	20	283	12	1 ½	
55-802962 (Buckeye R)	5	125	900	16	2	2000

* Arizona Department of Water Resources Identification Number

OTHER WATER SOURCES

Name or Description	Capacity (gpm)	Gallons Purchased or Obtained (in thousands)

BOOSTER PUMPS		FIRE HYDRANTS	
Horsepower	Quantity	Quantity Standard	Quantity Other
40	1		
10	3		
150	1		
7.5	1		

STORAGE TANKS		PRESSURE TANKS	
Capacity	Quantity	Capacity	Quantity
150,000	1	5,000	1
5,000	1	500	1
220,000	1	2,000	1

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Tonopah

Name of System: 07-618 B&D/Buckeye Ranch ADEQ Public Water System Number: 07-618

WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

Size (in inches)	Material	Length (in feet)
2		
3		
4		
5		
6		
8		
10		
12		

CUSTOMER METERS

Size (in inches)	Quantity
5/8 X ¾	
3/4	
1	
1 1/2	
2	
Comp. 3	
Turbo 3	
Comp. 4	
Turbo 4	
Comp. 6	
Turbo 6	

*This information is not available for individual PWS. Consolidated Report above

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:

Chlorinators installed at each well site.

Arsenic Treatment System

STRUCTURES:

OTHER:

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Tonopah	
Name of System: 07-030 Dixie	ADEQ Public Water System Number: 07-030

WATER COMPANY PLANT DESCRIPTION

WELLS

ADWR ID Number*	Pump Horsepower	Pump Yield (gpm)	Casing Depth (Feet)	Casing Diameter (Inches)	Meter Size (inches)	Year Drilled
55-639586 (Dixie)	5	40	246	16	1 ½	

* Arizona Department of Water Resources Identification Number

OTHER WATER SOURCES

Name or Description	Capacity (gpm)	Gallons Purchased or Obtained (in thousands)

BOOSTER PUMPS		FIRE HYDRANTS	
Horsepower	Quantity	Quantity Standard	Quantity Other
5	1		

STORAGE TANKS		PRESSURE TANKS	
Capacity	Quantity	Capacity	Quantity
10,000	1	500	1
5,000	1		

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Tonopah	
Name of System: 07-030 Dixie	ADEQ Public Water System Number: 07-030

WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

Size (in inches)	Material	Length (in feet)
2		
3		
4		
5		
6		
8		
10		
12		

CUSTOMER METERS

Size (in inches)	Quantity
5/8 X ¾	
3/4	
1	
1 1/2	
2	
Comp. 3	
Turbo 3	
Comp. 4	
Turbo 4	
Comp. 6	
Turbo 6	

*This information is not available for individual PWS. Consolidated Report above

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:
Chlorinators installed at each well site.

STRUCTURES:

OTHER:

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Tonopah	
Name of System: 07-733 WPE 6	ADEQ Public Water System Number: 07-733

WATER COMPANY PLANT DESCRIPTION

WELLS

ADWR ID Number*	Pump Horsepower	Pump Yield (gpm)	Casing Depth (Feet)	Casing Diameter (Inches)	Meter Size (inches)	Year Drilled
55-802145 (WPE6)	7.5	20	570	8	1 ½	

* Arizona Department of Water Resources Identification Number

OTHER WATER SOURCES

Name or Description	Capacity (gpm)	Gallons Purchased or Obtained (in thousands)

BOOSTER PUMPS		FIRE HYDRANTS	
Horsepower	Quantity	Quantity Standard	Quantity Other
7.5	2		

STORAGE TANKS		PRESSURE TANKS	
Capacity	Quantity	Capacity	Quantity
6,000	1	2,000	1
5,000	1		

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Tonopah

Name of System: 07-733 WPE 6 **ADEQ Public Water System Number: 07-733**

WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

Size (in inches)	Material	Length (in feet)
2		
3		
4		
5		
6		
8		
10		
12		

CUSTOMER METERS

Size (in inches)	Quantity
5/8 X ¾	
3/4	
1	
1 1/2	
2	
Comp. 3	
Turbo 3	
Comp. 4	
Turbo 4	
Comp. 6	
Turbo 6	

***This information is not available for individual PWS. Consolidated Report above**

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:
Chlorinators installed at each well site.
Arsenic/fluoride treatment at WPE #6

STRUCTURES:

OTHER:

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Tonopah	
Name of System: 07-617 Tufte	ADEQ Public Water System Number: 07-617

WATER COMPANY PLANT DESCRIPTION

WELLS

ADWR ID Number*	Pump Horsepower	Pump Yield (gpm)	Casing Depth (Feet)	Casing Diameter (Inches)	Meter Size (inches)	Year Drilled
55-802144 (Tufte)	2	20	400	8	1 ½	

* Arizona Department of Water Resources Identification Number

OTHER WATER SOURCES

Name or Description	Capacity (gpm)	Gallons Purchased or Obtained (in thousands)

BOOSTER PUMPS		FIRE HYDRANTS	
Horsepower	Quantity	Quantity Standard	Quantity Other
5	1		

STORAGE TANKS		PRESSURE TANKS	
Capacity	Quantity	Capacity	Quantity
5,700	1	1250	1

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Tonopah	
Name of System: 07-617 Tufte	ADEQ Public Water System Number: 07-617

WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

Size (in inches)	Material	Length (in feet)
2		
3		
4		
5		
6		
8		
10		
12		

CUSTOMER METERS

Size (in inches)	Quantity
5/8 X ¾	
3/4	
1	
1 1/2	
2	
Comp. 3	
Turbo 3	
Comp. 4	
Turbo 4	
Comp. 6	
Turbo 6	

***This information is not available for individual PWS. Consolidated Report above**

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:
Chlorinator to be installed at each well site.
Point of Use Arsenic Treatment systems installed at each residence.

STRUCTURES:

OTHER:

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Tonopah	
Name of System: 07-037 Garden City	ADEQ Public Water System Number: 07-037

WATER COMPANY PLANT DESCRIPTION

WELLS

ADWR ID Number*	Pump Horsepower	Pump Yield (gpm)	Casing Depth (Feet)	Casing Diameter (Inches)	Meter Size (inches)	Year Drilled
55-804131 (Garden C)	5	30	980	8	1 ½	

* Arizona Department of Water Resources Identification Number

OTHER WATER SOURCES

Name or Description	Capacity (gpm)	Gallons Purchased or Obtained (in thousands)

BOOSTER PUMPS		FIRE HYDRANTS	
Horsepower	Quantity	Quantity Standard	Quantity Other
5	1		

STORAGE TANKS		PRESSURE TANKS	
Capacity	Quantity	Capacity	Quantity
15,000	1	2,000	1
10,000	1		

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Tonopah

Name of System: 07-037 Garden City ADEQ Public Water System Number: 07-037

WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

Size (in inches)	Material	Length (in feet)
2		
3		
4		
5		
6		
8		
10		
12		

CUSTOMER METERS

Size (in inches)	Quantity
5/8 X ¾	
3/4	
1	
1 1/2	
2	
Comp. 3	
Turbo 3	
Comp. 4	
Turbo 4	
Comp. 6	
Turbo 6	

*This information is not available for individual PWS. Consolidated Report above

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:
Chlorinator installed at each well site.

STRUCTURES:

OTHER:

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Tonopah	
Name of System: 07-082 Roseview	ADEQ Public Water System Number: 07-082

WATER COMPANY PLANT DESCRIPTION

WELLS

ADWR ID Number*	Pump Horsepower	Pump Yield (gpm)	Casing Depth (Feet)	Casing Diameter (Inches)	Meter Size (inches)	Year Drilled
55-802143 (Roseview)	5	30	975	6	1 ½	

* Arizona Department of Water Resources Identification Number

OTHER WATER SOURCES

Name or Description	Capacity (gpm)	Gallons Purchased or Obtained (in thousands)

BOOSTER PUMPS		FIRE HYDRANTS	
Horsepower	Quantity	Quantity Standard	Quantity Other
3	2		

STORAGE TANKS		PRESSURE TANKS	
Capacity	Quantity	Capacity	Quantity
5,000	1	1,000	1

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Tonopah	
Name of System: 07-082 Roseview	ADEQ Public Water System Number: 07-082

WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

Size (in inches)	Material	Length (in feet)
2		
3		
4		
5		
6		
8		
10		
12		

CUSTOMER METERS

Size (in inches)	Quantity
5/8 X ¾	
3/4	
1	
1 1/2	
2	
Comp. 3	
Turbo 3	
Comp. 4	
Turbo 4	
Comp. 6	
Turbo 6	

*This information is not available for individual PWS. Consolidated Report above

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:
Chlorinator installed at each well site.
Point of Use System

STRUCTURES:

OTHER:

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Tonopah	
Name of System: 07-071 Sunshine	ADEQ Public Water System Number: 07-071

WATER COMPANY PLANT DESCRIPTION

WELLS

ADWR ID Number*	Pump Horsepower	Pump Yield (gpm)	Casing Depth (Feet)	Casing Diameter (Inches)	Meter Size (inches)	Year Drilled
55-802141 (Sunshine)	7.5	130	153	8	1 ½	

* Arizona Department of Water Resources Identification Number

OTHER WATER SOURCES

Name or Description	Capacity (gpm)	Gallons Purchased or Obtained (in thousands)

BOOSTER PUMPS		FIRE HYDRANTS	
Horsepower	Quantity	Quantity Standard	Quantity Other
30	2		

STORAGE TANKS		PRESSURE TANKS	
Capacity	Quantity	Capacity	Quantity
100,000	1	5,000	1

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Tonopah	
Name of System: 07-071 Sunshine	ADEQ Public Water System Number: 07-071

WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

Size (in inches)	Material	Length (in feet)
2		
3		
4		
5		
6		
8		
10		
12		

CUSTOMER METERS

Size (in inches)	Quantity
5/8 X ¾	
3/4	
1	
1 1/2	
2	
Comp. 3	
Turbo 3	
Comp. 4	
Turbo 4	
Comp. 6	
Turbo 6	

***This information is not available for individual PWS. Consolidated Report above**

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:

Chlorinator installed at each well site.

Arsenic Treatment System

STRUCTURES:

OTHER:

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Tonopah

Name of System: WPE #1 ADEQ Public Water System Number: N/A

WATER COMPANY PLANT DESCRIPTION

WELLS

ADWR ID Number*	Pump Horsepower	Pump Yield (gpm)	Casing Depth (Feet)	Casing Diameter (Inches)	Meter Size (inches)	Year Drilled
55-600209 (WPE#1)	10	20	790	8	1 ½	

* Arizona Department of Water Resources Identification Number

OTHER WATER SOURCES

Name or Description	Capacity (gpm)	Gallons Purchased or Obtained (in thousands)

BOOSTER PUMPS		FIRE HYDRANTS	
Horsepower	Quantity	Quantity Standard	Quantity Other
5	1		

STORAGE TANKS		PRESSURE TANKS	
Capacity	Quantity	Capacity	Quantity
5,000	1	50	2

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: Water Utility of Greater Tonopah	
Name of System: WPE #1	ADEQ Public Water System Number: N/A

WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

Size (in inches)	Material	Length (in feet)
2		
3		
4		
5		
6		
8		
10		
12		

CUSTOMER METERS

Size (in inches)	Quantity
5/8 X ¾	
3/4	
1	
1 1/2	
2	
Comp. 3	
Turbo 3	
Comp. 4	
Turbo 4	
Comp. 6	
Turbo 6	

***This information is not available for individual PWS. Consolidated Report above**

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:
Chlorinator to be installed at each well site.
Point of Use System

STRUCTURES:

OTHER:

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: WILLOW VALLEY WATER COMPANY	
Name of System: Lake Cimmaron 08-129	ADEQ Public Water System Number:

WATER COMPANY PLANT DESCRIPTION

WELLS

ADWR ID Number*	Pump Horsepower	Pump Yield (gpm)	Casing Depth (Feet)	Casing Diameter (Inches)	Meter Size (inches)	Year Drilled
55-604161(Lake Cimarron Little)	5	225	102	16	6	
55-604160 (Lake Cimarron Big)	10	400	100	12	14	

* Arizona Department of Water Resources Identification Number

OTHER WATER SOURCES

Name or Description	Capacity (gpm)	Gallons Purchased or Obtained (in thousands)

BOOSTER PUMPS		FIRE HYDRANTS	
Horsepower	Quantity	Quantity Standard	Quantity Other
25	2		
15	2		

STORAGE TANKS		PRESSURE TANKS	
Capacity	Quantity	Capacity	Quantity
210,000	1	5000	1

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: WILLOW VALLEY WATER COMPANY	
Name of System: Co King 08-040	ADEQ Public Water System Number:08-040

WATER COMPANY PLANT DESCRIPTION

WELLS

ADWR ID Number*	Pump Horsepower	Pump Yield (gpm)	Casing Depth (Feet)	Casing Diameter (Inches)	Meter Size (inches)	Year Drilled
55-603947(King St)	15	500	97	8	4	
55-603949(Unit 17)	15	400	86	8	6	
55603951(Unit 1) Inoperable	15	250	100	16	4	
55-603952(Riding Club) Inoperable	5	90	91	20	3	

* Arizona Department of Water Resources Identification Number

OTHER WATER SOURCES

Name or Description	Capacity (gpm)	Gallons Purchased or Obtained (in thousands)

BOOSTER PUMPS		FIRE HYDRANTS	
Horsepower	Quantity	Quantity Standard	Quantity Other
30	2	34	24
15	4		
40	1		

STORAGE TANKS		PRESSURE TANKS	
Capacity	Quantity	Capacity	Quantity
150,000	1	13,000	1
93,000	1	5,000	2
50,000	1	2,000	1
		80	4

Note: If you are filing for more than one system, please provide separate sheets for each system.

COMPANY NAME: WILLOW VALLEY WATER COMPANY	
Name of System:	ADEQ Public Water System Number: 08-040 & 08-129

WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

Size (in inches)	Material	Length (in feet)
2	PVC	565
3	PVC	2,387
4	PVC	76,262
5		
6	PVC	43,110
8	PVC	26,852
10	PVC	1,510
12		

CUSTOMER METERS

Size (in inches)	Quantity
5/8 X ¾	1,547
3/4	12
1	16
1 1/2	3
2	2
Comp. 3	
Turbo 3	
Comp. 4	
Turbo 4	2
Comp. 6	3
Turbo 6	

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:
NaOCl Injection System
Iron & Manganese removal system at Unit 17

STRUCTURES:
Office Building; Fences around well sites; Wood shed ant King St.

OTHER:

_____
_____
_____
_____
_____

Note: If you are filing for more than one system, please provide separate sheets for each system.

GSS 6

COMPANY NAME: Global Water - Palo Verde Utilities Company	
Name of System:	Wastewater Inventory Number (if applicable):

WASTEWATER FLOWS

MONTH/YEAR (Most Recent 12 Months)	NUMBER OF SERVICES	TOTAL MONTHLY SEWAGE FLOW	SEWAGE FLOW ON PEAK DAY
January	15,678	60,128,000	2,234,000
February	15,764	58,755,000	2,354,000
March	15,833	62,924,000	2,313,000
April	15,965	60,441,000	2,620,000
May	16,107	59,646,000	2,490,000
June	16,191	54,666,000	2,039,000
July	16,285	59,048,000	2,232,000
August	16,348	60,494,000	2,292,000
September	16,386	64,744,000	2,706,000
October	16,418	59,430,000	2,421,000
November	16,420	62,621,000	2,448,000
December	16,446	65,928,000	2,427,000

PROVIDE THE FOLLOWING INFORMATION AS APPLICABLE PER WASTEWATER SYSTEM

Method of Effluent Disposal (leach field, surface water discharge, reuse, injection wells, groundwater recharge, evaporation ponds, etc.)	Re- Use to Type 2 Reclaimed AzPDES
Groundwater Permit Number	
ADEQ Aquifer Protection Permit Number	APP 105228 APP 103558 APP 105668
ADEQ Reuse Permit Number	R103558 R105393 R105394 R105395 R105392 R105228 R105869 R105870 R105871 R105873
EPA NPDES Permit Number	AZ0025071

Note: If you are filing for more than one system, please provide separate sheets for each system

WATER USE DATA SHEET

NAME OF COMPANY →	Santa Cruz Water Company
ADEQ Public Water System No. →	11-131

MONTH/YEAR (Last 13 Months)	NUMBER OF POTABLE CUSTOMERS	POTABLE GALLONS SOLD (Thousands)	POTABLE GALLONS PUMPED (Thousands)	GALLONS PURCHASED
12/07	15,704	86,757	108,382	
01/08	15,894	110,802	111,573	
02/08	15,988	110,431	97,868	
03/08	16,048	103,887	119,696	
04/08	16,185	106,296	131,798	
05/08	16,329	162,009	172,321	
06/08	16,419	156,045	184,034	
07/08	16,508	170,338	181,355	
08/08	16,556	168,456	177,090	
09/08	16,606	177,259	185,217	
10/08	16,628	149,838	162,049	
11/08	16,626	160,908	165,407	
12/08	16,654	125,201	125,917	
TOTAL		1,788,228	1,922,707	

STORAGE TANK CAPACITY (Gallons)	NUMBER OF EACH	ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER	WELL PRODUCTION (Gallons per Minute)
500,000	2	55-612737- Smith	1070
1,500,000	2	55-617336- Vance	1965
2,500,000	2	55-621407 - Neely West	1980
		55-621406 - Neely North	2000
		55-509941- Rancho Mirage - potable use only	2800
		55-621410-Porter @	1000
		55-621408- Neely East #	2000
		55-801069-Cobblestone@	1280
		55-624037-Glennwilde@	1380
		55-622132-Maricopa Meadows- irrigation use only	1400
		55-612741- Maricopa Groves#	1200
		55-612247- Amarillo Creek East	1800
		55-612250- Sunset Canyon **	1500
		55-624031-Homestead West**	860
		55-624029 Homestead East**	1200
Other Water Sources in Gallons per Minute →			GPM -
Fire Hydrants on System →			Yes X No
Total Water Pumped Last 13 Months (Gallons in Thousands) →			1,922,707

Not Operational, ** Well undergoing rehabilitation
@ construction/irrigation use only

WATER USE DATA SHEET

NAME OF COMPANY ⟶	Valencia Water Company
ADEQ Public Water System No. ⟶	#07-078

MONTH/YEAR (Last 13 Months)	NUMBER OF CUSTOMERS	GALLONS SOLD (Thousands)	GALLONS PUMPED (Thousands)	GALLONS PURCHASED
12/07	4827	29,686	33,805	
01/08	4980	28,828	33,589	
02/08	5101	33,643	35,184	
03/08	5118	28,682	37,298	
04/08	5130	44,522	52,936	
05/08	5267	59,987	61,199	
06/08	5299	72,868	77,154	
07/08	5359	63,950	71,068	
08/08	5388	69,875	74,763	
09/08	5402	69,470	76,992	
10/08	5425	64,056	72,268	
11/08	5424	63,343	59,095	
12/08	5438	36,027	40,320	
TOTAL		664,937	725,671	

STORAGE TANK CAPACITY (Gallons)	NUMBER OF EACH	ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER	WELL PRODUCTION (Gallons per Minute)
785,000	1	55-607657 - 4th Central	220
500,000	2	55-607656 - 4th Baseline #1	80
190,000	1	55-577508 - 4th Baseline #2	600
180,000	1	55-607658 - 7th Alarcon #1	80
100,000	3	55-599950 - 7th Alarcon #2	250
50,000	3	55-202400 - Bales School	300
40,000	1	*55-201055 - Riata West #1	425
		55-202399 - Riata West #2	525
		*55-203651 - Evergreen #1	300
		*55-203650 - Evergreen #2	700
		*55-205450 - Evergreen #3	450
		55-599204 - Blue Hills #1	110
		55-592220 - Blue Hills #2	350
		55-595285 - Sonoran Vista SW	500
		*55-200564 - Sonoran Vista SE	
		*55-595289 - AZ Machinery	
		*55-203643 - Schult #2	
		*55-206355 - Evergreen #4	
		*55-207988 - Evergreen #5	
		*55-201739 - Crystal Vista	
		*55-206042 - Montana Vista	
		*55-201726 - Miller Manor	
Other Water Sources in Gallons per Minute ⟶			GPM -
Fire Hydrants on System ⟶			Yes X No
Total Water Pumped Last 13 Months (Gallons in Thousands) ⟶			725,671

* indicates well Not Active

WATER USE DATA SHEET

NAME OF COMPANY ⟶	Valencia Water Company, Greater Buckeye Division
ADEQ Public Water System No. ⟶	Sonoran Ridge System PWS #07-732

MONTH/YEAR (Last 13 Months)	NUMBER OF CUSTOMERS	GALLONS SOLD (Thousands)	GALLONS PUMPED (Thousands)	GALLONS PURCHASED
12/07	59	1,658	2,543	
01/08	59	2,695	2,556	
02/08	59	1,860	2,204	
03/08	59	2,106	2,998	
04/08	59	2,847	2,018	
05/08	58	2,263	834	
06/08	58	663	752	
07/08	58	612	741	
08/08	58	658	699	
09/08	58	720	687	
10/08	58	616	671	
11/08	59	590	602	
12/08	58	449	496	
TOTAL		17,737	17,801	

STORAGE TANK CAPACITY (Gallons)	NUMBER OF EACH	ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER	WELL PRODUCTION (Gallons per Minute)
150,000	1	55-572657	150
Other Water Sources in Gallons per Minute ⟶			GPM -
Fire Hydrants on System ⟶			Yes X No
Total Water Pumped Last 13 Months (Gallons in Thousands) ⟶			17,801

WATER USE DATA SHEET

NAME OF COMPANY ⟶	Valencia Water Company, Greater Buckeye Division
ADEQ Public Water System No. ⟶	Bulfer/Primrose System PWS #07-114

MONTH/YEAR (Last 13 Months)	NUMBER OF CUSTOMERS	GALLONS SOLD (Thousands)	GALLONS PUMPED (Thousands)	GALLONS PURCHASED
12/07	91	775	839	
01/08	91	721	746	
02/08	91	599	711	
03/08	91	657	953	
04/08	91	809	1,053	
05/08	92	1,025	1,114	
06/08	92	1,193	1,256	
07/08	92	1,151	1,287	
08/08	92	1,263	1,195	
09/08	92	1,185	1,019	
10/08	92	1,056	1,072	
11/08	92	884	903	
12/08	92	635	661	
TOTAL		11,953	12,809	

STORAGE TANK CAPACITY (Gallons)	NUMBER OF EACH	ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER	WELL PRODUCTION (Gallons per Minute)
200,000	1	55-618513	40
Other Water Sources in Gallons per Minute ⟶			GPM -
Fire Hydrants on System ⟶			Yes X No
Total Water Pumped Last 13 Months (Gallons in Thousands) ⟶			12,809

WATER USE DATA SHEET

NAME OF COMPANY ⟶	Valencia Water Company, Greater Buckeye Division
ADEQ Public Water System No. ⟶	Sun Valley/Sweetwater 1 System PWS #07-195

MONTH/YEAR (Last 13 Months)	NUMBER OF CUSTOMERS	GALLONS SOLD (Thousands)	GALLONS PUMPED (Thousands)	GALLONS PURCHASED
12/07	384	3,213	2,958	
01/08	385	2,173	2,952	
02/08	385	1,966	2,689	
03/08	384	2,133	3,665	
04/08	384	2,779	4,285	
05/08	395	3,442	4,631	
06/08	395	4,441	5,417	
07/08	400	4,232	5,055	
08/08	401	4,156	4,945	
09/08	403	4,354	4,228	
10/08	404	3,354	4,169	
11/08	406	3,596	3,417	
12/08	408	2,431	2,757	
TOTAL		42,270	51,168	

STORAGE TANK CAPACITY (Gallons)	NUMBER OF EACH	ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER	WELL PRODUCTION (Gallons per Minute)
125,000	1	55-800947	300
		55-802328 (Inactive)	30
		55-800946	500
Other Water Sources in Gallons per Minute ⟶			GPM -
Fire Hydrants on System ⟶			Yes X No
Total Water Pumped Last 13 Months (Gallons in Thousands) ⟶			51,168

WATER USE DATA SHEET

NAME OF COMPANY ⟶	Valencia Water Company, Greater Buckeye Division
ADEQ Public Water System No. ⟶	Sweetwater 2 System PWS #07-129

MONTH/YEAR (Last 13 Months)	NUMBER OF CUSTOMERS	GALLONS SOLD (Thousands)	GALLONS PUMPED (Thousands)	GALLONS PURCHASED
12/07	94	747	0	931
01/08	94	662	0	262
02/08	94	602	0	1390
03/08	94	656	0	1128
04/08	94	852	0	1173
05/08	94	1,010	0	1010
06/08	94	1,225	0	1206
07/08	94	1,226	0	1386
08/08	94	1,168	0	1417
09/08	94	1,330	0	1380
10/08	95	1,171	0	1189
11/08	95	928	0	989
12/08	95	755	0	775
TOTAL		12,333	0	13,461

STORAGE TANK CAPACITY (Gallons)	NUMBER OF EACH	ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER	WELL PRODUCTION (Gallons per Minute)
11,000	4	55-802333	40
147,000	1		

Other Water Sources in Gallons per Minute ⟶	GPM -
Fire Hydrants on System ⟶	Yes X No
Total Water Pumped Last 13 Months (Gallons in Thousands) ⟶	0

WATER USE DATA SHEET

NAME OF COMPANY →	Willow Valley Water Company, Inc.
ADEQ Public Water System No. →	08-040 King St.(interconnected systems to 08-034)

MONTH/YEAR (Last 13 Months)	NUMBER OF CUSTOMERS	GALLONS SOLD (Thousands)	GALLONS PUMPED (Thousands)	GALLONS PURCHASED
12/07	1,284	4,154	5,233	
01/08	1,286	3,320	4,299	
02/08	1288	4,055	5,618	
03/08	1288	3,718	4,958	
04/08	1290	5,348	7,530	
05/08	1290	4,921	11,065	
06/08	1290	6,674	10,438	
07/08	1290	7,974	11,764	
08/08	1290	9,506	14,427	
09/08	1291	6,327	10,394	
10/08	1291	6,874	10,438	
11/08	1291	4,999	12,375	
12/08	1294	4,550	6,773	
TOTAL		72,420	115,312	

STORAGE TANK CAPACITY (Gallons)	NUMBER OF EACH	ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER	WELL PRODUCTION (Gallons per Minute)
150,000	1	55-603947	500
93,000	1	55-603949	400
Other Water Sources in Gallons per Minute →			GPM -
Fire Hydrants on System →			Yes X No
Total Water Pumped Last 13 Months (Gallons in Thousands) →			115,312

WATER USE DATA SHEET

NAME OF COMPANY ⟶	Willow Valley Water Company, Inc.
ADEQ Public Water System No. ⟶	08-129 Cimarron Lake System

MONTH/YEAR (Last 13 Months)	NUMBER OF CUSTOMERS	GALLONS SOLD (Thousands)	GALLONS PUMPED (Thousands)	GALLONS PURCHASED
12/07	125	540	850	
01/08	128	688	719	
02/08	128	604	670	
03/08	128	519	789	
04/08	128	794	1451	
05/08	128	867	1235	
06/08	128	1063	1054	
07/08	128	1034	1144	
08/08	128	979	1124	
09/08	129	1291	1538	
10/08	129	848	1086	
11/08	129	642	1213	
12/08	129	510	670	
TOTAL		10,379	13,543	

STORAGE TANK CAPACITY (Gallons)	NUMBER OF EACH	ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER	WELL PRODUCTION (Gallons per Minute)
210,000	1	55-604160	400
		55-604161	225
Other Water Sources in Gallons per Minute ⟶			GPM -
Fire Hydrants on System ⟶			Yes X No
Total Water Pumped Last 13 Months (Gallons in Thousands) ⟶			13,543

WATER USE DATA SHEET

NAME OF COMPANY ⟶	Willow Valley Water Company, Inc.
ADEQ Public Water System No. ⟶	08-034 Unit 1 (interconnected systems to 08-040)

**Water pumped interconnected with PWS# 08-040

MONTH/YEAR (Last 13 Months)	NUMBER OF CUSTOMERS	GALLONS SOLD (Thousands)	GALLONS PUMPED (Thousands)	GALLONS PURCHASED
12/07	162	1,280		
01/08	162	995		
02/08	162	1,061		
03/08	162	1,033		
04/08	162	1,843		
05/08	162	2,274		
06/08	161	2,197		
07/08	161	2,652		
08/08	161	2,621		
09/08	161	1,906		
10/08	162	2,502		
11/08	162	1,372		
12/08	162	1,545		
TOTAL		23,281	0	

STORAGE TANK CAPACITY (Gallons)	NUMBER OF EACH	ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER	WELL PRODUCTION (Gallons per Minute)
50,000	1	55-603951 (Inactive)	250
		55-603952 (Inactive	90
Other Water Sources in Gallons per Minute ⟶			GPM -
Fire Hydrants on System ⟶			Yes X No
Total Water Pumped Last 13 Months (Gallons in Thousands) ⟶			0

WATER USE DATA SHEET

NAME OF COMPANY →	Water Utility of Greater Tonopah, Inc.
ADEQ Public Water System No. →	B&D/Buckeye Ranch System PWS #07-618

MONTH/YEAR (Last 13 Months)	NUMBER OF CUSTOMERS	GALLONS SOLD (Thousands)	GALLONS PUMPED (Thousands)	GALLONS PURCHASED
12/07	98	522	669	
01/08	98	488	595	
02/08	98	622	638	
03/08	99	617	844	
04/08	99	681	1,097	
05/08	99	1,180	1,368	
06/08	99	1,387	1,586	
07/08	98	1,272	1,515	
08/08	99	1,329	1,410	
09/08	99	1,456	1,370	
10/08	99	1,206	1,065	
11/08	99	907	1,645	
12/08	99	1,376	796	
TOTAL		13,043	14,598	

STORAGE TANK CAPACITY (Gallons)	NUMBER OF EACH	ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER	WELL PRODUCTION (Gallons per Minute)
150,000	1	55-802962	125
5,000	1	55-803811	20
220,000	1		
Other Water Sources in Gallons per Minute →			GPM -
Fire Hydrants on System →			Yes X No
Total Water Pumped Last 13 Months (Gallons in Thousands) →			14,598

WATER USE DATA SHEET

NAME OF COMPANY →	Water Utility of Greater Tonopah, Inc.
ADEQ Public Water System No. →	Dixie System PWS #07-030

MONTH/YEAR (Last 13 Months)	NUMBER OF CUSTOMERS	GALLONS SOLD (Thousands)	GALLONS PUMPED (Thousands)	GALLONS PURCHASED
12/07	40	220	271	
01/08	40	193	263	
02/08	40	248	276	
03/08	40	226	328	
04/08	40	311	428	
05/08	40	369	456	
06/08	40	452	598	
07/08	41	422	561	
08/08	41	408	620	
09/08	41	422	867	
10/08	41	369	715	
11/08	41	323	305	
12/08	42	280	239	
TOTAL		4,243	5,927	

STORAGE TANK CAPACITY (Gallons)	NUMBER OF EACH	ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER	WELL PRODUCTION (Gallons per Minute)
10,000	1	55-639586	40
5,000	1		
Other Water Sources in Gallons per Minute →			GPM -
Fire Hydrants on System →			Yes X No
Total Water Pumped Last 13 Months (Gallons in Thousands) →			5,927

WATER USE DATA SHEET

NAME OF COMPANY ⟶	Water Utility of Greater Tonopah, Inc.
ADEQ Public Water System No. ⟶	Garden City/Big Horn System PWS #07-037

MONTH/YEAR (Last 13 Months)	NUMBER OF CUSTOMERS	GALLONS SOLD (Thousands)	GALLONS PUMPED (Thousands)	GALLONS PURCHASED
12/07	18	92	177	
01/08	18	136	186	
02/08	18	133	127	
03/08	18	89	151	
04/08	18	117	176	
05/08	18	149	227	
06/08	18	176	282	
07/08	18	163	256	
08/08	18	159	300	
09/08	18	314	255	
10/08	18	187	247	
11/08	18	200	184	
12/08	18	137	169	
TOTAL		2,052	2,737	0

STORAGE TANK CAPACITY (Gallons)	NUMBER OF EACH	ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER	WELL PRODUCTION (Gallons per Minute)
10,000	1	55-804131	30
15,000	1		
Other Water Sources in Gallons per Minute ⟶			GPM -
Fire Hydrants on System ⟶			Yes X No
Total Water Pumped Last 13 Months (Gallons in Thousands) ⟶			2,737

WATER USE DATA SHEET

NAME OF COMPANY ⟶	Water Utility of Greater Tonopah, Inc.
ADEQ Public Water System No. ⟶	Rose View System PWS #07-082

MONTH/YEAR (Last 13 Months)	NUMBER OF CUSTOMERS	GALLONS SOLD (Thousands)	GALLONS PUMPED (Thousands)	GALLONS PURCHASED
12/07	17	69	165	
01/08	17	299	222	
02/08	17	82	72	
03/08	17	72	166	
04/08	17	174	172	
05/08	17	140	314	
06/08	18	320	287	
07/08	16	220	275	
08/08	19	219	239	
09/08	19	228	179	
10/08	19	150	213	
11/08	19	184	163	
12/08	19	124	111	
TOTAL		2,281	2,578	0

STORAGE TANK CAPACITY (Gallons)	NUMBER OF EACH	ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER	WELL PRODUCTION (Gallons per Minute)
5,000	1	55-804131	30
Other Water Sources in Gallons per Minute ⟶			GPM -
Fire Hydrants on System ⟶			Yes X No
Total Water Pumped Last 13 Months (Gallons in Thousands) ⟶			2,578

WATER USE DATA SHEET

NAME OF COMPANY ——→	Water Utility of Greater Tonopah, Inc.
ADEQ Public Water System No. ——→	Sunshine System PWS #07-071

MONTH/YEAR (Last 13 Months)	NUMBER OF CUSTOMERS	GALLONS SOLD (Thousands)	GALLONS PUMPED (Thousands)	GALLONS PURCHASED
12/07	138	712	750	
01/08	139	641	732	
02/08	139	767	687	
03/08	139	603	1,252	
04/08	139	1,245	1,500	
05/08	141	1,455	1,809	
06/08	143	1,903	1,895	
07/08	144	1,824	1,910	
08/08	144	1,737	1,855	
09/08	145	1,724	1,583	
10/08	144	1,656	1,482	
11/08	144	1,298	956	
12/08	144	892	714	
TOTAL		16,457	17,125	0

STORAGE TANK CAPACITY (Gallons)	NUMBER OF EACH	ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER	WELL PRODUCTION (Gallons per Minute)
100,000	1	55-802141	130
Other Water Sources in Gallons per Minute ——→			GPM -
Fire Hydrants on System ——→			Yes X No
Total Water Pumped Last 13 Months (Gallons in Thousands) ——→			17,125

WATER USE DATA SHEET

NAME OF COMPANY ——→	Water Utility of Greater Tonopah, Inc.
ADEQ Public Water System No. ——→	WPE #1 System PWS # N/A

MONTH/YEAR (Last 13 Months)	NUMBER OF CUSTOMERS	GALLONS SOLD (Thousands)	GALLONS PUMPED (Thousands)	GALLONS PURCHASED
12/07	8	18	40	
01/08	8	16	40	
02/08	8	18	50	
03/08	8	15	50	
04/08	8	25	45	
05/08	8	36	49	
06/08	7	29	36	
07/08	7	30	31	
08/08	7	31	35	
09/08	8	33	31	
10/08	8	38	45	
11/08	8	39	39	
12/08	8	32	48	
TOTAL		360	539	0

STORAGE TANK CAPACITY (Gallons)	NUMBER OF EACH	ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER	WELL PRODUCTION (Gallons per Minute)
5,000	1	55-600209	20
Other Water Sources in Gallons per Minute ——→			GPM -
Fire Hydrants on System ——→			Yes X No
Total Water Pumped Last 13 Months (Gallons in Thousands) ——→			539

WATER USE DATA SHEET

NAME OF COMPANY ——→	Water Utility of Greater Tonopah, Inc.
ADEQ Public Water System No. ——→	WPE #6 System PWS #07-733

MONTH/YEAR (Last 13 Months)	NUMBER OF CUSTOMERS	GALLONS SOLD (Thousands)	GALLONS PUMPED (Thousands)	GALLONS PURCHASED
12/07	29	90	159	
01/08	29	87	158	
02/08	29	98	160	
03/08	29	85	201	
04/08	29	143	227	
05/08	29	156	265	
06/08	29	203	271	
07/08	29	189	240	
08/08	29	146	266	
09/08	29	222	207	
10/08	29	145	209	
11/08	29	160	187	
12/08	29	124	139	
TOTAL		1,848	2,689	0

STORAGE TANK CAPACITY (Gallons)	NUMBER OF EACH	ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER	WELL PRODUCTION (Gallons per Minute)
6,000	1	55-802145	20
5,000	1		
Other Water Sources in Gallons per Minute ——→			GPM -
Fire Hydrants on System ——→			Yes X No
Total Water Pumped Last 13 Months (Gallons in Thousands) ——→			2,689

WATER USE DATA SHEET

NAME OF COMPANY →	Water Utility of Greater Tonopah, Inc.
ADEQ Public Water System No. →	Tufte WPE #7 System PWS #07-617

MONTH/YEAR (Last 13 Months)	NUMBER OF CUSTOMERS	GALLONS SOLD (Thousands)	GALLONS PUMPED (Thousands)	GALLONS PURCHASED
12/07	6	30	32	
01/08	6	28	34	
02/08	6	28	32	
03/08	6	26	33	
04/08	6	28	38	
05/08	6	30	56	
06/08	6	54	71	
07/08	6	71	64	
08/08	6	50	48	
09/08	6	40	30	
10/08	6	23	36	
11/08	6	38	37	
12/08	6	28	35	
TOTAL		473.5	546	0

STORAGE TANK CAPACITY (Gallons)	NUMBER OF EACH	ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER	WELL PRODUCTION (Gallons per Minute)
5,700	1	55-802144	20
Other Water Sources in Gallons per Minute →			GPM -
Fire Hydrants on System →			Yes X No
Total Water Pumped Last 13 Months (Gallons in Thousands) →			546

GSS 7

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
MONITORING ASSISTANCE PROGRAM
ANNUAL SAMPLING FEE INVOICE

* Pursuant to A.R.S. § 49-113, interest will be charged if full payment is not received by the specified due date. If you dispute the amount listed, please contact ADEQ as soon as possible. To reduce interest costs on an unpaid invoice, you may remit an amount that you believe is not in dispute. However, if nonpayment is due to willful neglect, you may suffer an additional five percent penalty of up to twenty-five percent of the amount due for each month or fraction of a month the amount is past due.

If you have any questions about your invoice, contact W. Scott Steinhagen at (602) 771-4445 or toll-free within Arizona at (800) 234-5677, extension 771-4445.

Pursuant to A.R.S. § 49-360 F and A.A.C. R18-4-224 through R18-4-226, "The director shall establish fees for the monitoring assistance program to be collected from all public water systems..."

Owner Id #: 10228	Invoice Number 64565
To: GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027	Public Water System ID #: 07179
	Billing for Calendar Year: 2008
	Due Date: December 17, 2007
	Total Amount Due . . . . . $ ~~309.11~~ 437.61
	Amount Paid . . . . . $

† Keep the top portion for your records. †

ADEQ Federal Tax #866004791

↓ This entire bottom portion must be returned to ADEQ. ↓

ADEQ Federal Tax #866004791

Annual Sampling Fee Invoice

Invoice # 64565

GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027	Water Utility of Northern Scottsdale 07179 - ~~Global Water Resources~~	Owner Id #: 10228 MAP Billing for Calendar Year: 2008 Due Date: 12/17/2007

ANNUAL SAMPLING FEE WORKSHEET

Company ID 626
Account Code
Signature
Date 11/16/07
Amount 437.61

Base Fee (all MAP systems)			$ 250.00
Fee per Connection in 2008	~~23~~ 73 connections X $	2.57	$ ~~59.11~~ 187.61
Total Sampling Fee			$ ~~309.11~~ 437.61
Plus Paid Interest Charges and/or Other Adjustments			$ 0.00
Plus Unpaid Interest Charges as of 10/31/2007			$ 0.00
Minus Payments Received and/or Other Adjustments			$ 0.00
Amount Due			$ ~~309.11~~ 437.61
Amount received by ADEQ (Make check payable to State of Arizona)			$

* A $12 fee will be charged for any check not honored by the bank.

Make your check or money order payable to State of Arizona
THIS FORM MUST ACCOMPANY YOUR REMITTANCE.

Mail to: Arizona Department of Environmental Quality
PO Box 18228
Phoenix, AZ 85005

Do not write below this line

Check Number:
Received:
Postmarked:

MWI 10/31/2007

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
MONITORING ASSISTANCE PROGRAM
ANNUAL SAMPLING FEE INVOICE

Pursuant to A.R.S. § 49-113, interest will be charged if full payment is not received by the specified due date. If you dispute the amount listed, please contact ADEQ as soon as possible. To reduce interest costs on an unpaid invoice, you may remit an amount that you believe is not in dispute. However, if nonpayment is due to wilful neglect, you may suffer an additional five percent penalty of up to twenty-five percent of the amount due for each month or fraction of a month the amount is past due.

If you have any questions about your invoice, contact W. Scott Steinhagen at (602) 771-4445 or toll-free within Arizona at (800) 234-5677, extension 771-4445.

Pursuant to A.R.S. § 49-360 F and A.A.C. R18-4-224 through R18-4-226, "The director shall establish fees for the monitoring assistance program to be collected from all public water systems..."

Owner Id #: 10228	Invoice Number 64567
To: GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027	Public Water System ID #: 07618
	Billing for Calendar Year: 2008
	Due Date: December 17, 2007
	Total Amount Due . . . . . $ 501.86 ~~486.44~~ CE
	Amount Paid . . . . . $

↑ Keep the top portion for your records. ↑ ADEQ Federal Tax #866004791

↓ This entire bottom portion must be returned to ADEQ. ↓

ADEQ Federal Tax #866004791

Annual Sampling Fee Invoice Invoice # 64567

GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201	Owner Id #: 10228	MAP
PHOENIX AZ 85027 07618 - ~~Global Water Resources~~ B+D	Billing for Calendar Year: 2008	
	Due Date: 12/17/2007	

ANNUAL SAMPLING FEE WORKSHEET

Company ID 630
Account Code
Signature
Date 11/16/07
Amount 501.86

Base Fee (all MAP systems) . . . . . $ 250.00

Fee per Connection in 2008 . . . . . ~~98~~ 92 connections X $ 2.57 . . . . . $ ~~251.86~~ ~~236.44~~ CE

Total Sampling Fee . . . . . $ 501.86 ~~486.44~~ CE

Plus Paid Interest Charges and/or Other Adjustments . . . . . $ 0.00

Plus Unpaid Interest Charges as of 10/31/2007 . . . . . $ 0.00

Minus Payments Received and/or Other Adjustments . . . . . $ 0.00

Amount Due . . . . . $ 501.86 ~~486.44~~ CE

Amount received by ADEQ (Make check payable to State of Arizona) . . . . . $

A $12 fee will be charged for any check not honored by the bank.

Make your check or money order payable to State of Arizona
THIS FORM MUST ACCOMPANY YOUR REMITTANCE.

Mail to: Arizona Department of Environmental Quality
PO Box 18228
Phoenix, AZ 85005

Do not write below this line

Check Number:
Received:
Postmarked:
Entered: MWT 10/31/2007

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
MONITORING ASSISTANCE PROGRAM
ANNUAL SAMPLING FEE INVOICE

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If you have any questions about your invoice, contact W. Scott Steinhagen at (602) 771-4445 or toll-free within Arizona at (800) 234-5677, extension 771-4445.

Pursuant to A.R.S. § 49-360 F and A.A.C. R18-4-224 through R18-4-226, "The director shall establish fees for the monitoring assistance program to be collected from all public water systems..."

Owner Id #: 10228	Invoice Number 64558
To: GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027	Public Water System ID #: 07030
	Billing for Calendar Year: 2008
	Due Date: December 17, 2007
	Total Amount Due . . . . . $ ~~316.82~~ 355.37
	Amount Paid . . . . . $

† Keep the top portion for your records. †

ADEQ Federal Tax #866004791

↓ This entire bottom portion must be returned to ADEQ. ↓

ADEQ Federal Tax #866004791

Annual Sampling Fee Invoice

Invoice # 64558

GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027 07030 ~~Global Water Resources~~ DMC	Owner Id #: 10228 MAP Billing for Calendar Year: 2008 Due Date: 12/17/2007

ANNUAL SAMPLING FEE WORKSHEET

Company ID 630
Account Code
Signature
Date 11/16/07
Amount 355.37

Base Fee (all MAP systems)	$ 250.00
Fee per Connection in 2008 . . . . . 41 ~~26~~ connections X $ 2.57	$ 105.37 ~~66.82~~
Total Sampling Fee	$ 355.37 ~~316.82~~
Plus Paid Interest Charges and/or Other Adjustments	$ 0.00
Plus Unpaid Interest Charges as of 10/31/2007	$ 0.00
Minus Payments Received and/or Other Adjustments	$ 0.00
Amount Due	$ 355.37 ~~316.82~~
Amount received by ADEQ (Make check payable to State of Arizona)	$

* A $12 fee will be charged for any check not honored by the bank.

Make your check or money order payable to State of Arizona
THIS FORM MUST ACCOMPANY YOUR REMITTANCE.

Mail to: Arizona Department of Environmental Quality
PO Box 18228
Phoenix AZ 85005

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MW1 10/31/2007

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
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Owner Id #: 10228	Invoice Number 64569
To: GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027	Public Water System ID #: 07733
	Billing for Calendar Year: 2008
	Due Date: December 17, 2007
	Total Amount Due ..... $ ~~329.67~~ ~~309.11~~
	Amount Paid ..... $

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Annual Sampling Fee Invoice Invoice # 64569

GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201	Owner Id #: 10228	MAP
WPS #6	Billing for Calendar Year: 2008	
PHOENIX AZ 85027 07733 - ~~Global Water Resources~~	Due Date: 12/17/2007	

ANNUAL SAMPLING FEE WORKSHEET

Company ID 630
Account Code
Signature
Date 11/16/07
Amount 329.67

Base Fee (all MAP systems)	$ 250.00
Fee per Connection in 2008 ..... ~~23~~ 31 connections X $ 2.57	$ 77.67 ~~59.11~~
Total Sampling Fee	$ 329.67 ~~309.11~~
Plus Paid Interest Charges and/or Other Adjustments	$ 0.00
Plus Unpaid Interest Charges as of 10/31/2007	$ 0.00
Minus Payments Received and/or Other Adjustments	$ 0.00
Amount Due	$ 329.67 ~~309.11~~
Amount received by ADEQ (Make check payable to State of Arizona)	$

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Owner Id #: 10228	Invoice Number 64559
To: GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027	Public Water System ID #: 07037
	Billing for Calendar Year: 2008
	Due Date: December 17, 2007
	Total Amount Due . . . . . $ ~~291.12~~ 296.26 KP
	Amount Paid . . . . . $

† Keep the top portion for your records. † ADEQ Federal Tax #866004791

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ADEQ Federal Tax #866004791

Annual Sampling Fee Invoice Invoice # 64559

GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 Gaden City PHOENIX AZ 85027 07037 ~~Global Water Resources~~	Owner Id #: 10228 MAP Billing for Calendar Year: 2008 Due Date: 12/17/2007

ANNUAL SAMPLING FEE WORKSHEET

Company ID 630
Account Code
Signature
Date 11/16/07
Amount 296.26

Base Fee (all MAP systems)	$ 250.00
Fee per Connection in 2008 . . . . . 16 ~~10~~ connections X $ 2.57	$ 46.26 ~~41.12~~ KP
Total Sampling Fee	$ 296.26 ~~291.12~~ KP
Plus Paid Interest Charges and/or Other Adjustments	$ 0.00
Plus Unpaid Interest Charges as of 10/31/2007	$ 0.00
Minus Payments Received and/or Other Adjustments	$ 0.00
Amount Due	$ 296.26 ~~291.12~~ KP
Amount received by ADEQ (Make check payable to State of Arizona)	$

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Owner Id #: 10228	Invoice Number 64562
To: GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027	Public Water System ID #: 07082
	Billing for Calendar Year: 2008
	Due Date: December 17, 2007
	Total Amount Due . . . . . $ 288.55
	Amount Paid . . . . . $

† Keep the top portion for your records. †

ADEQ Federal Tax #866004791

↓ **This entire bottom portion must be returned to ADEQ.** ↓

ADEQ Federal Tax #866004791

Annual Sampling Fee Invoice

Invoice #: 64562

GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027	Closed 07082 - ~~Global Water Resources~~	Owner Id #: 10228 MAP Billing for Calendar Year: 2008 Due Date: 12/17/2007

ANNUAL SAMPLING FEE WORKSHEET

Company ID 630
Account Code
Signature
Date 11/16/07
Amount 28855

Base Fee (all MAP systems)		$ 250.00
Fee per Connection in 2008	15 connections X $ 2.57	$ 38.55
Total Sampling Fee		$ 288.55
Plus Paid Interest Charges and/or Other Adjustments		$ 0.00
Plus Unpaid Interest Charges as of 10/31/2007		$ 0.00
Minus Payments Received and/or Other Adjustments		$ 0.00
Amount Due		$ 288.55
Amount received by ADEQ (Make check payable to State of Arizona)		$

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Owner Id #: 10228	Invoice Number 64560
To: GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027	Public Water System ID #: 07071
	Billing for Calendar Year: 2008
	Due Date: December 17, 2007
	Total Amount Due . . . . . $ ~~550.69~~ 607.23
	Amount Paid . . . . . $

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Annual Sampling Fee Invoice

Invoice # 64560

GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027	Sunshine 07071 - ~~Global Water Resources~~	Owner Id #: 10228 MAP Billing for Calendar Year: 2008 Due Date: 12/17/2007

ANNUAL SAMPLING FEE WORKSHEET

Company ID 630
Account Code
Signature
Date 11/16/07
Amount 607.23

Base Fee (all MAP systems)	$ 250.00
Fee per Connection in 2008 . . . . . 139 ~~117~~ connections X $ 2.57	$ 357.23 ~~300.69~~ LR
Total Sampling Fee	$ 607.23 ~~550.69~~ LR
Plus Paid Interest Charges and/or Other Adjustments	$ 0.00
Plus Unpaid Interest Charges as of 10/31/2007	$ 0.00
Minus Payments Received and/or Other Adjustments	$ 0.00
Amount Due	$ 607.23 ~~550.69~~ LR
Amount received by ADEQ (Make check payable to State of Arizona)	$

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Owner Id #: 10228	Invoice Number 64563
To: GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027	Public Water System ID #: 07114
	Billing for Calendar Year: 2008
	Due Date: December 17, 2007 ~~463.07~~
	Total Amount Due . . . . . $ ~~460.74~~
	Amount Paid . . . . . $

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Annual Sampling Fee Invoice

Invoice # 64563

GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027	Buffer 07114 - ~~Global Water Resources~~	Owner Id #: 10228 MAP Billing for Calendar Year: 2008 Due Date: 12/17/2007

ANNUAL SAMPLING FEE WORKSHEET

Company ID 634
Account Code
Signature
Date 11/16/07
Amount 463.07

Base Fee (all MAP systems)	$ 250.00
Fee per Connection in 2008 . . . . . 91 ~~82~~ connections X $ 2.57	$ 233.87 ~~210.74~~
Total Sampling Fee	$ 483.87 ~~460.74~~
Plus Paid Interest Charges and/or Other Adjustments	$ 0.00
Plus Unpaid Interest Charges as of 10/31/2007	$ 0.00
Minus Payments Received and/or Other Adjustments	$ 0.00
Amount Due	$ 483.87 ~~460.74~~
Amount received by ADEQ (Make check payable to State of Arizona)	$

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Owner Id #: 10228	Invoice Number 64568
To: GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027	Public Water System ID #: 07732
	Billing for Calendar Year: 2008
	Due Date: December 17, 2007
	Total Amount Due . . . . . $ ~~404.20~~ 406.77
	Amount Paid . . . . . $

↑ Keep the top portion for your records. ↑ ADEQ Federal Tax #866004791

↓ This entire bottom portion must be returned to ADEQ. ↓

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Annual Sampling Fee Invoice Invoice # 64568

GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027 07732 ~~Global Water Resources~~ Sonoran Ridge	Owner Id #: 10228	MAP
	Billing for Calendar Year: 2008	
	Due Date: 12/17/2007	

ANNUAL SAMPLING FEE WORKSHEET

Company ID 634
Account Code
Signature
Date 11/6/07
Amount 406.77

Base Fee (all MAP systems)	$ 250.00
Fee per Connection in 2008 . . . . . 60 connections X $ 2.57	$ 156.77 ~~154.20~~
Total Sampling Fee	$ 406.77 ~~404.20~~
Plus Paid Interest Charges and/or Other Adjustments	$ 0.00
Plus Unpaid Interest Charges as of 10/31/2007	$ 0.00
Minus Payments Received and/or Other Adjustments	$ 0.00
Amount Due	$ 406.77 ~~404.20~~
Amount received by ADEQ (Make check payable to State of Arizona)	$

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MWI 10/31/2007

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Owner Id #: 10228	Invoice Number 64566
To: GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027	Public Water System ID #: 07195
	Billing for Calendar Year: 2008
	Due Date: December 17, 2007
	Total Amount Due ..... $ ~~1,208.61~~ 1234.31
	Amount Paid ..... $

† Keep the top portion for your records. †

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↓ This entire bottom portion must be returned to ADEQ. ↓

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Annual Sampling Fee Invoice

Invoice # 64566

GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027	Sun Valley 07195 ~~Global Water Resources~~	Owner Id #: 10228 MAP Billing for Calendar Year: 2008 Due Date: 12/17/2007

ANNUAL SAMPLING FEE WORKSHEET

Company ID 634
Account Code
Signature
Date 11/16
Amount 1234.31

Base Fee (all MAP systems)	$ 250.00
Fee per Connection in 2008 ..... 383 ~~373~~ connections X $ 2.57	$ 984.31 ~~958.61~~
Total Sampling Fee	$ 1234.31 ~~1,208.61~~
Plus Paid Interest Charges and/or Other Adjustments	$ 0.00
Plus Unpaid Interest Charges as of 10/31/2007	$ 0.00
Minus Payments Received and/or Other Adjustments	$ 0.00
Amount Due	$ 1234.31 ~~1,208.61~~
Amount received by ADEQ (Make check payable to State of Arizona)	$

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Owner Id #: 10228	Invoice Number 64570
To: GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027	Public Water System ID #: 08040
	Billing for Calendar Year: 2008
	Due Date: December 17, 2007
	Total Amount Due . . . . . $ ~~3,166.95~~ 3776.50
	Amount Paid . . . . . $

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↓ This entire bottom portion must be returned to ADEQ. ↓

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Annual Sampling Fee Invoice Invoice # 64570

GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027 08040 - ~~Global Water Resources~~ Co-Ling	Owner Id #: 10228 MAP Billing for Calendar Year: 2008 Due Date: 12/17/2007

ANNUAL SAMPLING FEE WORKSHEET

Company ID 622
Account Code
Signature
Date 11/16/07
Amount 3976.50

Base Fee (all MAP systems)	$ 250.00
Fee per Connection in 2008 . . . . . ~~1,155~~ 1450 connections X $ 2.57	$ ~~2,916.95~~ 3726.50
Total Sampling Fee	$ ~~3,166.95~~ 3976.50
Plus Paid Interest Charges and/or Other Adjustments	$ 0.00
Plus Unpaid Interest Charges as of 10/31/2007	$ 0.00
Minus Payments Received and/or Other Adjustments	$ 0.00
Amount Due	$ ~~3,166.95~~ 3976.50
Amount received by ADEQ (Make check payable to State of Arizona)	$

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Owner Id #: 10228	Invoice Number 64571
To: GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027	Public Water System ID #: 08129 Billing for Calendar Year: 2008 Due Date: December 17, 2007 Total Amount Due . . . . . $ ~~1,200.90~~ $76.39 Amount Paid . . . . . $

† Keep the top portion for your records. †

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↓ **This entire bottom portion must be returned to ADEQ.** ↓

ADEQ Federal Tax #866004791

Annual Sampling Fee Invoice Invoice # 64571

GLOBAL WATER RESOURCES 21410 N 19TH AVE, SUITE 201 PHOENIX AZ 85027	Lake Cimarron 08129 - ~~Global Water Resources~~	Owner Id #: 10228 MAP Billing for Calendar Year: 2008 Due Date: 12/17/2007

ANNUAL SAMPLING FEE WORKSHEET

Company ID 622
Account Code
Signature
Date 11/6/07
Amount $76.39

Base Fee (all MAP systems) . . . . . $ 250.00

Fee per Connection in 2008 . . . . . ~~370~~ 129 connections X $ 2.57 . . . . . $ ~~950.90~~ 326.39

Total Sampling Fee . . . . . $ ~~1,200.90~~ 576.39

Plus Paid Interest Charges and/or Other Adjustments . . . . . $ 0.00

Plus Unpaid Interest Charges as of 10/31/2007 . . . . . $ 0.00

Minus Payments Received and/or Other Adjustments . . . . . $ 0.00

Amount Due . . . . . $ ~~1,200.90~~ 576.39

Amount received by ADEQ (Make check payable to State of Arizona) . . . . . $

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WVWC Schedules

Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Computation of Increase in Gross Revenue Requirement

Schedule A-1

Line No.	DESCRIPTION	ORIGINAL COST	FAIR VALUE
1	Adjusted Rate Base	$ 2,251,164	$ 2,251,164
2			
3	Adjusted Operating Income (Loss)	$ (95,508)	$ (95,508)
4			
5	Current Rate of Return (L3 / L1)	-4.24%	-4.24%
6			
7	Required Operating Income (L8 * L1)	$ 208,008	$ 208,008
8			
9	Required Rate of Return	9.24%	9.24%
10			
11	Operating Income Deficiency (L7 - L3)	$ 303,516	$ 303,516
12			
13	Gross Revenue Conversion Factor	1.645086	1.645086
14			
15	Increase in Gross Revenue Requirements	$ 499,309	$ 499,309
16			
17			

Line No.	Customer Classification	Present Rates	Proposed Rates	Dollar Increase	Percent Increase
18					
19					
20					
21	Residential	$ 422,409	$ 824,855	$ 402,446	95.3%
22	Commercial	19,367	81,174	61,807	319.1%
23	Irrigation	12,835	41,429	28,594	222.8%
24	Construction	-	-	-	N/A
25					
26	Total of Water Revenues	$ 454,612	$ 947,458	$ 492,846	108.4%
27					
28	Miscellaneous Revenues	19,743	25,453	5,710	28.9%
29					
30	Total Operating Revenues	$ 474,355	$ 972,911	$ 498,556	105.1%
31					
32					
33					
34	Supporting Schedules:				
35	B-1				
36	C-1				
37	C-3				
38	H-1				
39					
40					

Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Summary of Results of Operations

Schedule A-2

Line No.	Description	Prior Years Ended 12/31/2006	Prior Years Ended 12/31/2007	Test Year Actual 12/31/2008	Test Year Adjusted 12/31/2008	Projected Year Present Rates 12/31/2009	Projected Year Proposed Rates 12/31/2009
1	Gross Revenues	$ 505,371	$ 509,569	$ 482,166	$ 473,527	$ 473,527	$ 972,836
2							
3	Revenue Deductions and						
4	Operating Expenses	521,644	489,208	592,312	569,035	569,035	764,829
5							
6	Operating Income	$ (16,273)	$ 20,361	$ (110,146)	$ (95,508)	$ (95,508)	$ 208,008
7							
8	Other Income and Deductions	1,687	11,762	779	779	779	779
9							
10	Interest Expense	(37,597)	(27,375)	(13,333)	(13,333)	(13,333)	(13,333)
11							
12	Net Income	$ (52,183)	$ 4,747	$ (122,700)	$ (108,062)	$ (108,062)	$ 195,454
13							
14	Common Shares	1,000	1,000	1,000	1,000	1,000	1,000
15							
16	Earned Per Average						
17	Common Share	(52.18)	4.75	(122.70)	(108.06)	(108.06)	195.45
18							
19	Dividends Per						
20	Common Share	-	-	-	-	-	-
21							
22	Payout Ratio	-	-	-	-	-	-
23							
24	Return on Average						
25	Invested Capital	-0.20%	0.01%	-0.38%	-8.36%	-17.69%	31.99%
26							
27	Return on Year End						
28	Capital	-0.14%	0.01%	-8.99%	-8.84%	-8.84%	15.99%
29							
30	Return on Average						
31	Common Equity	-0.20%	0.01%	-0.38%	-9.98%	-21.01%	38.00%
32							
33	Return on Year End						
34	Common Equity	-0.14%	0.01%	-10.79%	-10.50%	-10.50%	19.00%
35							
36	Times Bond Interest Earned						
37	Before Income Taxes	(0.29)	1.28	(11.32)	(12.58)	(12.58)	24.50
38							
39	Times Total Interest and						
40	Preferred Dividends Earned						
41	After Income Taxes	0.57	1.74	(7.26)	(6.16)	(6.16)	16.60
42							
43							
44							
45							
46	Supporting Schedules:						
47	E-2						
48	C-1						
49	F-1						
50							

Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Summary of Capital Structure

Schedule A-3

Line No.	Description	Prior Years Ended 12/31/2006	Prior Years Ended 12/31/2007	Test Year 12/31/2008	Projected Year 12/31/2009
1	Short-Term Debt	$ -	$ -		
2					
3	Long-Term Debt	511,594	243,858	227,953	193,387
4					
5	Total Debt	$ 511,594	$ 243,858	$ 227,953	$ 193,387
6					
7	Preferred Stock	-	-	-	-
8					
9	Common Equity	36,585,445	63,811,676	1,136,740	1,028,678
10					
11	Total Capital	$ 37,097,039	$ 64,055,534	$ 1,364,693	$ 1,222,065
12					
13	Capitalization Ratios:				
14					
15	Short-Term Debt	0.00%	0.00%	0.00%	0.00%
16					
17	Long-Term Debt	1.38%	0.38%	16.70%	15.82%
18					
19	Total Debt	1.38%	0.38%	16.70%	15.82%
20					
21	Preferred Stock	0.00%	0.00%	0.00%	0.00%
22					
23	Common Equity	98.62%	99.62%	83.30%	84.18%
24					
25	Total Capital	100.00%	100.00%	100.00%	100.00%
26					
27	Weighted Cost of				
28	Short-Term Debt	0.00%	0.00%	0.00%	0.00%
29					
30	Weighted Cost of				
31	Long-Term Debt	0.91%	0.91%	0.91%	0.91%
32					
33	Weighted Cost of				
34	Senior Debt	0.00%	0.00%	0.00%	0.00%
35					
36					
37					
38	Supporting Schedules:				
39	E-1				
40	D-1				

Willow Valley Water Company, Inc. Schedule A-4
Test Year Ended December 31, 2008
Constructure Expenditures and Gross Utility Plant Placed in Service

Line No.			Construction Expenditures	Net Plant Placed In Service	Gross Utility Plant In Service
1	*Prior Year Ended*	12/31/2006	$ 140,600	$ 120,723	$ 2,041,077
2					
3	Prior Year Ended	12/31/2007	696,176	277,879	2,318,956
4					
5	Test Year Ended	12/31/2008	1,266,204	1,697,924	4,016,880
6					
7	Projected Year Ended	12/31/2009	-	-	4,016,927
8					
9					
10					
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27					
28					
29					
30	Supporting Schedules:				
31	F-3				
32	*E-5*				
33					
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Summary Statements of Cash Flows

Schedule A-5

Line No.		Prior Years Ended 12/31/2006	Prior Years Ended 12/31/2007	Test Year 12/31/2008	Projected Year Present Rates 12/31/2009	Projected Year Proposed Rates 12/31/2009
1	Source of Funds					
2						
3	Net Income from Operations	$ (52,184)	$ 4,749	$ (122,699)	$ (108,062)	$ 195,454
4	*Depreciation & Amortization*	1,027,312	73,967	126,768	185,781	185,781
5	Operating Balance Sheet Changes:	-	-	-	-	-
6	(Incr)/Decr in Accounts Receivable	(36,532)	(2,333)	23,456	23,456	23,456
7	(Incr)/Decr in Other Receivables	-	(350)	5,259	5,259	5,259
8	Cash (to)/from Related Parties	-	-	1,380,285	1,380,285	1,380,285
9	(Incr)/Decr in Prepaid Expense	-	(5,029)	456	456	456
10	(Incr)/Decr in Deposits & Escrow	(75,150)	46,672	(890)	(890)	(890)
11	Change in Noncurrent Tax Assets/Liabilities	(80,664)	(775)	(6,367)	(6,367)	(6,367)
12	(Incr)/Decr in Other Assets	(16,098)	(3,261)	3,433	3,433	3,433
13	Incr/(Decr) in Accounts Payable	54,190	(26,055)	(5,617)	(5,617)	(5,617)
14	Incr/(Decr) in Retention Payable	-	-	-	-	-
15	Incr/(Decr) in Other Current Liabilities	5,566	(4,146)	(35)	(35)	(35)
16	Incr/(Decr) in Customer Dep & Prepay	18,661	7,744	(5,443)	(5,443)	(5,443)
17	Incr/(Decr) in Accrued Liabilities	25,594	26,712	(75,450)	(75,450)	(75,450)
18	Total Cash Flows from Operations	$ 871,695	$ 117,895	$ 1,323,156	$ 1,396,806	$ 1,700,322
19						
20	Application of Funds					
21	Fixed Asset Changes					
22	Fixed Asset Purchases	$ (2,041,077)	$ (277,879)	$ (1,697,924)	$ -	$ -
23	Construction Projects	(23,153)	(418,951)	442,057	-	-
24	Asset Disposals	-	-	-	-	-
25	Total Change to Fixed Assets	$ (2,064,230)	$ (696,830)	$ (1,255,867)	$ -	$ -
26	From Purchase of Subsid/Investments	(406,067)	(523)	(156)	(156)	(156)
27	Total Cash Flows from Investing	$ (2,470,297)	$ (697,353)	$ (1,256,023)	$ (156)	$ (156)
28						
29	Cash Flows From Financing Activities:					
30	Meter/Line Extension Receipts	$ 828,171	$ 653	$ (10,336)	$ (10,336)	$ (10,336)
31	From ST Borrowing/LT Debt	511,594	(267,737)	(15,905)	(15,905)	(15,905)
32	*Cash (to)/from GWR, LLC - related utilities*	-	-	(20,170)	(20,170)	(20,170)
33	Equity (Withdrawals)/Contributions	501,492	805,383	-	-	-
34	Total Cash Flows from Financing	$ 1,841,257	$ 538,299	$ (46,411)	$ (46,411)	$ (46,411)
35						
36	Net Increase (Decrease) in Cash	$ 42,655	$ (41,159)	$ 20,722	$ 1,350,239	$ 1,653,755
37						
38						
39						
40						
41						
42	Supporting Schedules:					
43	E-3					
44	F-2					
45						

Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Summary of Fair Value Rate Base

Schedule B-1

Line No.		Original Cost Rate Base
1	Plant in Service	$ 4,016,878
2	Less: Accumulated Depreciation	(1,228,047)
3		
4	Net Plant in Service	$ 2,788,831
5		
6	LESS:	
7	Net CIAC	-
8	Advances in Aid of Construction (AIAC)	518,488
9	Customer Deposits	5,985
10	Deferred Income Tax Credits	-
11		
12	ADD:	
13	Unamortized Finance Charges	-
14	Deferred Tax Assets	87,806
15	Working Capital	-
16	Utility Plant Acquisition Adjustment	-
17		
18	Original Cost Rate Base	$ 2,251,164
19		
20		
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32		
33		
34	Supporting Schedules:	Recap Schedules:
35	B-2	A-1
36	B-3	
37	E-1	
38	B-5	
39		
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Schdule B-2

Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Original Cost Rate Base Pro Forma Adjustments

Line No.	Description	[A] Actual End of Test Year	[B] ADJ #1	[C] ADJ #2	[D] ADJ #3	[E] ADJ #4	[F] ADJ #5	[G] ADJ #6	[H] ADJ #7	[I] Adjusted End of Test Year
1	303 Land and Land Rights	$ 18,100	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 18,100
2	304 Structures and Improvements	197,952	-	-	-	-	-	-	-	197,952
3	306 Lake, River and Other Intakes	-	-	-	-	-	-	-	-	-
4	307 Wells and Springs	1,622,446	-	-	-	-	-	-	-	1,622,446
5	309 Supply Mains	2,118	-	-	-	-	-	-	-	2,118
6	310 Power Generation Equipment	10,751	-	-	-	-	-	-	-	10,751
7	311 Pumping Equipment	492,405	-	-	-	-	-	-	-	492,405
8	320 Water Treatment Equipment	263,210	-	-	-	-	-	-	-	263,210
9	330 Distribution Reservoirs and Standpipes	265,882	-	-	-	-	-	-	-	265,882
10	331 Transmission and Distribution Mains	620,830	-	-	-	-	-	-	-	620,830
11	333 Services	95,359	-	-	-	-	-	-	-	95,359
12	334 Meters and Meter Installations	220,733	-	-	-	-	-	-	-	220,733
13	335 Hydrants	37,179	-	-	-	-	-	-	-	37,179
14	336 Backflow Prevention Devices	1,024	-	-	-	-	-	-	-	1,024
15	339 Other Plant and Miscellaneous Equipment	19,311	-	-	-	-	-	-	-	19,311
16	340 Office Furniture and Equipment	22,526	-	-	-	-	-	-	-	22,526
17	341 Transportation Equipment	20,846	-	-	-	-	-	-	-	20,846
18	343 Tools, Shop and Garage Equipment	42,909	-	-	-	-	-	-	-	42,909
19	344 Laboratory Equipment	9,508	-	-	-	-	-	-	-	9,508
20	345 Power Operated Equipment	38,925	-	-	-	-	-	-	-	38,925
21	346 Communication Equipment	2,654	-	-	-	-	-	-	-	2,654
22	347 Miscellaneous Equipment	8,273	-	-	-	-	-	-	-	8,273
23	348 Other Tangible Plant	3,937	-	-	-	-	-	-	-	3,937
24										
25	Total Plant in Service	$ 4,016,878	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,016,878
26	Less: Accumulated Depreciation	(1,228,047)	-	-	-	-	-	-	-	(1,228,047)
27	Net Plant in Service (L59 - L 60)	$ 2,788,831	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,788,831
28										
29	LESS:									
30	Net Contributions in Aid of Construction (CIAC)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
31	Advances in Aid of Construction (AIAC)	618,488	-	-	-	-	-	-	-	618,488
32	Customer Meter Deposits	6,985	-	-	-	-	-	-	-	6,985
33	Deferred Income Tax Credits	-	-	-	-	-	-	-	-	-
34										
35	ADD:									
36	Unamortized Finance Charges	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
37	Deferred Tax Assets	87,806	-	-	-	-	-	-	-	87,806
38	Working Capital	-	-	-	-	-	-	-	-	-
39	Utility Plant Acquisition Adjustment	-	-	-	-	-	-	-	-	-
40										
41	**Original Cost Rate Base**	$ 2,251,164	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,251,164
42										
43										
44	Supporting Schedules:			Recap Schedules:						
45	E-1			B-1						

Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Adjustments to RCND Calculaton

Schedule B-3

Line No.	
1	The Company did not conduct a Reconstruction Cost New Study.
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
RCND Detail of Plant Accounts

Schedule B-4

Line No.	
1	The Company did not conduct a Reconstruction Cost New Study.
2	
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Computation of Working Capital Allowance

Schedule B-5

Line No.	
1	
2	The Company is not requesting a working capital allowance.
3	
4	
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Adjusted Test Year Income Statement

Schedule C-1

Line No.	DESCRIPTION	[A] Actual Test Year	[B] Pro Forma Adjustments		[C] Adjusted Test Year	[D] Proposed Rate Increase	[E] Adjusted With Rate Increase
1	Revenues						
2	Metered Water Sales	$ 452,423	$ (8,639)	1,3	$ 453,784	$ 493,599	$ 947,383
3	Water Sales - Unmetered	-	-		-	-	-
4	Other Operating Revenue	19,743	-	2	19,743	5,710	25,453
5	Total Operating Revenues	$ 482,166	$ (8,639)		$ 473,527	$ 499,309	$ 972,836
6							
7	Operating Expenses						
8	601 Salary and Wages - Employees	$ 253,041	$ (26,672)	4	$ 226,369	$ -	$ 226,369
9	604 Employee Pensions and Benefits	56,299	(5,334)	4	50,965	-	50,965
10	610 Purchased Water	-	-		-	-	-
11	615 Purchased Power	33,979	(417)	3,5	33,562	-	33,562
12	616 Fuel for Power Production	-	-		-	-	-
13	618 Chemicals	18,274	(224)	3	18,050	-	18,050
14	620 Materials and Supplies	18,697	-		18,697	-	18,697
15	620.08 Materials and Supplies	41,492	-		41,492	-	41,492
16	635 Contractual Services - Testing	5,401	-		5,401	-	5,401
17	636 Contractual Services - Other	12,787	-		12,787	-	12,787
18	641 Rental of Building/Real Property	9,185	-		9,185	-	9,185
19	642 Rental of Equipment	-	-		-	-	-
20	650 Transportation Expenses	13,076	-		13,076	-	13,076
21	657 Insurance - General Liability	5,119	-		5,119	-	5,119
22	659 Insurance - Other	1,072	-		1,072	-	1,072
23	660 Advertising Expense	578	(578)	6	-	-	-
24	667 Rate Case Expense	-	5,333	7	5,333	-	5,333
25	670 Bad Debt Expense	3,850	885	8	4,735	4,993	9,728
26	675 Miscellaneous Expenses	10,257	-		10,257	-	10,257
27	403 Depreciation Expense	126,768	59,013	9	185,781	-	185,781
28	408 Taxes Other Than Income	2,620	(2,480)	10	140	-	140
29	408.11 Taxes Other Than Income - Property Taxes	21,324	(21,324)	11	-	-	-
30	408.13 Taxes Other Than Income - Other Taxes and I	-	-		-	-	-
31	409 Income Taxes	(41,507)	(31,480)	12	(72,987)	190,800	117,814
32	Total Operating Expenses	$ 592,312	$ (23,277)		$ 569,035	$ 195,794	$ 764,829
33							
34	Utility Operating Income (Loss)	$ (110,146)	$ 14,638		$ (95,508)	$ 303,516	$ 208,008
35							
36	414 Gains (Losses) from Disp of Util Prop	$ -	$ -		$ -	$ -	$ -
37	419 Interest and Dividend Income	779	-		779	-	779
38	427 Interest Expense	(13,333)	-		(13,333)	-	(13,333)
39	Total Other Income and Deductions	$ (12,554)	$ -		$ (12,554)	$ -	$ (12,554)
40							
41	Net Income (Loss)	$ (122,700)	$ 14,638		$ (108,062)	$ 303,516	$ 195,454
42							
43	Supporting Schedules:					Recap Schedules:	
44	E-2					A-1	
45	C-2						

Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Income Statement Pro Forma Adjustments

Line No.	DESCRIPTION	[A] Actual Test Year	[B] ADJ #1	[C] ADJ #2	[D] ADJ #3	[E] ADJ #4	[F] ADJ #5	[G] ADJ #6	[H] ADJ #7	[I] ADJ #8	[J] ADJ #9	[K] ADJ #10	[L] ADJ #11	[M] ADJ #12	[N] Adjusted
1	Revenues	$ 462,423	$ (2,467)	$ -	$ (6,172)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 453,784
2	Metered Water Sales	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	Water Sales - Unmetered	19,743	-	-	-	-	-	-	-	-	-	-	-	-	19,743
4	Other Operating Revenue	$ 482,166	$ (2,467)	$ -	$ (6,172)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 473,527
5	Total Operating Revenues														
6															
7	Operating Expenses	$ 253,041	$ -	$ -	$ -	$ (26,672)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 226,369
8	601 Salary and Wages - Employees	56,299	-	-	-	(5,334)	-	-	-	-	-	-	-	-	50,965
9	604 Employee Pensions and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	610 Purchased Water	33,979	-	-	(417)	-	-	-	-	-	-	-	-	-	33,562
11	615 Purchased Power	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	616 Fuel for Power Production	18,274	-	-	(224)	-	-	-	-	-	-	-	-	-	18,050
13	618 Chemicals	18,697	-	-	-	-	-	-	-	-	-	-	-	-	18,697
14	620 Materials and Supplies	41,492	-	-	-	-	-	-	-	-	-	-	-	-	41,492
15	620.08 Materials and Supplies	5,401	-	-	-	-	-	-	-	-	-	-	-	-	5,401
16	635 Contractual Services - Testing	12,787	-	-	-	-	-	-	-	-	-	-	-	-	12,787
17	636 Contractual Services - Other	9,185	-	-	-	-	-	-	-	-	-	-	-	-	9,185
18	641 Rental of Building/Real Property	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	642 Rental of Equipment	13,076	-	-	-	-	-	-	-	-	-	-	-	-	13,076
20	650 Transportation Expenses	5,119	-	-	-	-	-	-	-	-	-	-	-	-	5,119
21	657 Insurance - General Liability	1,072	-	-	-	-	-	-	-	-	-	-	-	-	1,072
22	659 Insurance - Other	578	-	-	-	-	-	(578)	-	-	-	-	-	-	-
23	660 Advertising Expense	-	-	-	-	-	-	-	5,333	-	-	-	-	-	5,333
24	667 Rate Case Expense	3,850	-	-	-	-	-	-	-	885	-	-	-	-	4,735
25	670 Bad Debt Expense	10,257	-	-	-	-	-	-	-	-	-	-	-	-	10,257
26	675 Miscellaneous Expenses	126,768	-	-	-	-	-	-	-	-	59,013	-	-	-	185,781
27	403 Depreciation Expense	2,620	-	-	-	-	-	-	-	-	-	(2,480)	-	-	140
28	408 Taxes Other Than Income	21,324	-	-	-	-	-	-	-	-	-	-	(21,324)	-	-
29	408.11 Taxes Other Than Income - Property Taxes	-	-	-	-	-	-	-	-	-	-	-	-	(31,480)	(31,480)
30	408.13 Taxes Other Than Income - Other Taxes and Licenses	(41,507)	-	-	-	-	-	-	-	-	-	-	-	-	(41,507)
31	409 Income Taxes	$ 592,312	$ -	$ -	$ (641)	$ (32,006)	$ -	$ (578)	$ 5,333	$ 885	$ 59,013	$ (2,480)	$ (21,324)	$ (31,480)	$ 569,035
32	Total Operating Expenses														
33															
34	Operating Income (Loss)	$ (110,146)	$ (2,467)	$ -	$ (5,532)	$ 32,006	$ -	$ 578	$ (5,333)	$ (885)	$ (59,013)	$ 2,480	$ 21,324	$ 31,480	$ (95,508)
35															
36	414 Gains (Losses) from Disposition of Utility Property	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 779
37	419 Interest and Dividend Income	779.0	-	-	-	-	-	-	-	-	-	-	-	-	(13,333)
38	427 Interest Expense	(13,333)	-	-	-	-	-	-	-	-	-	-	-	-	(12,554)
39	Total Other Income and Deductions	$ (12,554)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
40															
41	Net Income (Loss)	$ (122,700)	$ (2,467)	$ -	$ (5,532)	$ 32,006	$ -	$ 578	$ (5,333)	$ (885)	$ (59,013)	$ 2,480	$ 21,324	$ 31,480	$ (108,062)
42															
43	Supporting Schedules:														
44	C-2														
45	E-2														

Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Income Statement Adjustment 1
Elimination of Unbilled Revenues and Other Accounting Entries

Line No.		
1	Unbilled Revenue Adjustments	
2	Residential	$ (2,421)
3	Commercial	54
4	Irrigation	(100)
5	Construction	-
6		$ (2,467)
7		
8		
9	Removal of Accounting Adjustments	$ (2,467)
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Income Statement Adjustment 2
Adjustment to Miscellaneous Revenues

Line No.	
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Income Statement Adjustment 3
Annualize Revenue & Expense to reflect End-of-Test Year Customer Counts

Line No.	Class of Service	[A] Average No. of Customers Per Bill Count Sch. H-2 Col. A	[B] Year-End Number of Customers	[C] Average Additional Customers (B - A)	[D] Change in Bills to be Issued	[E] Average Gallons Sold Per Customer	[F] Additional K Gallons To Be Sold	[G] Additional Revenues at Present Rates
1	5/8" Residential	1,516	1,498	(18)	(210)	Varies	(1,010)	$ (4,524)
2	3/4" Residential	11	11	-	-	Varies	-	-
3	1" Residential	8	8	-	-	Varies	-	-
4	Subtotal Residential	1,535	1,517	(18)	(210)		(1,010)	$ (4,524)
5								
6								
7	5/8" Commercial	2	2	-	-	Varies	-	$ -
8	3/4" Commercial	2	1	(1)	(6)	Varies	(170)	(398)
9	1" Commercial	7	6	(1)	(6)	Varies	(53)	(289)
10	1" Commercial NT	1	1	-	-	Varies	-	-
11	1.5" Commercial	1	1	-	-	Varies	-	-
12	1.5" Commercial NT	1	1	-	-	Varies	-	-
13	6" Commercial	1	1	-	-	Varies	-	-
14	6" Commercial NT	2	2	-	-	Varies	-	-
15	Subtotal Commercial	17	15	(2)	(12)		(223)	$ (686)
16								
17	2" Construction	1	-	(1)	(6)	Varies	-	$ (630)
18	3" Construction	1	-	(1)	(2)	Varies	(16)	(332)
19	Subtotal Construction	2	-	(2)			(16)	$ (962)
20								
21	Totals	1,554	1,532	(22)	(222)		(1,249)	$ (6,172)
22								
23								
24								
25								
26								
27								

Line No.	Class of Expense	Average Cost Per Gallons Sold Per Sch. E-7	Additional K Gallons To Be Sold	Additional Cost From Customer Growth
28				
29				
30	Pumping	$ 0.33	(1,249)	$ (417)
31	Water Treatment	0.18	(1,249)	(224)
32				
33	Totals			$ (641)
34				
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Income Statement Adjustment 4
Adjustment to Employee Salaries and Wages and Benefits

Line No.		
1	601 Salaries and Wages - Test Year	$ 253,041
2	Adjustment for Workforce Reduction	(26,672)
3	Adjusted Salaries and Wages	$ 226,369
4		
5		
6	604 Employee Pensions and Benefits - Test Year	$ 56,299
7	Adjustment for Workforce Reduction (Estimate at 20%)	(5,334)
8		$ 50,965
9		
10		
11	Adjustment to Salaries and Wages	$ (26,672)
12		
13	Adjustment to Pensions and Benefits	$ (5,334)
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Income Statement Adjustment 5
Adjustment to Purchased Power Expense

Line No.	
1	$ -
2	-
3	$ -
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6	$ -
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Income Statement Adjustment 6
Adjustment to Advertising Expense

Line No.			
1	660 Advertising Expense	$	578
2	Removal of Advertising Expense		(578)
3	Adjusted Advertising Expense	$	-
4			
5			
6	Adjustment to Remove Advertising Expense	$	(578)
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Income Statement Adjustment 7
Estimate of Rate Case Expense and Amortization

Line No.			
1	Company Estimated Rate Case Expense	$	400,000
2	Amortize over Three Years	x	0.333
3	Amortization of Rate Case Expense	$	133,333
4			
5	Willow Valley Portion of Rate Case Expense	x	4.00%
6			
7	Annual Rate Case Expense	$	5,333
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Income Statement Adjustment 8
Adjust Bad Debt Expense for Change in Revenue Levels

Line No.			
1	Bad Debt Expense - Test Year Actual	$	3,850
2	Bad Debt Expense - 1% of Adjusted		4,735
3	Difference	$	885
4			
5	Adjustment to Bad Debt Expense	$	885
6			
7			
8	Adjustment to Bad Debt Expense for Proposed Revenues	$	4,993
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Income Statement Adjustment 9
Adjust and Annualize Depreciation for Proposed Rates

Line No.	Description	Adjusted Test Year End Balance 12/31/2008	Proposed Depreciation Rate	Depreciation/ Amortization Expense
1				
2	303 Land and Land Rights	$ 18,100	0.00%	$ -
3	304 Structures and Improvements	197,952	3.33%	6,598
4	306 Lake, River and Other Intakes	-	2.50%	-
5	307 Wells and Springs	1,622,446	3.33%	54,082
6	309 Supply Mains	2,118	2.00%	42
7	310 Power Generation Equipment	10,751	5.00%	538
8	311 Pumping Equipment	492,405	12.50%	61,551
9	320 Water Treatment Equipment	263,210	3.33%	8,774
10	330 Distribution Reservoirs and Standpipes	265,882	2.22%	5,908
11	331 Transmission and Distribution Mains	620,830	2.00%	12,417
12	333 Services	95,359	3.33%	3,179
13	334 Meters and Meter Installations	220,733	8.33%	18,394
14	335 Hydrants	37,179	2.00%	744
15	336 Backflow Prevention Devices	1,024	6.67%	68
16	339 Other Plant and Miscellaneous Equipment	19,311	6.67%	1,287
17	340 Office Furniture and Equipment	22,526	6.67%	1,502
18	341 Transportation Equipment	20,846	20.00%	4,169
19	343 Tools, Shop and Garage Equipment	42,909	5.00%	2,145
20	344 Laboratory Equipment	9,508	10.00%	951
21	345 Power Operated Equipment	38,925	5.00%	1,946
22	346 Communication Equipment	2,654	10.00%	265
23	347 Miscellaneous Equipment	8,273	10.00%	827
24	348 Other Tangible Plant	3,937	10.00%	394
25				
26	Subtotal	$ 4,016,878		$ 185,781
27				
28	Less: Contributions in Aid of Construction	$ -	2.50%	$ -
29				
30	Total Pro Forma Depreciation Expense			$ 185,781
31				
32	Test Year Depreciation Expense			$ 126,768
33				
34	Increase/(Decrease) to Depreciation Expense			$ 59,013
35				
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Income Statement Adjustment 10
Adjust for Pass-Through of ACC & RUCO Assessments

Line No.			
1	408 Taxes Other Than Income	$	2,620
2	Expenses in 2008 Related to ACC & RUCO Assessments		(2,480)
3			
4	408 Taxes Other Than Income - Adjusted	$	140
5			
6	Adjustment to - 408 Taxes Other Than Income		(2,480)
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Income Statement Adjustment 11
Remove Property Tax Expense Due to Request for Pass-Through Treatment

Line No.			
1	Property Taxes - Test Year	$	21,324
2	Adjusted Property Taxes - Due to Pass-Through		-
3			
4	Adjustment to Property Taxes	$	(21,324)
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Income Statement Adjustment 12
Adjust Income Taxes to Reflect Adjusted and Proposed Income Taxes

Line No.		Adjusted Test Year Results	Proposed Revenue Results
1			
2	Operating Income Before Income Taxes	$ (168,495)	$ 325,821
3	Synchronized Interest	20,595	20,595
4	Arizona Taxable Income	$ (189,090)	$ 305,226
5			
6	Arizona Income Tax (6.968%)	$ (13,176)	$ 21,268
7			
8	Federal Income Before Taxes	$ (189,090)	$ 305,226
9	Less Arizona Income Taxes	(13,176)	21,268
10	Federal Taxable Income	$ (175,914)	$ 283,958
11			
12	Federal Income Tax (34% Tax Bracket)	$ (59,811)	$ 96,546
13			
14	Total Income Tax	$ (72,987)	$ 117,814
15			
16	Tax Rate	38.5989%	38.5989%
17			
18	Effective Income Tax Rates		
19	State	6.9680%	6.9680%
20	Federal	31.6309%	31.6309%
21			
22			
23	Test Year Income Taxes (Sch. C-2, Line 31)	$ (41,507)	
24	Increase/(Decrease) to Income Taxes - Adjusted	$ (31,480)	
25			
26	Test Year Income Taxes - Adjusted		$ (72,987)
27			
28	Increase/(Decrease) to Proposed Income Taxes		$ 190,800
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Computation of Gross Conversion Factor

Schedule C-3

Line No.				Percentage of Incremental Gross Revenues
1	Revenue			100.0000%
2	Uncollecible Factor (L14)			0.6140%
3	Revenues (L1 - L2)			99.3860%
4	Combined Federal and State Income Tax			38.5989%
5	Subtotal (L3 - L4)			60.7871%
6	**Revenue Conversion Factor *(L1 / L5)***			**1.645086**
7				
8				
9	Calculation of Uncollectible Factor:			
10	Revenue			100.0000%
11	Combined Federal and State Tax Rate (L23)			38.5989%
12	One Minus Combined Income Tax Rate (L10 - L11)			61.4011%
13	Uncollectible Rate			1.0000%
14	Uncollectible Factor (L12 x L13)			0.6140%
15				
16	Calculation of Effective Tax Rate:			
17	Arizona State Income Tax Rate		6.9680%	
18	Operating Income Before Taxes (Arizona Taxable Income)	100.0000%		
19	Arizona State Income Tax Rate	6.9680%		
20	Federal Taxable Income (L18 - L19)	93.0320%		
21	Applicable Federal Income Tax Rate	34.0000%		
22	Effective Federal Income Tax Rate (L20 x L21)		31.6309%	
23	Combined Federal and State Income Tax Rate (L17 +L22)			38.5989%
24				
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Summary Cost of Capital

Schedule D-1

Line No.	Description	End of Test Year - Actual Dollar Amount	Percent of Total	Rate of Return	Weighted Cost	End of Projected Year - Present Rates Dollar Amount	Percent of Total	Rate of Return	Weighted Cost
1									
2	Short-Term Debt	$ -	0.00%	0.00%	0.00%	$ -	0.00%	0.00%	0.00%
3									
4	Long-Term Debt	227,953	16.70%	5.48%	0.91%	193,387	15.82%	5.48%	0.87%
5									
6	Common Equity	1,136,740	83.30%	10.00%	8.33%	1,028,678	84.18%	10.00%	8.42%
7									
8	Totals	$ 1,364,693	100.00%		9.24%	$ 1,222,065	100.00%		9.28%
9									
10									
11		End of Test Year - Proposed				End of Projected Year - Proposed Rates			
12		Dollar Amount	Percent of Total	Rate of Return	Weighted Cost	Dollar Amount	Percent of Total	Rate of Return	Weighted Cost
13									
14									
15	Short-Term Debt	$ -	0.00%	0.00%	0.00%	$ -	0.00%	0.00%	0.00%
16									
17	Long-Term Debt	227,953	16.70%	5.48%	0.91%	193,387	12.68%	5.48%	0.69%
18									
19	Common Equity	1,136,740	83.30%	10.00%	8.33%	1,332,194	87.32%	10.00%	8.73%
20									
21	Totals	$ 1,364,693	100.00%		9.24%	$ 1,525,580	100.00%		9.43%
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Cost of Debt

Schedule D-2

Line No.		End of Test Year - Actual Amount Outstanding	Annual Cost	Interest Rate	End of Projected Year - Present Rates Amount Outstanding	Annual Cost	Interest Rate
1	Long-Term Debt						
2							
3	WIFA 920010-98	$ 143,557	$ 8,793	6.13%	$ 118,801	$ 7,277	6.13%
4	WIFA 920078-03	84,396	3,692	4.38%	74,585	3,263	4.38%
5							
6	Totals	$ 227,953	$ 12,485	5.48%	$ 193,387	$ 10,540	5.45%
7							
8	Short-Term Debt						
9							
10	Not Applicable	N/A	N/A	N/A	N/A	N/A	N/A
11							
12	Totals	N/A	N/A	N/A	N/A	N/A	N/A
13							
14							
15							
16		End of Test Year - Proposed			End of Projected Year - Proposed Rates		
17		Amount Outstanding	Annual Cost	Interest Rate	Amount Outstanding	Annual Cost	Interest Rate
18							
19	Long-Term Debt						
20							
21	WIFA 920010-98	$ 143,557	$ 8,793	6.13%	$ 118,801	$ 7,277	6.13%
22	WIFA 920078-03	84,396	3,692	4.38%	74,585	3,263	4.38%
23							
24	Totals	$ 227,953	$ 12,485	5.48%	$ 193,387	$ 10,540	5.45%
25							
26	Short-Term Debt						
27							
28	Not Applicable	N/A	N/A	N/A	N/A	N/A	N/A
29							
30	Totals	N/A	N/A	N/A	N/A	N/A	N/A
31							
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Cost of Preferred Stock

Schedule D-3

Line
No.

1 Schedule D-3 is not applicable as *there is no* preferred stock issued or
2 outstanding in any of the utilities involved in this rate case.

Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Cost of Common Equity

Schedule D-4

Line No.	
1	The Company's rate application reflects a 10% return on common equity.
2	See the Direct Testimony of Matthew Rowell.
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Comparative Balance Sheets

Schedule E-1

Line No.		Test Year Ended 12/31/2008	Prior Year Ended 12/31/2007	Prior Year Ended 12/31/2006
1	Assets			
2				
3	131 Cash and cash equivalents	$ 22,221	$ 1,500	$ 42,658
4	132 Special Deposits	29,367	28,478	75,150
5	141 Customer Accounts Receivable	19,448	39,841	35,532
6	142 Other Accounts Receivable	(4,909)	350	-
7	143 Accumulated Provision for Uncollectible Accounts	(5,040)	(1,977)	-
8	151 Plant Material and Supplies	10,776	16,668	15,163
9	162 Prepayments	4,573	5,029	-
10	125 Other Investments	20,744	20,588	20,065
11	173 Accrued utility revenue	5,150	2,691	935
12	Total Current Assets	$ 102,330	$ 113,168	$ 189,503
13				
14	Total Utility Plant in Service	$ 4,016,880	$ 2,318,956	$ 2,041,077
15	105 Construction work-in-progress	47	442,104	23,153
16	108 Less:Accumulated Depreciation	(1,228,047)	(1,101,279)	(1,027,312)
17	Total Fixed Assets (Net)	$ 2,788,880	$ 1,659,781	$ 1,036,918
18				
19	Deferred Debits			
20	114 Utility Plant Acquisition Adjustments	$ 386,002	$ 386,002	$ 386,002
21	190 Accumulated Deferred Income Taxes	87,806	81,439	80,664
22	Total other assets	$ 473,808	$ 467,441	$ 466,666
23				
24	Total Assets	$ 3,365,018	$ 2,240,390	$ 1,693,087
25				
26	Liabilities and Stockholders' Equity			
27				
28	231 Accounts payable	$ 22,519	$ 28,136	$ 54,190
29	232 Notes Payable	16,800	14,824	32,653
30	233 Accounts Payable to Associated Companies	1,360,115	-	-
31	235 Customer Deposits	6,985	6,800	7,900
32	236 Accrued Taxes	(32,702)	11,045	13,175
33	237 Accrued Interest	1,394	1,421	5,566
34	241 Miscellaneous Current and Accrued Liabilities	9,580	41,261	12,419
35	253 Other Deferred Credits	13,946	19,605	10,761
36	Total Current Liabilities	$ 1,398,637	$ 123,092	$ 136,664
37				
38	224 Other Long-Term Debt	$ 211,153	$ 229,034	$ 478,941
39	Total Long-Term Liabilities	$ 211,153	$ 229,034	$ 478,941
40				
41	252 Advances for Construction	$ 618,488	$ 628,825	$ 628,171
42	Total Deferred Credits and Other Liabilities	$ 618,488	$ 628,825	$ 628,171
43				
44	Total Liabilities and Deferred Credits	$ 2,228,278	$ 980,951	$ 1,243,776
45				
46	201 Common Stock Issued	$ -	$ -	$ -
47	211 Othe Paid-In Capital	1,249,148	1,249,148	501,492
48	215 Unappropriated Retained Earnings	10,292	5,543	-
49	215 Current year net income	(122,700)	4,748	(52,181)
50	Total Members' Equity	$ 1,136,740	$ 1,259,439	$ 449,311
51				
52	Total Liabilities and Stockholders' Equity	$ 3,365,018	$ 2,240,390	$ 1,693,087
53				
54				
55				

Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Comparative Income Statements

Schedule E-2

Line No.		Test Year Ended 12/31/2008	Prior Year Ended 12/31/2007	Prior Year Ended 12/31/2006
1	Operating Revenues			
2				
3	461 Metered Water Revenue	$ 449,436	$ 475,593	$ 480,637
4	465 Sales to Irrigation Customers	12,987	13,017	-
5	471 Miscellaneous Service Revenues	19,743	20,959	21,961
6	472 Rents from Water Property	-	-	-
7	474 Other Water Revenues	-	-	2,773
8	Total Operating Revenues	$ 482,166	$ 509,569	$ 505,371
9				
10	Operating Expenses			
11				
12	601 Salary and Wages - Employees	$ 253,041	$ -	$ 71,634
13	604 Employee Pensions and Benefits	56,299	-	10,752
14	610 Purchased Water		95	190
15	615 Purchased Power	33,979	37,730	28,626
16	616 Fuel for Power Production		517	814
17	618 Chemicals	18,274	17,602	7,190
18	620 Materials and Supplies	18,697	55,210	16,816
19	620.08 Materials and Supplies	41,492	-	17,706
20	634 Contractual Services - Management Fees		235,069	193,607
21	635 Contractual Services - Testing	5,401	6,931	2,119
22	636 Contractual Services - Other	12,787	11,347	21,834
23	641 Rental of Building/Real Property	9,185	-	-
24	642 Rental of Equipment		2,811	634
25	650 Transportation Expenses	13,076	-	10,774
26	657 Insurance - General Liability	5,119	-	-
27	659 Insurance - Other	1,072	-	-
28	660 Advertising Expense	578	-	-
29	667 Rate Case Expense			
30	670 Bad Debt Expense	3,850	2,554	1,750
31	675 Miscellaneous Expenses	10,257	3,588	1,289
32	403 Depreciation Expense	126,768	87,973	98,438
33	408.10 Taxes Other Than Income - Util Reg Assess Fee	2,620	730	1,242
34	408.11 Taxes Other Than Income - Property Taxes	21,324	23,616	26,350
35	408.13 Taxes Other Than Income - Other Taxes and Licenses	-	450	6,367
36	409 Income Taxes	(41,507)	2,985	3,512
37	Total Operating Expenses	$ 592,312	$ 489,208	$ 521,644
38				
39	Operating Income / (Loss)	$ (110,146)	$ 20,361	$ (16,273)
40				
41	OTHER INCOME / (EXPENSE			
42	414 Gains (Losses) from Disposition of Utility Property	$ -	$ 7,447	$ -
43	419 Interest and Dividend Income	779	4,315	1,687
44	427 Interest Expense	(13,333)	(27,376)	(37,597)
45	Total Other Income / (Expense)	$ (12,554)	$ (15,614)	$ (35,910)
46				
47	NET INCOME / (LOSS)	$ (122,700)	$ 4,747	$ (52,183)
48				
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Comparative Statement of Changes in Financial Position

Schedule E-3

Line No.		Test Year Ended 12/31/2008	Prior Year Ended 12/31/2007	Prior Year Ended 12/31/2006
1				
2	Cash Flows from Operating Activities:			
3	Net Income from Operations	$ (122,699)	$ 4,749	$ (52,184)
4	Depreciation & Amortization	126,768	73,967	1,027,312
5	Operating Balance Sheet Changes:			
6	(Incr)/Decr in Accounts Receivable	23,456	(2,333)	(35,532)
7	(Incr)/Decr in Other Receivables	5,259	(350)	-
8	Cash (to)/from Related Parties	1,380,285	-	-
9	(Incr)/Decr in Prepaid Expense	456	(5,029)	-
10	(Incr)/Decr in Deposits & Escrow	(890)	46,672	(75,150)
11	Change in Noncurrent Tax Assets/Liabilities	(6,367)	(775)	(80,664)
12	(Incr)/Decr in Other Assets	3,433	(3,261)	(16,098)
13	Incr/(Decr) in Accounts Payable	(5,617)	(26,055)	54,190
14	Incr/(Decr) in Retention Payable	-	-	-
15	Incr/(Decr) in Other Current Liabilities	(35)	(4,146)	5,566
16	Incr/(Decr) in Customer Dep & Prepay	(5,443)	7,744	18,661
17	Incr/(Decr) in Accrued Liabilities	(75,450)	26,712	25,594
18	Total Cash Flows from Operations	$ 1,323,156	$ 117,895	$ 871,695
19				
20	Cash Flows From Investing Activities:			
21	Fixed Asset Changes			
22	Fixed Asset Purchases	$ (1,697,924)	$ (277,879)	$ (2,041,077)
23	Construction Projects	442,057	(418,951)	(23,153)
24	Asset Disposals	-	-	-
25	Total Change to Fixed Assets	$ (1,255,867)	$ (696,830)	$ (2,064,230)
26	From Purchase of Subsid/Investments	(156)	(523)	(406,067)
27	Total Cash Flows from Investing	$ (1,256,023)	$ (697,353)	$ (2,470,297)
28				
29	Cash Flows From Financing Activities:			
30	Meter/Line Extension Receipts	$ (10,336)	$ 653	$ 628,171
31	From ST Borrowing/LT Debt	(15,905)	(267,737)	511,594
32	Cash (to)/from GWR, LLC - related utilities	(20,170)	-	-
33	Equity (Withdrawals)/Contributions	-	805,383	501,492
34	Total Cash Flows from Financing	$ (46,411)	$ 538,299	$ 1,641,257
35				
36	Net Increase (Decrease) in Cash	$ 20,722	$ (41,159)	$ 42,655
37	Cash at Beginning of Period	1,499	42,658	3
38	Ending Cash Balance	$ 22,221	$ 1,499	$ 42,658
39				
40				

Schedule E-4

Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Statement of Changes in Stockholders' Equity

Line No.		Common Stock Shares	Common Stock Amount	Additional Paid-In-Capital	Retained Earnings	Total
1						
2	Balance - January 1, 2006	-	$ -	$ 501,492	$ 57,726	$ 559,218
3						
4	Net Income				(52,183)	(52,183)
5						
6	Dividends Paid				-	-
7						
8	Other/Reclass				-	-
9						
10	Balance - January 1, 2007	-	$ -	$ 501,492	$ 5,543	$ 507,035
11						
12	Net Income				4,747	4,747
13						
14	Dividends Paid				-	-
15						
16	Other/Reclass			747,656	-	747,656
17						
18	Balance - January 1, 2008	-	$ -	$ 1,249,148	$ 10,290	$ 1,259,438
19						
20	Net Income				(122,700)	(122,700)
21						
22	Dividends Paid				-	-
23						
24	Other/Reclass			-	-	-
25						
26	Balance - December 31, 2008	-	$ -	$ 1,249,148	$ (112,410)	$ 1,136,738
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Detail Plant in Service

Schedule E-5

Line No.		End of Prior Year 12/31/2007	Net Additions	End of Test Year 12/31/2008
1	Utility Plant in Service			
2	303 Land and Land Rights	$ 18,100	$ -	$ 18,100
3	304 Structures and Improvements	131,891	66,061	197,952
4	306 Lake, River and Other Intakes	-	-	-
5	307 Wells and Springs	72,967	1,549,479	1,622,446
6	309 Supply Mains	159	1,959	2,118
7	310 Power Generation Equipment	10,751	-	10,751
8	311 Pumping Equipment	477,782	14,623	492,405
9	320 Water Treatment Equipment	253,938	9,272	263,210
10	330 Distribution Reservoirs ad Standpipes	264,538	1,344	265,882
11	331 Transmission and Distribution Mains	588,107	32,723	620,830
12	333 Services	93,410	1,949	95,359
13	334 Meters and Meter Installations	219,263	1,470	220,733
14	335 Hydrants	27,204	9,975	37,179
15	336 Backflow Prevention Devices	939	85	1,024
16	339 Other Plant and Miscellaneous Equipment	19,311	-	19,311
17	340 Office Furniture and Equipment	20,172	2,354	22,526
18	341 Transportation Equipment	20,846	-	20,846
19	343 Tools, Shop and Garage Equipment	39,717	3,192	42,909
20	344 Laboratory Equipment	6,863	2,645	9,508
21	345 Power Operated Equipment	38,925	-	38,925
22	346 Communication Equipment	2,654	-	2,654
23	347 Miscellaneous Equipment	7,481	792	8,273
24	348 Other Tangible Plant	3,937	-	3,937
25	Total Utility Plant in Service	$ 2,318,955	$ 1,697,923	$ 4,016,878
26				
27	107 Construction Work in Progress	$ 442,104	$ (442,057)	$ 47
28				
29	Total Plant	$ 2,761,059	$ 1,255,866	$ 4,016,925
30				
31	Total Accum. Depreciation	$ (1,101,279)	$ (126,768)	$ (1,228,047)
32				
33	Total Net Plant	$ 1,659,780	$ 1,129,098	$ 2,788,878
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Comparative Departmental Statements of Operating Income

Schedule E-6

Line No.		Test Year Ended 12/31/2008	Prior Year Ended 12/31/2007	Prior Year Ended 12/31/2006
1	Operating Revenues			
2	Residential	$ 427,199	$ 438,070	$ 462,790
3	Commercial	20,893	21,373	16,613
4	Construction	1,344	16,149	1,234
5	Irrigation	12,987	13,017	-
6				
7	Total Water Sales	$ 462,423	$ 488,610	$ 480,637
8				
9	Miscellaneous	19,743	20,959	24,734
10				
11	Total Operating Revenues	$ 482,166	$ 509,569	$ 505,371
12				
13	Operating Expenses			
14	Operations and Maintenance	$ 274,352	$ 111,154	$ 53,636
15				
16	General and Administrative	$ 208,755	$ 262,299	$ 338,467
17				
18	Depreciation	$ 126,768	$ 87,973	$ 98,438
19				
20	Taxes			
21	Income Taxes	$ (41,507)	$ 2,985	$ 3,512
22	Property taxes	21,324	23,616	26,350
23	Other Taxes and Licenses	-	450	-
24	Utility Regulatory Assessment Fee	2,620	730	1,242
25				
26	Total Taxes	$ (17,563)	$ 27,781	$ 31,104
27				
28	Total Operating Expenses	$ 592,311	$ 489,207	$ 521,645
29				
30	Operating Income/(Loss)	$ (110,145)	$ 20,362	$ (16,274)
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Operating Statistics

Schedule E-7

Line No.		Test Year Ended 12/31/2008	Prior Year Ended 12/31/2007	Prior Year Ended 12/31/2006
1	Gallons Sold (in 1,000's)			
2	Total Residential	94,966	111,150	112,364
3	Total Commercial	3,550	4,154	4,200
4	Total Irrigation	3,318	3,884	3,926
5	Total Construction	16	19	19
6		101,850	119,207	120,509
7				
8	Average No. Customers			
9	Total Residential	1,535	1,539	1,521
10	Total Commercial	18	17	16
11	Total Irrigation	4	12	12
12	Total Construction	2	1	1
13	Totals	1,559	1,568	1,550
14				
15	Average Annual Gallons Per			
16	Residential Customer (in 1,000's)	61.87	72.24	73.86
17				
18	Average Annual Revenue Per			
19	Residential Customer	$ 278.31	$ 284.72	$ 304.21
20				
21				
22	Average Per 1,000 Gallons Sold			
23	Pumping Expense	$ 0.33	$ 0.32	$ 0.24
24	Water Treatment Expense	0.18	0.15	0.06
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Taxes Charged to Operations

Schedule E-8

Line No.		Test Year Ended 12/31/2008	Prior Year Ended 12/31/2007	Prior Year Ended 12/31/2006
1				
2	Federal Taxes			
3	Income	$ (30,065)	$ 2,446	$ 6,903
4	FICA (Employer's)	17,245	-	-
5	Unemployment	304	-	-
6	Total Federal Taxes	$ (12,516)	$ 2,446	$ 6,903
7				
8				
9	State Taxes			
10	Income	$ (11,442)	$ 539	$ (3,391)
11	Property	21,324	23,616	26,350
12	Unemployment	768	-	-
13	Total State Taxes	$ 10,650	$ 24,155	$ 22,959
14				
15				
16	Total Taxes to Operations	$ (1,866)	$ 26,601	$ 29,862
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Line
No.

Significant Accounting Policies — The Company prepares its financial statements in accordance with accounting principles generally accepted in the United States of America. Significant accounting policies are as follows:

Utility Plant — Utility plant is stated at cost with depreciation provided on a straight-line basis at annual rates ranging from 2% to 20% for each depreciable asset class as set by the Commission or, in the absence of a set rate, by water industry standard. Expenditures for maintenance and repairs are charged to expense. The cost of replacements and improvements is capitalized. When assets are retired or otherwise disposed of, the cost is eliminated from the accounts and is charged to the related accumulated depreciation.

Revenue Recognition — Water usage revenues are generally recorded when service is rendered or water is delivered to customers. However, the determination and billing of water sales to individual customers is based on the reading of their meters, which occurs on a systematic basis throughout the month. At the end of the fiscal year, amounts of water delivered to customers since the date of the last meter reading and the corresponding accrued revenue are estimated. Water meter connection fees are recorded when service is rendered for new customer connections. Revenue from water meter sales, that is not refundable pursuant to an advance in aid of construction agreement with the developer, is generally recorded at the time the water meters are installed and service begins to a particular lot.

Advances and Contributions in Aid of Construction — The Company has various agreements with real estate development and homebuilding companies (the "Developers"), whereby funds and water line extensions are provided to the companies by the Developers and are considered refundable advances for construction. These advances in aid of construction are noninterest-bearing and are subject to refund to the Developers through annual payments, that is computed as a percentage of the total annual gross revenue earned from customers connected to utility services constructed under the agreement over a specified period. The portion of the advance, that is not refunded, is considered a contribution in aid of construction (CIAC) at the time it becomes nonrefundable. CIACs are amortized as a reduction of depreciation expense over the estimated remaining life of the utility plant.

Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Projected Income Statements - Present and Proposed

Schedule F-1

Line No.		Test Year Actual 12/31/2008	Present Rates Year Ended 12/31/2009	Adjustments	Proposed Rates Year Ended 12/31/2009
1	Operating Revenues	$ 482,166	$ 473,527	$ 499,309	$ 972,836
2					
3	Operating Expenses				
4					
5	601 Salary and Wages - Employees	$ 253,041	$ 226,369	$ -	$ 226,369
6	604 Employee Pensions and Benefits	56,299	50,965	-	50,965
7	610 Purchased Water	-	-	-	-
8	615 Purchased Power	33,979	33,562	-	33,562
9	616 Fuel for Power Production	-	-	-	-
10	618 Chemicals	18,274	18,050	-	18,050
11	620 Materials and Supplies	18,697	18,697	-	18,697
12	620.08 Materials and Supplies	41,492	41,492	-	41,492
13	634 Contractual Services - Management Fees	5,401	5,401	-	5,401
14	635 Contractual Services - Testing	12,787	12,787	-	12,787
15	636 Contractual Services - Other	9,185	9,185	-	9,185
16	641 Rental of Building/Real Property	-	-	-	-
17	642 Rental of Equipment	13,076	13,076	-	13,076
18	650 Transportation Expenses	5,119	5,119	-	5,119
19	657 Insurance - General Liability	1,072	1,072	-	1,072
20	659 Insurance - Other	578	-	-	-
21	660 Advertising Expense	-	5,333	-	5,333
22	670 Bad Debt Expense	3,850	4,735	4,993	9,728
23	675 Miscellaneous Expenses	10,257	10,257	-	10,257
24	403 Depreciation Expense	126,768	185,781	-	185,781
25	408.10 Taxes Other Than Income - Util Reg Assess Fee	2,620	140	-	140
26	408.11 Taxes Other Than Income - Property Taxes	21,324	-	-	-
27	408.13 Taxes Other Than Income - Other Taxes and Licenses	-	-	-	-
28	409 Income Taxes	(41,507)	(72,987)	190,800	117,814
29	Total Operating Expenses	$ 592,312	$ 569,035	$ 195,794	$ 764,829
30					
31	Operating Income / (Loss)	$ (110,146)	$ (95,508)	$ 303,516	$ 208,008
32					
33	OTHER INCOME / (EXPENSE				
34	414 Gains (Losses) from Disposition of Utility Property	$ -	$ -	$ -	$ -
35	419 Interest and Dividend Income	779	779	-	779
36	427 Interest Expense	(13,333)	(13,333)	-	(13,333)
37	Total Other Income / (Expense)	$ (12,554)	$ (12,554)	$ -	$ (12,554)
38					
39	NET INCOME / (LOSS)	$ (122,700)	$ (108,062)	$ 303,516	$ 195,454
40					

Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Projected Statements of Changes in Financial Position
Present and Proposed Rates

Schedule F-2

Line No.		Test Year 12/31/2008	Projected Year Present Rates 12/31/2009	Projected Year Proposed Rates 12/31/2009
1	Source of Funds			
2				
3	Net Income from Operations	$ (122,699)	$ (108,062)	$ 195,454
4	Depreciation & Amortization	126,768	185,781	185,781
5	Operating Balance Sheet Changes:	-	-	-
6	(Incr)/Decr in Accounts Receivable	23,456	23,456	23,456
7	(Incr)/Decr in Other Receivables	5,259	5,259	5,259
8	Cash (to)/from Related Parties	1,380,285	1,380,285	1,380,285
9	(Incr)/Decr in Prepaid Expense	456	456	456
10	(Incr)/Decr in Deposits & Escrow	(890)	(890)	(890)
11	Change in Noncurrent Tax Assets/Liabilities	(6,367)	(6,367)	(6,367)
12	(Incr)/Decr in Other Assets	3,433	3,433	3,433
13	Incr/(Decr) in Accounts Payable	(5,617)	(5,617)	(5,617)
14	Incr/(Decr) in Retention Payable	-	-	-
15	Incr/(Decr) in Other Current Liabilities	(35)	(35)	(35)
16	Incr/(Decr) in Customer Dep & Prepay	(5,443)	(5,443)	(5,443)
17	Incr/(Decr) in Accrued Liabilities	(75,450)	(75,450)	(75,450)
18	Total Cash Flows from Operations	$ 1,323,156	$ 1,396,806	$ 1,700,322
19				
20	Cash Flows From Investing Activities:			
21	Fixed Asset Changes			
22	Fixed Asset Purchases	$ (1,697,924)	$ -	$ -
23	Construction Projects	442,057	-	-
24	Asset Disposals	-	-	-
25	Total Change to Fixed Assets	$ (1,255,867)	$ -	$ -
26	Depreciation on Asset Disposals	(156)	(156)	(156)
27	Total Cash Flows from Investing	$ (1,256,023)	$ (156)	$ (156)
28				
29	Cash Flows From Financing Activities:			
30	Meter/Line Extension Receipts	$ (10,336)	$ (10,336)	$ (10,336)
31	From ST Borrowing/LT Debt	(15,905)	-	-
32	Cash (to)/from GWR, LLC - related utilities	(20,170)	(20,170)	(20,170)
33	Equity (Withdrawals)/Contributions	-	-	-
34	Total Cash Flows from Financing	$ (46,411)	$ (30,506)	$ (30,506)
35				
36	Net Increase (Decrease) in Cash	$ 20,722	$ 1,366,144	$ 1,669,660
37				
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42				
43	Supporting Schedules:			
44	E-3			
45	F-3			

Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Projected Construction Requirements

Schedule F-3

Line No.	Property Classification	Through 12/31/2009	Through 12/31/2010	Through 12/31/2011
1				
2	Well Development	$ -	$ -	$ -
3				
4	Water Distribution Centers	-	-	-
5				
6	Treatment and/or Blending	-	-	-
7				
8	Pipelines	-	-	-
9				
10	SCADA	-	-	-
11				
12	Other	-	115,287	115,287
13				
14	Totals	$ -	$ 115,287	$ 115,287
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Assumptions

Line
No.

1 Revenues and expenses were projected using the pro forma changes to the test year
2 ending December 31, 2008.
3
4 Construction forecasts are based on estimated plant requirements including
5 new facilities, the replacement of existing facilities, and the improvement and
6 maintenance of infrastructure necessary to ensure safe and reliable service.
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Cost of Service Summary - Present Rates

Schedule G-1

Line
No.
1 The Company did not prepare a cost of service study due to its proposal
2 of a conservation-oriented rate design which is not based on costs.
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Cost of Service Summary - Proposed Rates

Schedule G-2

Line
No.
1 The Company did not prepare a cost of service study due to its proposal
2 of a conservation-oriented rate design which is not based on costs.
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Rate Base Allocation to Classes of Service

Schedule G-3

Line No.	
1	The Company did not prepare a cost of service study due to its proposal
2	of a conservation-oriented rate design which is not based on costs.
3	
4	
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Expense Allocation to Classes of Service

Schedule G-4

Line No.	
1	The Company did not prepare a cost of service study due to its proposal
2	of a conservation-oriented rate design which is not based on costs.
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Distribution of Rate Base by Function

Schedule G-5

Line
No.
1 The Company did not prepare a cost of service study due to its proposal
2 of a conservation-oriented rate design which is not based on costs.
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Distribution of Expenses by Function

Schedule G-6

Line
No.
1 The Company did not prepare a cost of service study due to its proposal
2 of a conservation-oriented rate design which is not based on costs.
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Development of Allocation Factors

Schedule G-7

Line
No.
1 The Company did not prepare a cost of service study due to its proposal
2 of a conservation-oriented rate design which is not based on costs.

Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Classification - Present and Proposed Rates

Schedule H-1

Line No.	Customer Classification	[A] Present Rates Adjusted Sch. H-2 Col. E	[B] Proposed Rates Sch. H-2 Col. F	[C] Proposed Increase Amount	[D] %
1					
2	Residential	$ 422,409	$ 824,855	$ 402,446	95.3%
3	Commercial	19,367	81,174	61,807	319.1%
4	Irrigation	12,835	41,429	28,594	222.8%
5	Construction	-	-	-	N/A
6					
7	Total Water Revenues	$ 454,612	$ 947,458	$ 492,846	108.4%
8					
9	Miscellaneous Revenues (Sch. C-1, L4)	19,743	25,453		
10					
11	Total Operating Revenues	$ 474,355	$ 972,911		
12					
13					
14					
15	Pro Forma Adjustments	8,639			
16	Subtotal (L11 + L15)	$ 482,994			
17					
18	Total Gen. Ledger Operating Revenues				
19	Test Year Ended 12/31/2008 (Sch. C-1, L5)	482,166			
20	Unreconciled Difference (L16 - L19)	828			
21	%	0.17%			
22					
23	Target Revenue Requirement (Sch. C-1, L5)		972,836		
24	Difference (L11 - L23)		75		
25	%		0.01%		
26					
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Analysis of Revenue by Detailed Class

Line No.	Class of Service	[A] Average Number of Customers	[B] Average Consumption	[C] Present Rates	[D] Adjustments	[E] Adjusted Present Rates [C + D]	[F] Proposed Rates	[G] Proposed Increase [F - E]	[H] %	[I] T.Y. Ended 12/31/2008	[J] Revenue Adjustments	[K] Adjusted G.L. Revenues [I + J]	[L] Unreconciled Difference [E - K]	[M] %
				Bill Count Water Revenues						General Ledger Water Revenues				
1	5/8" Residential	1,516	5,142	$ 418,571	$ (4,524)	$ 414,047	$ 809,202	$ 395,155	95.44%					
2	3/4" Residential	11	4,317	3,497	-	3,497	5,271	1,773	50.71%					
3	1" Residential	8	9,396	4,865	-	4,865	10,383	5,518	113.41%					
4	5/8" Commercial	2	2,375	454	-	454	821	367	N/A					
5	3/4" Commercial	2	35,222	1,426	(398)	1,028	2,617	1,589	154.49%					
6	1" Commercial	7	11,628	4,189	(289)	3,900	8,423	4,523	115.97%					
7	1" Commercial NT	1	48,833	1,386	-	1,386	3,517	2,131	153.82%					
8	1.5" Commercial	1	18,000	872	-	872	2,754	1,882	215.81%					
9	1.5" Commercial NT	1	72,500	1,961	-	1,961	5,997	4,036	205.77%					
10	6" Commercial	1	4,750	3,669	-	3,669	18,817	15,148	412.83%					
11	6" Commercial NT	2	6,750	7,504	-	7,504	38,139	30,635	408.27%					
12	Fire Line Commercial NT	1	1,083	76	-	76	88	13	16.79%					
13	2" Irrigation	2	4,955	4,955	-	4,955	13,357	8,403	169.59%					
14	4" Irrigation	1	5,414	5,414	-	5,414	18,580	13,166	243.16%					
15	4" Irrigation NT	1	3,750	2,466	-	2,466	9,492	7,025	284.86%					
16	2" Construction	1	-	630	(630)	-	-	-	N/A					
17	3" Construction	1	8,000	332	(332)	-	-	-	N/A					
18	Totals	1,559	5,456	$ 462,258	(6,172)	$ 456,094	$ 947,456	$ 491,364	107.73%					
19														
20	Total Residential	1,535	5,159	$ 426,933	$ (4,524)	$ 422,409	$ 824,855	$ 402,446	95.27%	$ 427,199	$ (6,846)	$ 420,255	$ 2,155	0.51%
21	Total Commercial	18	17,402	19,656	(289)	19,367	81,174	58,366	301.38%	20,893	(632)	20,260	(893)	-4.41%
22	Total Irrigation	4	69,125	12,835	-	12,835	41,429	28,594	222.78%	12,987	(100)	12,887	(52)	-0.40%
23	Total Construction	2	2,000	962	(962)	-	-	-	N/A	1,344	(962)	382	(382)	-100.00%
24	Totals	1,559	5,456	460,386	(5,775)	454,612	947,458	488,408	107.65%	$ 462,423	$ (8,539)	$ 453,784	828	0.18%
25														
26	Miscellaneous Revenue (Sch. C-1)			18,743	-	19,743	25,453	5,710	28.92%					
27	Total Revenue Generated						$ 972,911							
28	Target Revenue Requirement (Sch. C-1)						$ 972,836							
29	Over/(Short)						$ 75							
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Calculation of Change in Miscellaneous Service Charge revenue

Line No.		Current	Proposed	Increase	Test Year Charges	Revenue Increase
1						
2	Establishment	$ 35.00	$ 50.00	$ 15.00	137	$ 2,055
3	After Hours	45.00	100.00	55.00	2	110.00
4	Reconnect	35.00	75.00	40.00	80	3,200
5	Meter Re-Read	20.00	30.00	10.00	3	30
6	NSF Fees	15.00	30.00	15.00	21	315
7						
8	Proposed Misc. Service Charge Increase					$ 5,710
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Willow Valley Water Company, Inc.
Test Year Ended December 31, 2008
Changes in Representative Rate Schedules

Monthly Minimum Charges:

Meter Size (All Classes)	Basic Service Charge		
	Present	Proposed	Change
5/8" Meter	$ 16.25	$ 31.15	$ 14.90
3/4" Meter	22.25	31.15	8.90
1" Meter	37.25	77.88	40.63
1.5" Meter	45.00	155.75	110.75
2" Meter	105.00	249.20	144.20
3" Meter	150.00	498.40	348.40
4" Meter	200.00	778.75	578.75
6" Meter	300.00	1,557.50	1,257.50
8" Meter	N/A	3,115.00	N/A

Commodity Rate Charges:

Potable Water - All Meter Sizes and Classes	Rate Block		Volumetric Charge (/M Gal)		
	Present	Proposed	Present	Proposed	Change
Tier One Breakover (M Gal)	8	1	$ 1.10	$ 1.00	varies
Tier Two Breakover (M Gal)	999,999,999	5	1.70	2.60	varies
Tier Three Breakover (M Gal)	N/A	10	N/A	2.85	varies
Tier Four Breakover (M Gal)	N/A	18	N/A	3.50	varies
Tier Five Breakover (M Gal)	N/A	25	N/A	4.50	varies
Tier Six Breakover (M Gal)	N/A	999,999,999	N/A	5.45	varies

Conservation Rebate Threshold ("CBT")	6,401
Commodity rate rebate applied if consumption is below the CBT:	45%

Miscellaneous Service Charges	Present	Proposed
Establishment of Service	$ 35.00	$ 50.00
Establishment of Service (After Hours)	45.00	100.00
Re-establishment of Service (Within 12 Months)	*	*
Reconnection of Service (Delinquent)	35.00	75.00
Reconnection of Service - After Hours (Delinquent)	N/A	100.00
Meter Move at Customer Request	**	Per AAC R14-2-405.B.5
After Hours Service Charge, Per Hour	45.00	50.00
Deposit	***	***
Meter Re-Read (If Correct)	20.00	30.00
Meter Test Fee (If Correct)	30.00	50.00
NSF Check	15.00	30.00
Late Payment Charge (Per Month)	Greater of 1.5% or $5.00	Greater of 1.5% or $5.00
Deferred Payment Charge (Per Month)	1.50%	Greater of 1.5% or $3.50

* Number of Months off System times the monthly minimum per A.A.C. R14-2-403(D).
** Cost to include parts, labor, overhead and all applicable taxes.
*** Per A.A.C. R14-2-403(B).

Willow Valley Water Company
Test Year Ended December 31, 2008
Typical Bill Analysis

Schedule H-4

Description	Average Monthly Consumption	Present Rates	Proposed Rates	Proposed Increase Amount	Proposed Increase %
5/8" Residential	5,142	$ 21.91	$ 37.64	$ 15.74	71.83%
3/4" Residential	4,317	27.00	36.44	9.44	34.98%
1" Residential	9,396	48.42	101.80	53.38	110.24%
5/8" Commercial	2,375	18.86	33.67	14.80	78.48%
3/4" Commercial	35,222	77.33	172.01	94.68	122.44%
1" Commercial	11,628	52.22	109.22	57.01	109.17%
1" Commerical NT	48,833	115.47	292.92	177.45	153.68%
1.5" Commercial	18,000	70.80	209.40	138.60	195.76%
1.5" Commercial NT	72,500	163.45	499.78	336.33	205.77%
6" Commercial	4,750	305.23	1,563.41	1,258.19	412.22%
6" Commercial NT	8,750	310.08	1,579.59	1,269.51	409.42%
Fire Line Commercial NT	1,083	6.19	5.67	(0.52)	-8.44%
2" Irrigation	61,083	204.04	531.00	326.96	160.24%
4" Irrigation	150,583	451.19	1,548.33	1,097.14	243.16%
4" Irrigation NT	3,750	204.13	783.23	579.11	283.70%
2" Construction	-	105.00	249.20	144.20	137.33%
3" Construction	8,000	158.80	518.35	359.55	226.42%

Willow Valley Water Company
Test Year Ended December 31, 2008
Bill Count

Schedule H-5

Rate Schedule: 5/8" Residential

Block		Number of Bills by Block	Consumption by Blocks	Cumulative Bills No.	Cumulative Bills % of Total	Cumulative Consumption Amount	Cumulative Consumption % of Total
0		5,043	-	5,043	27.73%	-	0.00%
1,000	1,000	2,501	2,501,000	7,544	41.48%	2,501,000	2.67%
2,000	2,000	1,769	3,538,000	9,313	51.21%	6,039,000	6.46%
3,000	3,000	1,427	4,281,000	10,740	59.06%	10,320,000	11.04%
4,000	4,000	1,207	4,828,000	11,947	65.69%	15,148,000	16.20%
5,000	5,000	983	4,915,000	12,930	71.10%	20,063,000	21.45%
6,000	6,000	789	4,734,000	13,719	75.44%	24,797,000	26.52%
7,000	7,000	640	4,480,000	14,359	78.96%	29,277,000	31.31%
8,000	8,000	549	4,392,000	14,908	81.98%	33,669,000	36.00%
9,000	9,000	398	3,582,000	15,306	84.16%	37,251,000	39.83%
10,000	10,000	376	3,760,000	15,682	86.23%	41,011,000	43.86%
11,000	11,000	308	3,388,000	15,990	87.92%	44,399,000	47.48%
12,000	12,000	233	2,796,000	16,223	89.21%	47,195,000	50.47%
13,000	13,000	229	2,977,000	16,452	90.47%	50,172,000	53.65%
14,000	14,000	176	2,464,000	16,628	91.43%	52,636,000	56.28%
15,000	15,000	166	2,490,000	16,794	92.35%	55,126,000	58.95%
16,000	16,000	156	2,496,000	16,950	93.20%	57,622,000	61.61%
17,000	17,000	116	1,972,000	17,066	93.84%	59,594,000	63.72%
18,000	18,000	128	2,304,000	17,194	94.55%	61,898,000	66.19%
19,000	19,000	94	1,786,000	17,288	95.06%	63,684,000	68.10%
20,000	20,000	91	1,820,000	17,379	95.56%	65,504,000	70.04%
21,000	21,000	76	1,596,000	17,455	95.98%	67,100,000	71.75%
22,000	22,000	65	1,430,000	17,520	96.34%	68,530,000	73.28%
23,000	23,000	65	1,495,000	17,585	96.70%	70,025,000	74.88%
24,000	24,000	46	1,104,000	17,631	96.95%	71,129,000	76.06%
25,000	25,000	62	1,550,000	17,693	97.29%	72,679,000	77.71%
26,000	26,000	56	1,456,000	17,749	97.60%	74,135,000	79.27%
27,000	27,000	34	918,000	17,783	97.78%	75,053,000	80.25%
28,000	28,000	30	840,000	17,813	97.95%	75,893,000	81.15%
29,000	29,000	27	783,000	17,840	98.10%	76,676,000	81.99%
30,000	30,000	28	840,000	17,868	98.25%	77,516,000	82.89%
31,000	31,000	15	465,000	17,883	98.33%	77,981,000	83.38%
32,000	32,000	31	992,000	17,914	98.50%	78,973,000	84.45%
33,000	33,000	25	825,000	17,939	98.64%	79,798,000	85.33%
34,000	34,000	14	476,000	17,953	98.72%	80,274,000	85.84%
35,000	35,000	23	805,000	17,976	98.85%	81,079,000	86.70%
36,000	36,000	11	396,000	17,987	98.91%	81,475,000	87.12%
37,000	37,000	15	555,000	18,002	98.99%	82,030,000	87.71%
38,000	38,000	13	494,000	18,015	99.06%	82,524,000	88.24%
39,000	39,000	12	468,000	18,027	99.13%	82,992,000	88.74%
40,000	40,000	14	560,000	18,041	99.20%	83,552,000	89.34%
41,000	41,000	5	205,000	18,046	99.23%	83,757,000	89.56%
42,000	42,000	8	336,000	18,054	99.27%	84,093,000	89.92%
43,000	43,000	7	301,000	18,061	99.31%	84,394,000	90.24%
44,000	44,000	5	220,000	18,066	99.34%	84,614,000	90.48%
45,000	45,000	7	315,000	18,073	99.38%	84,929,000	90.81%
46,000	46,000	5	230,000	18,078	99.41%	85,159,000	91.06%
47,000	47,000	8	376,000	18,086	99.45%	85,535,000	91.46%
48,000	48,000	10	480,000	18,096	99.51%	86,015,000	91.97%
49,000	49,000	6	294,000	18,102	99.54%	86,309,000	92.29%
50,000	50,000	4	200,000	18,106	99.56%	86,509,000	92.50%
51,000	51,000	7	357,000	18,113	99.60%	86,866,000	92.88%
52,000	52,000	4	208,000	18,117	99.62%	87,074,000	93.11%
53,000	53,000	3	159,000	18,120	99.64%	87,233,000	93.28%
54,000	54,000	1	54,000	18,121	99.64%	87,287,000	93.34%
55,000	55,000	1	55,000	18,122	99.65%	87,342,000	93.39%
56,000	56,000	2	112,000	18,124	99.66%	87,454,000	93.51%
57,000	57,000	1	57,000	18,125	99.66%	87,511,000	93.57%
58,000	58,000	5	290,000	18,130	99.69%	87,801,000	93.88%
59,000	59,000	1	59,000	18,131	99.70%	87,860,000	93.95%
60,000	60,000	1	60,000	18,132	99.70%	87,920,000	94.01%
61,000	61,000	2	122,000	18,134	99.71%	88,042,000	94.14%
62,000	62,000	1	62,000	18,135	99.72%	88,104,000	94.21%
63,000	63,000	1	63,000	18,136	99.73%	88,167,000	94.28%
64,000	64,000	2	128,000	18,138	99.74%	88,295,000	94.41%
66,000	66,000	3	198,000	18,141	99.75%	88,493,000	94.62%
67,000	67,000	1	67,000	18,142	99.76%	88,560,000	94.70%
69,000	69,000	2	138,000	18,144	99.77%	88,698,000	94.84%
70,000	70,000	1	70,000	18,145	99.77%	88,768,000	94.92%
71,000	71,000	2	142,000	18,147	99.79%	88,910,000	95.07%

72,000	72,000	2	144,000	18,149	99.80%	89,054,000	95.22%
74,000	74,000	3	222,000	18,152	99.81%	89,276,000	95.46%
76,000	76,000	2	152,000	18,154	99.82%	89,428,000	95.62%
77,000	77,000	1	77,000	18,155	99.83%	89,505,000	95.71%
78,000	78,000	1	78,000	18,156	99.84%	89,583,000	95.79%
79,000	79,000	1	79,000	18,157	99.84%	89,662,000	95.87%
80,000	80,000	1	80,000	18,158	99.85%	89,742,000	95.96%
81,000	81,000	1	81,000	18,159	99.85%	89,823,000	96.05%
83,000	83,000	1	83,000	18,160	99.86%	89,906,000	96.14%
84,000	84,000	1	84,000	18,161	99.86%	89,990,000	96.23%
89,000	89,000	1	89,000	18,162	99.87%	90,079,000	96.32%
90,000	90,000	1	90,000	18,163	99.87%	90,169,000	96.42%
93,000	93,000	2	186,000	18,165	99.88%	90,355,000	96.62%
97,000	97,000	1	97,000	18,166	99.89%	90,452,000	96.72%
99,000	99,000	1	99,000	18,167	99.90%	90,551,000	96.83%
101,000	101,000	2	202,000	18,169	99.91%	90,753,000	97.04%
102,000	102,000	1	102,000	18,170	99.91%	90,855,000	97.15%
103,000	103,000	1	103,000	18,171	99.92%	90,958,000	97.26%
105,000	105,000	1	105,000	18,172	99.92%	91,063,000	97.37%
106,000	106,000	1	106,000	18,173	99.93%	91,169,000	97.49%
110,000	110,000	1	110,000	18,174	99.93%	91,279,000	97.60%
116,000	116,000	1	116,000	18,175	99.94%	91,395,000	97.73%
117,000	117,000	1	117,000	18,176	99.95%	91,512,000	97.85%
129,000	129,000	1	129,000	18,177	99.95%	91,641,000	97.99%
130,000	130,000	1	130,000	18,178	99.96%	91,771,000	98.13%
132,000	132,000	1	132,000	18,179	99.96%	91,903,000	98.27%
136,000	136,000	1	136,000	18,180	99.97%	92,039,000	98.42%
143,000	143,000	1	143,000	18,181	99.97%	92,182,000	98.57%
145,000	145,000	1	145,000	18,182	99.98%	92,327,000	98.72%
192,000	192,000	1	192,000	18,183	99.98%	92,519,000	98.93%
196,000	196,000	1	196,000	18,184	99.99%	92,715,000	99.14%
339,000	339,000	1	339,000	18,185	99.99%	93,054,000	99.50%
466,000	466,000	1	466,000	18,186	100.00%	93,520,000	100.00%
Totals		18,186	93,520,000	18,186		93,520,000	

Average No. of Customers:	1,518
Average Consumption:	5,142
Median Consumption:	2,000

Willow Valley Water Company
Test Year Ended December 31, 2008
Bill Count

Schedule H-5

Rate Schedule: 3/4" Residential

Block		Number of Bills by Block	Consumption by Blocks	Cumulative Bills No.	Cumulative Bills % of Total	Cumulative Consumption Amount	Cumulative Consumption % of Total
0		40	-	40	31.75%	-	0.00%
1,000	1,000	20	20,000	60	47.62%	20,000	3.68%
2,000	2,000	10	20,000	70	55.56%	40,000	7.35%
3,000	3,000	9	27,000	79	62.70%	67,000	12.32%
4,000	4,000	6	24,000	85	67.46%	91,000	16.73%
5,000	5,000	8	40,000	93	73.81%	131,000	24.08%
6,000	6,000	3	18,000	96	76.19%	149,000	27.39%
7,000	7,000	4	28,000	100	79.37%	177,000	32.54%
8,000	8,000	1	8,000	101	80.16%	185,000	34.01%
9,000	9,000	7	63,000	108	85.71%	248,000	45.59%
10,000	10,000	5	50,000	113	89.68%	298,000	54.78%
11,000	11,000	2	22,000	115	91.27%	320,000	58.82%
12,000	12,000	1	12,000	116	92.06%	332,000	61.03%
13,000	13,000	1	13,000	117	92.86%	345,000	63.42%
15,000	15,000	2	30,000	119	94.44%	375,000	68.93%
16,000	16,000	2	32,000	121	96.03%	407,000	74.82%
18,000	18,000	1	18,000	122	96.83%	425,000	78.13%
24,000	24,000	1	24,000	123	97.62%	449,000	82.54%
27,000	27,000	1	27,000	124	98.41%	476,000	87.50%
28,000	28,000	1	28,000	125	99.21%	504,000	92.65%
40,000	40,000	1	40,000	126	100.00%	544,000	100.00%
Totals		126	544,000	126		544,000	

Average No. of Customers:	11
Average Consumption:	4,317
Median Consumption:	2,000

Willow Valley Water Company
Test Year Ended December 31, 2008
Bill Count

Schedule H-5

Rate Schedule: 1" Residential

Block		Number of Bills by Block	Consumption by Blocks	Cumulative Bills No.	Cumulative Bills % of Total	Cumulative Consumption Amount	Cumulative Consumption % of Total
0		18	-	18	18.75%	-	0.00%
1,000	1,000	9	9,000	27	28.13%	9,000	1.00%
2,000	2,000	9	18,000	36	37.50%	27,000	2.99%
3,000	3,000	6	18,000	42	43.75%	45,000	4.99%
4,000	4,000	6	24,000	48	50.00%	69,000	7.65%
5,000	5,000	9	45,000	57	59.38%	114,000	12.64%
6,000	6,000	8	48,000	65	67.71%	162,000	17.96%
7,000	7,000	3	21,000	68	70.83%	183,000	20.29%
8,000	8,000	2	16,000	70	72.92%	199,000	22.06%
9,000	9,000	2	18,000	72	75.00%	217,000	24.06%
13,000	13,000	1	13,000	73	76.04%	230,000	25.50%
14,000	14,000	1	14,000	74	77.08%	244,000	27.05%
16,000	16,000	1	16,000	75	78.13%	260,000	28.82%
17,000	17,000	1	17,000	76	79.17%	277,000	30.71%
19,000	19,000	1	19,000	77	80.21%	296,000	32.82%
20,000	20,000	2	40,000	79	82.29%	336,000	37.25%
21,000	21,000	1	21,000	80	83.33%	357,000	39.58%
22,000	22,000	1	22,000	81	84.38%	379,000	42.02%
25,000	25,000	4	100,000	85	88.54%	479,000	53.10%
26,000	26,000	1	26,000	86	89.58%	505,000	55.99%
27,000	27,000	2	54,000	88	91.67%	559,000	61.97%
30,000	30,000	1	30,000	89	92.71%	589,000	65.30%
36,000	36,000	1	36,000	90	93.75%	625,000	69.29%
40,000	40,000	1	40,000	91	94.79%	665,000	73.73%
43,000	43,000	1	43,000	92	95.83%	708,000	78.49%
44,000	44,000	2	88,000	94	97.92%	796,000	88.25%
49,000	49,000	1	49,000	95	98.96%	845,000	93.68%
57,000	57,000	1	57,000	96	100.00%	902,000	100.00%
Totals		96	902,000	96		902,000	

Average No. of Customers:	8
Average Consumption:	9,396
Median Consumption:	4,500

Willow Valley Water Company
Test Year Ended December 31, 2008
Bill Count

Schedule H-5

Rate Schedule: 5/8" Commercial

Block		Number of Bills by Block	Consumption by Blocks	Cumulative Bills No.	Cumulative Bills % of Total	Cumulative Consumption Amount	Cumulative Consumption % of Total
0		1	-	1	4.17%	-	0.00%
1,000	1,000	7	7,000	8	33.33%	7,000	12.28%
2,000	2,000	9	18,000	17	70.83%	25,000	43.86%
3,000	3,000	3	9,000	20	83.33%	34,000	59.65%
4,000	4,000	2	8,000	22	91.67%	42,000	73.68%
5,000	5,000	1	5,000	23	95.83%	47,000	82.46%
10,000	10,000	1	10,000	24	100.00%	57,000	100.00%
Totals		24	57,000	24		57,000	

Average No. of Customers:	2
Average Consumption:	2,375
Median Consumption:	2,000

Willow Valley Water Company
Test Year Ended December 31, 2008
Bill Count

Schedule H-5

Rate Schedule: 3/4" Commercial

Block		Number of Bills by Block	Consumption by Blocks	Cumulative Bills No.	Cumulative Bills % of Total	Cumulative Consumption Amount	Cumulative Consumption % of Total
0		2	-	2	11.11%	-	0.00%
1,000	1,000	5	5,000	7	38.89%	5,000	0.79%
2,000	2,000	1	2,000	8	44.44%	7,000	1.10%
13,000	13,000	1	13,000	9	50.00%	20,000	3.15%
14,000	14,000	1	14,000	10	55.56%	34,000	5.36%
21,000	21,000	1	21,000	11	61.11%	55,000	8.68%
32,000	32,000	1	32,000	12	66.67%	87,000	13.72%
73,000	73,000	1	73,000	13	72.22%	160,000	25.24%
77,000	77,000	1	77,000	14	77.78%	237,000	37.38%
91,000	91,000	1	91,000	15	83.33%	328,000	51.74%
94,000	94,000	1	94,000	16	88.89%	422,000	66.56%
99,000	99,000	1	99,000	17	94.44%	521,000	82.18%
113,000	113,000	1	113,000	18	100.00%	634,000	100.00%
Totals		18	634,000	18		634,000	

Average No. of Customers:	2
Average Consumption:	35,222
Median Consumption:	13,500

Willow Valley Water Company
Test Year Ended December 31, 2008
Bill Count

Schedule H-5

Rate Schedule: 1" Commercial

Block		Number of Bills by Block	Consumption by Blocks	Cumulative Bills No.	Cumulative Bills % of Total	Cumulative Consumption Amount	Cumulative Consumption % of Total
0		8	-	8	10.26%	-	0.00%
1,000	1,000	3	3,000	11	14.10%	3,000	0.33%
2,000	2,000	3	6,000	14	17.95%	9,000	0.99%
3,000	3,000	7	21,000	21	26.92%	30,000	3.31%
4,000	4,000	6	24,000	27	34.62%	54,000	5.95%
5,000	5,000	5	25,000	32	41.03%	79,000	8.71%
6,000	6,000	4	24,000	36	46.15%	103,000	11.36%
7,000	7,000	8	56,000	44	56.41%	159,000	17.53%
8,000	8,000	4	32,000	48	61.54%	191,000	21.06%
9,000	9,000	3	27,000	51	65.38%	218,000	24.04%
12,000	12,000	1	12,000	52	66.67%	230,000	25.36%
13,000	13,000	4	52,000	56	71.79%	282,000	31.09%
14,000	14,000	4	56,000	60	76.92%	338,000	37.27%
16,000	16,000	1	16,000	61	78.21%	354,000	39.03%
19,000	19,000	1	19,000	62	79.49%	373,000	41.12%
20,000	20,000	1	20,000	63	80.77%	393,000	43.33%
23,000	23,000	1	23,000	64	82.05%	416,000	45.87%
24,000	24,000	2	48,000	66	84.62%	464,000	51.16%
25,000	25,000	1	25,000	67	85.90%	489,000	53.91%
28,000	28,000	1	28,000	68	87.18%	517,000	57.00%
29,000	29,000	1	29,000	69	88.46%	546,000	60.20%
30,000	30,000	1	30,000	70	89.74%	576,000	63.51%
32,000	32,000	1	32,000	71	91.03%	608,000	67.03%
33,000	33,000	1	33,000	72	92.31%	641,000	70.67%
36,000	36,000	1	36,000	73	93.59%	677,000	74.64%
37,000	37,000	1	37,000	74	94.87%	714,000	78.72%
38,000	38,000	1	38,000	75	96.15%	752,000	82.91%
46,000	46,000	1	46,000	76	97.44%	798,000	87.98%
54,000	54,000	1	54,000	77	98.72%	852,000	93.94%
55,000	55,000	1	55,000	78	100.00%	907,000	100.00%
Totals		78	907,000	78		907,000	

Average No. of Customers:	7
Average Consumption:	11,628
Median Consumption:	13,500

Willow Valley Water Company
Test Year Ended December 31, 2008
Bill Count

Schedule H-5

Rate Schedule: 1" Commercial - Non-Tax

Block		Number of Bills by Block	Consumption by Blocks	Cumulative Bills No.	Cumulative Bills % of Total	Cumulative Consumption Amount	Cumulative Consumption % of Total
23,000	23,000	1	23,000	1	8.33%	23,000	3.92%
28,000	28,000	1	28,000	2	16.67%	51,000	8.70%
32,000	32,000	1	32,000	3	25.00%	83,000	14.16%
43,000	43,000	1	43,000	4	33.33%	126,000	21.50%
44,000	44,000	1	44,000	5	41.67%	170,000	29.01%
46,000	46,000	1	46,000	6	50.00%	216,000	36.86%
52,000	52,000	1	52,000	7	58.33%	268,000	45.73%
57,000	57,000	1	57,000	8	66.67%	325,000	55.46%
61,000	61,000	1	61,000	9	75.00%	386,000	65.87%
62,000	62,000	1	62,000	10	83.33%	448,000	76.45%
67,000	67,000	1	67,000	11	91.67%	515,000	87.88%
71,000	71,000	1	71,000	12	100.00%	586,000	100.00%
Totals		12	586,000	12		586,000	

Average No. of Customers: 1

Average Consumption: 48,833

Median Consumption: 49,000

Willow Valley Water Company
Test Year Ended December 31, 2008
Bill Count

Schedule H-5

Rate Schedule: 1.5" Commercial

Block		Number of Bills by Block	Consumption by Blocks	Cumulative Bills No.	Cumulative Bills % of Total	Cumulative Consumption Amount	Cumulative Consumption % of Total
1,000	1,000	1	1,000	1	8.33%	1,000	0.46%
2,000	2,000	2	4,000	3	25.00%	5,000	2.31%
3,000	3,000	3	9,000	6	50.00%	14,000	6.48%
5,000	5,000	1	5,000	7	58.33%	19,000	8.80%
9,000	9,000	1	9,000	8	66.67%	28,000	12.96%
14,000	14,000	1	14,000	9	75.00%	42,000	19.44%
18,000	18,000	1	18,000	10	83.33%	60,000	27.78%
43,000	43,000	1	43,000	11	91.67%	103,000	47.69%
113,000	113,000	1	113,000	12	100.00%	216,000	100.00%
Totals		12	216,000	12		216,000	

Average No. of Customers: 1

Average Consumption: 18,000

Median Consumption: 4,000

Willow Valley Water Company
Test Year Ended December 31, 2008
Bill Count

Schedule H-5

Rate Schedule: 1.5" Commercial - Non-Tax

Block		Number of Bills by Block	Consumption by Blocks	Cumulative Bills No.	Cumulative Bills % of Total	Cumulative Consumption Amount	Cumulative Consumption % of Total
58,000	58,000	1	58,000	1	8.33%	58,000	6.67%
63,000	63,000	1	63,000	2	16.67%	121,000	13.91%
68,000	68,000	2	136,000	4	33.33%	257,000	29.54%
70,000	70,000	1	70,000	5	41.67%	327,000	37.59%
71,000	71,000	2	142,000	7	58.33%	469,000	53.91%
74,000	74,000	1	74,000	8	66.67%	543,000	62.41%
75,000	75,000	1	75,000	9	75.00%	618,000	71.03%
79,000	79,000	1	79,000	10	83.33%	697,000	80.11%
81,000	81,000	1	81,000	11	91.67%	778,000	89.43%
92,000	92,000	1	92,000	12	100.00%	870,000	100.00%
Totals		12	870,000	12		870,000	

Average No. of Customers: 1

Average Consumption: 72,500

Median Consumption: 71,000

Willow Valley Water Company
Test Year Ended December 31, 2008
Bill Count

Schedule H-5

Rate Schedule: 6" Commercial

Block		Number of Bills by Block	Consumption by Blocks	Cumulative Bills No.	Cumulative Bills % of Total	Cumulative Consumption Amount	Cumulative Consumption % of Total
1,000	1,000	4	4,000	4	33.33%	4,000	7.02%
2,000	2,000	3	6,000	7	58.33%	10,000	17.54%
5,000	5,000	1	5,000	8	66.67%	15,000	26.32%
7,000	7,000	1	7,000	9	75.00%	22,000	38.60%
8,000	8,000	1	8,000	10	83.33%	30,000	52.63%
11,000	11,000	1	11,000	11	91.67%	41,000	71.93%
16,000	16,000	1	16,000	12	100.00%	57,000	100.00%
Totals		12	57,000	12		57,000	

Average No. of Customers:	1
Average Consumption:	4,750
Median Consumption:	2,000

Willow Valley Water Company
Test Year Ended December 31, 2008
Bill Count

Schedule H-5

Rate Schedule: 6" Commercial - Non-Tax

Block		Number of Bills by Block	Consumption by Blocks	Cumulative Bills No.	Cumulative Bills % of Total	Cumulative Consumption Amount	Cumulative Consumption % of Total
0		11	-	11	45.83%	-	0.00%
1,000	1,000	1	1,000	12	50.00%	1,000	0.48%
5,000	5,000	1	5,000	13	54.17%	6,000	2.86%
6,000	6,000	1	6,000	14	58.33%	12,000	5.71%
7,000	7,000	3	21,000	17	70.83%	33,000	15.71%
9,000	9,000	1	9,000	18	75.00%	42,000	20.00%
10,000	10,000	1	10,000	19	79.17%	52,000	24.76%
11,000	11,000	1	11,000	20	83.33%	63,000	30.00%
12,000	12,000	1	12,000	21	87.50%	75,000	35.71%
42,000	42,000	1	42,000	22	91.67%	117,000	55.71%
43,000	43,000	1	43,000	23	95.83%	160,000	76.19%
50,000	50,000	1	50,000	24	100.00%	210,000	100.00%
Totals		24	210,000	24		210,000	

Average No. of Customers:	2
Average Consumption:	8,750
Median Consumption:	3,000

Schedule H-5

Willow Valley Water Company
Test Year Ended December 31, 2008
Bill Count

Rate Schedule: Commercial Fire Lines - Non-Tax

Block		Number of Bills by Block	Consumption by Blocks	Cumulative Bills No.	Cumulative Bills % of Total	Cumulative Consumption Amount	Cumulative Consumption % of Total
0		9	-	9	75.00%	-	0.00%
1,000	1,000	1	1,000	10	83.33%	1,000	7.69%
2,000	2,000	1	2,000	11	91.67%	3,000	23.08%
10,000	10,000	1	10,000	12	100.00%	13,000	100.00%
Totals		12	13,000	12		13,000	

Average No. of Customers: 1

Average Consumption: 1,083

Median Consumption:

Willow Valley Water Company
Test Year Ended December 31, 2008
Bill Count

Schedule H-5

Rate Schedule: 2" Irrigation

Block		Number of Bills by Block	Consumption by Blocks	Cumulative Bills No.	Cumulative Bills % of Total	Cumulative Consumption Amount	Cumulative Consumption % of Total
0		12	-	12	50.00%	-	0.00%
28,000	28,000	1	28,000	13	54.17%	28,000	1.91%
39,000	39,000	1	39,000	14	58.33%	67,000	4.57%
55,000	55,000	1	55,000	15	62.50%	122,000	8.32%
57,000	57,000	1	57,000	16	66.67%	179,000	12.21%
76,000	76,000	1	76,000	17	70.83%	255,000	17.39%
110,000	110,000	1	110,000	18	75.00%	365,000	24.90%
115,000	115,000	1	115,000	19	79.17%	480,000	32.74%
118,000	118,000	1	118,000	20	83.33%	598,000	40.79%
127,000	127,000	1	127,000	21	87.50%	725,000	49.45%
227,000	227,000	1	227,000	22	91.67%	952,000	64.94%
230,000	230,000	1	230,000	23	95.83%	1,182,000	80.63%
284,000	284,000	1	284,000	24	100.00%	1,466,000	100.00%
Totals		24	1,466,000	24		1,466,000	

Average No. of Customers: 2

Average Consumption: 61,083

Median Consumption: 14,000

Willow Valley Water Company
Test Year Ended December 31, 2008
Bill Count

Schedule H-5

Rate Schedule: 4" Irrigation

Block		Number of Bills by Block	Consumption by Blocks	Cumulative Bills No.	Cumulative Bills % of Total	Cumulative Consumption Amount	Cumulative Consumption % of Total
69,000	69,000	1	69,000	1	8.33%	69,000	3.82%
72,000	72,000	1	72,000	2	16.67%	141,000	7.80%
73,000	73,000	1	73,000	3	25.00%	214,000	11.84%
77,000	77,000	1	77,000	4	33.33%	291,000	16.10%
112,000	112,000	1	112,000	5	41.67%	403,000	22.30%
118,000	118,000	1	118,000	6	50.00%	521,000	28.83%
134,000	134,000	1	134,000	7	58.33%	655,000	36.25%
147,000	147,000	1	147,000	8	66.67%	802,000	44.38%
185,000	185,000	1	185,000	9	75.00%	987,000	54.62%
195,000	195,000	1	195,000	10	83.33%	1,182,000	65.41%
312,000	312,000	1	312,000	11	91.67%	1,494,000	82.68%
313,000	313,000	1	313,000	12	100.00%	1,807,000	100.00%
Totals		12	1,807,000	12		1,807,000	

Average No. of Customers: 1

Average Consumption: 150,583

Median Consumption: 126,000

Schedule H-5

Willow Valley Water Company
Test Year Ended December 31, 2008
Bill Count

Rate Schedule: 4" Irrigation - Non-Tax

Block		Number of Bills by Block	Consumption by Blocks	Cumulative Bills No.	Cumulative Bills % of Total	Cumulative Consumption Amount	Cumulative Consumption % of Total
0		9	-	9	75.00%	-	0.00%
1,000	1,000	1	1,000	10	83.33%	1,000	2.22%
17,000	17,000	1	17,000	11	91.67%	18,000	40.00%
27,000	27,000	1	27,000	12	100.00%	45,000	100.00%
Totals		12	45,000	12		45,000	

Average No. of Customers: 1

Average Consumption: 3,750

Median Consumption: -

Willow Valley Water Company
Test Year Ended December 31, 2008
Bill Count

Schedule H-5

Rate Schedule: 2" Construction

Block	Number of Bills by Block	Consumption by Blocks	Cumulative Bills No.	Cumulative Bills % of Total	Cumulative Consumption Amount	Cumulative Consumption % of Total
0	6	-	6	100.00%	-	100.00%
Totals	6	-	6		-	

Average No. of Customers: 1

Average Consumption: -

Median Consumption: -

Willow Valley Water Company
Test Year Ended December 31, 2008
Bill Count

Schedule H-5

Rate Schedule: 3" Construction

Block		Number of Bills by Block	Consumption by Blocks	Cumulative Bills No.	Cumulative Bills % of Total	Cumulative Consumption Amount	Cumulative Consumption % of Total
5,000	5,000	1	5,000	1	50.00%	5,000	31.25%
11,000	11,000	1	11,000	2	100.00%	16,000	100.00%
Totals		2	16,000	2		6	

Average No. of Customers: 1

Average Consumption: 8,000

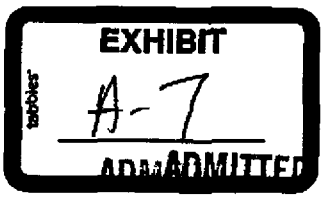
Median Consumption: 8,000

EXHIBIT A-7

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS
KRISTIN K. MAYES, Chairman
GARY PIERCE
PAUL NEWMAN
SANDRA D. KENNEDY
BOB STUMP

IN THE MATTER OF THE APPLICATION OF GLOBAL WATER – PALO VERDE UTILITIES COMPANY FOR THE ESTABLISHMENT OF JUST AND REASONABLE RATES AND CHARGES FOR UTILITY SERVICE DESIGNED TO REALIZE A REASONABLE RATE OF RETURN ON THE FAIR VALUE OF ITS PROPERTY THROUGHOUT THE STATE OF ARIZONA.	DOCKET NO. SW-03575A-09-



Direct Testimony

of

Trevor T. Hill

February 20, 2009

TABLE OF CONTENTS

I. Introduction.

Q. Please state your name and business address.

A. My name is Trevor T. Hill. My business address is 21410 North 19th Avenue, Suite 201, Phoenix, Arizona 85027.

Q. By whom are you employed and what is your position?

A. I am President and Chief Executive Officer of Global Water Resources, LLC ("Global Parent") and Global Water Management, LLC ("Global Management"). I also serve as the President of all of Global Parent's regulated subsidiaries (the "Global Utilities"). I will refer to Global Parent, Global Management, and our regulated subsidiaries as "Global Water."

Q. Please provide a brief summary of your educational and work experience.

A. I graduated in 1987 from the Royal Military College with a Bachelor of Engineering in Mechanical Engineering. I attended the Royal Naval Engineering College in Plymouth, England where I completed my post-graduate studies in 1988. I served with the Canadian Navy as an Engineering Officer retiring in 1994 after serving as Deputy Engineering officer in HMCS Huron in the Gulf War 1991 where I was decorated with the Gulf Kuwait Medal.

In 1994 I co-founded Hill, Murray & Associates, a design-build-operate firm specializing in the construction and operation of water reclamation facilities in British Columbia and the Canadian Arctic. I was instrumental in developing water reclamation codes, rules and regulations for the Province of British Columbia. In 2000, I co-founded Algonquin Water Resources of America, a division of the Algonquin Power Income Fund. In my role of Director of Operations for AWRA ("AWRA"), I led the acquisition team, acquiring 6 utilities in three years with 37,000 customers in Arizona and Texas.

In 2003, I co-founded Global Parent, a company established to acquire regulated water and wastewater utilities in the Southwestern states and to advance the cause of water reclamation and reuse as a conservation methodology in the State of Arizona. As President & CEO of Global Parent, I am responsible for acquisition activities and the overall operations of Global Parent. In addition, I provide leadership and policy direction with respect to water reclamation and re-use, water use efficiency and the economics of water reclamation. I am a registered Professional Engineer licensed in British Columbia.

Q. Please summarize your work history, awards and affiliations.

A. These are included on Attachment Hill-1.

Q. Please describe the Global Utilities.

A. Under my direction, the Global Utilities are one of the state's largest water, wastewater and recycled water operations. The Global Utilities are recognized leaders in groundwater conservation and sustainable utility planning in Arizona. The service areas of the Global Utilities are in some of the fastest growing areas of the state – Western Maricopa County and Western Pinal County. Our mission is reconciling that extraordinary growth with environmental concerns, in particular water scarcity. Together, the Global Utilities serve more than 68,000 people at more than 41,000 connections.

Q. Who are the investors in Global Parent?

A. Our investors are shown on Attachment Hill-2. They include our senior management team, as well as well-known and respected local investors like Bill Levine and Dan Cracchiolo. All of our investors live in Arizona.

Q. Please summarize the history of Global Water.

A. In 2003, I co-founded Global Parent to acquire regulated water and wastewater utilities in the Southwestern states. Dan Cracchiolo and Bill Levine were partners and Mr. Levine provided $25 million and access to a $60 million line of credit backed by his personal resources. Our central vision from day one has been to demonstrate the need and the wisdom of adopting water recycling as a means of ensuring sustainable development and conservation.

We saw that there was a critical need for utilities to be both integrated and conservation-focused in this state. And we knew that an explosion of growth was going to impact areas controlled by small, undercapitalized and under-engineered utilities, or by no utilities at all. So, my co-founders and I recognized that private water companies would therefore play an ever more important role as growth reached and overwhelmed these areas, and that Arizona faced serious groundwater issues and that water supply would be a limiting factor in growth.

So we formed Global Parent to consolidate utilities and correct what we saw was a fundamental flaw in the water resources planning. We aimed to change the paradigm in the utility/developer relationship, and impress a high level of resource conservation infrastructure into our service areas.

Q. What are Global Water's accomplishments?

A. Our talented team of employees have accomplished many things. Perhaps most remarkable has been the progress made in the Maricopa region. The City of Maricopa is emblematic of two critical factors: rapid population growth and water scarcity. In 2005, Maricopa was the fastest growing municipality in America, growing explosively over six years. In fact, the area's population has increased from 1,000 residents in 2000 to

40,000[1] in 2008. Through the dedication and creativity of our employees, and the foresight of our investors, we were able to not only keep up with this growth, but to also to deploy extensive water recycling and water conservation measures on a scale not seen before in Arizona.

We have emplaced over $200 million of infrastructure in five years. We have saved nearly 1.5 billion gallons[2] of potable water by providing recycled water *instead of* groundwater for numerous outdoor uses. We have worked hard to improve awareness, understanding, and support of water recycling and reuse –we have conducted polling and focus groups (entirely paid for by our shareholders) and found that we have 'moved the needle' on public acceptance of this important water resource. Relevant Polling Data is included as Attachment Hill-3.

Q. What topics do you address in your testimony?

A. I address the following topics:

- I provide an overview of our rate application.
- I discuss the steps we have taken to limit the size of our requested rate increase.
- I discuss the impact of the downturn in the economy and slower growth; and I describe how we are responding to these extraordinary challenges.
- I describe our plan to limit the impact to customers by phasing in the rate increase for Palo Verde.
- I describe our "Total Water Management" philosophy.
- I describe our "Public Private Partnership" agreements.

[1] Based on 15,387 active connections in September 2008 and the Special Census conducted by the City in 2005, which determined the average household population was 2.68 people per home.
[2] In the period 27 September 2004 to 31 December 2008, Global Water – Palo Verde Utilities Company delivered 1,456,000,000 gallons of Class A+ Recycled Water for beneficial reuse.

- I describe the benefits of our regional strategy, such as promoting water conservation and economies of scale.
- I describe our ICFA agreements.

Q. What other witnesses are providing direct testimony for the Global Utilities?

A. We know that the Commission will take a hard look at this rate request; and we have assembled a team of witnesses to support our requests:

Graham Symmonds, Global Water's Chief Technical Officer, explains our approach to conservation-focused, regional and efficient infrastructure and testifies that our facilities are used and useful. He explains how this approach leads to lower long term costs and promotes water conservation. He describes our green billing system, and our renewable energy study. He describes our experience in addressing the infrastructure problems of small water utilities acquired by Global Water. He introduces our innovative rate design, which promotes water conservation and allows customers to reduce their bills by conserving. He also addresses changes to specific fees and tariffs.

Greg Barber, Global Water's Chief Financial Officer, testifies concerning cost allocation, test year expenses and rate base and our cost of debt.

Matthew Rowell of Desert Mountain Analytical Services, and formerly Chief Economist of the Commission, explains the importance of consolidating the many small, inefficient and poorly capitalized water utilities in Arizona. He describes our Single Tariff Pricing proposal for the West Valley, and he demonstrates how Single Tariff Pricing promotes consolidation of small utilities. He explains how our ICFA agreements create appropriate regulatory incentives to pursue consolidation, and to emplace regional water infrastructure in the face of growth and water scarcity. He also testifies concerning the

regulatory and ratemaking treatment of the ICFA agreements. Finally, he testifies concerning the Global Utilities' cost of capital.

Jamie Moe, Global Water's regulatory accountant, and formerly a rate analyst for the Commission, will testify concerning our requested adjustment mechanisms, including our groundbreaking request for a renewable energy adjustor to support renewable, distributed energy facilities at our water recycling plants. He also testifies in support of the various adjustments made in the rate schedules.

Q. Will any of the Global Utilities be requesting emergency rates prior to a final order in this case?

A. No. However, we will be asking for an arsenic surcharge for Valencia Water Company – Town Division. The surcharge will be based on the Commission's standard Arsenic Cost Recovery Mechanism ("ACRM"). It will recover the costs of meeting the federal government's arsenic standard.

Q. What utilities are involved in this case?

A. Six utilities are involved: Global Water - Palo Verde Utilities Company, Global Water – Santa Cruz Water Company, Valencia Water Company – Town Division, Valencia Water Company – Greater Buckeye Division, Water Utility of Greater Tonopah, and Willow Valley Water Company.

Q. Please provide an organizational chart of these utilities.

A. A chart is provided as Attachment Hill-4.

Q. How many customers will be impacted?

A. We are filing rate applications for 6 utilities today; this affects about twenty-five thousand Arizona families and businesses.

We recognize that the timing of rate increases – in the midst of a severe recession and an unprecedented real estate market collapse – is extremely unfortunate. But we have to act now to establish reasonable rates and to ensure that the Global Utilities remain financially stable and able to continue to access debt and equity capital. That being said, even though the utilities are entitled to significant rate relief, we are also proposing several significant steps to help mitigate the rate increase – steps which allow the consumer the ability to control their own costs. These innovations will have particular benefit for those on fixed incomes, and those with lower incomes.

Q. What increases would these customers experience under the Global Utilities' proposed rates?

A. The overall revenue increases are shown on the following table:

Utility	**% increase in Revenues**
Global Water – Palo Verde Utilities Company	130.2%
Global Water – Santa Cruz Water Company	33.8%
Valencia Water Company – Town Division	57.4%
Valencia Water Company – Greater Buckeye Division	46.1%
Water Utility of Greater Tonopah	261.4%
Willow Valley Water Company	105.1%

The impact on average residential bills (based on all residential meter sizes during the Test Year) is projected to be:

Utility	% increase
Global Water – Palo Verde Utilities Company	119.2%
Global Water – Santa Cruz Water Company	15.6%
Valencia Water Company – Town Division	58.0%
Valencia Water Company – Greater Buckeye Division	44.9%
Water Utility of Greater Tonopah	226.8%
Willow Valley Water Company	95.3%

For a residential customer with a 5/8" meter and consuming the average usage for the utility, the rate increases have the following impact:

Utility	Average Usage (gallons)	Current Monthly Cost (5/8" Meter)	Proposed Monthly Costs (5/8" meter)
Global Water – Palo Verde Utilities Company	N/A	$33.00	$71.11[3]
Global Water – Santa Cruz Water Company	7,827	$42.75	$49.75
Valencia Water Company – Town Division	5,817	$29.64	$41.37
Valencia Water Company – Greater Buckeye Division	9,068	$40.94	$60.24
Water Utility of Greater Tonopah	7,346	$47.62	$107.63
Willow Valley Water Company	5,142	$21.91	$37.64

[3] This increase is proposed to be phased in over three years at the following: Year 1 = $45.70, Year 2 = $58.40, Year 3 = $71.11.

Note that Global has proposed the consolidation of rates in three utilities (Valencia Water Company – Town Division, Valencia Water Company – Greater Buckeye Division, and Water Utility of Greater Buckeye). In this case, assuming a residential customer using 7,000 gallons, the rates under the individual and consolidated rates would be:[4]

Utility	Usage (gallons)	Current Monthly Cost (5/8" Meter)	Proposed Monthly Costs[5] (5/8" meter) without Consolidation	Proposed Monthly Cost under Single Tariff Pricing for the West Valley Region
Global Water – Palo Verde Utilities Company	N/A	$33.00	$71.11[6]	N/A
Global Water – Santa Cruz Water Company	7,000	$40.60	$37.93	N/A
Valencia Water Company – Town Division	7,000	$33.02	$50.75	$49.69
Valencia Water Company – Greater Buckeye Division	7,000	$49.00	$46.66	$49.69
Water Utility of Greater Tonopah	7,000	$46.20	$104.52	$49.69
Willow Valley Water Company	7,000	$23.95	$48.25	N/A

Q. What steps are the Global Utilities taking to mitigate these increases?

A. We are proposing some groundbreaking approaches to mitigate our rate requests:

[4] The data in this table is derived from Schedule H-4 and displays 5/8" residential meters with a consumption of 7,000 gallons.

[5] These amounts show the impact of the Rebate Threshold Rate structure for Santa Cruz and Valencia – Greater Buckeye.

[6] This increase is proposed to be phased in over three years at the following: Year 1 = $45.70, Year 2 = $58.40, Year 3 = $71.11.

First, we exclude substantially all executive compensation[7], as well as all lobbying and conservation oriented outreach and education activities from rates.

Second, we propose phased-in rates for Palo Verde (our largest utility in rate base terms) which will move that utility to our proposed return over the next 4 years. This significantly mitigates the impact on ratepayers and recognizes that Global's shareholders are committed to working through these tough times with our customers.

Third, also in Palo Verde, we propose shifting revenue requirements away from residential customers and towards large users of recycled water. By increasing the cost of recycled water the Commission can:

a. Reduce the rate increase needed from residential ratepayers; and

b. Encourage large users to conserve Arizona's only growing source of water, recycled water.

Fourth, the Global Utilities propose a new rate design for water rates – Rebate Threshold Rates. The new rate design is designed to encourage conservation and to allow customers to reduce their bills by reducing their usage. We believe that this rate design has many benefits. The rate design includes the following:

a. An increased number of tiers; and

b. A provision for a rebate for customers that reduce usage.

Our rate design is described in Mr. Symmonds's direct testimony.

Fifth, we are not asking for rates based on "fair value" rate base, and are limiting our request to original cost rate base.

[7] 84% of executive compensation is paid directly by our shareholders and not included in rates.

Sixth, we are imputing the Global Parent tax-free bond debt to Santa Cruz and Palo Verde, thereby lowering their overall rate of return.

Seventh, we have elected to stipulate to Staff's return on equity methodology, as proposed in recent water and wastewater cases, rather than asking for a higher return.

Q. Why are the Global Utilities filing rate applications now?

A. There are several reasons for seeking rate relief now. Our original rates in all companies included in this application were established eight to 10 years ago[8]. Many of our costs have increased dramatically over that timeframe. In addition, Global Water has deployed significant amounts of plant to service these regions. Further, the economic reality is that we are experiencing a large number of foreclosures[9]. While we anticipated and planed for the slowdown in the economy, the combined effects of the above is that our revenues, profitability, and ability to meet cash coverage and other obligations have been impaired. Finally, the Commission Staff has recently completed their staff report on Global Water's application in support of a potential Initial Public Offering. In that report, Staff has recommended that "the Global-Santa Cruz and Global-Palo Verde utilities should file rate cases by March 31, 2010 using 2009 as a test year."[10]

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[8] The Global Utilities established or amended rates under the following decisions: Willow Valley - Decision No. 63612 (April 27, 2001),WUGT - Decision No. 62092 (November. 19, 1999),Valencia Water Co. - Decision No. 60832 (May 11, 1998)(now Valencia – Town Division),WUGB - Decision No. 60386 (Aug. 29, 1997) (now Valencia – Greater Buckeye Division), Palo Verde / Santa Cruz – Decision No. 61943 (September 17, 1999).

[9] Palo Verde and Santa Cruz currently have an 11% vacancy rate. Valencia Water Co. – Town Division currently has a 9% vacancy rate. Further, we are seeing an increase in delinquent accounts (2.3% of active customers across the Global Utilities are greater than 61 days past due on their accounts).

[10] Staff Report, Recommendation 1, Docket W-20446A-08-0247, et al.

Q. Why are the Global Utilities requesting that rate applications for those six utilities be consolidated?

A. There are three reasons. **First**, we strongly believe in the integration of water, wastewater and recycled water services. Because the provision of these three services (water, wastewater and recycled water) is so closely linked, we believe that, when possible, the rates for these three services should be determined in one proceeding.

Second, we understand that the Commission will want to examine the role and relationship of Global Water Management to the Global Utilities. We listened to the Commission's concerns and in response we implemented a new cost allocation method, as further explained in Mr. Barber's testimony. However, we expect that the Commission will want to fully examine the relationship between Global Water Management and the Global Utilities. This examination should be simpler if all the utilities are before the Commission in the same proceeding.

Third, there are common issues that impact each of the Global Utilities. For example, testimony concerning cost of equity, cost of debt, cost allocation, and total water management applies to each utility.

Q. Are the Global Utilities proposing to consolidate the rates of any of their divisions or entities?

A. We are proposing rate consolidation (Single Tariff Pricing) for three of the utilities, Water Utility of Greater Tonopah, Valencia Town Division, and Valencia Greater Buckeye Division.

Q. What is Global proposing for the West Valley utilities involved in this filing?

A. We have filed and provided the Commission with the information necessary to set rates for each of the three utilities independently; but we are also suggesting that we have a dialogue about consolidating those utilities.

I understand that the Commission generally prefers that rates be consolidated where systems are interconnected. Applying that requirement is an obstacle to consolidation. Further, we can see by looking at a map of the Water Utility of Greater Tonopah that this standard has not been met. Water Utility of Greater Tonopah has eight separate utility systems consolidated under one tariff.

I believe that rates should be consolidated in order to further the cause of water and wastewater company consolidation – the Commission adopted that as a policy goal ten years ago, but Arizona has more than 10% more companies today.

We are therefore proposing a regional consolidation of the three utilities in the West Valley of Maricopa County. This is an area that has long been concerned with growth and its water resource situation. As the Commission knows, ADWR continues to work with over 20 parties on a water analysis for the Lower Hassayampa Sub-Basin; and there are tens of thousands of homes in planning (most of us believe that those homes will in fact one day be built and occupied).

For the West Valley utilities, we have therefore filed individual, standard-form rate cases, and are also filing a proposed 'consolidated' approach. This consolidated or "Single Price Tariff" approach will also mitigate the large rate increase facing customers of Water Utility of Greater Tonopah. We look forward to the dialogue on this approach.

II. Impact of slower growth and poor economy.

Q. Please elaborate on the situation in Pinal County.

A. Greater than one in every ten homes in Maricopa is now vacant.[11] There is no way to overstate the impact of this on our community: businesses are closing, families are leaving, tax revenues are falling. The situation in our primary service area is dire. According to Elliot Pollack, 71% of home re-sales in Pinal County in October 2008 were foreclosed properties.[12]

Q. What is the situation in the West Valley?

A. This situation is similar in the West Valley.[13]

Q. How has this impacted the Global Utilities?

A. They are under-earning and are in poor financial condition. Palo Verde is currently earning a 0.24% rate of return on a rate base of more than $63 million. The three West Valley utilities are collectively earning negative 10.01% on their rate bases. Willow Valley is earning negative 4.9%. Santa Cruz has the "best" return, of 4.35%, yet well below the lowest returns authorized by the Commission.

Q. Please provide some perspective on growth in Arizona.

A. Arizona has been one of the nation's most consistent growth states. In the 1980s, our state grew 35%[14], in the 1990s 40%[15], and we will, I believe, end this decade with at least

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[11] As of 31 January 2009, Santa Cruz and Palo Verde have vacancy rates of 11.3% (1887 vacant accounts from a base of 16,671) and 11.4% (1877 vacant accounts from a base of 16,468) respectively.

[12] Speech at ASU/Chase Bank's 45th Annual Economic Forecast, December 10, 2008.

[13] As of 31 January 2009, Valencia Town Division has a vacancy rate of 9.4% (511 vacant accounts from a base of 5,439).

25% growth. Arizona cannot stop planning and investing in resource conservation -- growth will return, droughts will occur, and for Arizona to prosper in the future we must conserve water.

Two elements drive Arizona's economic engine: Job growth and affordable housing. Both have now turned negative.

Dr. Lee McPheters, Research Professor of Economics at the W.P. Carey School of Business, Arizona State University presented his economic assessment and forecast at a recent conference. (Attachment Hill-5). Regarding job growth he concludes that:

- Arizona is the second-worst state in the nation for job growth in 2008, losing 39,000 jobs (a 1.5% decline).
- Arizona will lose 26,000 more jobs in 2009 (a 1% decline).

Elliot Pollack, of Elliot Pollack & Company, is a recognized expert on Arizona housing. He also presented at the 45th Annual Economic Forecast (Attachment Hill-6). Regarding housing he concludes that:

- Arizona has not seen the peak in foreclosures;
- Foreclosures and distressed housing are making new housing uneconomic;
- Population growth has clearly slowed which means it will take longer to clear excess homes from the market; and
- Arizona has between 30,000 and 40,000 excess homes – the housing market will not recover until perhaps 2012 or 2013.

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[14] US Census, www.censusscope.org/us/s4/chart_popl.html.
[15] Ibid.

Our state faces major challenges on the path to recovery. Predictions are that job growth will not improve until 2010 and our housing market will not recover until 2012 at the earliest. The Arizona growth engine has stopped. This does not mean Arizona will not recover. Housing affordability has improved (as a result of falling home prices), and Arizona continues to be home to vibrant companies which will again grow. In fact, the US Census Bureau believes that Arizona will move into the top ten most populous states by 2030, growing by 109% to 10.7 million people.[16]

Global Water was created in a housing boom and a record drought. Our company is designed to handle explosive growth and difficult weather conditions. This does not mean that we cannot handle downturns, or that wet years obviate the need for total water management. As explained later in this testimony, Global Water has reduced its staffing, reorganized its operations, and embarked on new business platforms such as Global Green Billing. We are retooling and adapting to today's conditions, but we continue to believe that Arizona's future will involve growth and water scarcity – and our collective ability to manage those two challenges will determine our state's success.

Q. How has Global Water responded to the economic downturn?

A. Global Water has addressed this issue by reducing expenses and conserving capital through the following:

1. Economies and Efficiencies Task Force (EETF)

The EETF is chartered with the responsibility of determining methods and practices to reduce operating costs to a minimum acceptable level consistent with ensuring compliant operations at all times. The goal of the EETF is to review operating costs associated with

[16] US Census Bureau, Press Release CB05-02, April 21, 2005. Attached at Attachment Hill-11.

plant operations and to devise operating protocols, capital improvements or other mechanisms to reduce costs. The EETF has allowed us to cut $233,265 from our operating expenses.

2. Capital project deferrals

All capital projects have been placed on hold with the exception of those which will increase operational efficiency or those that are necessary to maintain compliance. For example, our projected capital budget for 2009 has been reduced from $16.9 million to $12.2 million.

3. Staff Reductions, Eliminated Bonuses, Stopped all Cost of Living and Pay Raises, Reduced Overtime, and Shifting Executive Pay Burden to Shareholders

Global Water made significant staffing reductions in our growth, permitting and support departments. Since September 2008, Global has reduced staffing levels from 111 to 85 people. Historically we have relied on bonuses to incent and recognize meeting predetermined performance targets, but we eliminated bonuses this year. We have foregone all cost of living and pay raises, and we have reduced overtime dramatically. As a result, we have reduced our labor related costs by $1,516,000 annually (excluding benefits). Our shareholders -- and not our ratepayers -- also continued to pay 84% of the costs of executives. This costs our shareholders about $963,000 annually (excluding benefits).

4. Billing efficiency

Further, we are advancing our Green Billing Initiatives designed to increase our customer's use of ACH, eCare and other automatic payment choices. Further information about our Green Billing initiative can be found in Mr. Symmonds' testimony.

5. Renegotiating Standing Obligations

Global Water has renegotiated rent and services contracts. This has reduced our costs by $262,259 annually.

6. Travel

All non-essential travel has been eliminated. This has saved $60,000 annually.

III. Palo Verde Rate Phase-In.

Q. Why are the Global Utilities proposing a rate phase in for Palo Verde?

A. Global Water is keenly aware of the major economic issues impacting our customers in the City of Maricopa. As noted in earlier testimony, Elliot Pollack & Company has determined that 71% of home resales in Pinal County during October 2008 were foreclosed properties. Fully 11% of homes in our Maricopa service area are vacant. While gasoline price declines have helped our commuter city, customers in Maricopa are in a very difficult time.

We regret the need to seek any increase at all. We have taken numerous steps to reduce the impact of the rate increase: we have laid-off 20% of our staff, we have stopped all growth-oriented capital expenditures, Global's owners pay 84% of the salaries of executives. All marketing and lobbying expenses are borne by Global's owners. We have reduced rent and service contract fees. We eliminated all non-essential travel.

Nonetheless, we cannot continue with our current rates. We propose increases in recycled water charges to fill (about 11.3%) of the shortfall.[17] But that will still not be enough to maintain our long term viability and our near term need to continue to attract capital and commercial financing.

Q. Please review Palo Verde's financial situation.

A. Palo Verde has an adjusted rate base of $63,637,830. This rate based plant serves 16,460 connections[18], or $3,866/connection. However, this number does not include $14,449,976 of plant which the Commission ordered to be built. Although the ACC order[19] virtually mandates the inclusion of this plant in rate base, we are voluntarily omitting the inclusion of this $14,449,976 of plant from rate base and thus from rates. Mr. Rowell explains how our ICFA agreements allow us to make this decision. Palo Verde has $6,484,785 of operating expenses (unadjusted) and $6,605,304 of revenue (unadjusted). Thus, on $63 million of assets, Global earns $120,519 per year.

A significant rate hike is necessary to rectify this situation. However, we believe it would be inappropriate to seek this hike in one stage in today's environment – so we are offering to phase in recovery, and to forego significant returns while phasing in the increase.

[17] This filing proposes to increase recycled water consumptive rates from $0.31/1000 gallons to $2.00/1000 gallons. In the test year (2008) this increases recycled water revenue by $960,871 on an overall requested revenue increase of $8,491,249.

[18] Based on connections at December 31, 2008. Note that the "active" connection in PVUC at December 31, 2008 was 14,580.

[19] Decision No. 68448 (February 2, 2006).

Q. Please explain the rate phase in proposal for Palo Verde.

Global Water proposes that the Commission phase in the rate increase to reduce rate shock, to allow consumers to adapt to the new charges, and to ensure that the Global Utilities will, over time, earn a reasonable return.

Our proposal is that the Commission move Palo Verde to new rates in three steps, providing for one-third of the approved revenue increase in each year. Global Water is aware that this means it will not earn a 10% return on its $63 million investment until the final phase-in takes effect in perhaps 2013 or 2014. Nonetheless, we believe this is a fair approach in light of the extraordinary economic situation.

IV. Total Water Management.

Q. What do you mean by "Total Water Management"?

A. Total Water Management is Global Water's approach to managing scarce water resources in high-growth areas. A key tenet of Total Water Management is the use of recycled water for non-potable purposes, such as irrigation of parks, common areas, medians, and even residential yards. We described our approach in our book, *Total Water Management: Resource Conservation in the Face of Population Growth and Water Scarcity*. A copy of our book is available at:

http://www.gwresources.com/pdf/twm.pdf

Interestingly, these fundamentals are gaining worldwide attention. The Pacific Institute's biannual report "The World's Water 2008-09"[20] states:

[20] The World's Water 2008-09, Chapter 1, Peak Water, Meena Palaniappan and Peter H. Gleick

> Peter Gleick and others coined the concept of a "soft path for water" (Gleick 2002, 2003; Wolff and Gleick 2002; Brooks 2005). The "soft path" is a comprehensive approach to water management, planning, and use that relies on water infrastructure but combines it with improvements in the overall productivity of water use, the smart application of economics to encourage efficiency and equitable use, innovative new technologies, and the strong participation of communities and local water users in making decisions. Rather than seek endless sources of new supply, the soft path matches water services to the scale of the users' needs, and it takes environmental and social concerns into account to ensure that basic human needs and the needs of the natural world are both met.

In addition, the soft path leads to water systems that supply water of various qualities for different uses. These concepts are all included in our Total Water Management approach.

The impacts of climate, growth, and demographic migration all point to water scarcity as the fundamental issue to be addressed in Arizona's future. Energy and gas can be transported over large distances relatively inexpensively. Water has such a profound cost of transportation that it must remain a regional issue – managed locally for the benefit of residents.

Since we published *Total Water Management*, much debate has occurred and some people misconstrue what Global Water is arguing for – to be clear, we believe that Arizona's policy leaders must demand that recycled water be used in lieu of ground or surface water whenever and wherever it is available; second, water and wastewater utilities must be consolidated rapidly and integrated service providers must be the norm;

and lastly, all water and wastewater infrastructure planning should occur on a regional scale.

This does not mean that water-only utilities need to go 'extinct', but it does mean that they should explore ways of working with recycled water providers, and that where possible, new utilities should be approved on an integrated model.

Q. What issues does *Total Water Management* address?

A In *Total Water Management,* we make the case that by using recycled water, surface water, and recharge, utilities avoid exposure to the non-controllable costs of energy and treatment. We prove that recycled water and surface water use can and do massively reduce groundwater consumption. And we demonstrate that recycling wastewater rather than relying only on recharge not only reduces costs but it maintains aquifer quality.

The final point of the book is that total water management succeeds when implemented on a regional scale. This is where the Commission plays an enormous role; in fact the Commission will determine whether regional operations arise in water management. And in making that determination, either through action or inaction, the Commission will decide whether or not Arizona's future involves total water management.

Further, by defining regional recycled water policies, the Commission will not only be saving water, it will imprint a reduction of overall power demand in the State.[21]

The Commission must move beyond supporting consolidation and begin incenting it. We make recommendations in Mr. Rowell's testimony for ways to accomplish that without

[21] See "*The Energy and Water Efficiency Benefits of Distributed Recycled Water Production Facilities*", attached to Mr. Symmonds' testimony.

burdening ratepayers. Because there have been no incentives for consolidation, Global Water used its ICFA mechanism to overcome the very high prices that CC&Ns achieved earlier this decade. The reason for our growth is because we studied how to implement total water management – we wrote a book encapsulating our studies – and concluded that we needed large regions where we could control aquifers, bring in surface water, and plan recycled water manufacturing and distribution.

By using ICFAs to achieve regional size through consolidation and acquisition we have obviated the need for the Commission to consider 'acquisition premiums'. We are not seeking to put the costs of those acquisitions into rates, that is a major benefit of our ICFA mechanism, and again, it was used in order to achieve total water management.

Mr. Symmonds details the results of Total Water Management in his testimony, but in summary, we have saved 1.5 billion gallons of groundwater through our Maricopa operations. We have recharged over 1.9 billion gallons of surface water into the troubled Lower Hassayampa Sub-basin.

Q. What does Mr. Symmonds say about Total Water Management?

A. His testimony addresses how we implement Total Water Management and the benefits we are seeing. I won't summarize his extensive testimony, but two key findings jump out:

1) **Regional infrastructure promotes conservation.** Mr. Symmonds looks at the data from the systems that have Total Water Management, and our older systems that do not. There is a stark difference in water usage – Total Water Management has a significant effect. The problem is that these older areas really can't be fixed -- it's just too expensive to rip up streets after the fact and install recycled water lines. It's not like electricity,

where distribution lines can carry "clean" energy just as well as traditional energy. For water conservation, the recycled water infrastructure needs to be put in right at the start.

It's true that customers can make some reductions on their own, but we have to be realistic about how much can be done. Turning off the faucet when brushing your teeth matters – and we are proposing to incent those consumer-driven conservation choices directly through our Rebate Threshold Rates – but the consumer can only do so much. Customers cannot radically change their way of life without the necessary infrastructure and support. As President Obama said in his inaugural address, we have to protect both our way of life and the environment.

2) **Consider long-term costs.** Mr. Symmonds also describes how Total Water Management costs more at the onset, but creates long term costs savings. He also describes how developers take the opposite approach, which leads to inefficient infrastructure with high long term costs. That is why we think it is important that the utility, under the Commission's guidance, make these infrastructure decisions, rather than the developers.

V. Public Private Partnership (P3) Agreements.

Q. Please explain the Public Private Partnership (P3) agreements signed by Global Parent.

A. Global Water believes very strongly in developing good relationships with the communities served by the Global Utilities. This includes the need for cooperation with the cities we serve. The P3s serve to formalize the close relationship we have developed with the Cities of Maricopa and Casa Grande. The P3s provide a number of benefits:

- Close cooperation on water conservation measures;

- Mutual exchange of development information, such as building permits, GIS data and water hook-ups;
- Coordination of Regional Planning;
- Coordination of the City's obligation under Arizona's Growing Smarter legislation;
- Emergency services co-ordination via SCADA (fire flow responses etc)
- Expedited processing of certain permits;
- A commitment to meet and discuss issues often; and
- Access to public streets rights of way.

Q. How many P3s has Global Parent signed?

A. Global Parent has P3s with the City of Maricopa, the City of Casa Grande and the City of Eloy. A copy of the Maricopa P3 is attached as Attachment Hill-7, a copy of the Casa Grande P3 is attached as Attachment Hill-8, and a copy of the Eloy P3 is attached as Attachment Hill-9. We have also entered into a formal resource management agreement with the Town of Buckeye. Further, we have a Letter of Understanding with the Ak-Chin Indian Community regarding regional conservation and resource management issues.

Q. Please explain the P3 payments.

A. There are two types of payments. The first is based on a set amount for each new hook-up. The second is a fee based on revenues. The payments are intended to compensate the Cities for the Global Utilities' access to public rights of way. Thus, the payments are similar to franchise fee payments.

Q. How do the P3s relate to water conservation?

A. One of the main reasons the cities signed the P3s was their deep concern about future water resources. They fully understood the benefits of integrated utilities that could

provide Total Water Management. Indeed, the P3s provide for close cooperation on water conservation measures.

Q. In this rate case, are the Global Utilities requesting any special ratemaking treatment because of the P3s?

A. Yes. The Global Utilities request approval of the pass-through of the franchise fee expenses incurred under the P3 agreements. Global Parent has been paying these costs to date, and it is appropriate that they are now charged directly to the appropriate utilities. Mr. Moe addresses this request in his testimony.

VI. Benefits of Regional Approach.

Q. What are Global Water's strategies for dealing with growth?

A. We have three interlinked strategies: (1) regionalization; (2) cooperation with cities, towns and Native American communities; and (3) acquisition of undercapitalized or distressed utilities.

Q. Please explain the benefits of regionalization.

A. Global Water believes that regional operations are a prerequisite of Total Water Management. Too often Arizona has seen competing uses of water within AMAs that each divine their own "estimate" of groundwater and then pump as if there was no interconnection between their various estimates. In fact, Global Water is directly involved in ADWR's efforts to manage the Lower Hassayampa Sub-basin in western Maricopa County. In that sub-basin we can see the demonstration of this phenomenon.

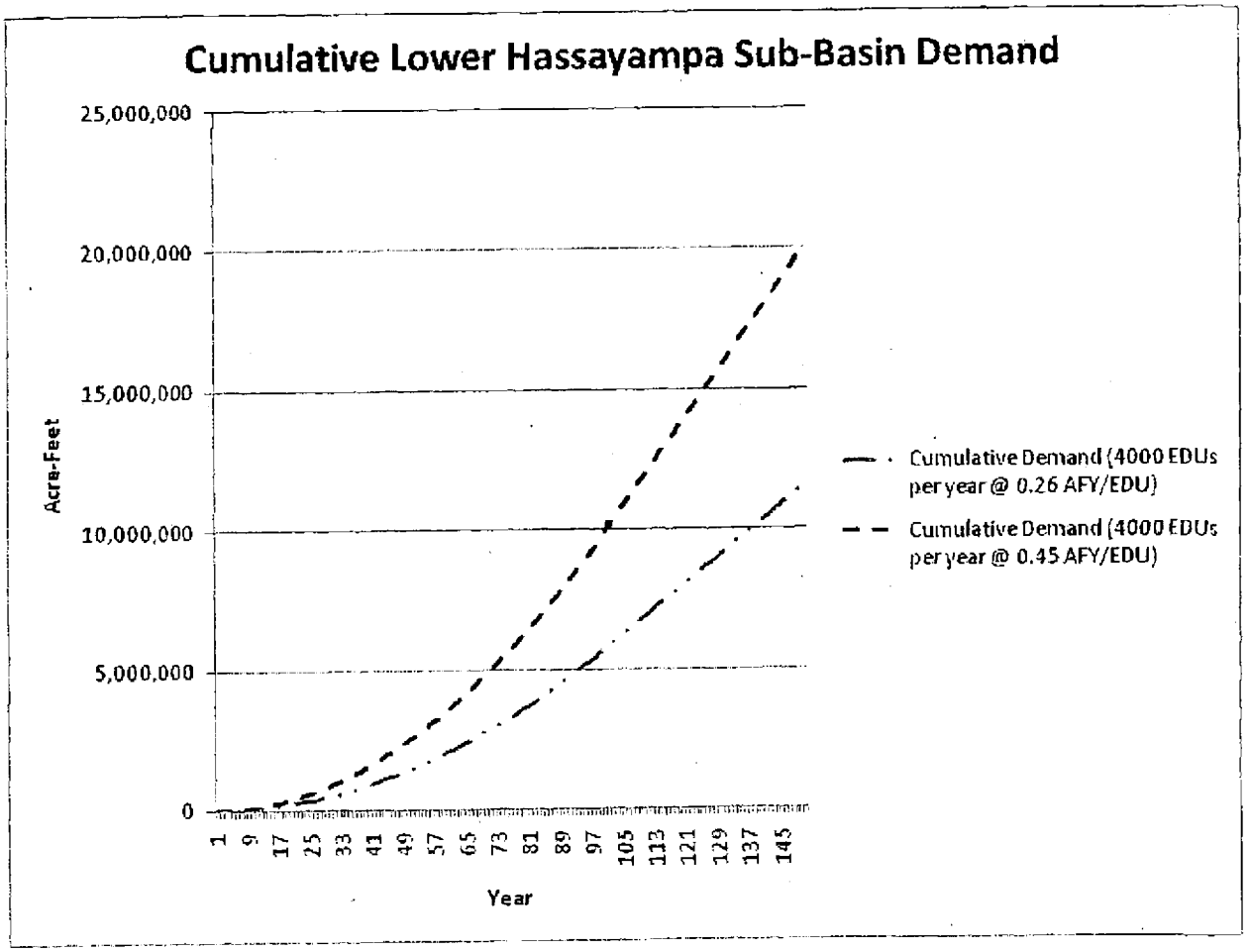
In the Lower Hassayampa Sub-Basin, there are 13 Analysis of Assured Water Supply ("Analysis or Analyses") in the sub-basin, which in total, could provide authority to

pump 198,000 acre-feet of groundwater each year. Further, there are 55,000 acre-feet of pending Analyses in the basin. Extensive groundwater modeling completed by the developers at the request of ADWR indicates that under the present water use parameters (0.42 acre-feet per dwelling unit per year) there are insufficient supplies to ensure that all developments meet their 100 year Assured Water Supply.[22]

As a part of the *entitlement process*, developers hire consultants that 'prove up' water supplies and those supplies are then allocated in Certificate of Assured Water Supply (CAWS). The story of Hassayampa sub-basin is the story of countless aquifers in our state. When there is no regional oversight and no collaboration, we over-allocate groundwater and over-pumping occurs. Indeed without a Designated water supplier, sources cannot be moved around the service area, and the issues are exacerbated.

With the introduction of regionalized water resources management and an integrated service provider, this area can support development and can extend supply well beyond 100 years.

[22] In the Brown and Caldwell model, the pumping results in "dry cells" in developments indicating that the groundwater table has been reduced lower than 1100 ft Below Land Surface.



In addition, regionalization helps us achieve economies of scale. This is essential to making use of recycled water economically feasible.

Q. What are the obstacles to regionalization?

A. There are major obstacles to regionalization: history, funding, and trust are the largest. Global Water has worked tirelessly to overcome those obstacles – we have public-private partnerships with the cities we serve, we have signed a memorandum of understanding with our neighbors, the Ak-Chin Indian Community. We have created transparency and open communication with those entities. We have settled our differences with Arizona Water Company and now regard them as a valuable and vital partner. We have formed alliances with Universities and Colleges; we share resources and donated land to federal agencies studying water issues and agriculture. We have won numerous awards for our

public awareness and outreach campaigns. Everyone at Global Water, from Mr. Levine to our newest employees, is proud of that work and the results we have achieved.

Q. How has the regional approach been funded?

A. We use equity from our investors, as well as low cost tax-free bonds. In addition, a key component of our approach to funding regional infrastructure has been to have developers agree to pay some of the carrying costs of infrastructure, through our ICFA agreements. We know that this funding approach has been of great interest to the Commission, and we will address it again in this case – but there can be no doubt that ICFAs allowed us to emplace $200 million worth of regional infrastructure in a very short period of time. This needs to be compared to the normal and historic approach to water/wastewater infrastructure which has resulted in a myriad of small water companies many of which are (or were originally) developer owned.

Global Water has long argued that developer-emplaced and/or financed infrastructure is almost always designed to be the lowest capital cost, with little or no thought given to water efficiency or long-term operation and maintenance costs. We will continue to support our ICFA model in this case as we believe that all evidence points to its vital role in our total water management approach.

Q. Have ICFAs been used for other purposes?

A. Yes. They have been used to help us acquire under-capitalized and poorly-run utilities. Global Water used ICFA revenues to acquire seriously distressed entities such as the West Maricopa Combine, the 387 Domestic Water & Wastewater Improvement Districts, and CP Water Company. We also use ICFA revenues to acquire Francisco Grande which is not distressed – because it had no customers. But it had no capability to serve, although it had a massive service area. By using ICFAs to acquire and consolidate those

utilities we bring them *into our* regional water recycling vision, and we avoid any need for 'acquisition adjustments' which are often merely means of making existing customers pay for the consolidation – a consolidation which benefits developers. Under ICFAs the developers help pay for their benefit.

VII. ICFA agreements.

Q. Having addressed ICFA issues for several years now, can you put the issue into some context?

A. As I reflect on the cooperation between Global Water and the Commission, it seems that we are on the same side of the major issues confronting water utilities:

- The need for regionalization, through consolidation and large-scale planning.
- The need for recycled water in water supply planning.
- The need to use rates as an incentive for conservation.
- Accessing low-cost bond debt in a balanced manner, protecting utilities from excessive debt burdens while using the lowest cost capital available and imputing bond debt to the appropriate regulated entity.
- The need for consolidation of small, under-funded water companies.
- The need for utilities to bear the burden in emergency situations, like Desert Hills, Hacienda Acres, and Sabrosa.
- The need to go much further than the minimum standard in ADWR's BMPs.
- The preference for DAWS over CAWS to maximize conservation.
- The need to educate the public on water reclamation and recycling.
- The need for growth to be paid by growth.

Global Water has used the ICFA to implement the policy vision that Global Water and the Commission share. In that context, we believe that Global Water and the Commission can reach agreement on the accounting mechanism for this valuable tool.

Q. What is an ICFA?

A. An ICFA (Infrastructure Coordination and Financing Agreement) is a voluntary contract between Global Parent and a landowner. These contracts provide for Global Parent to coordinate the planning, financing and construction of off-site water, wastewater and recycled water plant. The Global Utilities will own and operate this plant when construction is complete. Under the ICFAs, Global Parent is responsible for funding both the planning and construction of water, wastewater and recycled water plant. This is a significant investment for Global Parent. The landowners who enter into the ICFAs agree to cooperate with Global Parent's plant planning and construction process. ICFAs formalize the cooperation between the landowner and Global, but also provide fees which allow Global Parent to impress conservation and consolidation into the regional planning initiatives. These fees are intended to recover a portion of the carrying costs for the very expensive facilities required to implement effective water conservation and, in some cases, to fund Global Parent's acquisition of existing utilities.

Q. Does Global Parent pay taxes on the revenues received under ICFAs?

A. Yes. We pay taxes on ICFAs as part of our consolidated revenues – tax liability on the $60 million received is $24 million.

Q. Please describe the fees contained within the ICFAs.

A. ICFAs typically require landowners to pay a fee related to acquisition of utilities and the carrying costs of the funds associated with plant planning and construction to Global Parent. Importantly, most of these fees are typically due at the time of final plat approval,

(*i.e.*, when the grading may begin on the land), after Global Parent has provided planning, financing, and construction services. These fees are paid on a per equivalent dwelling unit ("EDU") basis.

Q. How much money has Global Parent received through ICFAs?

A. Global Parent has received $60,084,123 from ICFAs. Global Parent incurred $24,057,683 in tax liability from ICFA revenues, leaving $34,859,816 net of taxes.

Q. How much was received by year?

A. In 2004, Global Parent received $4,998,566

In 2005, Global Parent received $20,543,310

In 2006, Global Parent received $25,939,677

In 2007, Global Parent received $4,656,470

In 2008, Global Parent received $3,946,100

In 2009, Global Parent does not expect to collect any ICFA fees.

Q. How much of those ICFA revenues did Global Parent use for acquisitions and consolidation of utilities?

A. From 2004 through year-end 2008 we spent $83,080,153 for acquisitions and consolidations, but $33,762,427 of that total reflects our ownership group's initial acquisition of Palo Verde and Santa Cruz. Of the remaining $49,317,726 spent on acquisitions, $5,445,924 was for the acquisitions of Cave Creek Water Company and its affiliate Pacer Equities – that acquisition also did not involve ICFAs. Thus our ICFA-related acquisitions costs are $43,871,802; this is money that has been paid out and does not include any future obligations.

Q. What areas are covered by ICFAs?

A. Maps showing areas covered by ICFAs are included as Attachment Hill-10.

Q. Do the ICFAs grant some type of monopoly or right to serve those areas?

A. Absolutely not. Only the Commission can do that through the CC&N process. In fact, the ICFAs contain express provisions for termination if the Commission does not grant the Global Utilities a CC&N for the area covered by the ICFA. Furthermore, the ICFA mechanism is a voluntary financing methodology offered to landowners. Landowners always have the choice to enter into standard main and line extension agreements.

Q. *How do ICFAs relate to conservation?*

A. First of all, they eliminate the developer-financed approach which almost always builds the lowest-capital cost solution and ignores both long-term costs such as energy and treatment, and avoids investing in water recycling and recharge.

Second, ICFAs allow for many developers to support one regional plan. The ICFAs contain a 'most favored nation' term in ICFAs, which assures developers that no competing developer (in the same group of ICFAs) has struck a 'better deal' with Global. Additionally, ICFAs allowed us to consolidate and acquire CC&Ns – I use the term CC&N rather than utility because the vast majority of our acquisition efforts didn't yield us usable and well-designed utilities, we were always buying CC&N rights that had long ago accrued to undercapitalized providers who had neither the interest not the capability of enacting meaningful regional planning.

Finally, ICFAs allowed Global to partially offset the carrying costs of emplacing $200+ million of utility plant in a five-year period. And that scope of investment was needed to provide maximum water recycling. In the case of Palo Verde and Santa Cruz, in an area

called the "Southwest Area" we received requests for service from developers, applied to the Commission for a service area extension which we received. The developers moved their projects forward, receiving final plat approval from Pinal County and informing us that development was imminent; we began work. We received $5,042,392 in ICFA fees and built $32,391,318 of plant to serve customers. Today, those plants stand idle. The pipes are in the ground, but are dry. Under the ICFA model, despite having a Commission order[23] instructing Santa Cruz and Palo Verde to complete these facilities, we believe that we should not seek its inclusion in rate base.

As I explained in my Direct Testimony in the Arizona Water complaint case (filed August 14, 2007 in Docket W-01445A-06-0200 et al.), under the ICFAs "Global Parent is exposed to a large risk if development is slower than anticipated. For example, Global Parent may construct infrastructure for an area, only to see the area develop much slower than anticipated. Utilities, and their customers, should be shielded from these risks. Global Parent's investors have a lot of experience with development, and they are willing to take these risks. The ICFA structure helps keep these development risks at the parent level, where they belong."

Today, that exact situation has come to pass. Under the rules of the Commission we had received valid requests for service and the Commission ordered us to build $32 million of plant. In this rate case, we believe that our investors should exclude that plant from rate base; and the $5,042,392 we received under those ICFAs will offset some of the carrying costs of that plant.

[23] Decision No. 68448 (February 2, 2006).

Q. Does this conclude your direct testimony?

A. Yes.

Hill
Exhibits

Hill 1

Trevor Hill – Awards and Work History

Occupational Summary

- 2003 – Co-Founder, President & CEO, Member of the Board of Directors, Global Water Resources
- 2001 – Co-Founder, Director of Operations, Algonquin Water Resources of America
- 2000 – General Manager, Water Division, Conor Pacific Environmental
- 1994 – Founder, President and CEO, Hill, Murray & Associates Inc.
- 1991 – Marine Systems Engineering Officer, Naval Engineering Unit Pacific
- 1988 – Deputy Engineering Officer, HMCS Huron

Credentials, Affiliations

- 2008 – Member, Young Presidents' Organization ("YPO"), Sonoran Chapter
- 2008 – Member, Greater Phoenix Economic Development Council
- 2008 – Member, Arizona Investment Council
- 2008 – Member, Board of Directors, WESTMARC
- 2008 – Member, External Advisory Board, Maricopa County *Green Initiative Program*
- 2007 – Member, Canada Arizona Business Council
- 2007 – Member, Utility Communicators International
- 2007 – Member, Valley Forward
- 2007 – Member, Board of Directors, Pinal Partnership
- 2006 – Member, American Water Works Association
- 2006 – Advisory Board Member, Arizona Water Institute External Advisory Board
- 2006 – Member, Pinal County Drought Impact Task Force
- 2006 – Board Member, Investor Owned Water Utilities Association ("IOWUA")
- 2005 – Member, WateReuse Association
- 1989 – Registered Professional Engineer, British Columbia
- 1988 – Post Graduate Studies, Royal Naval Engineering College, Manadon, UK
- 1987 – B.Eng. - Mechanical Engineering, Royal Military College, Kingston

Awards/Honors

- 2008 – Phoenix Business Journal and BestCompaniesAZ, 2008 Best Places to Work in the Valley - Medium Business Category
- 2008 – Phoenix Business Journal, 2008 Power Player
- 2008 – WateReuse Public Education Award of Merit
- 2008 – WP Carey School of Business, Spirit of Enterprise Award Finalist
- 2008 – 29th Annual Telly Awards – Two Bronze Awards ("Water Crisis" and Global Water Center LEED Certified Videos)
- 2008 – Utility Communicators Awards: First Place Award – Single Newspaper Ad; First Place Award – Series of Newspaper

Ads; Second Place Award – Potpourri (Water Crisis Video); Best of Show – Newspaper /Magazine Ad

- 2008 – Entrepreneur Magazine's Hot 100 of 2007 - Ranked #5
- 2008 – State Compensation Fund, Best of the Best 2007
- 2008 – Arizona ADDY® Award (Bronze), Consumer or Trade Publication/Four Color Print Campaign
- 2007 – Phoenix Business Journal and BestCompaniesAZ, 2007 Best Places to Work in the Valley - Medium Business Category
- 2007 – Arizona Business Magazine, Economic Engine of Arizona Award
- 2007 – Valley Forward Crescordia Award, Environmental Education/Communication - Private Sector
- 2007 – Valley Forward Award of Merit, Buildings and Structures - Industrial and Public Works
- 2007 – Utility Communicators Award of Distinction - Awards Print Competition
- 2007 – Arizona Small Business Association Spotlight Award - Commerce
- 2007 – Arizona Small Business Association's 50 Companies to Watch Award
- 2007 – Ernst & Young Entrepreneur of the Year, Orange County Division
- 1999 – Top 40 Under 40 Award, Business in Vancouver, January 1999
- 1998 – ZENON Merit Award for Design, October 1998
- 1998 – Finalist, Entrepreneur of the Year Award, Pacific Region, Canada, October 1998
- 1997 – BC Ministry of Environment, Lands and Parks, Minister's Environmental Award, Business/Industry Category
- 1997 – Nominated, Entrepreneur of the Year Award, Pacific Region, Canada
- 1996 – ZENON Merit Award for Design
- 1991 – Decorated, Gulf Kuwait Medal

Hill 2

GLOBAL WATER RESOURCES MEMBERS

NAME	PERCENTAGE
Bill Levine	42.44%
Dan Cracchiolo	6.13%
Andrew Cohn	12.5%
Trevor Hill	23.29%
Leo Commandeur	11.65%
Graham Symmonds	2.5%
Cindy Liles	1.5%

Hill 3

SURVEY OF GLOBAL WATER COMPANY CUSTOMERS AND NON-CUSTOMERS IN CASA GRANDE, COOLIDGE, FLORENCE AND QUEEN CREEK, ARIZONA

Prepared for:

Global Water Company
and
Park and Company

Volume I – Summary and Analysis

Prepared by:

Behavior Research Center, Inc.
1101 North First Street
Phoenix, Arizona 85004
(602) 258-4554

TABLE OF CONTENTS

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Research in Public Opinion, Public Policy & Consumer Behavior
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INTRODUCTION

This study was commissioned by Global Water Company and Park and Company to explore the view of selected Pinal and Maricopa County residents as they pertain to water sewer services in their community. A total of 400 heads of household were interviewed via telephone including 200 randomly selected from a list of customers provided by Global Water Company and 50 each selected at random from each of four regions in the county: Florence, Casa Grande, Coolidge and Queen Creek, which is in Maricopa County.

The purpose of the survey was to explore the following issues:

- Brand equity of Global Water Company in the community overall and among its customers.
- Consumer contribution to water conservation and water re-use after it has been treated and reclaimed.
- Evaluation of water providers on service dependability, water quality, pricing and community service.
- Awareness and Image of Global Water Company.
- Public concern about drought in Arizona and willingness to participate in water conservation and support under reclamation strategies.
- Customer awareness of Global sewer service.

All of the interviewing on this project was conducted between October 16 and 24, 2005, at BRC's Computer Aided Telephone Interviewing (CATI) facility in Phoenix, Arizona. Interviewing was conducted during an approximately equal cross section of late afternoon, evening and weekend hours. This procedure was followed to further ensure that all residents were equally represented, regardless of work schedules. Further, during the interviewing segment of this study, up to four separate attempts – on different days and during different times of day – were made to contact each selected household. Only after four unsuccessful attempts was a selected household substituted in the sample.

All of the interviewers who worked on this project were professional interviewers of BRC. Each had prior experience with BRC and received a thorough briefing on the particulars of this study. During the briefing, the interviewers were trained on (a) the purpose of the study; (b) sampling procedures; (c) administration of the questionnaire; and (d) other project-related items. In addition, each interviewer completed a set of practice interviews to assure that all procedures were understood and followed.

One hundred percent of the interviews were edited and any containing errors of administration were pulled, the respondent recalled, and the errors corrected. In addition, 15 percent of each interviewer's work was randomly selected for validation to ensure its authenticity and correctness. No problems were encountered during this phase of interviewing quality control.

As the data collection segment of this study was being undertaken, completed and validated interviews were turned over to BRC's in-house coding department. The coding department edited, validated and coded the interviews. Following completion of coding, a series of validity and logic checks were run on the data to ensure it was "clean" and representative of the sample universe.

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When analyzing the results of this survey it should be kept in mind that all surveys are subject to sampling error. Sampling error, stated simply, is the difference between results obtained from a sample and those which would be obtained by surveying the entire population under consideration. The size of a possible sampling error varies, to some extent, with the number of interviews completed and with the division of opinion on a particular question.

An estimate of the sampling error range for this study is provided in the following table. The sampling error presented in the table has been calculated at the confidence level most frequently used by social scientists, the 95 percent level. The sampling error figures shown in the table are average figures that represent the maximum error for the sample bases shown (i.e., for the survey findings where the division of opinion is approximately 50%/50%). Survey findings that show a more one-sided distribution of opinion, such as 70%/30% or 90%/10%, are usually subject to slightly lower sampling tolerances than those shown in the table.

As may be seen in the table, the overall sampling error for this study is approximately ± 5.0 percent when the sample is studied in total (i.e., all 400 cases). However, when subsets of the total sample are studied, the amount of sampling error increases based on the sample size within the subset.

Sample Size	Approximate Sampling Error At A 95% Confidence Level (Plus/Minus Percentage Of Sampling Tolerance)
400	5.0%
300	5.7
200	7.1
150	8.2
100	10.0
50	14.1

All interviewing was completed by telephone using the following questionnaire:

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Time Start: _____

	QUOTAS		
	GW	NonGW	Total
Final	200	200	400

Hello, my name is _____ and I'm an interviewer for Behavior Research Center, a national marketing research firm. We are conducting a Rocky Mountain Poll among Arizona residents on issues of the day and I'd like to speak with you for a few moments.

Before we get started, is the male head of your household available? (IF RESPONDENT ASKS WHY YOU WANT TO SPEAK TO THE MALE HEAD OF THE HOUSEHOLD: It is harder to get enough males to participate in studies such as this than it is to get females to participate so we always ask if the MALE HEAD OF HOUSEHOLD is available).

Male...1
Female...2

IF THE MALE HEAD OF THE HOUSEHOLD IS NOT AVAILABLE, ASK TO SPEAK TO THE FEMALE HEAD OF HOUSEHOLD, RE-INTRODUCE YOURSELF AND CONTINUE. IF NOT AVAILABLE, SCHEDULE A CALL BACK.

1. Good, now to start I'd like to ask you how important certain things are to you. For each, please use a scale of zero to ten where zero means it is of no importance to you and ten means it is very important to you. Of course, you may use any number between zero and ten. (ROTATE SEQUENCE)

		RATING
A.	Living in a home designed to help the family conserve water	_____
B.	Living in a community where everyone tries to conserve water	_____
C.	Living in a community that recycles sewer water for use in the toilets and urinals of public buildings and office buildings	_____
D.	Water quality in your community	_____
E.	Long term water availability in your community	_____

And now, using that same scale of zero to ten where zero means you are not willing to do it and ten means you are very willing to do it, how willing are you to do each of the following?

		WILLINGNESS RATING
A.	Use much less water than you currently use at home	_____
B.	Pay higher rates for water if it helps conserve water in the community	_____

3. Is water provided to your home provided by the county, the city or a private water company?

(GO TO Q 4) County...1
(GO TO Q 4) City/town...2
(ASK Q 3A) Private company...3
(GO TO Q4) Unsure...4

3.a And what is the name of your water company?

Global Water Co ...1
Santa Cruz Water...2
Other(specify_____) ... 3
Not sure...9

4 Would you rate your water company in each of the following areas as excellent, good, only fair, poor or very poor?

		Excellent	Good	Only Fair	Poor	Very Poor	Not Sure
4a.	Dependability of service	1	2	3	4	5	6
4b.	Water quality they provide	1	2	3	4	5	6
4c.	Price they charge for the water	1	2	3	4	5	6
4d.	Their involvement and support of community programs	1	2	3	4	5	6

One water company in Pinal county is called Global Water. Would you say that your overall impression of Global Water is very favorable, favorable, unfavorable or very unfavorable? If you have never heard of Global Water, please feel free to say so.

Very favorable...1
Favorable...2
Aware, but neutral...3
Unfavorable...4
Very unfavorable...5
Unaware of them...6

6. And as far as you know, which of the following are the sources for the water that is treated and delivered to your home for household use...(PAUSE) ... ground water wells, the San Pedro River, the Salt River Project watershed or the Central Arizona Project? (CIRCLE ALL MENTIONED)

Central Arizona Project...1
Salt River Project Watershed...2
San Pedro River...3
Ground water...4
Unsure...5

7. From your experience or from what you read or hear, do city governments or private water companies in your area do the best job of providing the communities they serve with water?

(ASK 7a) Cities ...1
(ASK 7a) Private companies...2
(GO TO Q8) Both are equal...3
(GO TO Q8) Not sure...4

7.a (IF RESPONDENT SAYS CITIES OR PRIVATE COMPANIES ASK:) And in what ways do they do a better job?

_____

_____

_____

Thanks, now my next questions are about water supply and conservation. From what you have read or heard, is Arizona currently in a drought, is not in a drought but may soon be in one or is it unlikely that Arizona will be in a drought anytime soon?

We are in a drought...1
Not now but may soon be in a drought... 2
Drought not likely...3
Unsure ...4

9. If Arizona was in a drought, do you think it would have a major, minor or no effect on your lifestyle?

Major...1
Minor...2
No effect...3
Not sure...4

10. If people in Arizona got serious about water conservation, do you think it could have a major, a minor or no effect on ensuring the long term availability of water for our communities?

Major...1
Minor...2
No effect...3
Not sure...4

11. When it comes to water conservation, would you say each of the following are very active in conserving water, somewhat active in conserving water or are they basically not active in conserving water?

	Very Active	Some what Active	Not Active	Not Sure
A. Yourself	1	2	3	4
B. Your Family	1	2	3	4
C. Your neighbors	1	2	3	4

12 As you may be aware the population of Central Arizona, including Maricopa and Pinal Counties is growing rapidly and now contains about 3.7 million people. If the area continues to grow, how many years do you think it will be before water will run short?

OF YEARS

ENTER RESPONDENT ESTIMATE: _____

Not sure 99

13. Next , do you have sewer service or are you on a septic system?

(ASK Q 13a) Sewer service...1
(GO TO Q 14) Septic system...2
(GO TO Q 14) Not sure...3

13a. And who provides your sewer service (READ EACH)

(GO TO Q14) County...1
(GO TO Q14) City/town...2
(GO TO Q13b) Private company...3
(GO TO Q14) Unsure...4

13b. IF PRIVATE COMPANY ASK: And what is the name of the company that provides your sewer service?

(Ask 13c) Global Water.....1
(Go to Q 14) Palo Verde Utilities Company.....2
(Go to Q 14)Other (Specify_____)_....3
(Go to Q 14) Not sure.....9

13c. When it comes to the sewer service Global Water provides you, would you say your impression of them is very favorable, favorable, unfavorable or very unfavorable.

Very favorable...1
Favorable...2
neutral...3
Unfavorable...4
Very unfavorable...5

14. For each of the following, would you rate the sewer service as excellent, good, only fair, poor or very poor?

		Excellent	Good	Only Fair	Poor	Very Poor	Not Sure
A	Dependability of service	1	2	3	4	5	6
B.	The price you pay for sewer service	1	2	3	4	5	6

15. As far as you know, do they treat and reclaim sewer water for re-use in landscaping?

Yes...1
No...2
Unsure...3

16. From your experience or from what you read or hear, do city governments or private companies in your area do the best job of providing the communities with sewer service?

(ASK Q 16A) Cities ...1
(SK Q 16A) Private companies...2
(GO TO Q 17) Both are equal...3
(GO TO Q 17) Not sure...4

16.a (IF RESPONDENT SAYS CITIES OR PRIVATE COMPANIES ASK:) And in what ways is it that they do a better job?

_____
_____
_____

17. Next, I would like to read you a list of programs used in some places to re-use water after it has been treated and reclaimed. For each use, please tell me if you think it is a good idea or a bad idea.

		Good Idea	Bad Idea	Not Sure
A.	Use treated reclaimed water in *public toilets and urinals*	1	2	3
B.	Use treated reclaimed water for toilets in the home	1	2	3
C.	Use treated reclaimed water for golf course irrigation	1	2	3
D.	Use treated reclaimed water for home landscaping	1	2	3

18. Are you aware of any areas in your community where treated re-claimed water is being used?

Yes....1
No...2
Unsure...3

19. In general, would you say that the use of ground water for the following purposes is responsible, irresponsible or neither responsible not irresponsible?

	Responsible	Irresponsible	Neither	Unsure
Golf course irrigation	1	2	3	4
Farm irrigation	1	2	3	4
Yard and Garden watering	1	2	3	4
Household use	1	2	3	4
Factories	1	2	3	4

DEMOGRAPHICS

w before I finish, I need a few pieces of information about yourself for classification purposes only.

In what year were you born? (RECORD ONE YEAR ONLY) YEAR: / / / / /

B. Which of the following categories best describes your ethnic origin? (READ LIST AND RECORD ONE RESPONSE; ROTATE)

Caucasian...1
African-American...2
Hispanic...3
Native American...4
Asian...5
Or something else (SPECIFY) _____
(DO NOT READ) Not sure..99

C. Are you currently employed, a homemaker, a student, unemployed, or retired? (RECORD ONE RESPONSE)

(GO TO QD1) Employed...1
(SKIP TO QE) Homemaker...2
(SKIP TO QE) Student...3
(SKIP TO QE) *Unemployed*...4
(SKIP TO QE) Retired...5

C1. Is that in a white collar job or a blue collar job? (RECORD ONE RESPONSE)

White collar...1
Blue collar...2

D. And, was your total family income for last year, I mean before taxes and including everyone in your household, under or over $45,000? (RECORD ONE RESPONSE)

UNDER $45,000
Was it under $25,000...1
Or over $25,000...2
(DO NOT READ) Refused under $45,000...3

OVER $45,000
Was it under $65,000...4
Or over $65,000...5
(DO NOT READ) Refused over $45,000..6
(DO NOT READ) Refused overall..99

What is your home zip code? (RECORD ONE ZIP) / / / / / /

E.1 How long have you lived at this zip code? _____

E.2 Before living where you are now, what zip code did you live in? / / / / / /

E.3 And how many years more do you plan on living in this area? _____

F. Do you have any children under the age of 18 currently living in your home? (RECORD ONE RESPONSE)

Yes...1
No...2
Don't know / no answer...3

Thank you very much, that completes this interview. My supervisor may want to call you to verify that I conducted this interview so may I have your first name so that they may do so? **(VERIFY PHONE NUMBER)**

NAME: PHONE #: _____

Thank you. If you would like to participate in our BRCPOLLS DOT COM Internet surveys on topics of interest to you, and be eligible for cash drawings for doing so, please feel free to visit us at BRCPOLLS DOT COM, where you can register. That's BRCPOLLS DOT COM.

TIME END: TOTAL TIME: _____

ADMINISTRATIVE DATA:

INTERVIEWER NAME: #: _____
INTERVIEW DATE: _____
ALIDATED BY: #: _____
Date of validation _____ Validation method: ___Monitor ___Callback
DED BY: #: _____
Date Coded:

SUMMARY OF THE FINDINGS

WATER CONSERVATION

- Eight of ten consider water availability and quality as very important community issues.
- Two-thirds say it is important to them to live in a community where everyone tries to conserve water and themselves to live in a home built for water conservation.
- A community engineered to recycle treated sewer water for urinals and toilets is a strong value for four of ten.
- Eight of ten say they are willing to cut back on water use at home, including six of ten who say they are "very willing" to do so. Half are willing to pay higher fees.

VIEWS ON WATER PROVIDERS

- Roughly half of consumers in this survey receive their water from private companies. A significant proportion of GWC customers appear unaware that GWC is their supplier (half).
- Water companies, and especially GWC, receive strong favorable ratings on service reliability (+/-80%), but favorable ratings drop to 54 percent on water quality, then drop further to 41 percent on price of product. Most people (44%) are unaware of community programs or rate them as only "fair" to "poor" (25%).
- Seventy-seven percent of respondents say they have never heard of Global Water Company, including 63 percent of customers on the list provided us by the company. Those aware of the company, however, have very favorable regard (63%) for the company. The results drastically underscore a need for Global Water Company to establish and build brand equity.
- Half of water consumers have no idea of where the water they receive is developed. Those who make a guess – educated or otherwise – tend to believe the source is groundwater.
- Most believe it is "responsible" to use groundwater for farming and household use. Less than half hold the same view for yard or golf course watering.

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- Views on who are the best water providers depend largely on who provides one with water now. For example, customers of public water companies view governmental water suppliers to be superior in four areas: customer service, water quality control, lower rates and community involvement.

  Customers of private water companies – and especially those who are GWC customers, admire private companies for providing high quality water, being profit motivated to offer superior service and prices and for generally good service.

  We suggest that the belief that a private company like Global Water strives harder to meet customer needs is a culturally audible concept and should be considered. SRP and APS have proven that the "we care" and "we invest in technology and the community" are powerful elements in their brand image.

DROUGHT AND WATER CONSERVATION

- Eighty percent believe Arizona is currently in drought conditions or soon will be.
- Half believe water shortages in the state would have "major" impacts on their lifestyle.
- On average, respondents believe Arizona will face water shortages within 16 years.
- At the same time, 75 percent believe that if Arizonans "got serious" about water conservation, it would have a "major" impact on preserving water supplies.
- Most people believe they are water conservation activists – at least behaviorally in the home. Few hold the same view of their neighbors. This suggests that water conservation is on a personal ethic. Strengthening public awareness that "you are not alone in water conservation" could motivate greater community efforts.

SEWER SERVICE

- Eighty percent of respondents have sewer rather than septic service and most (57%) are served by governmental sanitary sewer systems.
- Customers of GWC sewer services (including Santa Cruz and Palo Verde) rate their service fairly well (53% positive to 20% negative).

  All sewer service suppliers are well rated on dependability of service (85% to 89% favorable).

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Additionally, prices charged for sewer service are generally favorably rated (40% to 50% positive to 9 to 31 percent unfavorable).

WATER RECLAMATION

- Two-thirds of respondents are unaware of any water reclamation by their water suppliers.
- Similarly, only a third are aware of any areas in their community where treated, reclaimed water is being used.
- Use of treated and reclaimed water is thought to be appropriate for golf courses (91%), home landscaping (79%) or in public bathrooms – urinals/toilets (79%) – and for household toilets (60%).

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DETAIL OF THE FINDINGS

WATER FACTORS OF IMPORTANCE TO CONSUMERS

Respondents were asked to note the importance of five water conservation, recycling and quality issues. As may be seen below, consumers place high priority on the items tested, and especially on the issues of long-term water supply and its quality. Also, note the tendency for women and older citizens to give high priority to each item; ethnic minorities also place greater priority on those items.

> *"Good, now to start I'd like to ask you how important certain things are to you. For each, please use a scale of zero to ten where zero means it is of no importance to you and ten means it is very important to you. Of course, you may use any number between zero and ten."*

	% Rating Each as "8" Or Higher	Mean Score (10.0 = Highest Score)			
		Total	Men	Women	Retired
Long term water availability in your community	89%	9.2	8.9	9.5	9.0
Water quality in your community	84	8.9	8.6	9.2	8.6
Living in a community where everyone tries to conserve water	69	8.1	7.7	8.6	8.6
Living in a home designed to help the family conserve water	67	8.1	7.6	8.4	8.2
Living in a community that recycles sewer water for use in the toilets and urinals of public buildings and office buildings	44	6.5	6.3	6.8	5.8

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PERSONAL COMMITMENT

While consumers place high priority on the conservation issues noted in the prior section, their personal commitment to actually conserve water registers at lower – but nonetheless less impressive – levels. This willingness to pay higher water rates as a means to encourage conservation is lower still, but nonetheless 26 percent are "very willing" and 30 percent "somewhat willing" – implying that more than half will at least consider accepting higher rates as a strategy to encourage conservation.

> *"And now, using that same scale of zero to ten where zero means you are not willing to do it and ten means you are very willing to do it, how willing are you to do each of the following?"*

		Not Very Willing (0-4)	Some-what Willing (5-6)	Very Willing (7-10)	MEAN SCORE
Use much less water than you currently use at home	(Total)	(15%)	(24%)	(60%)	(6.9)
	Men	20	28	52	6.3
	Women	10	19	69	7.5
	White collar	16	24	64	6.8
	Blue collar	16	26	58	6.7
	Retired	14	24	60	7.0
Pay higher rates for water if it helps conserve water in the community?	(Total)	(42%)	(30%)	(26%)	(4.3)
	Men	42	29	20	3.9
	Women	38	30	31	4.7
	White collar	47	25	28	4.2
	Blue collar	43	28	27	4.3
	Retired	39	32	23	4.4

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WATER PROVIDER AWARENESS

Roughly half (46%) of Pinal County customers in this study say they receive their residential water from private companies. Another 40 percent are served by city or county water companies and about 14 percent have no idea who supplies their water.

"Is water provided to your home provided by the county, the city or a private water company?"

	WATER SUPPLIER BELIEVED TO BE:		
	County City	Private Company	Not Sure
Total	40%	46%	14%
RESPONDENT IS CUSTOMER OF:			
GWC	35	50	15
Other suppliers	46	23	11

The strong tendency for respondents on the GWC customer list to say they receive water from the city or county or are not sure who provides their water, is an important finding for it clearly reveals that brand identity of GWC and its associated companies is weak, at best. Further, when we look at the responses of those who believe their supplier is a private company, we find that the list of candidates shows that Global Water Company has successfully built some equity of brand for the company, but four in ten consumers do not know or guess wrong about who serves them.

On the positive side, such findings make it clear that Global has an opportunity to develop its brand image on what appears today to be a "blank slate."

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"And what is the name of your water company?"

(Asked of consumers who believe they receive water from private companies)

	Sample Groups		
	GWC Customers	Non-GWC Customers	All Customers
ANY GWC COMPANY (NET)	(72%)	(0)	(39%)
GWC	12	0	7
Palo Verde	6	0	3
Santa Cruz	54	0	29
ALL OTHER COMPANIES (NET)	(14)	(78)	(48)
Arizona Water Company	0	24	15
Johnson	0	12	18
Queen Creek Water	0	11	7
H^2O, Inc.	0	10	6
Domestic Well	0	4	2
All others (17 listings)	0	16	9
Unsure	14	22	14

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SERVICE RATINGS OF WATER COMPANIES

Water customers were asked to evaluate the service of their provider on four factors: service dependability, water quality, price and community involvement. As may be seen, service dependability gets very high marks for all suppliers, but water quality ratings drop into the 54 percent range, although Global Water ratings on this dimension are superior to competitors. None of the providers receive strong favorable marks for price or community involvement. Most consumers, including GWC customers are unaware of any company activity in the community.

"Would you rate your water company in each of the following areas as excellent, good, only fair, poor or very poor?"

	Excellent	Good	(Net Excellent/ Good)	Only Fair or Poor	Not Sure
DEPENDABILITY OF SERVICE (TOTAL)	36%	44%	(80%)	16%	4%
GWC	34	48	(82)	14	4
All others	38	39	(77)	20	3
WATER QUALITY (TOTAL)	17%	37%	(54%)	44%	2%
GWC	15	43	(58)	38	4
All others	20	30	(50)	48	2
PRICE FOR THE WATER (TOTAL)	11%	30%	(41%)	50%	9%
GWC	6	32	(38)	57	5
All others	16	29	(45)	41	14
COMMUNITY INVOLVEMENT (TOTAL)	10%	21%	(31%)	25%	44%
GWC	9	21	(30)	23	47
All others	11	23	(34)	26	40

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AWARENESS OF GLOBAL WATER COMPANY

Seventy-eight percent of respondents are unaware of Global Water Company, including 63 percent of respondents on the customer list provided the research team by Global Water Company. However, among those aware of the company, opinion of the company is decidedly favorable (63%) and only 20 percent have a negative view. Seventeen percent have neither a favorable nor unfavorable view of the company.

> *"One water company in Pinal county is called Global Water. Would you say that your overall impression of Global Water is very favorable, favorable, unfavorable or very unfavorable? If you have never heard of Global Water, please feel free to say so."*

	ALL RESPONDENTS			AS % OF THOSE AWARE		
	All Respondents	Customers on GWC List	Other Customers	All	GWC	Other
Favorable	14%	23%	6%	63%	62%	71%
Neutral	4	7	1	17	18	12
Unfavorable	5	7	2	20	20	17
Unaware of them	77	63	91	—	—	—

The low awareness of the Global Water Company brand, especially among people who are listed as customers by Global Water, underscores the tendency for consumers to treat water delivery as a commodity and to view suppliers as "pretty much all the same." It suggests that no city, town or private water company in the study area, including GWC, has differentiated themselves as the best brand or most customer-oriented.

On the other hand, the right-hand side of the table also makes it clear that for companies that have built brand awareness among their consumers, brand equity is strongly favorable. This is a reality clearly understood by utilities such as APS and SWG, all of which enjoy strong positive brand equity with the public – and with elected decision makers.

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AWARENESS OF WATER SOURCES

Half of respondents have no idea from where the water delivered to their homes was originally developed. The balance tend to believe it comes from ground water sources. Global Water Company customers are the least likely to be aware of water sources.

"As far as you know, which of the following are the sources for the water that is treated and delivered to your home for household use...."

	All Respondents	GWC Customers	Other Company Customers
I have no idea	48%	53%	44%
Ground water	32	23	40
CAP	11	11	10
SRP Watershed	10	14	7
San Pedro River	1	1	1

Total exceeds 100% due to multiple responses.

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RESPONSIBLE/IRRESPONSIBLE USES OF GROUNDWATER

Consumers have very mixed views of whether it is responsible to use groundwater for certain applications. Basically, they find it "responsible" to use groundwater for food production ("farm irrigation") or for their own household use, but are divided as to whether its use could be considered responsible when applied to golf course, factories or even yard and garden watering around the home. But only in the case of golf course irrigation is the consensus clearly that groundwater should not be used for that purpose.

> *"In general, would you say that the use of ground water for the following purposes is responsible, irresponsible or neither responsible not irresponsible?"*

	Responsible	Unsure/ Neither	Irresponsible
Farm irrigation	63%	16%	21%
Household use	60	17	23
Yard and garden watering	47	21	32
Factories	40	28	32
Golf course irrigation	33	22	45

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OPINION DIVIDED ON "BEST" PROVIDERS

General opinion in the Pinal community is divided as to whether government or private utilities do the best job of water delivery. And as might be expected, answers depend significantly on who currently supplies their home with water – although not entirely.

"From your experience or from what you read or hear, do city governments or private water companies in your area do the best job of providing the communities they serve with water?"

		WATER PROVIDER IS			
Best job...	Total	City/ County	Global companies	Other Private	Not Sure
Cities	28%	37%	20%	28%	17%
Private companies	24	16	27	36	20
No difference/equal	15	15	20	12	11
No opinion	33	32	33	24	52
	100%	100%	100%	100%	100%

Respondents were next asked to give us the reason they believed the water source they selected is "best." As may be seen, cities draw greater kudos for customer service, but consumers believe that private companies are more motivated to keep prices low and service high. Consumer belief that a free enterprise environment spurs companies to higher levels of performance than governmental units may be a valuable tool in building brand equity messages. For example, a conceptual framework might position Global as best because it works harder and smarter for its customers.

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"In what ways do they do a better job?"

	Cities Are Best Because...	Private Companies Are Best Because...	GWC Customers
SUPERIOR CUSTOMER SERVICE (NET)	(33%)	(22%)	(21%)
Never had problem with them	10	8	3
Dependable	9	8	9
Quick response to calls	7	0	3
"Good" service	5	2	3
Good hours/access	3	1	–
All other comments	2	2	3
QUALITY CONTROL/STANDARDS (NET)	(20)	(18)	(30)
Cleaner quality water	9	9	12
Test water purity often	5	6	9
More regulated	5	1	9
More experienced	2	1	3
LOWER RATES (NET)	(14)	(7)	(21)
COMMUNITY INVOLVEMENT (NET)	(12)	(9)	(3)
HAVE COMPETITION: MOTIVATED TO OFFER SERVICE/LOWER PRICES (NET)	(5)	(27)	(12)
STRONGER – BETTER FUNDED (NET)	(5)	(6)	(3)

QUESTION ON DROUGHT AND WATER CONSERVATION

A majority of consumers in this study believe that the State of Arizona is currently in drought conditions -- a belief that rises among white collar workers, Caucasians and Native Americans, but falls off among blue collar workers, retirees and both Hispanics and African Americans. Another *quarter* believe that the state may soon enter drought conditions. For all intents then, eight of ten believe that is the state is in or near drought conditions.

> *"Thanks, now my next questions are about water supply and conservation. From what you have read or heard, is Arizona currently in a drought, is not in a drought but may soon be in one or is it unlikely that Arizona will be in a drought anytime soon?"*

	Currently in Drought	Not Yet, but May Soon Be	Drought Not Likely	Unsure
TOTAL	56%	24%	12%	8%
Men	57	22	13	8
Women	55	26	11	8
White collar	63	23	8	4
Blue collar	52	26	11	11
Retirees	47	29	14	10
Caucasian	62	21	11	6
Native American	58	25	0	17
Hispanic	36	31	20	13
African American	18	41	24	17

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Curiously, when asked whether a drought in Arizona would have an impact on their lifestyle, half say it would have no or only a minor impact on themselves. Men are noticeably less likely than women to foresee a major impact on their lives. Belief that the impact on one's lifestyle rises appreciably as income decreases and among ethnic minorities and, as such, may reflect a realization within these less-affluent populations that drought might bring higher water prices – and thus, stress on the family budget.

"If Arizona was in a drought, do you think it would have a major, minor or no effect on your lifestyle?"

	IMPACT ON US WOULD BE			
	Major	Minor	No Impact	Unaware
ALL RESPONDENTS	49%	37%	12%	2%
Men	41	42	15	8
Women	58	33	8	1
INCOME				
Under $25,000	57	26	13	4
$25,000 to $44,999	51	36	13	0
$45,000 to $64,999	46	46	6	2
$65,000 +	45	42	13	0
White collar	48	41	10	1
Blue collar	43	48	9	0
Retirees	56	26	16	2

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Finally, we register broad public belief that conservation behavior by consumers could have a significant impact on helping assure the long-term availability of water for our communities. Further, this belief cuts across all consumer groups, although women are more likely than men to hold these views.

"If people in Arizona got serious about water conservation, do you think it could have a major, a minor or no effect on ensuring the long term availability of water for our communities?"

	IMPACT ON US WOULD BE			
	Major	Minor	No Impact	Unaware
TOTAL	75%	17%	3%	5%
Men	68	23	5	5
Women	82	11	2	6
White collar	76	17	4	3
Blue collar	73	22	3	2
Retirees	72	12	4	12

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ARIZONA WILL FACE WATER SHORTAGES IN 16.5 YEARS, SAY RESPONDENTS

Respondents, on average, believe it will 16.5 years before central Arizona reaches a point of water shortages. Women tend to believe water shortages will occur in only 13.8 years.

"As you may be aware, the population of central Arizona, including Maricopa and Pinal Counties is growing rapidly and now contains about 3.7 million people. If the area continues to grow, how many years do you think it will be before water will run short?

	Total	Men	Women
10 or less years	43%	38%	47%
11 to 19 years	5	6	5
20 or longer years	21	26	17
Unsure	31	30	31
Mean years among those with an opinion	16.5	19.1	13.8

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PERSONAL COMMITMENT TO WATER CONSERVATION

Four out of ten respondents believe they are "very active" in their efforts to conserve water and about a third believe their family is as well. Half say they are only "somewhat active" as water conservers. Only small percentages indicate they make no efforts at water conservation.

As they look around their neighborhood, however, four of ten say they have no idea whether their neighbors are water conservation oriented, but of those who do have an opinion, the consensus is that neighbors are only somewhat or not active in water conservation.

This differential between self-view and view of neighbors is interesting because it suggests that people do not see themselves involved in a community ethic of water conservation. That is, their conservation behavior is an individual ethic – not a community ethic. In our minds, it raises the issue of what behaviors, icons of behavior or visible practices might be advanced by Global as outward signs of conservation and which could be used to encourage greater efforts.

When it comes to water conservation, would you say each of the following are very active in conserving water, somewhat active in conserving water or are they basically not active in conserving water?

	Very Active	Somewhat Active	Not Active/Not Sure	Unsure
Yourself	40%	50%	9%	1%
Your family	32	49	12	7
Your neighbors	14	32	13	41
(Those with an opinion)	(23)	(54)	(23)	–

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The profile of respondents who see themselves as "very active" reveals no geographic variation of significance. Women, older consumers and lower income groups think of themselves as more water conservation-oriented as of this reading.

	Self-View – I Am A "Very Active" Water Conservationist
TOTAL	40%
Men	36
Women	45
White collar	40
Blue collar	30
Retirees	53
INCOME	
Under $25K	50
$25K to $44.9K	39
$45K to $64.9K	39
$65K +	36
WATER SUPPLIER	
GWC	28
City/County	40
Other private	44

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SEWER SERVICE QUESTIONS

TYPE OF SEWER AND SUPPLIER

Eight of ten consumers in this study report that they are connected to a sanitary sewer system, while 18 percent are on septic systems and two percent are unsure. Queen Creek appears to have the lowest level of sewer services. In that community, 44 percent of residents say they are on septic systems.

"Do you have sewer service or are you on a septic system?"

	Sewer	Septic
TOTAL	80%	18%
GWC sample	92	4
RDD sample	68	31
Casa Grande	70	28
Coolidge	70	30
Florence	76	22
Queen Creek	54	44
YEARS IN ZIP		
1 or less	93	5
2 to 4	83	12
5 to 10	62	39
11 +	64	34

SEWER SERVICE PROVIDER

Among sewer service customers, 51 percent say they are served by a city or town, another five percent by county government and 30 percent by private providers. Thirteen percent of people have no idea who provided their sewer service.

(Among sewer service customers) *"And who provides your sewer service?"*

	City/Town or County	Private Company	Unsure
TOTAL	57%	30%	13%
GWC list	45	39	16
RDD list	73	17	10
Casa Grande	83	3	14
Coolidge	83	11	6
Florence	92	3	5
Queen Creek	22	63	15

Among individuals who said they receive their sewer service from a private company, nearly six of ten have one of the Global Water Company holdings as their service supplier.

Consumers with private company sewer service: "And what is the name of the company that provides your sewer service?"

	All	GWC Customers
Global Water	16%	27%
Santa Cruz	35	59
Palo Verde	8	14
All others	31	0
Unsure	10	0

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CITIES THOUGHT "BEST" IN PROVIDING SEWER SERVICE

Although opinions are mixed, consumers tend to believe cities, rather than private companies, provide the best sewer service. However, these views are partially experiential in nature, which is to say that private companies are rated better among their customers and cities are rated higher among their customers.

> *"From your experience or from what you read or hear, do city governments or private companies in your area do the best job of providing the communities with sewer service?"*

		SEWER CUSTOMERS OF			
BEST SERVICE IS FROM:	Total	Global	Cities	Other Private Companies	Unsure
Cities	35%	18%	48%	31%	17%
Private companies	15	32	9	24	19
No difference	15	23	13	28	9
Unsure	35	27	30	17	55

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When asked why they rated a service supplier over another, the following patterns emerge:

- Again, as with water service, the "free enterprise, growth" motive is seen as a value driving companies to better service and prices.
- Cities are somewhat more likely to be viewed as providing higher levels of customer service and trouble-free service.
- On other values, there are few perceived differences.

"Why do you think they do the best job?"

	Best Job Done by	
	Cities	Private Companies
REASON		
CUSTOMER SERVICE (NET)	(35%)	(29%)
Never had problem	17	9
Dependable service	9	2
Quick response	7	3
Hours, friendly	4	5
PROFIT MOTIVATION (NET)	(7%)	(29%)
Keeps prices lower	0	15
Gives good service	0	5
Seeking to grow	0	3
All business – no politics	0	3
Research for the future	4	2
Cities not profit-motivated	4	0
QUALITY CONTROL/STANDARDS (NET)	(6%)	(5%)
COMMUNITY INVOLVEMENT (NET)	(8%)	(3%)
LOWER RATES (NET)	(4%)	(7%)
WELL FUNDED FOR GROWTH (NET)	(4%)	(5%)
NOT SURE (NET)	(18%)	(14%)
ITS MY ONLY CHOICE (NET)	(20%)	(24%)

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IMPRESSION OF SEWER SERVICE PROVIDED BY GLOBAL WATER

Global Water customers who believe they receive sewer service from the company, were asked to evaluate that service overall. As may be seen, customer evaluation of the sewer service provided by Global Water is 2.7 to one favorable (53% to 20%).

> *"When it comes to the sewer service Global Water provides you, would you say your impression of them is very favorable, favorable, unfavorable or very unfavorable."*

Very favorable	13%
Favorable	40
(Net positive)	(53)
Neutral	20
Unfavorable	20
Very unfavorable	0
(Net negative)	(20)
Unsure	7

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GLOBAL SEWER SERVICE EVALUATED IN PRICE AND DEPENDABILITY

Global Water gets very positive ratings on the dependability of its sewer service (89% favorable) and stacks up favorably compared to its competitors, although as may be seen, satisfaction with sewer service is high for all providers.

"For each of the following, would you rate the sewer service as excellent, good, only fair, poor or very poor?"

DEPENDABILITY OF SEWER SERVICES

	Global Customers	City/County Customers	Other Private Companies Customers
Excellent	34%	46%	31%
Good	55	39	55
(Net Positive)	(89)	(85)	(86)
Only fair	7	9	10
Poor	2	1	0
Very poor	0	2	4
(Net Negative)	(2)	(3)	(4)
Unsure	2	3	0

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On the dimension of prices charged for sewer service, ratings are noticeably lower than for dependability of service. Also note that cities and towns get the best overall ratings (49% positive to only nine percent negative). In contrast, private companies, including Global Water companies draw negative evaluations of between 25 and 30 percent.

"For each of the following, would you rate the sewer service as excellent, good, only fair, poor or very poor?"

PRICE CHARGED FOR THE SERVICE

	Global Customers	City/County Customers	Other Private Companies Customers
Excellent	4%	20%	7%
Good	37	29	41
(Net Positive)	(41)	(49)	(49)
Only fair	25	30	21
Poor	14	7	24
Very poor	11	2	7
(Net Negative)	(25)	(9)	(31)
Unsure	9	12	0

MOST UNAWARE OF WATER RECLAMATION

Six of ten (58%) say they do not know if their sewer service providers, treats and reclaims sewer water for re-use in landscaping. Thirty percent think this is being done. Global Water customers are no more or less likely than customers of other providers to hold those views.

"As far as you know, do they treat and reclaim sewer water for re-use in landscaping?"

	SEWER SERVICE PROVIDED BY			
	Global	Government	Other Private Companies	Unsure
Yes they do	25%	33%	17%	26%
No they don't	11	8	14	8
Unsure	64	59	69	66

PERCEIVED VALUE OF RECYCLING

Awareness of Community Recycling

Only a third of consumers included in this survey are aware of any programs in their community in which treated re-claimed water is being used. Global customers are more aware of such programs, but not greatly so.

"Are you aware of any areas in your community where treated re-claimed water is being used?"

	Yes	No
City-wide	33%	69%
CUSTOMER OF:		
Global Water	42	58
City/county	34	66
Other private companies	17	83

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PERCEPTION OF WHERE USE OF TREATED AND RECLAIMED WATER IS A GOOD IDEA

A strong majority of the public believes it is a "good idea" to re-use water after it has been treated and reclaimed, especially if that use is for such things as golf courses (91%), home landscaping (79%) or use in public toilets and urinals. Six of ten also approve of use of such water for household toilets.

And in general, Global Water Company customers are the most supportive of such uses, which may reflect this greater familiarity with such programs.

> *"Next, I would like to read you a list of programs used in some places to re-use water after it has been treated and reclaimed. For each use, please tell me if you think it is a good idea or a bad idea."*

	Good Idea	Bad Idea	Unsure
USE TREATED/RECLAIMED WATER:			
FOR GOLF COURSE IRRIGATION			
Total	91%	7%	2%
GWC customers	93	6	1
FOR HOME LANDSCAPING			
Total	79	18	3
GWC customers	79	18	3
IN PUBLIC TOILETS AND URINALS			
Total	79	18	3
GWC customers	89	8	3
FOR TOILETS IN THE HOME			
Total	60	35	5
GWC customers	73	24	3

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PROFILE OF WATER CUSTOMERS

	All Customers	Global Customers
AGE OF RESPONDENT	4%	4%
Under 25	27	22
25 to 34	22	25
35 to 44	15	15
45 +	27	31
Refused	5	3
ETHNICITY		
Caucasian	73	82
Hispanic	15	10
All others	8	7
Refused/not sure	4	1
OCCUPATIONAL STATUS		
Employed (Net)	(59)	(78)
White collar	36	55
Blue collar	20	20
Refused	3	3
HOMEMAKER/STUDENT	13	15
RETIRED	23	7
GENDER		
Male	50	41
Female	50	59
INCOME		
Under $25,000	13	4
$25,000 to $44,999	18	9
$45,000 to $64,999	23	32
$65,000 +	35	54
Refused	11	1
LENGTH OF RESIDENCE		
1 year or less	44	72
2 to 4 years	23	25
5 to 10 years	13	2
11+ years	20	1
(Mean)	(6.8)	(1.2)

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	All Customers	Global Customers
YEARS THEY PLAN TO STAY IN AREA		
3 or less	15%	22%
4 to 7	14	27
8+	33	31
Unsure	38	20
(Mean)	(14.4)	(8.5)
Children living at home	44	39
LOCATION		
Global territory as provided in sample (N)	200	
Other RDD Customers		
Casa Grande	50	
Coolidge	50	
Florence	50	
Queen Creek	50	

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SURVEY OF GLOBAL WATER COMPANY CUSTOMERS AND NON-CUSTOMERS IN CASA GRANDE, COOLIDGE, FLORENCE AND QUEEN CREEK, ARIZONA
STUDY #2 – 2007

Prepared for:

Global Water Company
and
Park and Company

Summary and Analysis

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TABLE OF CONTENTS

INTRODUCTION

This study was commissioned by Global Water Company and Park and Company to explore the views of selected Pinal and Maricopa County residents as they pertain to water services in their community. A total of 402 heads of household were interviewed between January 2nd and January 12th, 2007, via telephone, including 200 randomly selected from a list of customers provided by Global Water Company and 50 each selected at random from each of four regions in Pinal county: Florence, Casa Grande and Coolidge, and Queen Creek, which is in Maricopa County. This is the second survey; the first was conducted in October of 2005.

The purpose of the survey was to explore the following issues:

- Brand equity of Global Water Company in the community overall and among its customers.
- Consumer awareness of water sources and possibility of drought.
- Evaluation of water providers on service dependability, water quality, pricing and community service.
- Awareness and image of Global Water Company.
- Public concern about drought in Arizona and willingness to participate in water conservation and support reclamation strategies.
- New questions on water reclamation and recycling and perceptions of safe uses of recycled water.

All of the interviewing on this project was conducted at BRC's Computer Aided Telephone Interviewing (CATI) facility in Phoenix, Arizona. Interviewing was conducted during an approximately equal cross section of late afternoon, evening and weekend hours. This procedure was followed to further ensure that all residents were equally represented, regardless of work schedules. Further, during the interviewing segment of this study, up to four separate attempts – on different days and during different times of day – were made to contact each selected household. Only after four unsuccessful attempts was a selected household substituted in the sample.

All of the interviewers who worked on this project were professional interviewers of BRC. Each had prior experience with BRC and received a thorough briefing on the particulars of this study. During the briefing, the interviewers were trained on (a) the purpose of the study; (b) sampling procedures; (c) administration of the questionnaire; and (d) other project-related items. In addition, each interviewer completed a set of practice interviews to assure that all procedures were understood and followed.

One hundred percent of the interviews were edited and any containing errors of administration were pulled, the respondent recalled, and the errors corrected. In addition, 15 percent of each interviewer's work was randomly selected for validation to ensure its authenticity and correctness. No problems were encountered during this phase of interviewing quality control.

As the data collection segment of this study was being undertaken, completed and validated interviews were turned over to BRC's in-house coding department. The coding department edited, validated and coded the interviews. Following completion of coding, a series of validity and logic checks were run on the data to ensure it was "clean" and representative of the sample universe.

When analyzing the results of this survey it should be kept in mind that all surveys are subject to sampling error. Sampling error, stated simply, is the difference between results obtained from a sample and those which would be obtained by surveying the entire population under consideration. The size of a possible sampling error varies, to some extent, with the number of interviews completed and with the division of opinion on a particular question.

An estimate of the sampling error range for this study is provided in the following table. The sampling error presented in the table has been calculated at the confidence level most frequently used by social scientists, 95 percent. The sampling error figures shown in the table are average figures that represent the maximum error for the sample bases shown (i.e., for the survey findings where the division of opinion is approximately 50%/50%). Survey findings that show a more one-sided distribution of opinion, such as 70%/30% or 90%/10%, are usually subject to slightly lower sampling tolerances than those shown in the table.

As may be seen in the table, the overall sampling error for this study is approximately ± 5.0 percent when the sample is studied in total (i.e., all 400 cases). However, when subsets of the total sample are studied, the amount of sampling error increases based on the sample size within the subset.

Sample Size	Approximate Sampling Error At A 95% Confidence Level (Plus/Minus Percentage Of Sampling Tolerance)
402	5.0%
300	5.7
200	7.1
150	8.2
100	10.0
50	14.1

All interviewing was completed by telephone using the questionnaire appended to this report.

SUMMARY OF THE FINDINGS

WATER PROVIDER AWARENESS

- The proportion of Global customers who recognize Global Water Company as their supplier increased tremendously over 2005 – now at 49 percent compared to only 12 percent in 2005.

- Sixty-three percent of all consumers in the region have a favorable opinion of Global Water Company, including half of non-Global customers.

- Half of consumers believe private companies provide them their water, while 42 percent believe it may be public utilities and eleven percent are unsure.

- Five water issues are of greatest priority to half or more of the public:

    - Long term water availability
    - Water quality
    - Community includes open space and green space
    - Living in a community where everyone endeavors to conserve water
    - Recycling sewage water for use in public buildings

- Most remain unaware of water sources that supply their community. The proportion who doubt or are unaware whether each of the following water sources support their water system are as follows:

    - Groundwater wells 59%
    - CAP water 85
    - Reclaimed water 84
    - Surface water 85

- Use of groundwater for most uses is now deemed "responsible" – including irrigating golf courses and use in factories.

- Nine of ten believe drought will effect their lifestyles negatively including 60 percent who foresee a major negative impact. Seven of ten forecast water shortages within 20 years and even if Arizona recycled and reclaimed all its water, most foresee water shortages in 20 years.

- As in the past, two-thirds or more of consumers have no idea of where the water they use originates.

- When evaluating each of eight public entities, from two-thirds to three-quarters believe they do little or nothing to promote water conservation or recycling. Schools, the Arizona Department of Water Resources and city water departments are the most likely to be given kudos for such efforts.

- Reclaiming and Recycling Water

  Most consumers admit they know little or nothing about the science of reclaiming and treating water (74%). Only a third believe treated, reclaimed water is currently being used in their community. Further, the majority have neutral (55%) or favorable (14%) word association with the phrase "reclaimed water." Just over a third make negative associations. This finding implies that an opportunity exists to add positive content to those holding neutral or positive views.

  More important, seven of ten are unworried about reclaimed water being recycled in the community for irrigation or toilets in homes and public places. Most in fact consider such uses to be a "good idea."

  Eighty-five to 90 percent are willing (including two-thirds who are "very willing") to use reclaimed and treated water for uses other than drinking.

  The strength of support for water reclamation is most powerfully seen in the willingness of 90 percent to pay five dollars additional on their home water bill to develop reclaimed water (as a means to avoid drought). More astonishing still is that half are willing to pay 20 dollars more a month.

  Fifty to 75 percent believe the following kinds of water can be reclaimed and treated to make them safe to use by humans and on plants.

  - CAP water
  - Grey water
  - Road and street run off
  - Farm tailings

  People are less enthusiastic about the safe use of black water for either human or plant use – yet surprisingly, some 36 percent already consider it safe for human use and 45 percent consider it safe for use on plants.

DETAIL OF THE FINDINGS

AWARENESS AND IMAGE OF GLOBAL WATER COMPANY

There is no doubt that the public awareness and image campaign for Global Water Company moved the needle. Among Global customers, brand awareness doubled, rising to 65 percent from 37 percent in 2005. Across the region as a whole, 37 percent of consumers are now aware of the Global Water Company brand compared to only 23 percent in *2005, a sixty percent* increase.

> *"One water company in Pinal county is called Global Water. Would you say that your overall impression of Global Water is very favorable, favorable, unfavorable or very unfavorable? If you have never heard of Global Water, please feel free to say so."*

Awareness of Global Water Company	Region	GWC Customer	Non-GWC Customer
2007	37%	65%	12%
2005	23	37	9
(Point Shift)	(+14)	(+28)	(+ 3)

Among those aware of the company, 63 percent have a favorable impression of the company – a figure that is somewhat higher among Global customers. Negative opinion remains at about a fifth of those aware of the company. It should also be noted that regionally, only three percent hold a strongly negative view of the company – a figure we consider to be non-problematic.

	Region	GWC Customer	Non-GWC Customer
Favorable	63%	65%	50%
Neutral	13	13	14
Unfavorable	24	22	36
(Net Positive)	(+39)	(+43)	(+14)

WATER PROVIDER AWARENESS

Roughly half (47%) of Pinal County water customers in this study say they receive their residential water from private companies. Forty two percent believe they are served by city or county water companies and about eleven percent have no idea who supplies their water. More than half of GWC customers believe their provider is a private company, at 54 percent today compared to 50 percent in 2005.

"Is water provided to your home provided by the county, the city or a private water company?"

		WATER SUPPLIER BELIEVED TO BE:		
		County City	Private Company	Not Sure
Total	2007	42%	47%	11%
	2005	40	46	14
RESPONDENT IS CUSTOMER OF:				
GWC		36	54	10
Other suppliers		47	42	11

There remains a tendency for about a third of respondents on the GWC customer list to say they receive water from the city or county or are not sure who provides their water. On the other hand and as may be seen in the table which follows, among respondents on the Global Water Company customer list, we register a tremendous increase in brand awareness – now at 49 percent compared to only 12 percent in 2005. (Further, 13 percent of non-Global customers now think that Global Water company is their supplier.)(See next page)

"And what is the name of your water company?"

(Asked of consumers who believe they receive water from private companies.)

	SAMPLE GROUPS		
	GWC Customers	Non-GWC Customers	All Customers
GWC	49%	13%	33%
(Other)	2	0	0
Santa Cruz	36	0	20
OTHER COMPANIES			
Arizona Water Company	0	31	14
Johnson	0	24	11
Queen Creek Water	0	4	2
H^2O, Inc.	0	0	0
Domestic well	0	0	0
All others (17 listings)	0	12	5
Unsure	13	16	15

Comparison 2005-2007

	Global Water Customers	
	2007	2005
Water Company Is...		
GWC	49%	12%
(other)	2	6
Santa Cruz	36	54
	(87%)	(72%)

WATER ISSUES OF IMPORTANCE TO CONSUMERS

Respondents were asked to rate the importance of nine water conservation, recycling and quality issues. As may be seen below, consumers place the highest priority on the issues of long-term water supply, water quality and living in a community with parks and open space and where neighbors are water conservation conscious. Water reclamation and recycling is a high priority to roughly half, but private or public swimming pools and golf courses are of low priority.

> *"Good, now to start I'd like to ask you how important certain things are to you. For each, please use a scale of zero to ten where zero means it is of no importance to you and ten means it is very important to you. Of course, you may use any number between zero and ten."*

	% Rating Each as "8" Or Higher	2007 Mean Score (10.0 = Highest Score)			
		Total	Men	Women	Retired
Long term water availability in your community	89%	9.3	9.3	9.3	9.2
Water quality in your community	77	8.5	8.4	8.7	9.2
Living in a community with green parks and open space	72	8.2	7.8	8.7	8.4
Living in a community where everyone tries to conserve water	71	8.3	8.0	8.9	9.0
Living in a community that recycles sewer water for use in the toilets and urinals of public buildings and office buildings	46	6.8	6.7	6.8	6.2
Living in a community with public lakes and other water features	36	5.8	6.0	5.5	5.4
Living in a community with public swimming pools	23	4.5	4.3	4.7	4.1
Living in a community in which people have pools at home	16	3.9	4.0	3.9	3.4
Living in a community with golf courses	13	3.3	3.0	3.5	3.4

For comparative progress, below are the results to five items asked in 2005. As may be seen, the mean scores for each closely parallel what is registered in the current study.

	% Rating Each as "8" Or Higher	2005 Mean Score (10.0 = Highest Score)			
		Total	Men	Women	Retired
Long term water availability in your community	89%	9.2	8.9	9.5	9.0
Water quality in your community	84	8.9	8.6	9.2	8.6
Living in a community where everyone tries to conserve water	69	8.1	7.7	8.6	8.6
Living in a home designed to help the family conserve water	67	8.1	7.6	8.4	8.2
Living in a community that recycles sewer water for use in the toilets and urinals of public buildings and office buildings	44	6.5	6.3	6.8	5.8

SERVICE RATINGS OF WATER COMPANIES

(A) Overall ratings

Between October 2005 and January of 2007, the average customer service ratings across all companies show some deteriation, most noticeably in two categories (A) dependability of service and (B) price of the water. Not withstanding the lower ratings, dependability of service remains favorable (74% to 21%). The modest negative shift on "water quality" may be an early warning sign that should be closely monitored.

"Would you rate your water company in each of the following areas as excellent, good, only fair, poor or very poor?"

		All Company Average			
		Excellent Good	Only Fair to Poor	Not Sure	(Positive)
Dependability of Service	2007	74%	21%	5%	(+53)
	2005	80	16	4	(+64)
Water Quality	2007	50	46	4	(+ 4)
	2005	54	44	2	(+10)
Price for the Water	2007	38	55	7	(-17)
	2005	41	50	9	(- 9)
Community Involvement	2007	35	33	32	(+ 2)
	2005	31	25	44	(+ 6)

(B) Global Water Company Customers

When we next look at the assessments given by Global Water Company customers on water quality, service dependability, price and corporate community involvement, we find a decline in positive ratings. This may reflect growing pains of Global Water, but as well, consumer dissatisfaction with perceived higher costs they pay for water. Satisfaction with price paid for water shrank from 41 percent in 2005 to 38 percent and dissatisfaction rose from 50 to 55 percent. Positive readings on water quality also suffered negative shifts with a majority (51%) now giving "fair to poor" readings compared to 38 percent in 2005. If Global has acquired some companies in this trade area since 2005, it may partially explain some of these shifts.

"Would you rate your water company in each of the following areas as excellent, good, only fair, poor or very poor?"

Global Water Company Customers

		Excellent Good	Fair to Poor	Unsure	Positive over Negative
Dependability of Service	2007	74%	23%	3%	(+51)
	2005	82	14	4	(+70)
Water Quality	2007	47	51	2	(- 4)
	2005	58	38	4	(+20)
Price for the Water	2007	38	55	7	(- 17)
	2005	41	50	9	(- 9)
Community Involvement	2007	35	33	32	(+ 2)
	2005	31	25	44	(+ 6)

(C) Other Companies

Service and quality readings for non-Global water companies are stable as regards dependability of service and register a fairly impressive improvement in the net favorable readings on water quality and community involvement. As with Global water customers, however, customer satisfaction with water prices declined, albeit less radically than was seen among GWC customers.

"Would you rate your water company in each of the following areas as excellent, good, only fair, poor or very poor?"

		Non-Global Customers			
		Excellent Good	Fair to Poor	Not Sure	(Net Positive)
Dependability of Service	2007	76%	19%	5%	(+57)
	2005	77	20	3	(+57)
Water Quality	2007	55	40	5	(+15)
	2005	50	48	2	(+ 2)
Price for the Water	2007	43	47	10	(- 4)
	2005	45	41	14	(+ 4)
Community Involvement	2007	41	29	30	(+12)
	2005	34	26	40	(+ 8)

AWARENESS OF WATER SOURCES

The proportion of respondents who have no idea as to the source of their water has declined from 48 in 2005 to 36 percent today. A plurality believe it is developed from groundwater wells and just under a quarter cite Central Arizona Project water. Most consumers (roughly 60%) either doubt or are unsure whether reclaimed or surface water are part of the water resources that serve their homes.

"As far as you know, are the following sources or not sources for the water that is treated and delivered to your home for household use...."

	All Respondents	GWC Customers	Other Company Customers
Groundwater Wells			
Is	41%	37%	44%
Is Not	23	25	21
Unsure	36	38	35
	100%	100%	100%
Central AZ Project Water			
Is	15	15	16
Is Not	36	33	39
Unsure	49	52	45
	100%	100%	100%
Reclaimed Water			
Is	16	18	14
Is Not	43	38	49
Unsure	41	44	37
	100%	100%	100%
Surface Water			
Is	15	15	16
Is Not	36	33	39
Unsure	49	52	45
	100%	100%	100%

CONSUMERS NOW LESS LIKELY TO VIEW SOME USES OF GROUNDWATER AS "IRRESPONSIBLE"

Consumer views on whether it is "responsible" or "irresponsible" to use groundwater for agricultural and household uses have changed little since 2005. At the same time, the proportion who look favorably on using groundwater for golf courses, factories and yard watering has grown significantly. It is not clear in this study what might have caused such a shift in favorable readings over such a short time.

> "*In general, would you say that the use of ground water for the following purposes irresponsible, irresponsible or neither responsible nor irresponsible?*"

2007

	Responsible	Unsure/ Neither	Irre-sponsible	Net "Responsible"
Farm irrigation	61%	16%	23%	+37
Household use	55	20	25	+30
Yard and garden watering	60	15	25	+35
Factories	53	20	27	+26
Golf course irrigation	58	14	28	+30

2005

	Responsible	Unsure / Neither	Irre-sponsible	Net "Responsible"
Farm irrigation	63%	16%	21%	+42
Household use	60	17	23	+37
Yard and garden watering	47	21	32	+12
Factories	40	28	32	8
Golf course irrigation	33	22	45	-12

DROUGHT IMPACT VIEWED MORE SERIOUSLY

When asked whether a drought in Arizona would have an impact on their lifestyle, 60 percent say it would have a major impact on themselves. This is a significant increase over 2005 (49%) and may reflect growing awareness that the current drought may be longer lived than thought in 2005. The rise in concerns about drought traces principally to shifts among men and upper income families in the region. .

"If Arizona was in a drought, do you think it would have a major, minor or no effect on your lifestyle?"

	IMPACT ON US WOULD BE			
	Major	Minor	No Impact	Unsure
ALL RESPONDENTS				
2007	60%	29%	9%	2%
2005	49	37	12	2
Detail = 2007				
Men	57	31	10	2
Women	64	27	7	2
INCOME				
Under $25,000	54	38	8	0
$25,000 to $44,999	58	29	13	0
$45,000 to $64,999	71	21	8	0
$65,000 +	61	31	7	1
White collar	61	32	6	1
Blue collar	65	23	12	0
Retirees	66	21	11	2

In addition, we continue to register broad public belief that conservation behavior by consumers could have a significant impact on helping assure the long-term availability of water for our communities. Further, this belief cuts across all consumer groups, although women are more likely than men to hold these views.

"If people in Arizona got serious about water conservation, do you think it could have a major, a minor or no effect on ensuring the long term availability of water for our communities?"

	IMPACT ON US WOULD BE			
	Major	Minor	No Impact	Unaware
TOTAL				
2007	80%	14%	2%	4%
2005	75	17	3	5
DETAIL 2007				
Men	83	13	2	2
Women	78	15	3	4
White collar	87	11	1	1
Blue collar	75	19	3	3
Retirees	77	13	4	6

ARIZONA WILL FACE WATER SHORTAGES IN 19.7 YEARS, SAY RESPONDENTS

On average, area residents believe it will be nearly 20 years before central Arizona reaches a point of water shortages. This is farther out than the 16.5 years estimated in 2005 and may in part explain why consumers are more positive about the use of groundwater for a wide variety of uses. This having been said, seven of ten foresee Arizona running out of water in two decades. And even if all reclaimed water is treated and recycled, the majority believe the state will run short in 28 years.

"As you may be aware, the population of central Arizona, including Maricopa and Pinal Counties is growing rapidly and now contains about 3.7 million people. If the area continues to grow, how many years do you think it will be before water will run short?

		Total	Men	Women
10 or less years		34%	31%	37%
11 to 19 years		7	8	7
20 or longer years		30	32	26
Unsure		29	29	30
Mean years among those with an opinion	2007	19.7	19.7	19.7
	2005	16.5	19.1	13.8

"If Arizona reclaimed all the water it currently uses in homes, businesses and organizations and then cleaned the water for such things as landscaping, golf courses, toilets in commercial and public buildings, irrigation and so on, how many years do you think it would be before Arizona ran out of water?"

		Total	Men	Women
10 or less years		18%	18%	19%
11 to 19 years		5	6	4
20 or longer years		46	45	34
Unsure		37	31	43
Mean years among those with an opinion	2007*	28.3	28.6	27.8

(*Not asked in 2005)

PUBLIC KNOWLEDGE LEVELS REGARDING BASIC WATER RESOURCES

Two thirds of the public in the study region admit that they know "little" or "nothing" about such topics as groundwater, surface water, Central Arizona Project water, or reclaimed water. Only about one in ten claims to "know a lot" about any of these water sources.

"Would you say you know a lot, some, only a little or basically nothing about..."

	A Lot	Some	Little or Nothing
Groundwater	12%	21%	67%
Surface water	9	19	72
CAP water	11	21	68
Reclaimed water	10	20	70

PERCEPTIONS OF EFFORTS TO PROMOTE WATER CONSERVATION AND RECYCLING

Between a quarter and a third of the public under study believe various government agencies and water companies are actively taking steps to educate the public about water conservation and water recycling. Only about one in six, however, would characterize any private or public entity as "doing a lot" to educate the public. Indeed, 70 percent or more characterize such educational efforts as either unapparent to them or as insignificant.

Agencies most likely to be viewed as actively working to educate the public include the Arizona Department of Water Resources, in-school education programs and city water departments. The data suggests that an opportunity exists to capture a leadership position on these education issues. Working with school districts might afford a good vehicle.

> *"Would you say the following organizations do a lot, some, only a little or nothing to promote (a) conservation of water in Arizona, (b) recycling of water in Arizona?"*

Promote Water Conservation	A Lot	Some	Net A Lot/ Some	Little/Nothing Don't know
Az. Dept. of Water Resources	20%	19%	(39%)	61%
Schools via recycling education	14	23	(37)	63
City water departments	15	19	(34)	66
Your water company (GWC customer)	13	16	(29)	71
Governor's office	13	15	(28)	72
Your water company (Non-GWC customer)	12	13	(25)	75
Az. Corporation Commission	11	14	(25)	75
State legislature	9	15	(24)	76
Promote Water Recycling				
Schools via recycling education	15%	25%	(40%)	60%
Az. Dept. of Water Resources	18	19	(37)	63
City water departments	14	20	(34)	66
Governor's office	15	15	(30)	70
Your water company (Non-GWC customer)	12	17	(29)	71
State legislature	13	15	(28)	72
Your water company (GWC customer)	13	15	(28)	72
Az. Corporation Commission	10	15	(25)	75

AWARENESS OF THE SCIENCE OF RECLAIMING AND RECYCLING WATER.

Few consumers claim to be very aware of new advances being made in the reclaiming and recycling water. Thus, only seven in 100 claim to "know a lot" about these things. Nineteen percent say they know "something" about it, but three-quarters admit they "know little or nothing."

"As you may know, the science of reclaiming and treating water has grown in-recent years. Would you say you know a lot, some, only a little or basically nothing at all about the science of reclaiming and treating water?"

		Customer of	
	Region	GWC Customer	Non-GWC Customer
Alot	7%	5%	10%
Some	19	24	14
Only a little	38	37	39
Basically nothing	36	34	37

In a follow up question, we asked consumers to tell us what the first thoughts or words are that come to mind when they hear the phrase "reclaimed water." As may be seen in the next table, consumer responses are very diverse and tend to be either neutral in their description (55%) or positive (14%). Roughly 37 percent give negative descriptions.

On the other hand, six of ten give neutral or positive responses. This proclivity may suggest an opportunity to "create" a favorable image orientation in the minds of consumers that could have long term benefits. Focus groups on this issue could provide new insight. We are particularly impressed with what appears to be an intuitive tendency for consumers to substitute words such as "recycling", "reused water" and "clean" or "good" when describing "reclaimed water."

It is also interesting that most negative arguments cling to the perception that reclaimed water has not been treated and therefore remains "dirty/waste", "sewage" and "unsafe." These perceptions should be counter-pointed with words such as "clean", "clear and safe" and included in focus group tests.

"What are the first words or thoughts that come to your mind when you hear the phrase "reclaimed water"?"

				Customers of	
	Total	Men	Women	GWC	Other
Positive	(14%)	(19%)	(12%)	(13%)	(17%)
Clean	6%	9%	3%	7%	5%
Good	5	6	5	4	6
Important/necessary	2	1	2	1	2
Growth	0	0	1	0	1
Low cost	0	1	0	0	1
Lakes/runoff	1	2	1	1	2
Neutral	(54%)	(55%)	(52%)	(58%)	(50%)
Recycling	20%	16%	24%	25%	15%
Re-used water	12	17	10	11	14
Golf courses	5	5	4	6	4
Treated water	4	5	3	5	3
Irrigation	3	4	3	2	5
Conservation	3	2	3	3	3
Filtered	2	1	2	3	1
Take it back	2	2	1	1	2
Waste water	1	2	1	1	2
Landscaping	1	1	1	1	1
Negative	(37%)	(36%)	(35%)	(40%)	(34%)
Dirty/nasty	12%	8%	16%	17%	7%
Sewage	8	10	7	8	9
Unsafe for humans	8	9	6	10	6
Gray water	3	4	1	2	4
Toilet water	2	2	1	1	3
Drain water	1	1	1	1	2
Stinking water	1	1	1	0	1
Pollution	1	1	1	1	1
High costs	0	0	1	0	1
Don't know	8%	5%	10%	5%	10%

MOST NOT WORRIED ABOUT THE USE OF RECLAIMED WATER

Seven of ten consumers say they are not concerned about reclaimed water being recycled for use in their community, about seven percent are unsure and only 22 percent express concerns. We do note a rise in concerns among Hispanic consumers (and minorities in general) and among women and retirees. It is very interesting that such large percentages of people are basically unconcerned about the use of reclaimed water being recycled for use in their community when simultaneously nearly four in ten have negative images of "reclaimed water." Clearly, the addition of the word recycled has a powerful impact. In effect, the phrase "recycled reclaimed" water seems to carry with it the assumption that it has some how been treated or cleaned and is safer.

"In general are you worried or not worried about reclaimed water being recycled for use in your community?"

	Yes	No	Unsure
TOTAL	22%	71%	7%
Men	17	79	4
Women	27	65	8
Retirees	29	62	10
Caucasian	17	77	6
Hispanic	43	51	6
Other	31	62	7

Those who said they were worried about the use of such water, or who were "unsure" about how they felt, were asked if they would still be worried for specific applications, as shown in the next question. As may be seen, from 76 to 89 percent say they would not worry about reclaimed water used for outside watering or for either public or household toilets.

> *"If you knew that reclaimed water goes through various stages of treatment and testing before being recycled for use, would you worry or not worry about reclaimed water being used in the following ways?"*

	Worry	Not Worry	Unsure
To water plants and grass in parks and golf courses.	8%	89%	3%
To water school yards, plants and grass	22	76	2
To water your own lawn	12	84	4
For flushing toilets in public buildings	7	88	5
For flushing toilets in your home	17	80	3

AWARENESS OF USES OF RECLAIMED WATER

Just over a third (35%) of area consumers say they believe that there are areas in their community in which reclaimed water is being used. A somewhat lower percent (27%) claim to be aware that reclaimed and treated sewer water is reused in landscaping.

"Are you aware of any areas of your community where treated, reclaimed water is being used?"

	Yes	No	Unsure
TOTAL	35%	57%	8%
Global customers	36	57	7
Non-Global customers	33	58	9
Casa Grande	34	50	16
Coolidge	22	71	7
Florence	42	56	2
Queen Creek	35	55	10

"As far as you know do they reclaim and treat sewer water for re-use in landscaping?"

	Yes	No	Unsure
2007	27%	27%	46%
2005	25	11	64
2007 Detail			
Global customer	26	25	49
Non-Global customer	28	29	43

PERCEPTION OF WHERE USE OF TREATED AND RECLAIMED WATER IS A GOOD IDEA

As was found in 2005, a strong majority of the public believes it is a "good idea" to re-use water after it has been treated and reclaimed, especially if uses are for such things as golf courses (92%), home landscaping (88% compared to 79% in 2005) or in public toilets and urinals (90% in 2007 compared to 79% in 2005) Six of ten also approve of use of such water for household toilets (up from 60 percent in 2005)

And in general, Global Water Company customers are the most supportive of such uses, which may reflect their greater familiarity with such programs.

"Next, I would like to read you a list of programs used in some places to re-use water after it has been treated and reclaimed. For each use, please tell me if you think it is a good idea or a bad idea."

	Good Idea	Bad Idea	Unsure
For Golf Course Irrigation			
Total	92%	6%	2%
GWC customers	95	4	1
For Home Landscaping			
Total	88	9	3
GWC customers	93	6	1
In Public Toilets and Urinals			
Total	90	8	2
GWC customers	95	4	1
For Toilets in the Home			
Total	83	14	3
GWC customers	87	12	2

WILLINGNESS TO USE RECLAIMED WATER IS STRONG

Two new questions were deployed in 2007 to gauge consumer willingness to (a) use reclaimed and treated water for uses other than drinking and (b) to live in a community with strong recycling programs and laws. As may be seen, two-thirds are "very willing" to use reclaimed water for purposes other than drinking, similarly, 66 percent say they would be "very willing" to purchase a home in a community with strong recycling laws and programs.

> *"And now, using that same scale of zero to ten where zero means you are not willing to do it and ten means you are very willing to do it, how willing are you to do each of the following?"*

		Not Very Willing (0-4)	Some-what Willing (5-6)	Very Willing (7-10)	MEAN SCORE
Use reclaimed and treated water for other than drinking:	2007	15%	18%	65%	7.2
	2005	N/A	N/A	N/A	N/A
Purchase a home in a community that has strong water recycling programs and laws:	2007	13	20	66	7.3
	2005	N/A	N/A	N/A	N/A

WILLINGNESS TO PAY IF RECLAMATION WORKS TO INCREASE WATER SUPPLY

Assuming Arizona reclaimed and recycled all water so that it increased our overall water supply and produced water that is safe for human use, an astonishing 48 percent of consumers say they would be willing to pay an additional $20 a month in water fees. Willingness to pay $15 more a month is found among 55 percent of the public and willingness climbs to 69 percent at ten dollars a month and to 90 percent at five dollars a month. The readings at the five dollar or even the ten dollar level are less surprising than the willingness to pay 15 to 20 dollars more per month. This speaks loudly about the personal commitment consumers appear willing to make to help assure water supplies.

> *"Water experts say that if all water used in Arizona is reclaimed, cleaned, treated and recycled, Arizona might never run short of water. Assuming that we did reclaim and recycle all the water so that it increased our overall water supply and produced water that is safe for human use, would you be willing or not willing to pay the following additional amount in your monthly home water bill."*

	Willing	Not Willing
@ $20/month	48%	52%
@ $15/month	55	45
@ $10/month	69	31
@ $5/month	90	10

Considering the increased sensitivity of consumers to what they perceive as rising water costs, the broad willingness to pay higher water fees for recycled water in the name of helping Arizona avoid drought is very impressive. More important, the results for this question help underscore the importance of providing consumers with a community rational for such increases, a rational that goes beyond the cost of doing business.

PERCEPTIONS ON ABILITY TO RECLAIM AND TREAT FIVE KINDS OF END WATER

In question 14 of this survey, we split the inquiry to explore the degree to which consumers think each of five kinds of reclaimed and treated water could be used for (a) human use and (b) for use on plants. It is clear that with the exception of sewer or black water, most people believe these waters can be reclaimed and treated to make them safe for use on plants and by human beings.

In addition to their hesitation about using sewage water, also note concern about recycling farm run off water, a water category that in recent years has been the focus of many media stories on the negative impact on the environment of such run off.

> *"Next I will read you a list of different kinds of used water. For each, please tell me if you think it definitely can, probably can or probably cannot be reclaimed and treated to make it safe for (a) human use (b) use on plants."*

	Definitely Can	Probably Can	Total "Can"
HUMAN USE:			
CAP Canal Water	35%	38%	73%
Shower/sink water/grey water	30	42	72
Surface runoff from roads/streets	24	40	64
Runoff water from farms	19	36	55
Sewage water/black water	14	22	36
PLANT USE:			
CAP Canal Water	33%	42%	75%
Shower/sink water/grey water	20	49	69
Surface runoff from roads/streets	23	43	66
Runoff water from farms	17	37	54
Sewage water/black water	13	32	45

PERCEPTIONS ABOUT SAFETY OF USING RECLAIMED WATER

In question 13, we explored the extent to which people believe "reclaimed water" developed by state licensed companies can be safely used for each of eight applications. Two versions of the question were used to test how responses might vary if respondents are simply asked the question "straight" or if the question is preceded with a message designed to persuade people that reclaimed water is safe to use. The two questions were framed as follows.

> (Version A)"*From what you know or hear, would you say reclaimed water provided by state licensed water companies if definitely safe, probably safe or not safe for each of the following uses?*"

> (Version B)"*It happens that the term "reclaimed water" refers to a process by which water used in houses and businesses goes down the drain and becomes wastewater, which is then transported to a water reclamation facility where it is cleaned and sterilized using biological and chemical processing. Such water then can be safely reused in a variety of meaningful ways in the community, such as neighborhood lakes, boulevard irrigation and flushing toilets. Given this definition, would you say reclaimed water provided by state licensed water companies is definitely safe, probably safe or not safe for each of the following uses?*"

Findings:

- Regardless of how the question is set up, there is little variation in the overall proportion who believe such uses are, or probably are, safe.
- Nearly everyone considers reclaimed water from a state licensed water company safe to use for car washing, in toilets, on golf courses and on lawns.
- Roughly half believe reclaimed water from state licensed companies is safe to use in swimming pools, in showers and sinks and on food crops.
- However, only a quarter to a fifth think such water would be safe to drink.
- The simpler version of the two statements produces the best results (ie., the proportion who believe such uses are "definitely safe".

	Version A With Explanation Is it safe to use for....			Version B Without Explanation Is it safe to use for....		
	Definitely	Probably	(Total)	Definitely	Probably	(Total)
For use on golf courses	64%	32%	(96%)	48%	47%	(95%)
For use in toilets	59	37	(96)	48	47	(95)
For use in car washing	64	30	(94)	50	43	(93)
For use on lawns	56	38	(94)	47	47	(94)
For use on food crops	24	34	(58)	12	39	(51)
For use in swimming pools	22	32	(54)	17	33	(50)
For use in showers and sinks	18	33	(51)	11	36	(47)
For drinking	7	18	25	3	17	20

PROFILE OF RESPONDENTS

	All Customers	Global Customers
AGE OF RESPONDENT		
Under 25	4%	Under 0.5%
25 to 34	22	32
35 to 44	22	22
45 +	46	37
Refused	6	5
ETHNICITY		
Caucasian	73	73
Hispanic	12	10
All others	11	12
Refused/not sure	4	5
OCCUPATIONAL STATUS		
Employed (Net)	(57)	(67)
White collar	40	54
Blue collar	17	13
Homemaker/Student	13	13
Unemployed	5	4
Retired	25	16
GENDER		
Male	48	53
Female	52	48
INCOME		
Under $25,000	6	4
$25,000 to $44,999	13	11
$45,000 to $64,999	27	29
$65,000 +	33	37
Refused	21	19
LENGTH OF RESIDENCE		
1 year or less	26	40
2 to 4 years	33	37
5 to 10 years	16	10
11+ years	19	4
Refused	6	9
(Mean)	(8.5)	(3.8)

	All Customers	Global Customers
Years They Plan to Stay in Area		
3 or less	19%	25%
4 to 7	14	21
8+	33	24
Unsure	34	30
(Mean)	(14.7)	(9.9)
Have Children Living at home	40	41

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JOB ID 2006099

GLOBAL WATER CO.
January - 2007

	QUOTAS		
	GW	NonGW	Total
Pinal/Maricopa	200	200	400

Hello, my name is _____ and I'm an interviewer for Behavior Research Center, a national marketing research firm. We are conducting a Rocky Mountain Poll among Arizona residents on issues of the day and I'd like to speak with you for a few moments.

A. Before we get started, is the male head of your household available? (IF RESPONDENT ASKS WHY YOU WANT TO SPEAK TO THE MALE HEAD OF THE HOUSEHOLD: It is harder to get enough males to participate in studies such as this than it is to get females to participate so we always ask if the MALE HEAD OF HOUSEHOLD is available).

Male...1
Female...2

IF THE MALE HEAD OF THE HOUSEHOLD IS NOT AVAILABLE, ASK TO SPEAK TO THE FEMALE HEAD OF HOUSEHOLD, RE-INTRODUCE YOURSELF AND CONTINUE. IF NOT AVAILABLE, SCHEDULE A CALL BACK.

(SPLIT QUESTION) Good, now to start I'd like to ask you how important certain things are to you. For each, please use a scale of zero to ten where zero means it is of no importance to you and ten means it is very important to you. Of course, you may use any number between zero and ten. (ROTATE SEQUENCE)

	RATING
a. 1 Living in a community where everyone tries to conserve water	_____
b. 2 Living in a community that recycles sewer water for re-use in the toilets and urinals of public buildings and office buildings	_____
c. 1 The water quality in your community	_____
d. 2 Long term water availability in your community	_____
e. 1 Living in a community with public swimming pools	_____
f. 2 Living in a community with golf courses	_____
g. 1 Living in a community with green parks and open space	_____
h. 2 Living in a community with public lakes and other water features	_____
i. 1 Living in a community in which people have pools at home	_____

2. And now, using that same scale of zero to ten where zero means you are not willing to do it and ten means you are very willir to do it, how willing are you to do each of the following?

	WILLINGNESS RATING
A. Use reclaimed and treated water for other than drinking	_____
B. Purchase a home in a *community* that has strong water recycling programs and laws.	_____

Is the water to your home provided by the county, the city or a private water company?

(GO TO Q 4) County.
(GO TO Q 4) City/town.
(ASK Q 3A) Private company.
(GO TO Q4) Unsure.

3.a And what is the name of your water company? (DO NOT READ NAMES)

Global Water ...1
Santa Cruz Water...2
Other(specify_____)...3
Not sure...9

4 Would you rate your water company in each of the following areas as excellent, good, only fair, poor or very poor? (ROTATE)

		Excellent	Good	Only Fair	Poor	Very Poor	Not Sure
a.	Dependability of service	1	2	3	4	5	6
b.	Water quality they provide	1	2	3	4	5	6
c.	Price they charge for the water	1	2	3	4	5	6
d.	Their involvement and support of community programs	1	2	3	4	5	6

5 Would you say you know a lot, some, only a little or basically nothing at all about each of the following? (ROTATE)

		A Lot	Some	Only a Little	Nothing At All
a.	Groundwater	1	2	3	4
b.	Surface water	1	2	3	4
c.	Central Arizona Project water	1	2	3	4
d.	Reclaimed water	1	2	3	4

6 And as far as you know, are the following sources or not sources for the water that is treated and delivered to your home for household use. (ROTATE)

		Is a Source	Is not a source	Unsure
a.	Ground water wells	1	2	3
b.	Surface water	1	2	3
c.	Central Arizona Project water	1	2	3
d.	Reclaimed water	1	2	3

7. If Arizona were in a drought, do you think it would have a major, minor or no effect on your lifestyle?

Major...1
Minor...2
No effect...3
Not sure...4

8. If people in Arizona got serious about water conservation, do you think it could have a major, a minor or no effect on ensuring the long term availability of water for our communities?

Major...1
Minor...2
No effect...3
Not sure...4

9. As you may be aware, the population of Central Arizona, including Maricopa and Pinal Counties is growing rapidly and now contains about 3.7 million people. If the area continues to grow, how many years do you think it will be before water will run short?

# of Years

ENTER RESPONDENT ESTIMATE: _____

Not sure...99

And if Arizona reclaimed all of the water it currently uses in homes, business and agriculture and then cleaned the water for such things as landscaping, golf courses, toilets in commercial and public buildings, irrigation, and so on, how many years do you think it would be before Arizona ran out of water?

_____ # of years

11. As you may know, the science of reclaiming and treating water has grown in recent years. Would you say you know a lot, some, only a little or basically nothing at all about the science of reclaiming and treating water?

A lot...1
Some...2
Only a little...3
Basically nothing...4

12. What are the first words or thoughts that come into your mind when you hear the phrase "reclaimed water." (RECORD VERBATIM RESPONSES)

13. *(SPLIT QUESTION - ½ hear 13.V.1 with definition, the others hear 13.V.2 without definition)*

13.V.1 It happens that the term "reclaimed water" refers to a process by which water used in houses and businesses goes down the drain and becomes wastewater, which is then transported to a water reclamation facility where it is cleaned and sterilized using biological and chemical processing. Such water then can be safely reused in a variety of meaningful ways in the community, such as neighborhood lakes, boulevard irrigation and flushing toilets. Given this definition, would you say reclaimed water provided by state licensed water companies is definitely safe, probably safe or not safe for each of the following uses: (READ LIST AND ROTATE SEQUENCE)

13 V.2 From what you know or hear, would you say reclaimed water provided by state licensed water companies is definitely safe, probably safe or not safe for each of the following uses: (READ LIST AND ROTATE SEQUENCE)

	Definitely Safe	Probably Safe	Probably Not Safe	Unsure
a. for drinking	1	2	3	4
b. for use on the lawn	1	2	3	4
c. for use on food crops	1	2	3	4
d. for use on golf courses	1	2	3	4
e. for use in toilets	1	2	3	4
f. for use in showers and sinks	1	2	3	4
g. for use in swimming pools	1	2	3	4
h. for use in car washing	1	2	3	4

14. (SPLIT QUESTION)

14.V.1 Next I will read you a list of different kinds of used water. For each, please tell me if you think it definitely can, probably can or probably cannot be reclaimed and treated to make it safe for human use:

	Definitely Can	Probably Can	Probably Cannot	Unsure
a. Sewage water, sometimes called black water	1	2	3	4
b. Shower and sink water, sometimes called grey water	1	2	3	4
c. Surface run off water from roads and streets	1	2	3	4
d. Central Arizona Project canal water	1	2	3	4
e. Run off water from farms	1	2	3	4

14.V.2 Next, I would like to read you a list of different kinds of used water. For each, please tell me if you think it *definitely*, probably or probably cannot be reclaimed and treated to make it safe for use on plants:

	Definitely Can	Probably Can	*Probably* Cannot	Unsure
a. Sewage water, sometimes called black water	1	2	3	4
b. Shower and sink water, sometimes called grey water	1	2	3	4
c. Surface run off water from roads and streets	1	2	3	4
d. Central Arizona Project canal water	1	2	3	4
e. Run off water from farms	1	2	3	4

15. In general, are you worried or not worried about reclaimed water being recycled for use in your community?

Worried – Ask 15a
Not worried – Go to 16
Unsure – Ask 15a

15a. (IF WORRIED OR UNSURE ASK) If you knew that reclaimed water goes through various stages of treatment and testing before being recycled for use, would you worry or not worry about reclaimed water being used in the following ways.

	Worry	Not Worry	Not Sure
a. To water plants and grass in parks and golf courses	1	2	3
b. To water school yard plants and grass	1	2	3
c. To water your own lawn	1	2	3
d. For flushing toilets in public buildings	1	2	3
e. For flushing toilets in your home	1	2	3

16 One water company in Pinal county is called Global Water. Would you say that your overall impression of Global Water is very favorable, favorable, unfavorable or very unfavorable? If you have never heard of Global Water, please feel free to say so.

Very favorable...1
Favorable...2
Aware, but neutral...3
Unfavorable...4
Very unfavorable...5
Unaware of them...6

17 Are you aware of any areas in your community where treated re-claimed water is being used?

Yes....1
No...2
Unsure...3

18. As far as you know, do they treat and reclaim sewer water for re-use in landscaping?

Yes...1
No...2
Unsure...3

Next, I would like to read you a list of programs used in some places to re-use water after it has been treated and reclaimed. For each use, please tell me if you think it is a good idea or a bad idea. (ROTATE)

	Good Idea	Bad Idea	Not Sure
a. Use treated reclaimed water in public toilets and urinals	1	2	3
b. Use treated reclaimed water for toilets in the home	1	2	3
c. Use treated reclaimed water for golf course irrigation	1	2	3
d. Use treated reclaimed water for home landscaping	1	2	3

20. In general, would you say that the use of ground water for the following purposes is responsible, irresponsible or neither responsible nor irresponsible? (ROTATE)

	Responsible	Irresponsible	Neither	Unsure
a. Golf course irrigation	1	2	3	4
b. Farm irrigation	1	2	3	4
c. Yard and Garden watering	1	2	3	4
d. Household use	1	2	3	4
e. Factories	1	2	3	4

21. Water experts say that if all water used in Arizona is reclaimed, cleaned, treated and recycled, Arizona might never run short of water. Assuming that we did reclaim and recycle all the water so that it increased our overall water supply and produced water that is safe for human use, would you be willing or not willing to pay the following additional amount in your monthly home water bill. (READ LIST BUT STOP AT THE FIRST "WILLING")

	Willing	Not Willing	Unsure
a. 20 dollars per month	1	2	3
b. 15 dollars per month	1	2	3
c. 10 dollars per month	1	2	3
d. 5 dollars per month	1	2	3

22. (SPLIT QUESTION)

V.22.1 Would you say the following organizations do a lot, some, only a little or nothing at all to promote **conservation of water** in Arizona.

V.22.2 Would you say the following organizations do a lot, some, only a little or nothing at all to promote **recycling of water** in Arizona.

	A Lot	Some	Only a Little	Nothing	Unsure
a. Your water company	1	2	3	4	5
b. City water departments	1	2	3	4	5
c. The Arizona Department of Water Resources	2	3	4	5	
d. The Arizona Corporation Commission	1	2	3	4	5
e. The State legislature	1	2	3	4	5
e. The Governor's office	1	2	3	4	4
f. Schools with water conservation education	1	2	3	4	5

DEMOGRAPHICS

Now before I finish, I need a few pieces of information about yourself for classification purposes only.

A. In what year were you born? (RECORD ONE YEAR ONLY)

YEAR: / / / / /

B. Which of the following categories best describes your ethnic origin? (READ LIST AND RECORD ONE RESPONSE; ROTATE)

Caucasian...1
African-American...2
Hispanic...3
Native American...4
Asian...5
Or something else (SPECIFY) _____
(DO NOT READ) Not sure..99

C. Are you currently employed, a homemaker, a student, unemployed, or retired? (RECORD ONE RESPONSE)

(GO TO QD1) Employed...1
(SKIP TO QE) Homemaker...2
(SKIP TO QE) Student...3
(SKIP TO QE) Unemployed...4
(SKIP TO QE) Retired...5

C1. Is that in a white collar job or a blue collar job? (RECORD ONE RESPONSE)

White collar...1
Blue collar...2

And, was your total family income for last year, I mean before taxes and including everyone in your household, under or over $45,000? (RECORD ONE RESPONSE)

UNDER $45,000
Was it under $25,000...1
Or over $25,00...2
(DO NOT READ) Refused under $45,000...3

OVER $45,000
Was it under $65,000...4
Or over $65,000...5
(DO NOT READ) Refused over $45,000..6
(DO NOT READ) Refused overall..99

E. What is your home zip code? (RECORD ONE ZIP) / / / / / /

E.1 How long have you lived at this zip code? _____

E.2 Before living where you are now, what zip code did you live in? / / / / / /

E.3 And how many years more do you plan on living in this area? _____

F. Do you have any children under the age of 18 currently living in your home? (RECORD ONE RESPONSE)

Yes...1
No...2
Don't know / no answer...3

Thank you very much, that completes this interview. My supervisor may want to call you to verify that I conducted this inte

so ... I have your first name so that they may do so? **(VERIFY PHONE NUMBER)**

...E: PHONE #: _____

Thank you. If you would like to participate in our BRCPOLLS DOT COM Internet surveys on topics of interest to you, and be eligible for cash drawings for doing so, please feel free to visit us at BRCPOLLS DOT COM, where you can register. That's BRCPOLLS DOT COM.

TIME END: TOTAL TIME: _____

ADMINISTRATIVE DATA:

INTERVIEWER NAME: #: _____

INTERVIEW DATE: _____

VALIDATED BY: #: _____

Date of validation _____ Validation method: ___ Monitor ___ Callback

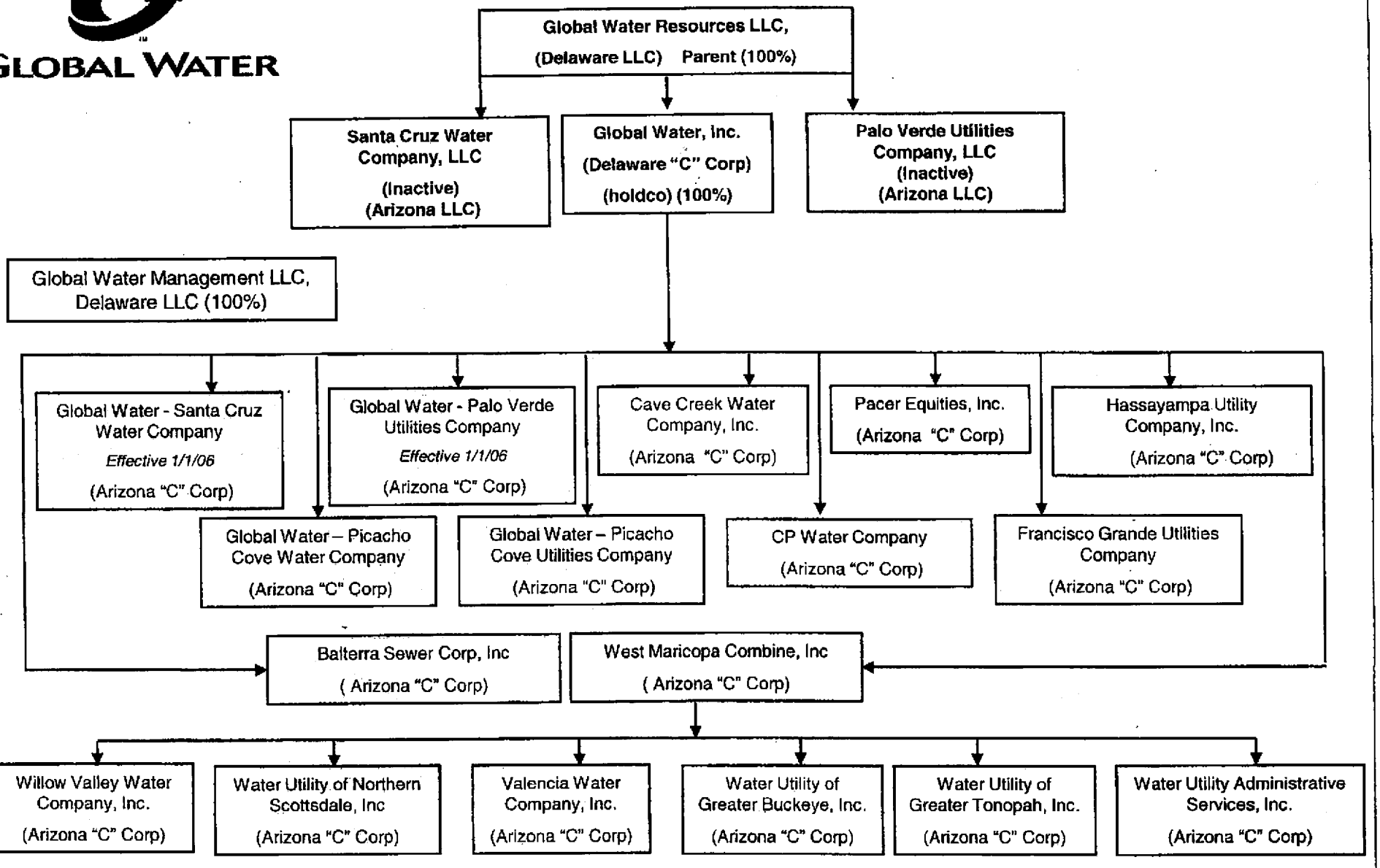
CODED BY: #: _____

Date Coded:

Hill 4

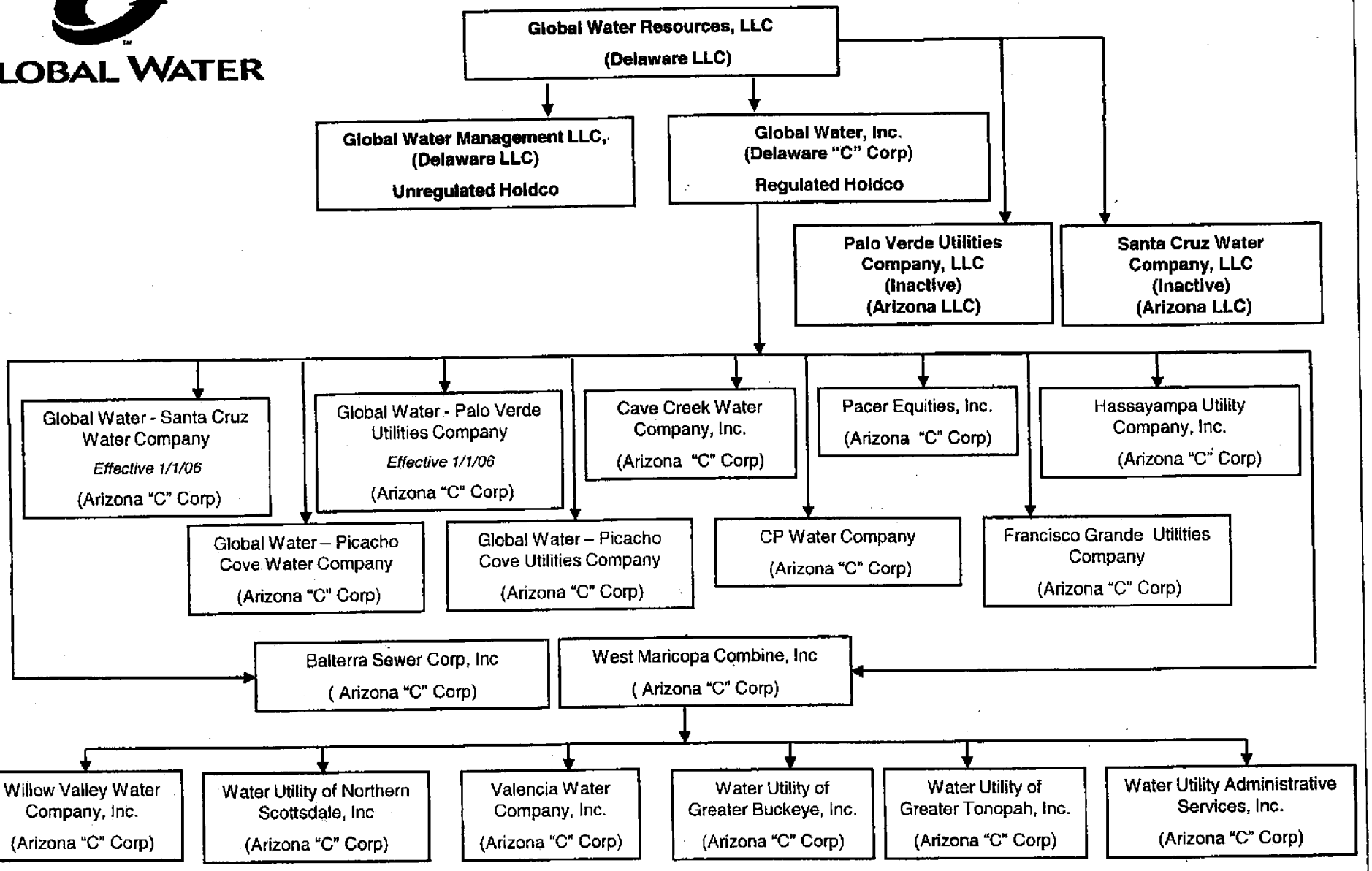
GLOBAL WATER

Corporate Structure (Current)



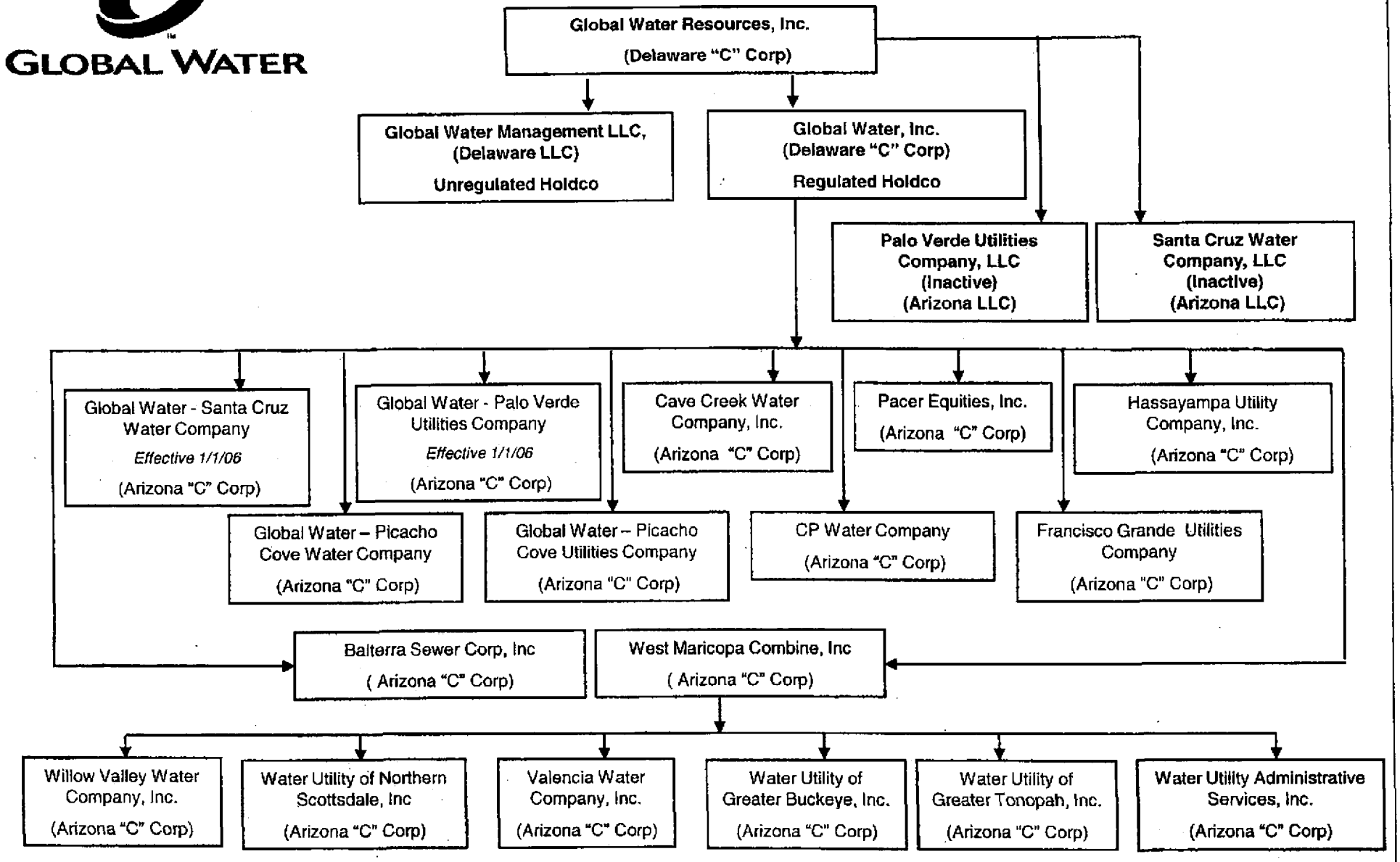
GLOBAL WATER

Corporate Structure (Pre-IPO – Step 1)



GLOBAL WATER

Corporate Structure (IPO – Step 2)



Hill 5

Arizona Outlook

45th ASU/Chase Economic Forecast Luncheon

December 10, 2008

ASU W. P. CAREY SCHOOL of BUSINESS

ARIZONA STATE UNIVERSITY

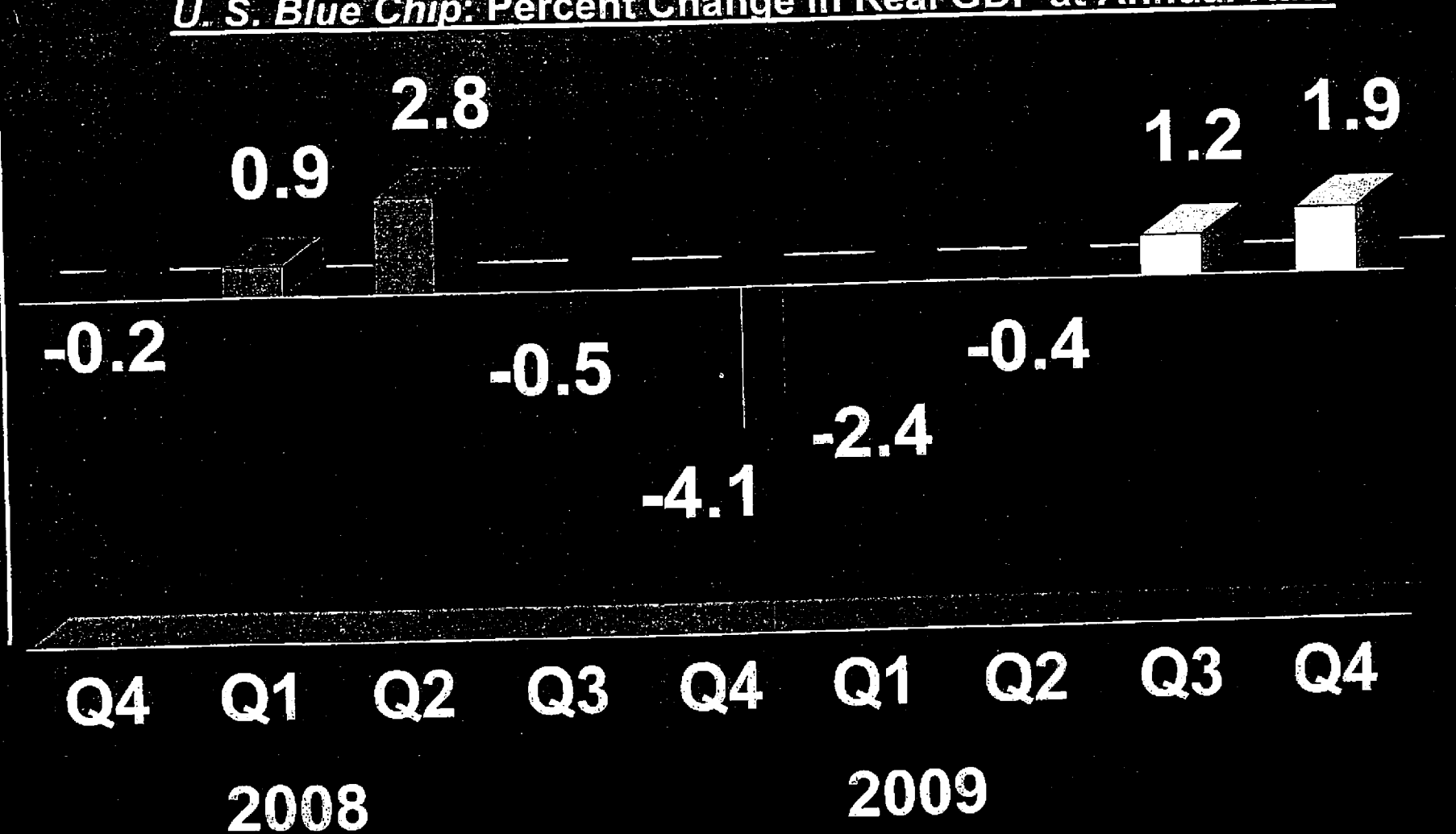
Arizona Update & Outlook

- Recession Watch
- Arizona Downturn
- A Silver Lining
- Outlook is Flat

THE RECESSION WATCH

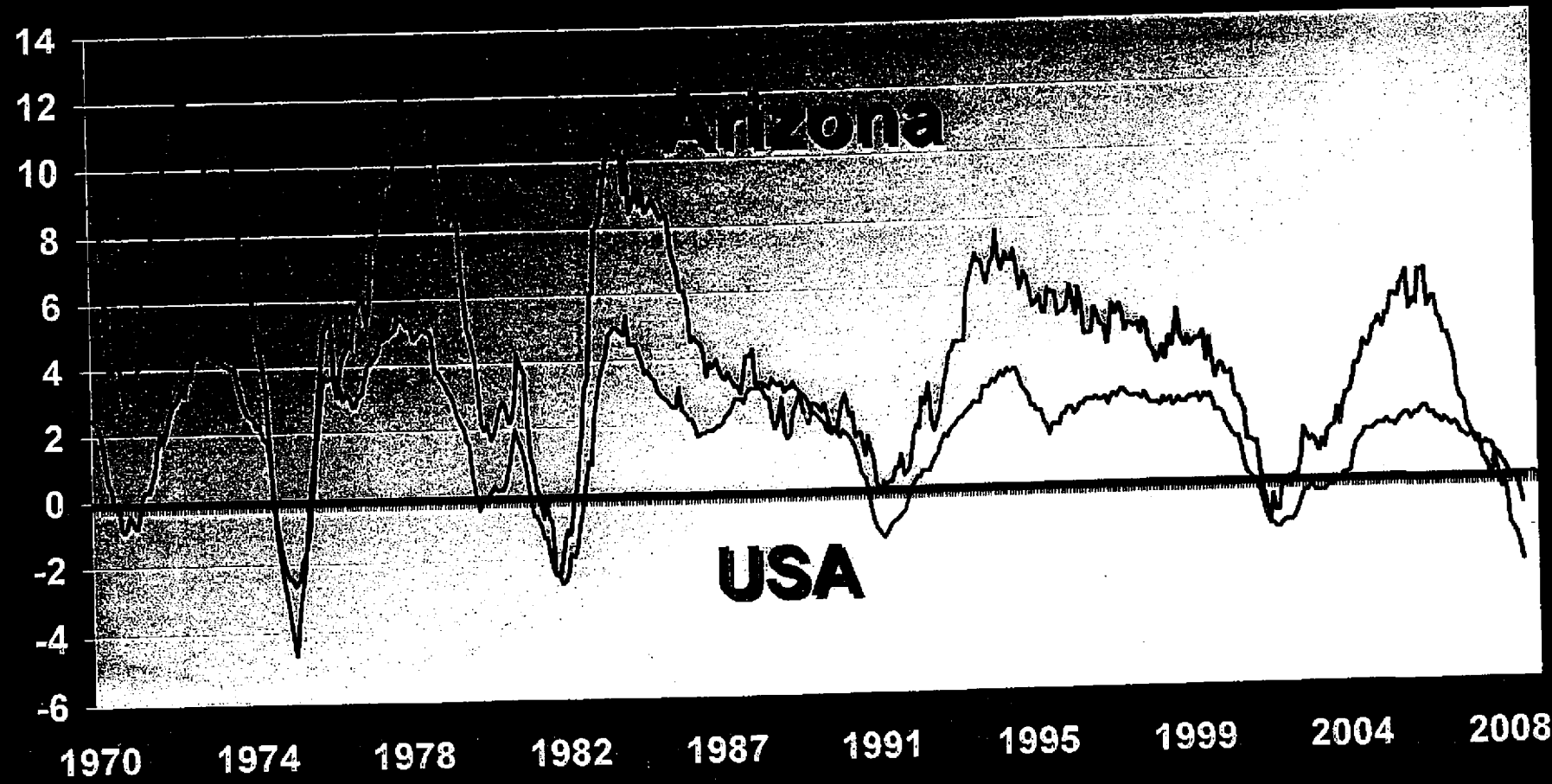
- How severe will it be?
- How long will it last?

GDP Recovery in 2nd Half?



Arizona & US Move Together

(Employment Year/Year Percent Change 1970 - 2008)



Lost: 1.9 million jobs

The 2008 tally soars after payrolls shrink by 533,000 in November, the biggest one-month decline in nearly 34 years. Unemployment soars to 6.7% .

NEW YORK (CNNMoney.com) -- The economy shed 533,000 jobs in November, according to a government report Friday - bringing the year's total job losses to 1.9 million.

November had the largest monthly job loss total since December 1974.

"This is a dismal jobs report," said Keith Hall, commissioner of the Bureau of Labor Statistics, at a congressional hearing. "There's very little in this report that's positive. This is maybe one of the worst jobs reports the Bureau of Labor Statistics (founded in 1884) has ever produced."

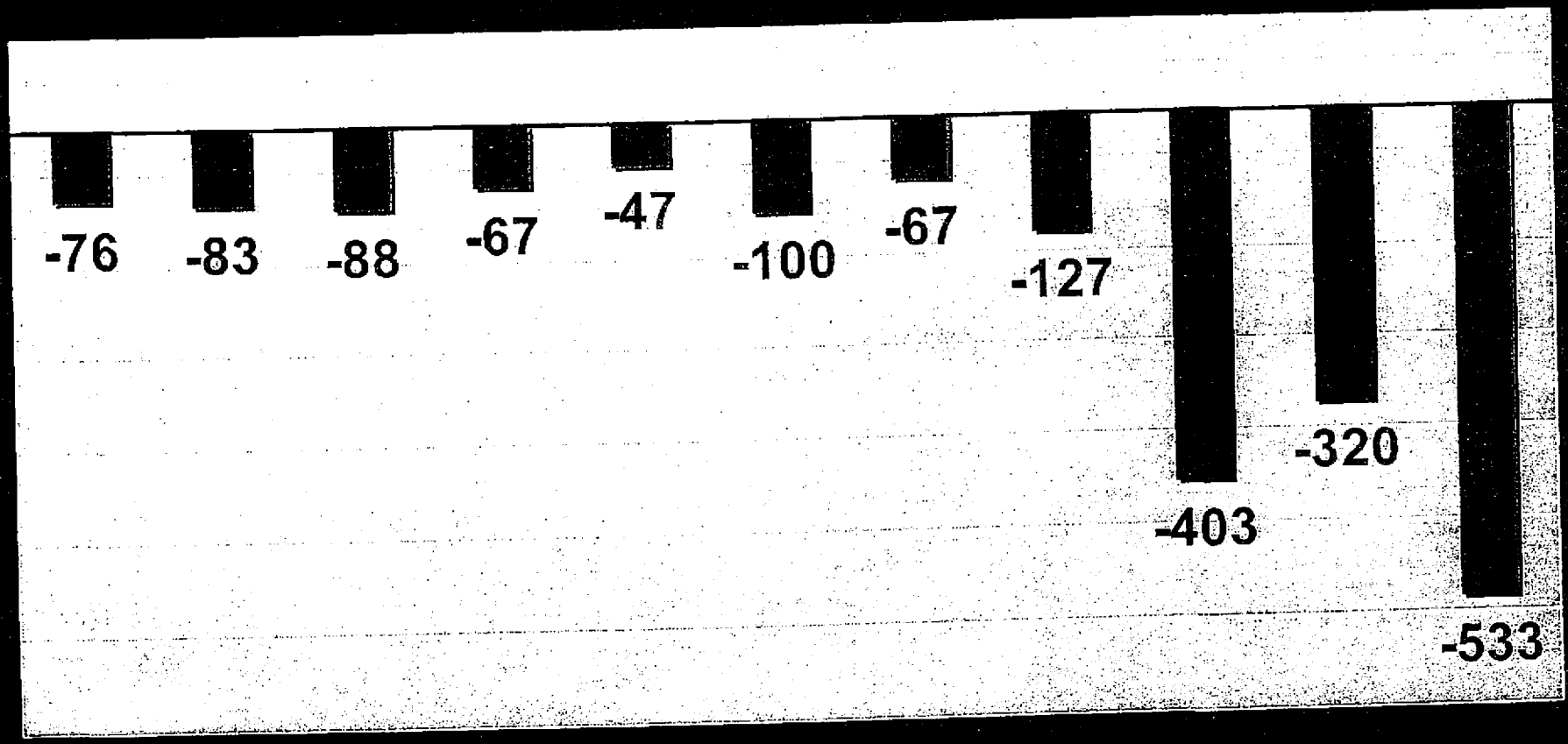
The number of jobs lost in the current recession, which began in December 2007, surpasses the 1.6 million jobs lost in the 2001 recession.

70,900 Arizona Jobs Lost

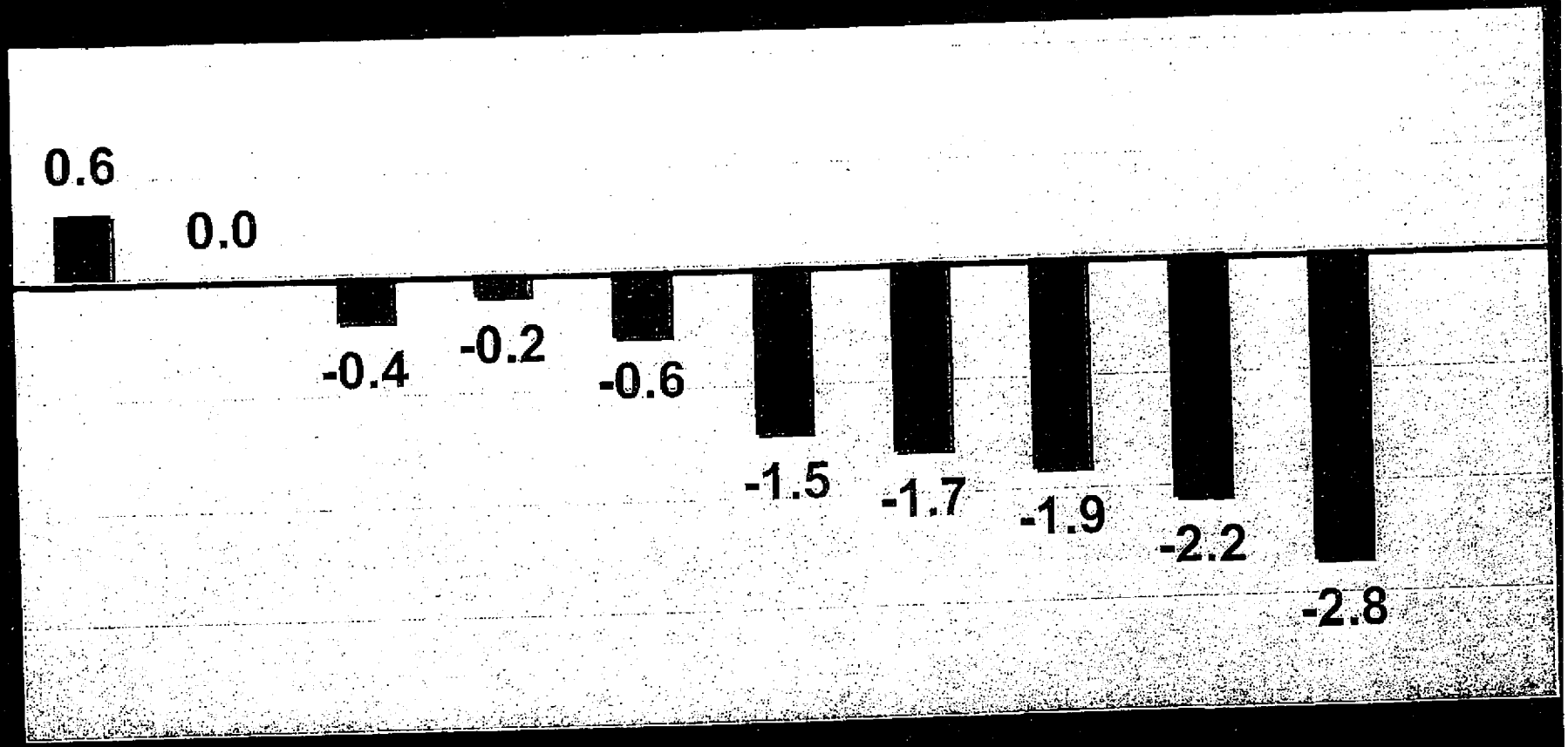
Sector	Oct 08 vs Oct 07
Overall	-70,900
Health Care	+10,000
Science/Technical	+2,700
Government	+6,200
Employment Services	-10,800
Retail Trade	-17,600
Food Service	-8,800
Construction	-37,600

11 Months of U.S. Job Loss

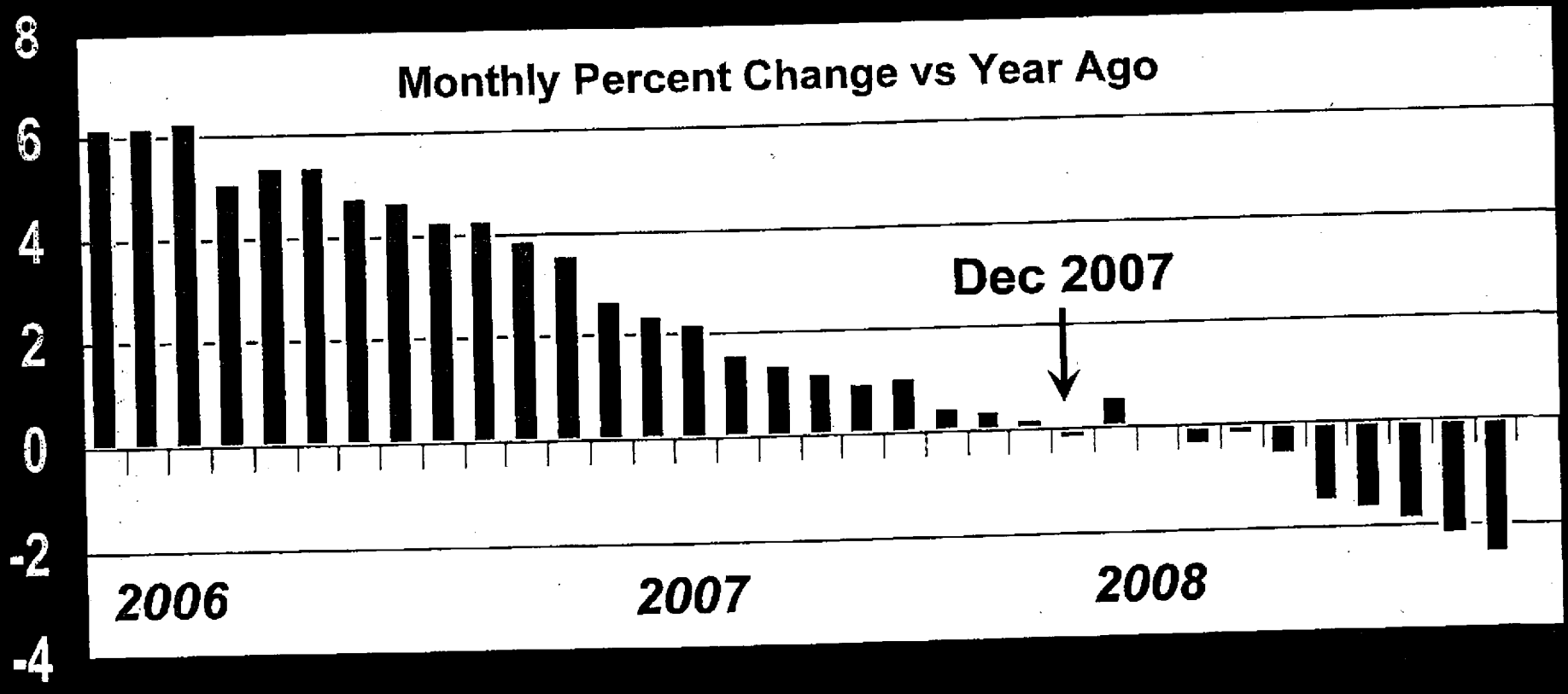
Job Growth/Loss, Thousands



Arizona Job Losses in 2008
Monthly Percent Change vs Year Ago



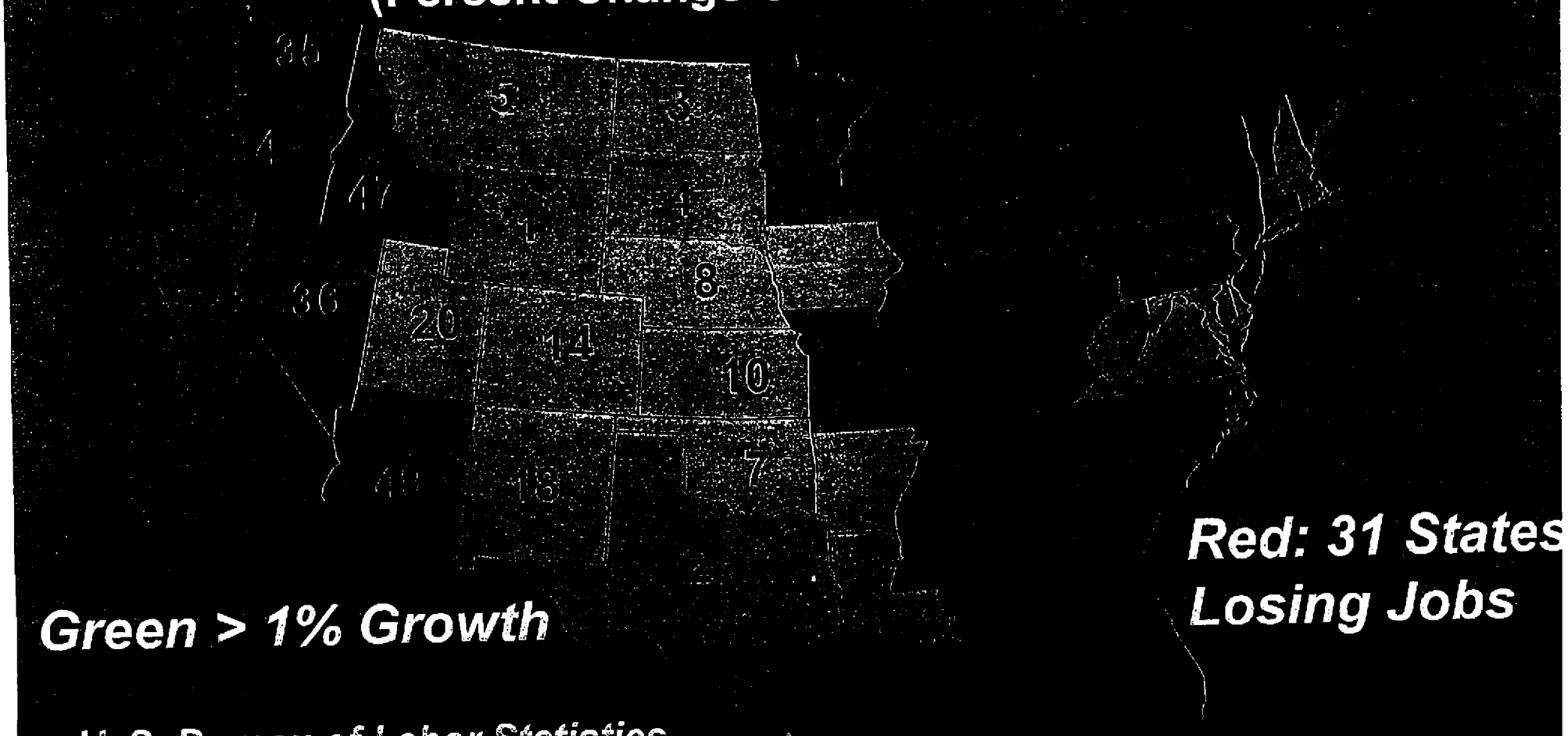
Arizona Job Growth Deteriorated After 2006



Source: Arizona Department of Commerce

Arizona Ranks Near Bottom for Job Growth

(Percent Change Oct. 2008 vs Oct. 2007)



Green > 1% Growth

Red: 31 States Losing Jobs

U. S. Bureau of Labor Statistics

Unemployment at 7%?

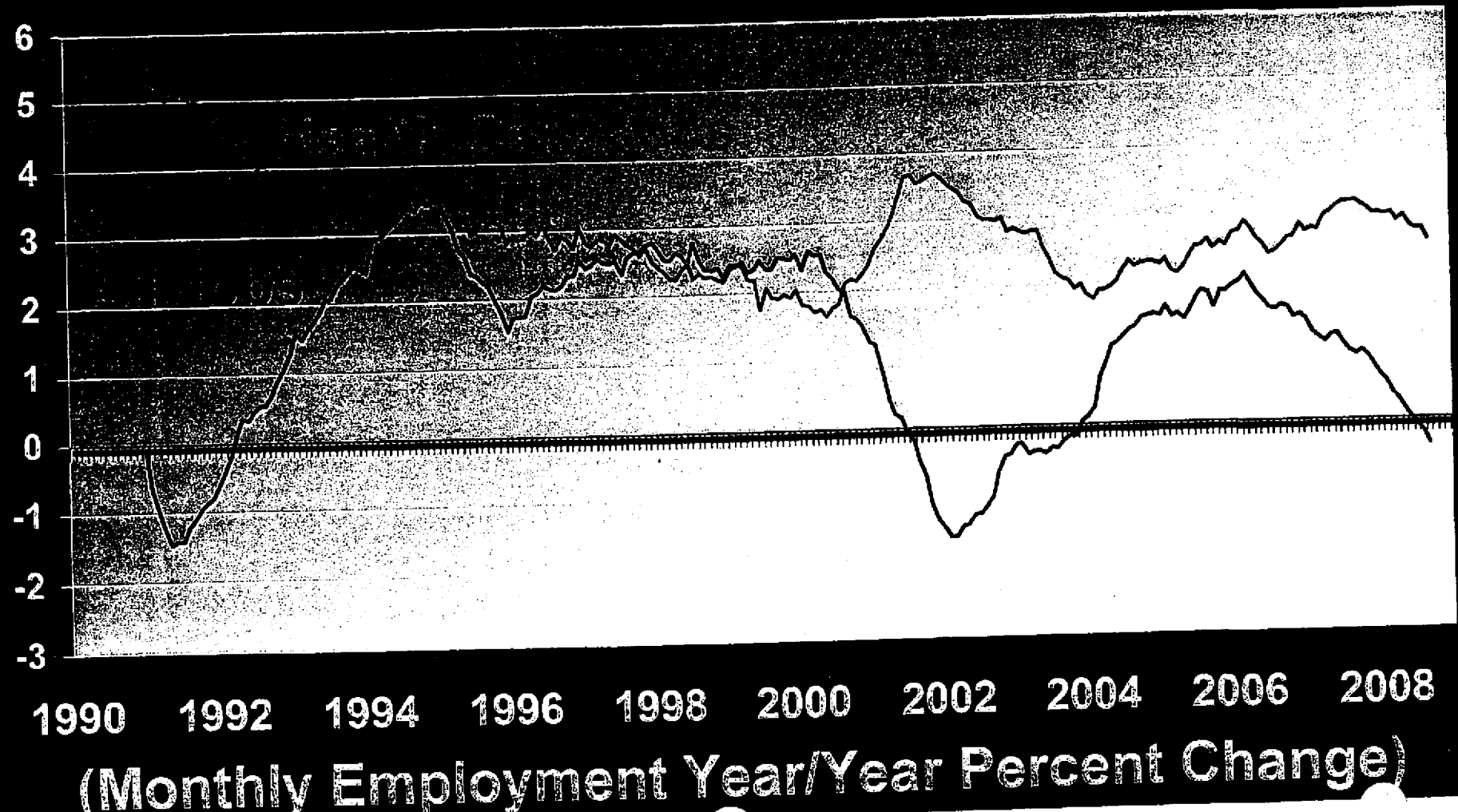
Arizona Unemployment Rates in Recession

1976	10.3%
1982	11.5%
1992	7.5%
2008	6.1%

Less Harmed by Recession

- Food, guns, alcohol
- Health care & related
- Online commerce
- Repair & maintenance
- Basic consumer goods

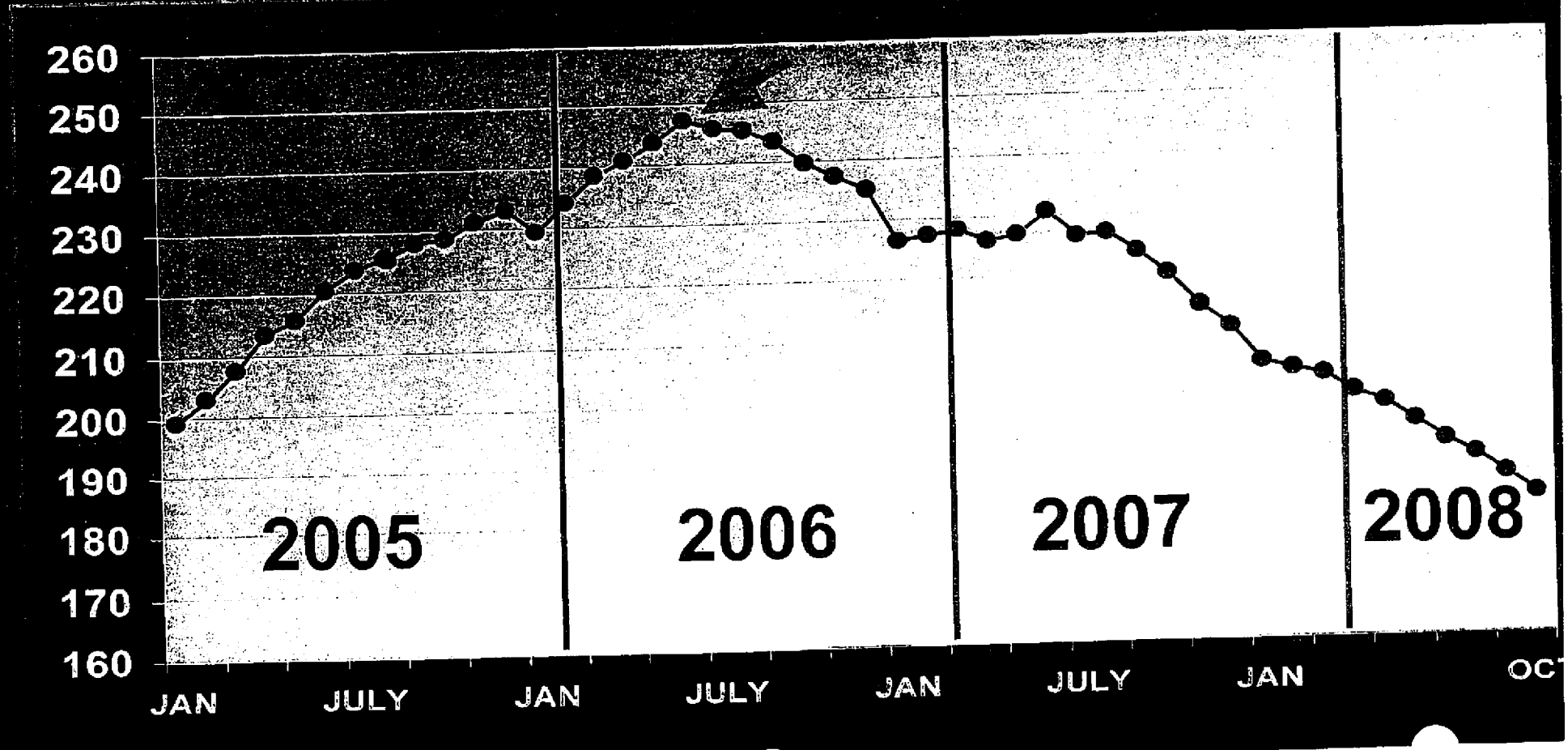
Recession Proof Sector in US Economy: Health Care



Hit Hardest by Recession

- Discretionary & postponable
- Temporary worker agencies
- Construction, home stores
- Retail outlets, restaurants
- Auto dealers, trucking
- Finance & insurance

65,000 Arizona Construction Jobs Lost Since Summer of 2006

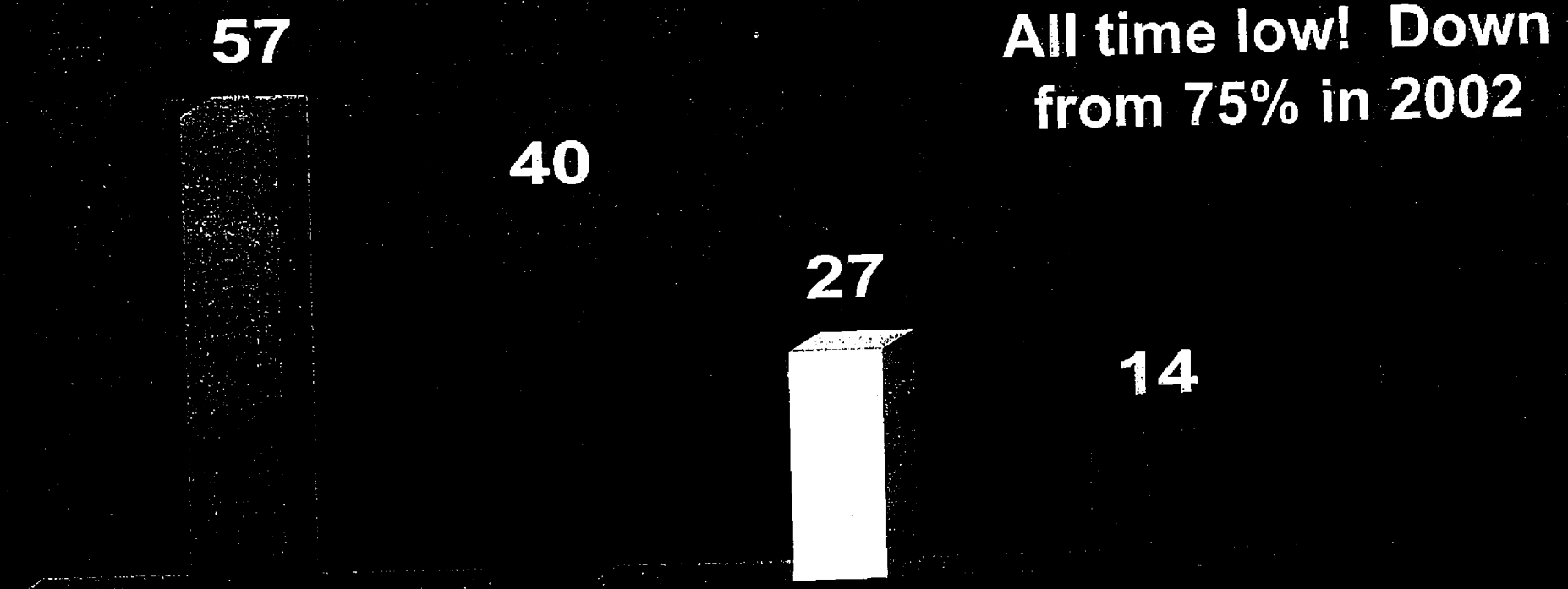


U.S. Housing Gets More Affordabl

Source: U. S. data from National Assoc. Home Builders, Q3 2008

Affordability Index (2006)

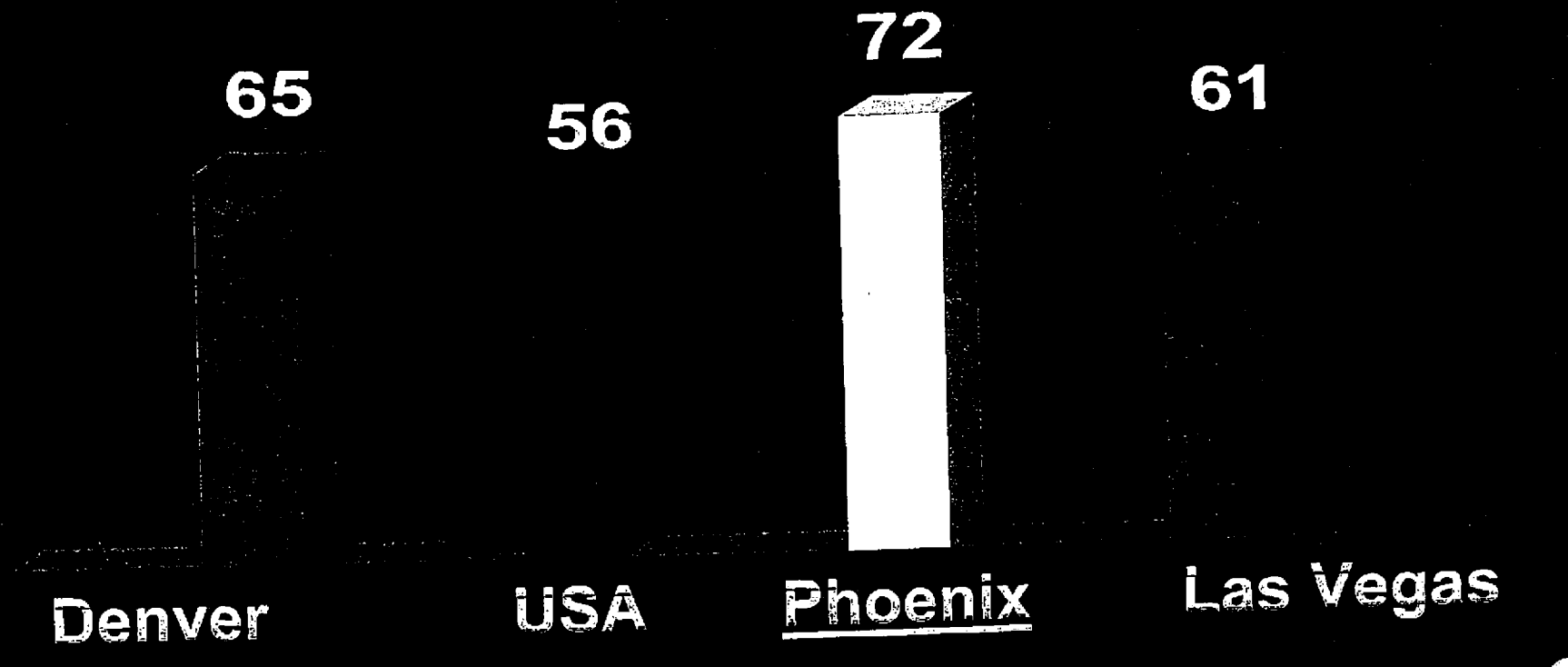
Percent homes affordable at median income (NAHB)



Affordability Index (2008)

Percent homes affordable at median income (NAHB)

More Affordable
Than U.S. Average

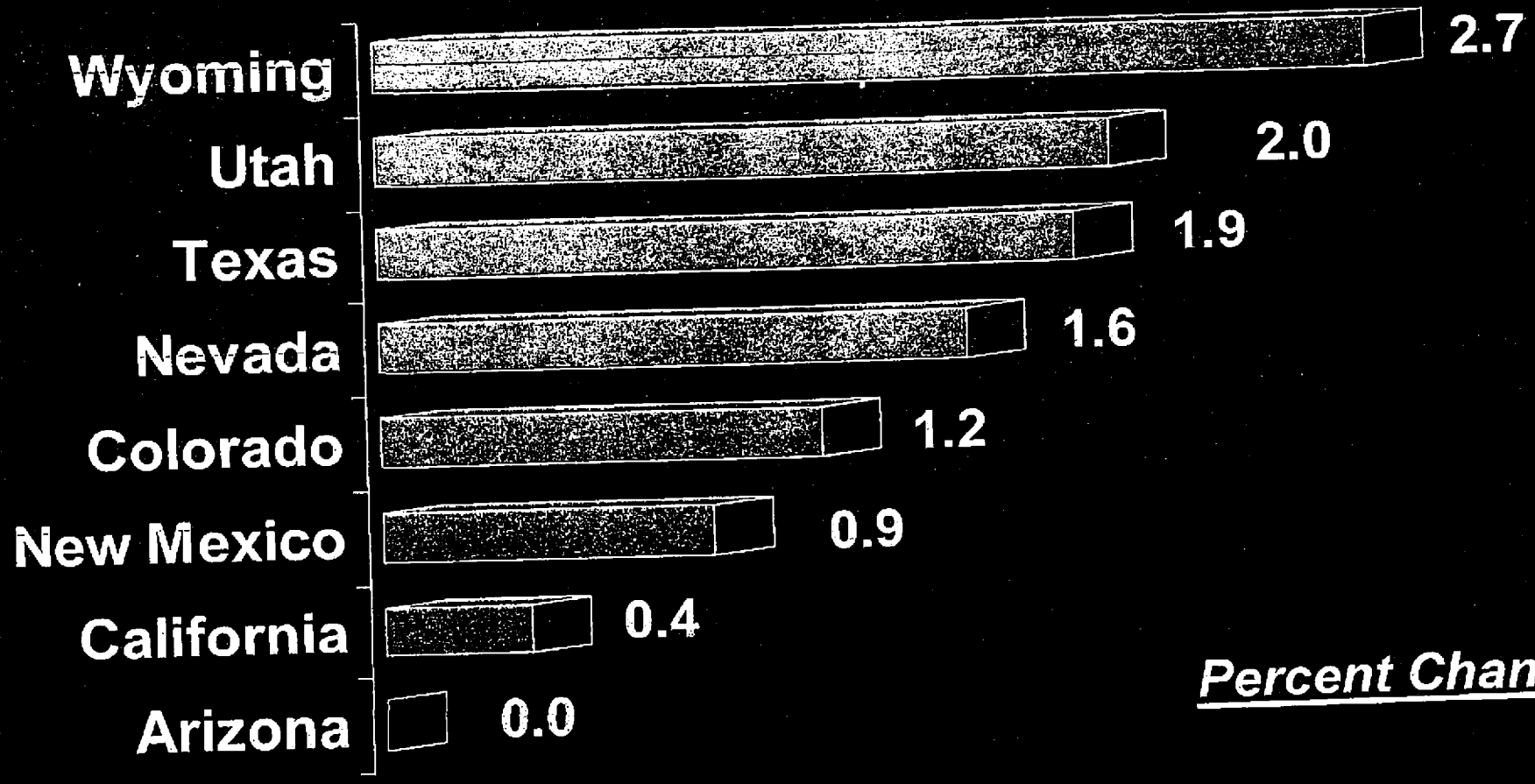


Distress Index – Q3 2008

(Unemployment Rate + Serious Delinquency Rate)

W. P. Carey School of Business

Western Jobs Outlook: 2009

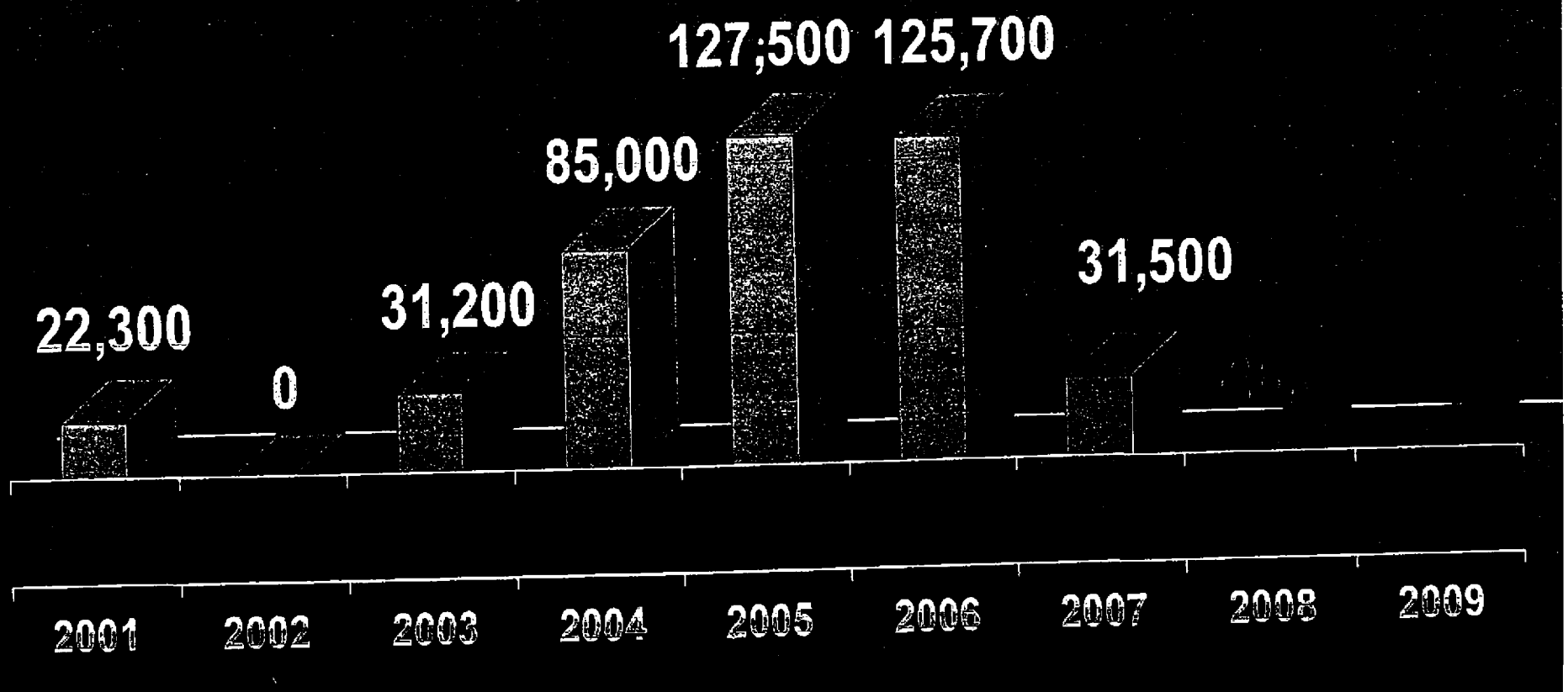


Source: Western Blue Chip Economic Forecast, ASU

Arizona Job Growth Outlook: Stagnant Through 2009

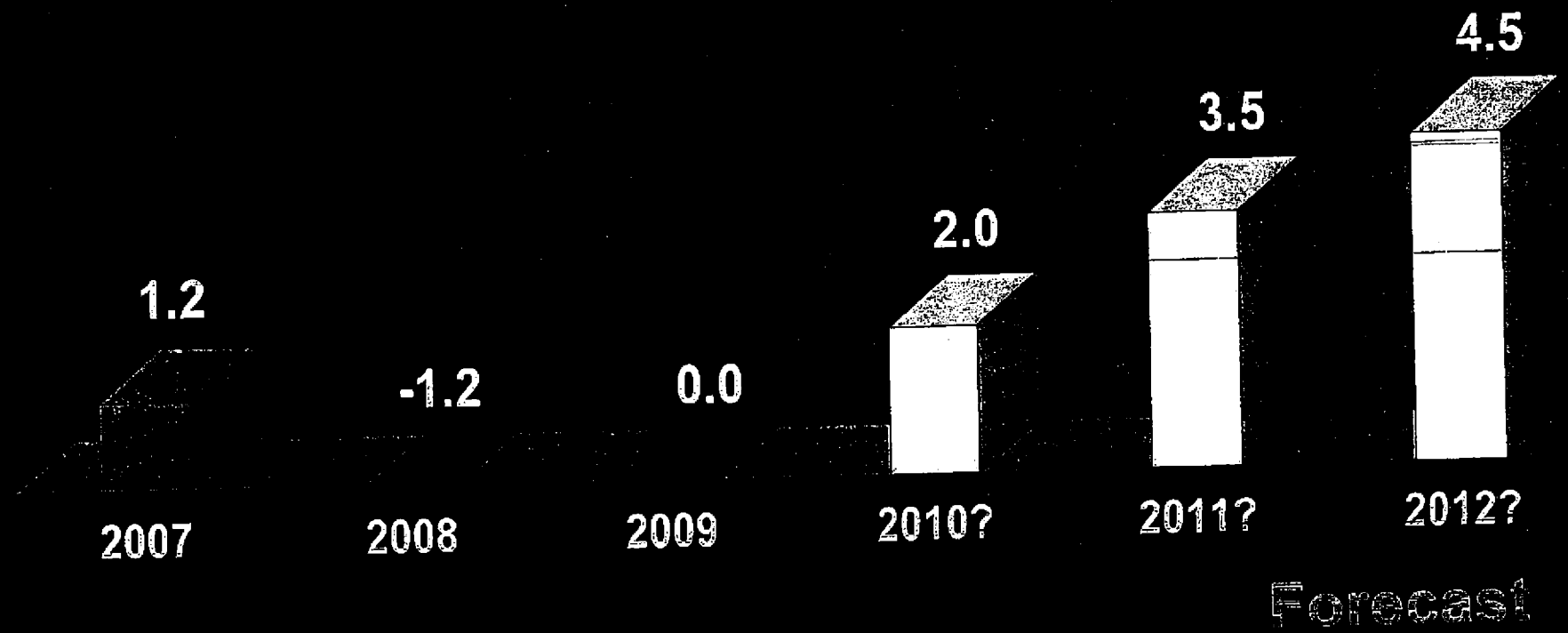
Annual Percent Change In Arizona Employment

Arizona Job Growth: No Net Jobs in 2009



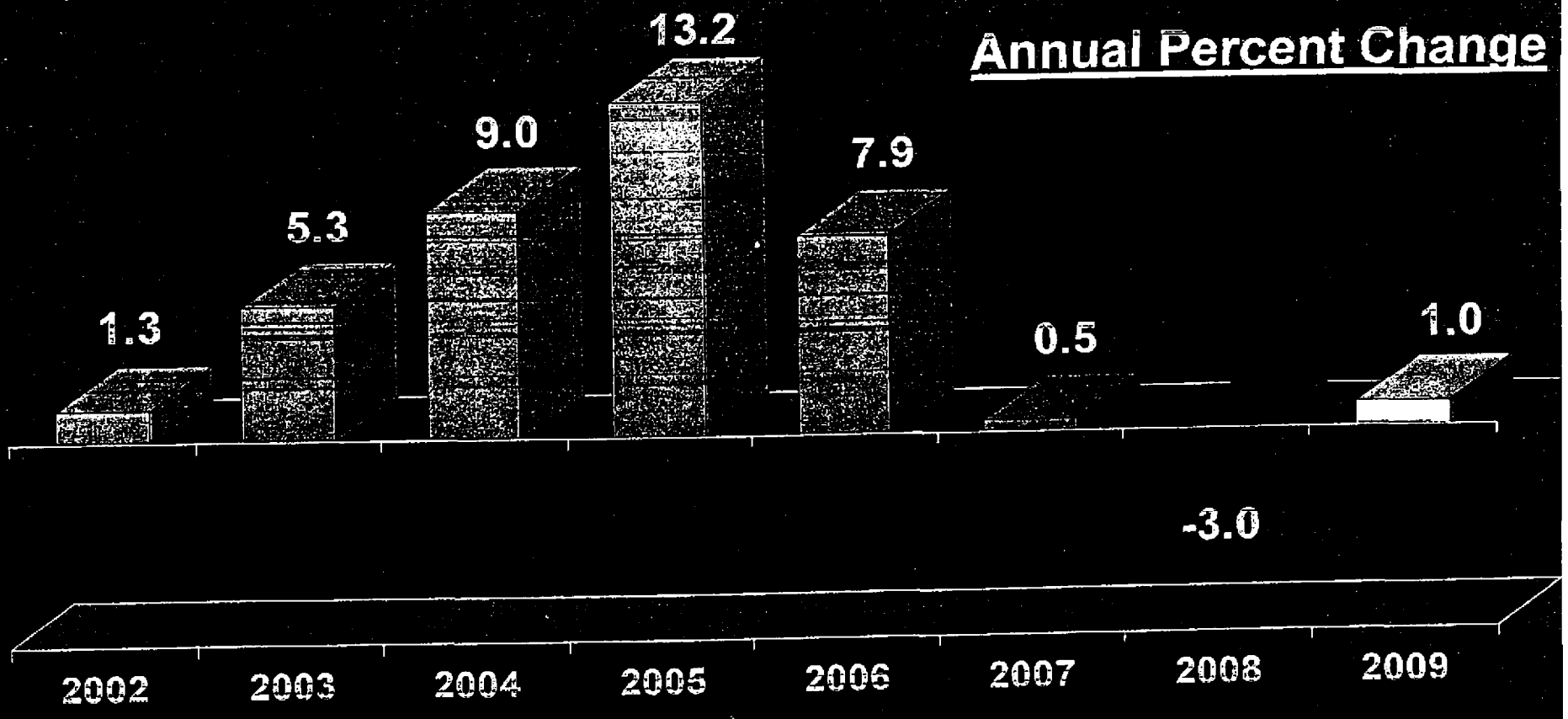
Typical Arizona Rebound?

Annual Percent Change in Arizona Employment



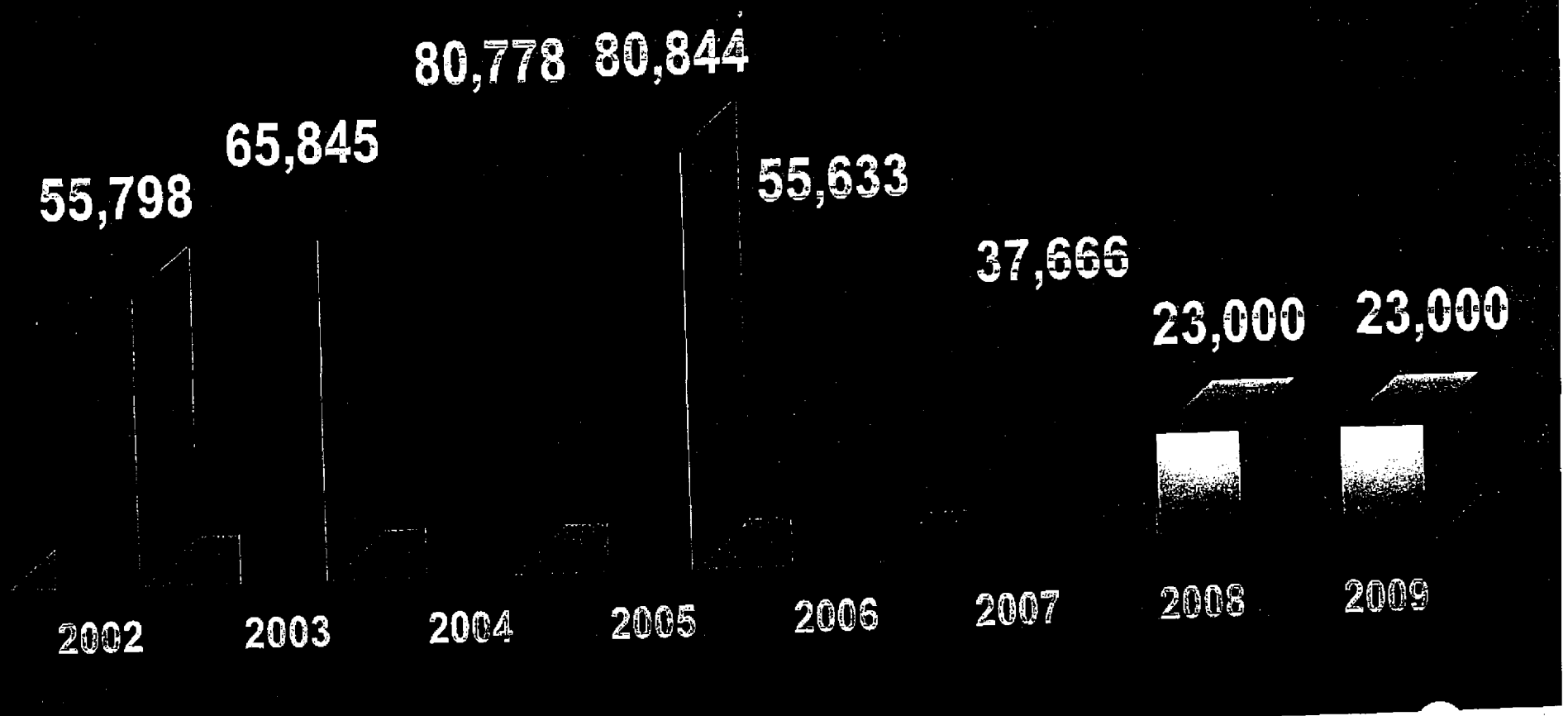
Source: *W. P. Carey School of Business*

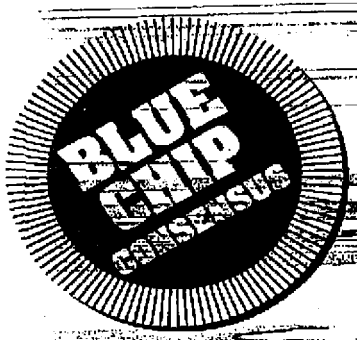
Arizona Retail Sales Outlook: Slow Revenue Growth



Source: Arizona Blue Chip Forecast

Arizona New Single Family Permits: Flat in 2009



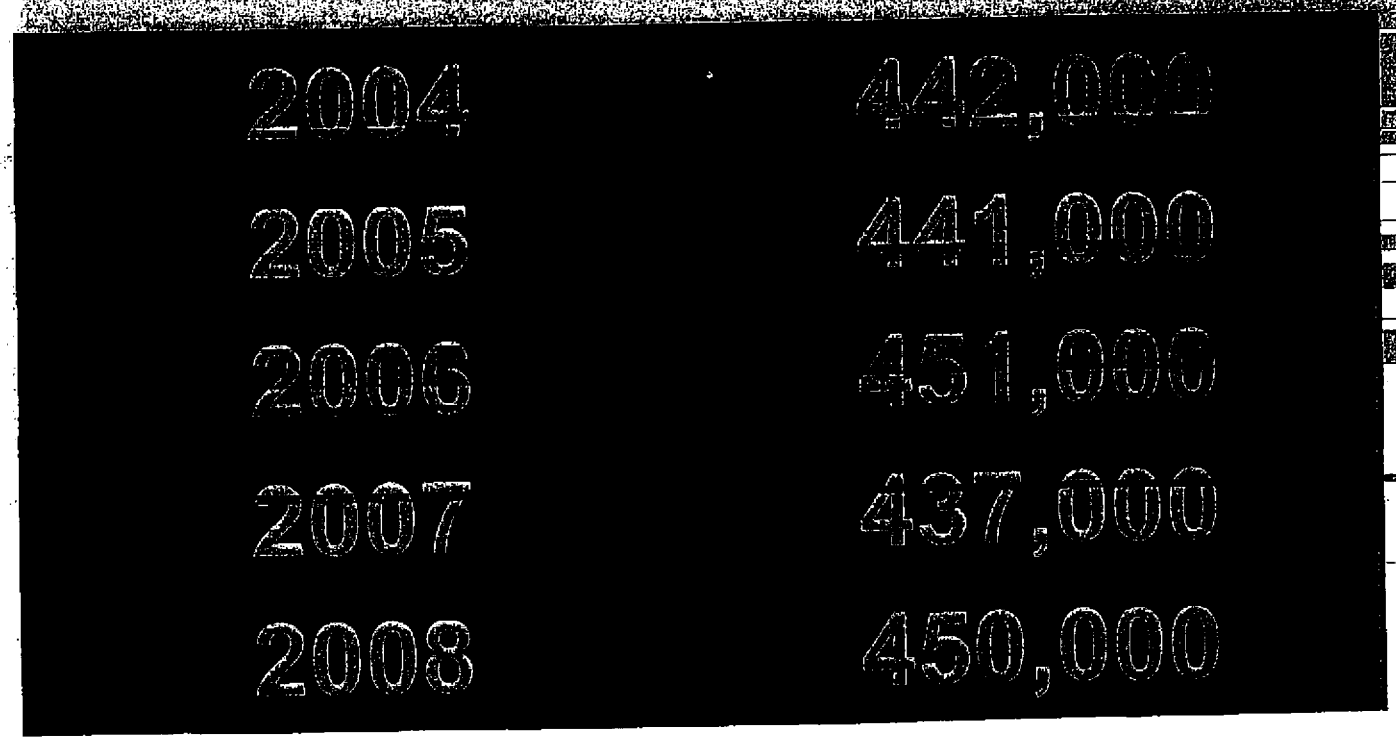


ARIZONA

BLUE CHIP ECONOMIC FORECAST

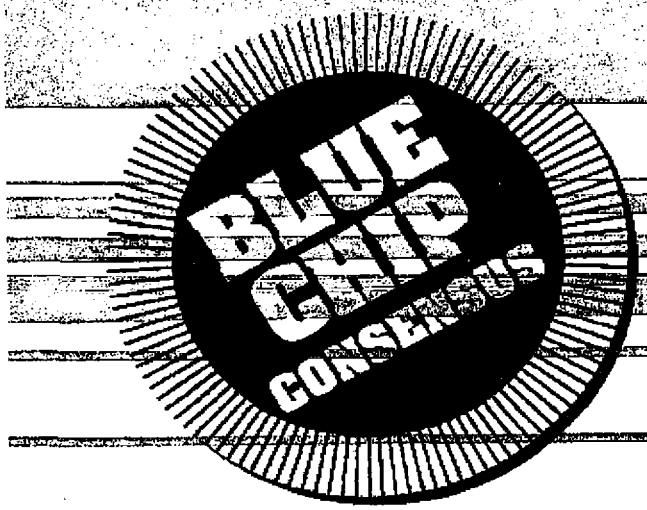
	2007	2008	2009
	Annual Percent Change		
Personal Income	4.5	3.6	3.5
Employment	1.2	-1.2	0.0
Single Family Units	-32	-37	0.0
Retail Sales	0.5	-3.0	1.0

Out of State License Surrenders Still Strong



Source: Auto Licenses from AZ Dept of Motor Vehicles

Arizona Blue Chip Panel



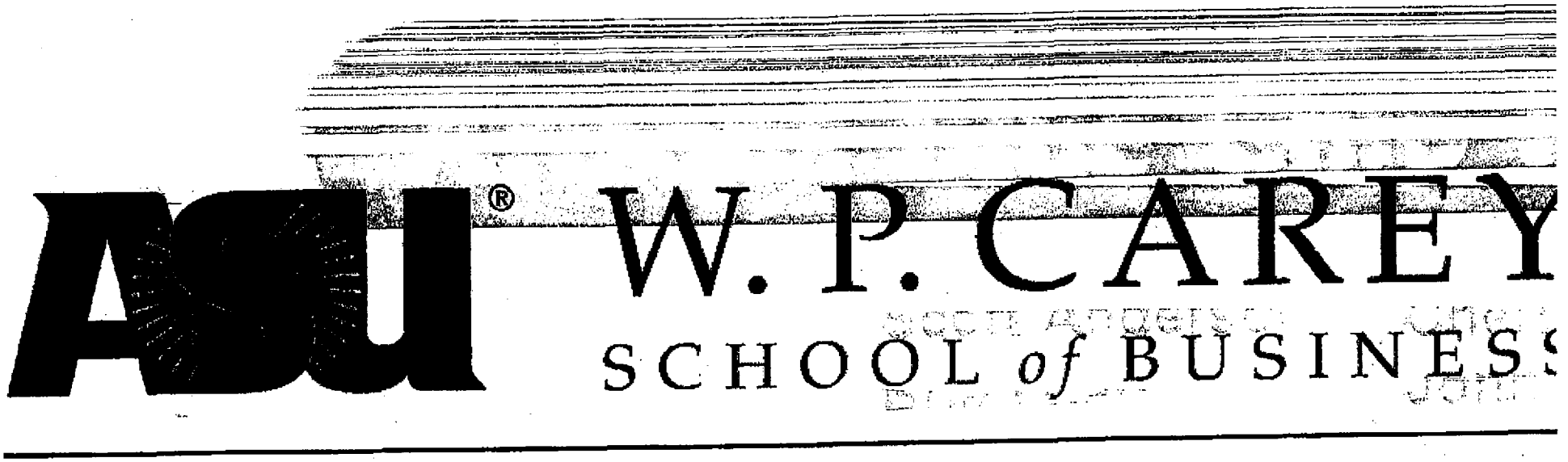
Scott Anderson
Brian Cary
Dennis Doby
Dwight Duncan
Kent Ennis
Tim Everill
Pete Ewen
Dennis Foster
Neal Helm
Cheri Levenson
John Lucking
Alan Maguire
Elliott Pollack
Richard Petrenka
Steve Pritulsky
Debra Roubik
Stephen Taddie
Marshall Vest

Outlook "Take Away"

2008 – it wasn't great!

2009 - continue to whine!

2010 - growing again!



http://knowledge.wpcarey.asu.edu

Hill 6

Real Estate Outlook:

YES, IT REALLY IS THIS BAD

Presented by:
Elliott D. Pollack

Presented to:
ASU Forecast Luncheon
December 10th, 2008

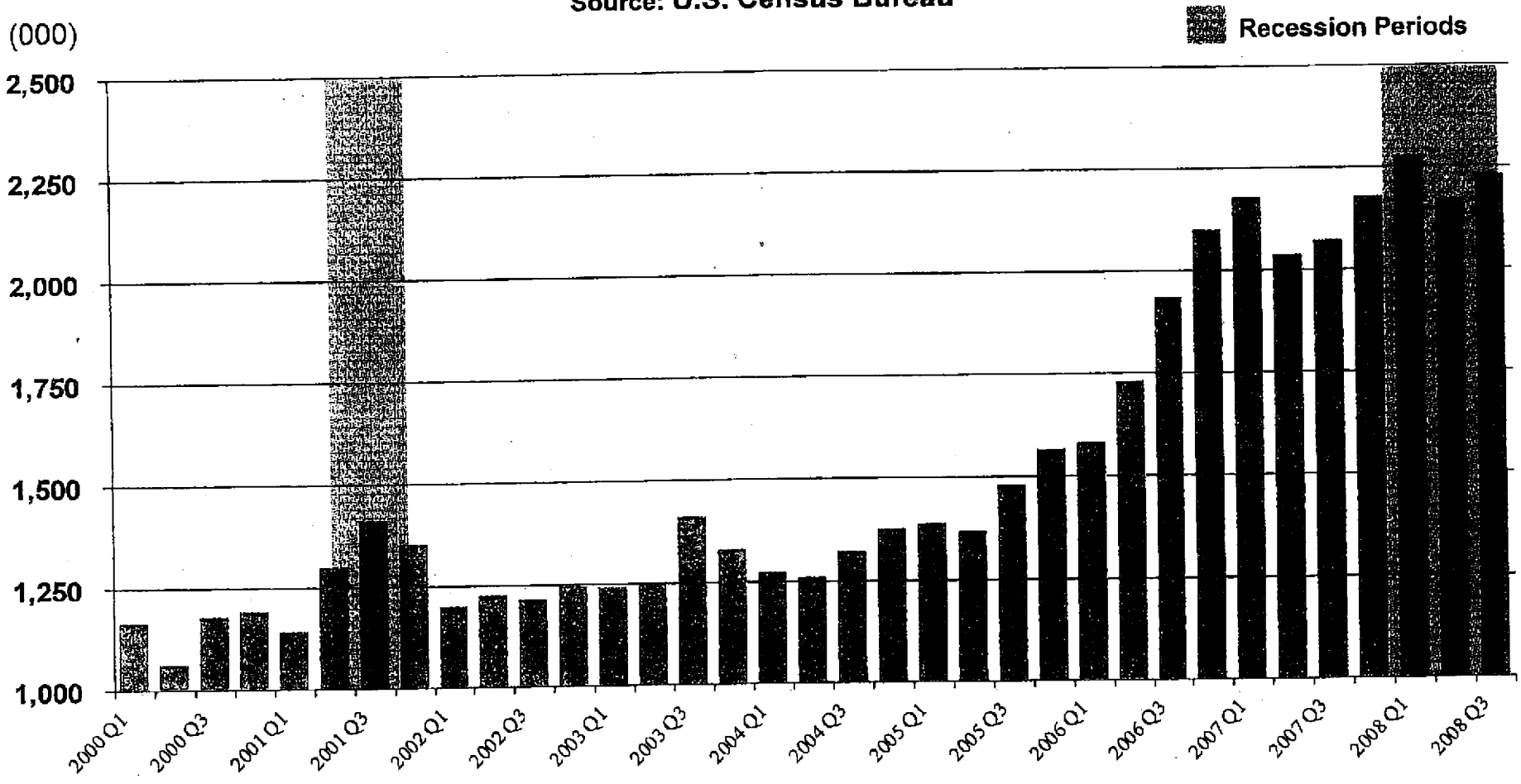
Elliott D. Pollack & Company

Housing Market

I shouldn't have cashed out my equity.

U.S. Number of Vacant Homes for Sale
2000 – 2008*

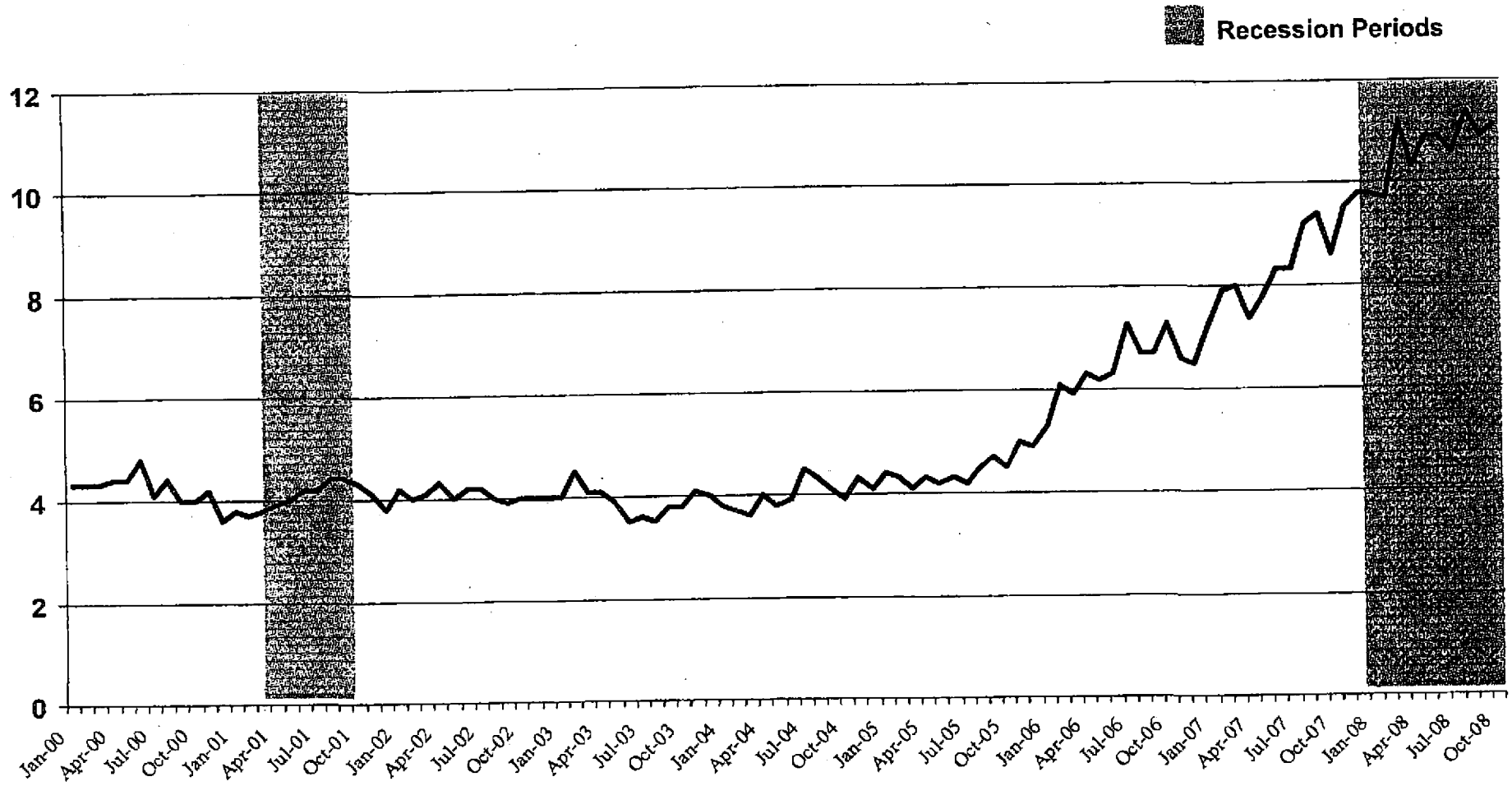
Source: U.S. Census Bureau



• Data through 3rd Quarter 2008.

United States Home Sales
Months Supply – Single Family New Homes
2000 – 2008*

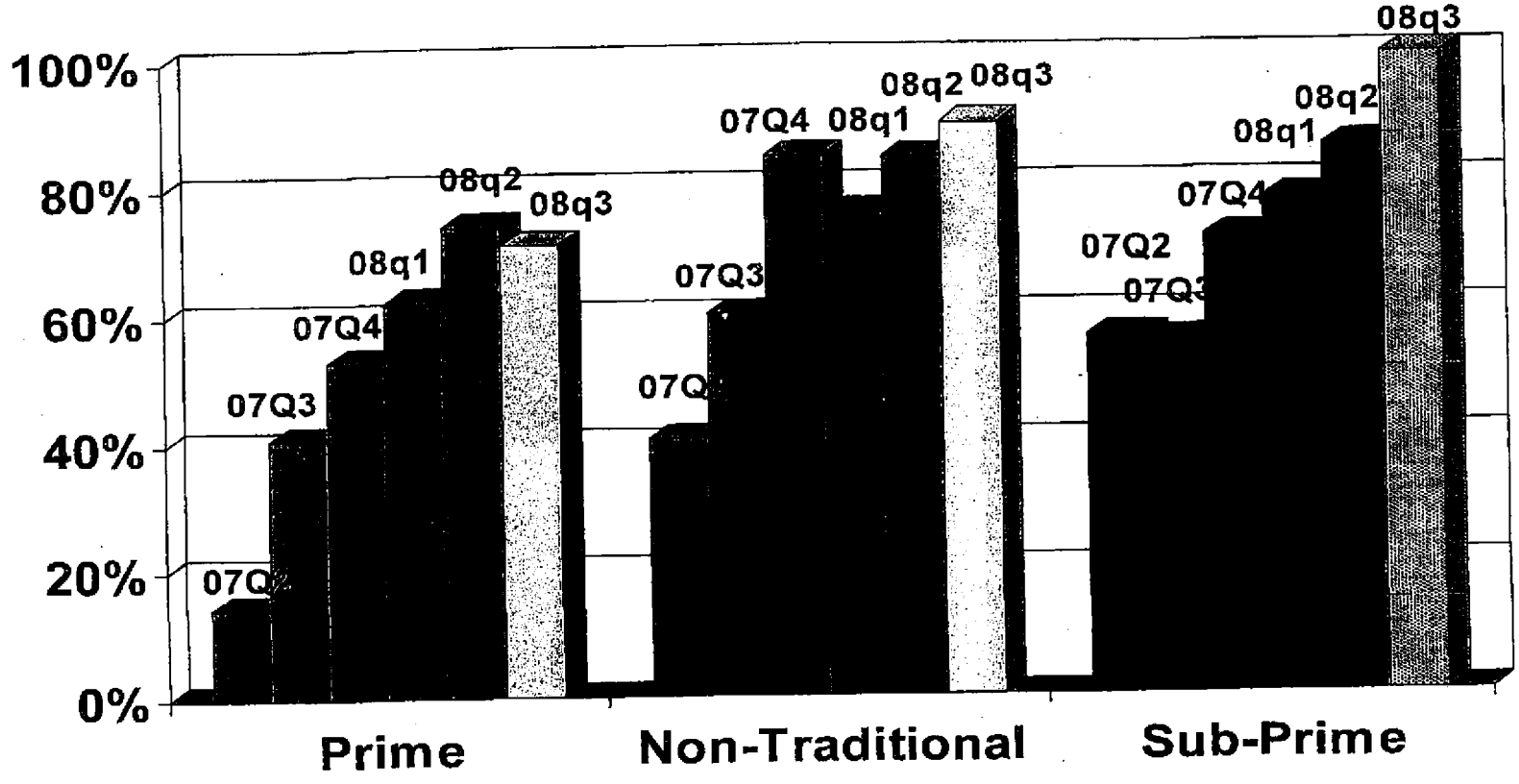
Source: U.S. Census Bureau



• Data through October 2008.

Net Percentage of Large U.S. Banks Reporting Tougher Standards versus Eased Standards on Residential Mortgage Loans 2007 – 2008q3

Source: Federal Reserve, Board of Governors



Over the past 12 months in Greater Phoenix:

- 48.9% of homes sold were sold at a loss.

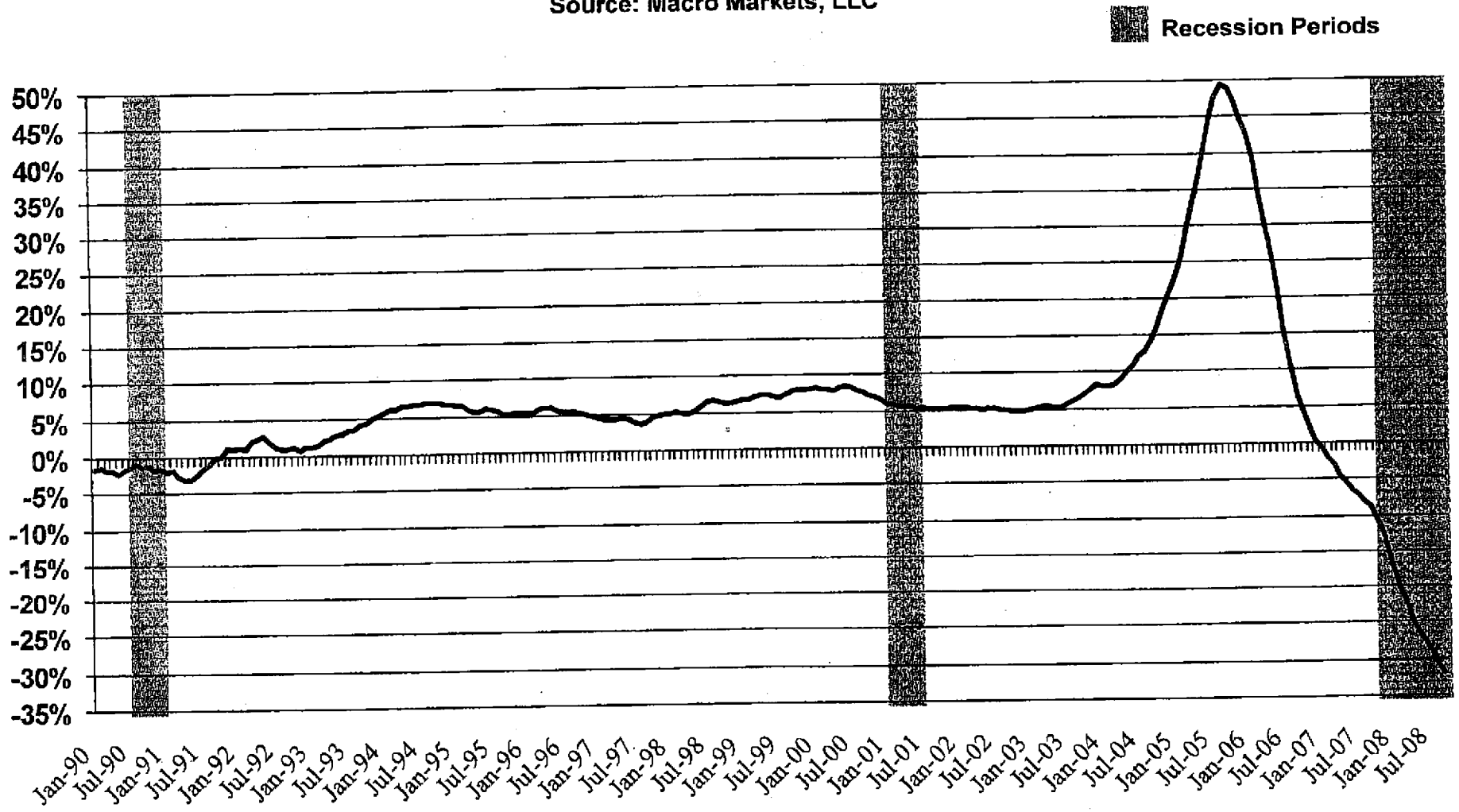
- 37.9% of home sales were foreclosures.

Of the homes purchased over the past 5 years, an average of 41.8% have negative equity.

Source: Zillow, New & resale homes.

Greater Phoenix S&P/Case-Schiller Home Price Index**
Percent Change Year Ago
1990 – 2008*

Source: Macro Markets, LLC



Elliott D. Pollack & Company

*Data through September 2008

**Measures changes in existing single family home prices given a constant level of quality.

It's Not Just Subprime

2008 Q1- Arizona

Source: Mortgage Bankers Association

Loan Type	AZ Share of Loans	AZ Share of Foreclosures
Prime Fixed	57.2%	14.2%
Prime ARM	19.8%	23.7%
Sub Fixed	4.9%	6.4%
Sub ARM	9.8%	52.6%
FHA	4.9%	2.2%
VA	2.3%	0.7%
Other	1.1%	0.3%
Total	100%	100%

Maricopa County Inventory to Sales Ratio

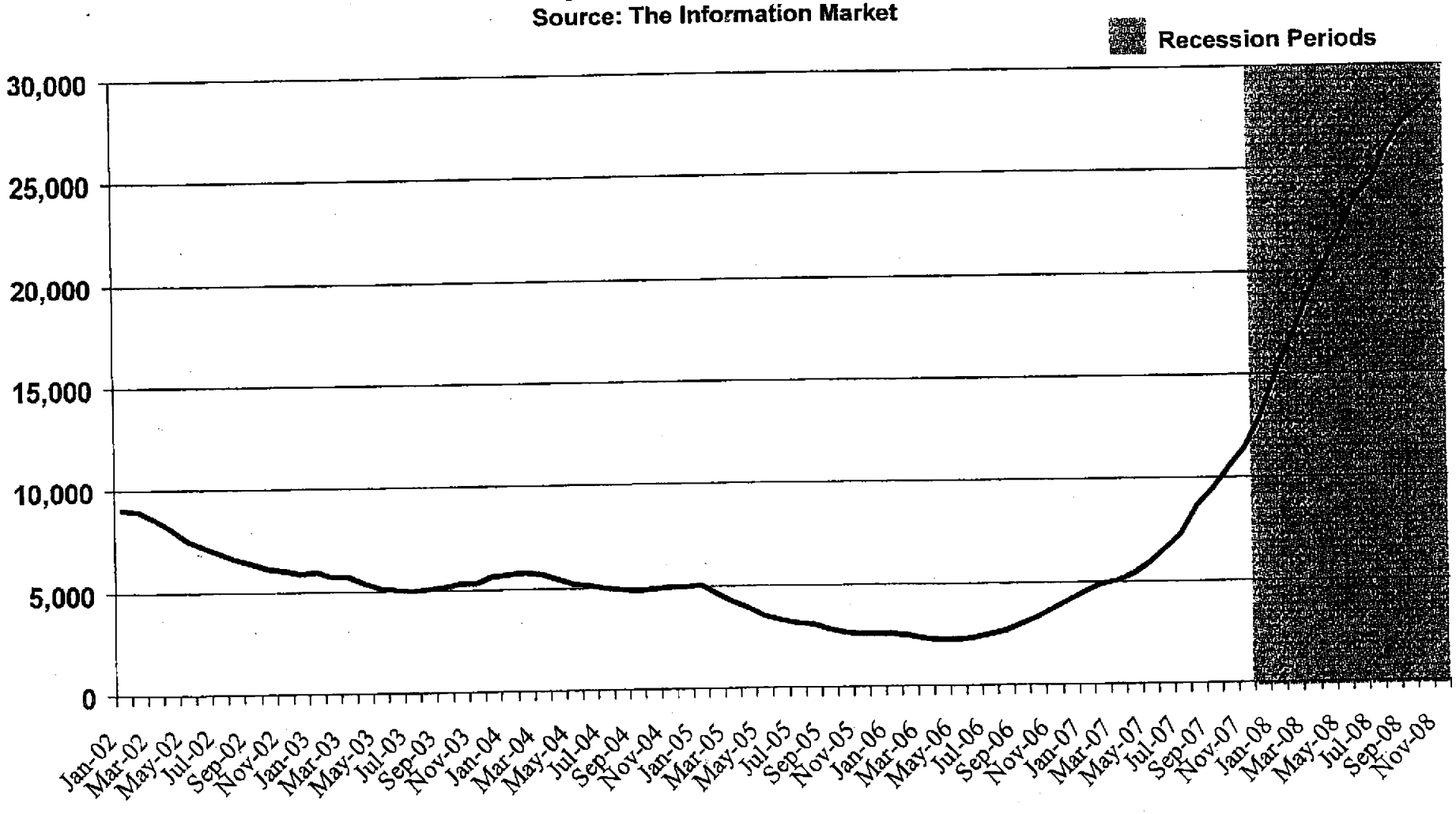
(Single Family Sales as a Percent of Inventory)

Source: ASU Realty Studies

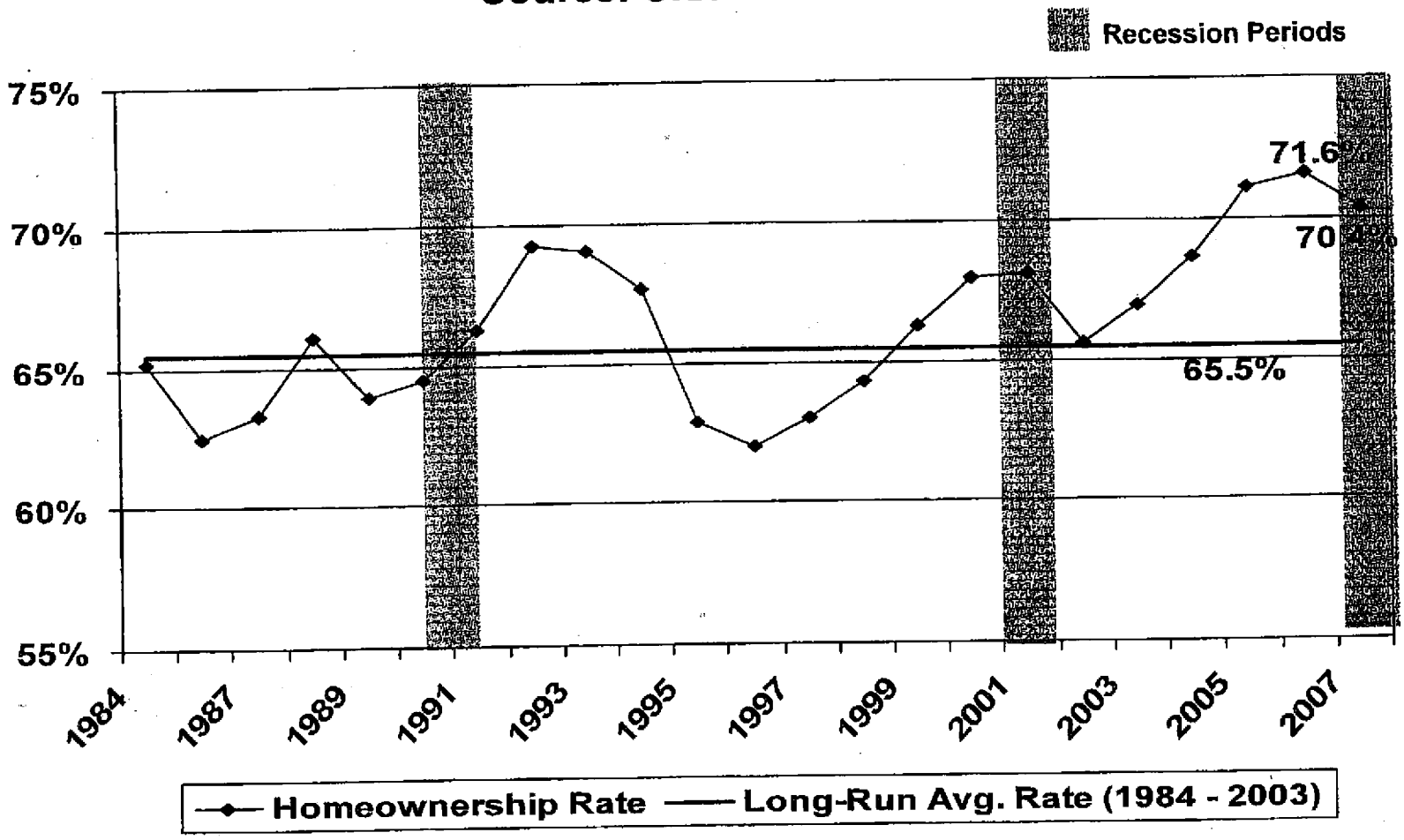
Year	Resale	New
■ 2002	7.2 %	3.4 %
■ 2003	8.2 %	3.6 %
■ 2004	10.8 %	3.8 %
■ 2005	11.2 %	4.3 %
■ 2006	6.5 %	3.7 %
■ 2007	4.8%	2.6%
■ 1982-2004	6.6 %	2.6 %
As of 2008 this means…	70,000	28,200

Properties in the Foreclosure Process
Maricopa County 2002 – 2008

Source: The Information Market



Arizona Homeownership Rates
1984 - 2007
Source: U.S. Census



Greater Phoenix Housing Units

Source: ASU Realty Studies

Year	Housing Units[1/]
2007	1,517,500
1% =	15,175
2% =	30,350
3% =	45,525
4% =	60,700
5% =	75,875

Greater Phoenix Housing Demand

Old Analysis
125,000 new residents each year
80% single family
2.5 persons / housing unit
= 40,000 single family units

New Analysis
80,000 new residents each year
75% single family
2.7 persons / housing unit
= 19,300 single family units

Greater Phoenix Housing Demand

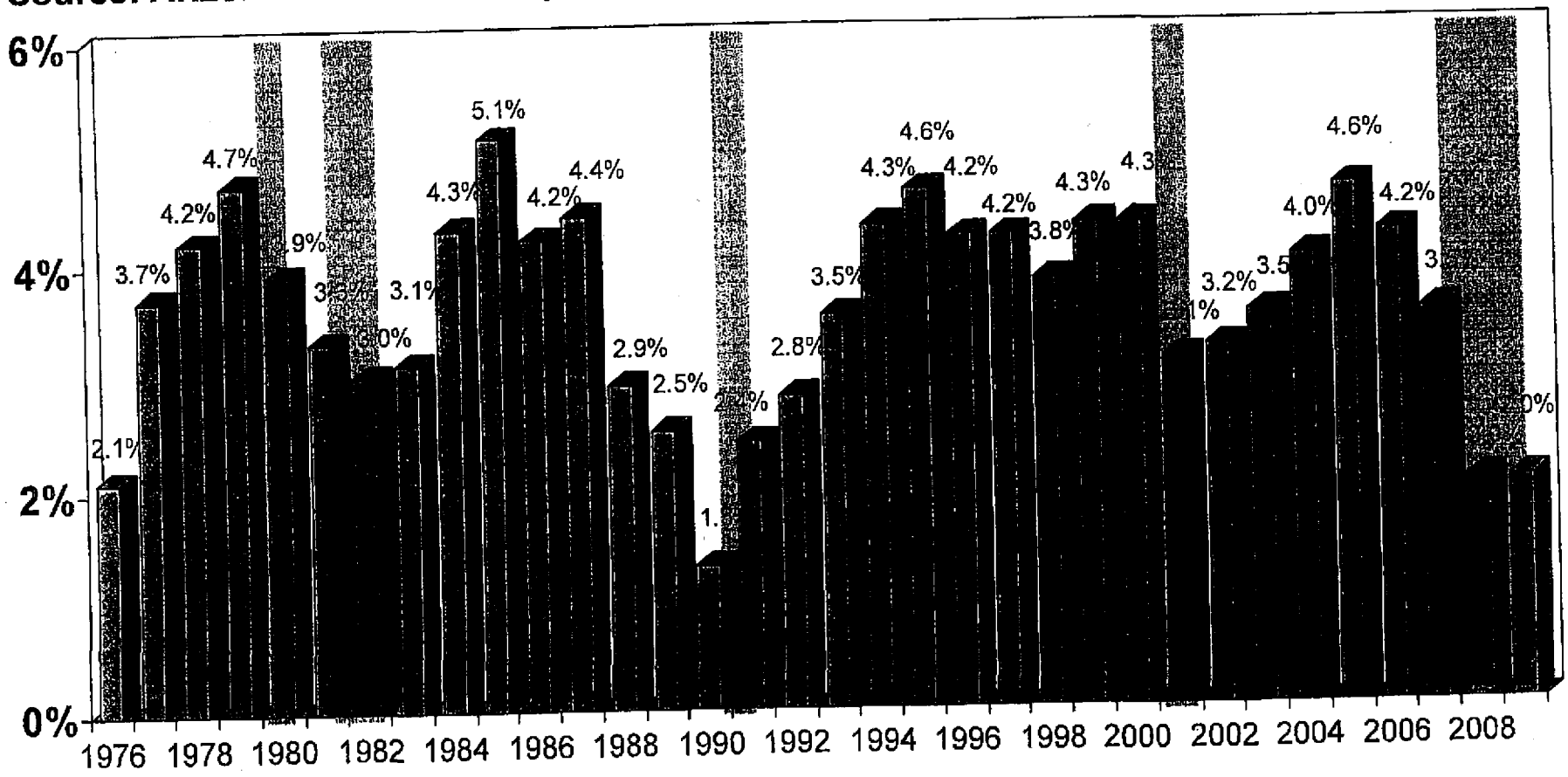
20,000 single family units demanded

13,000 new housing units

= 7,000 eating into excess

Greater Phoenix Population
Annual Percent Change 1976–2009*

Source: Arizona State University & Department of Commerce, Research Administration



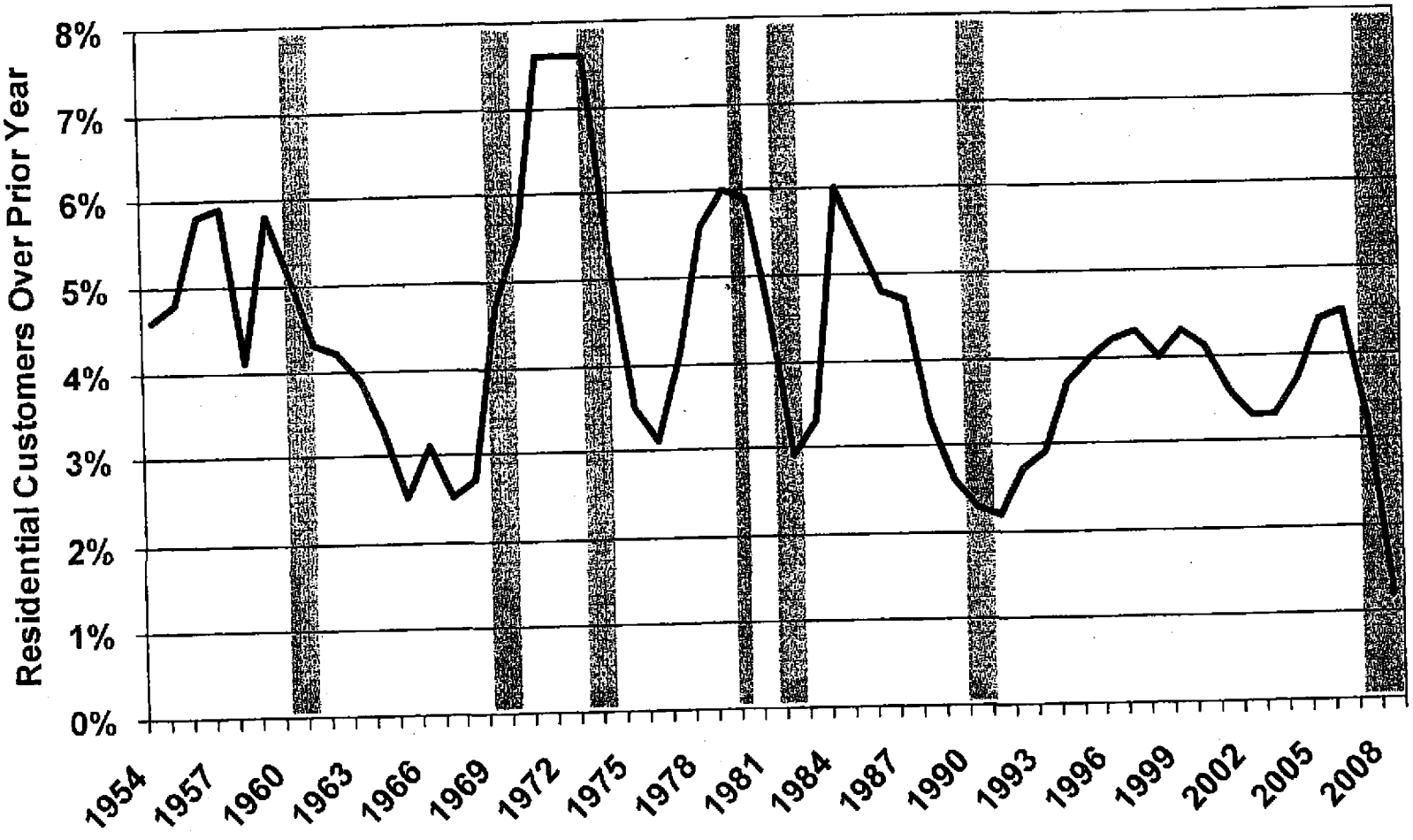
2006 and 2007 are estimates put out by ADES and may be subject to substantial revision.

* 2008 & 2009 forecast is from *Elliott D. Pollack & Co.*

Recession Periods

Elliott D. Pollack & Company

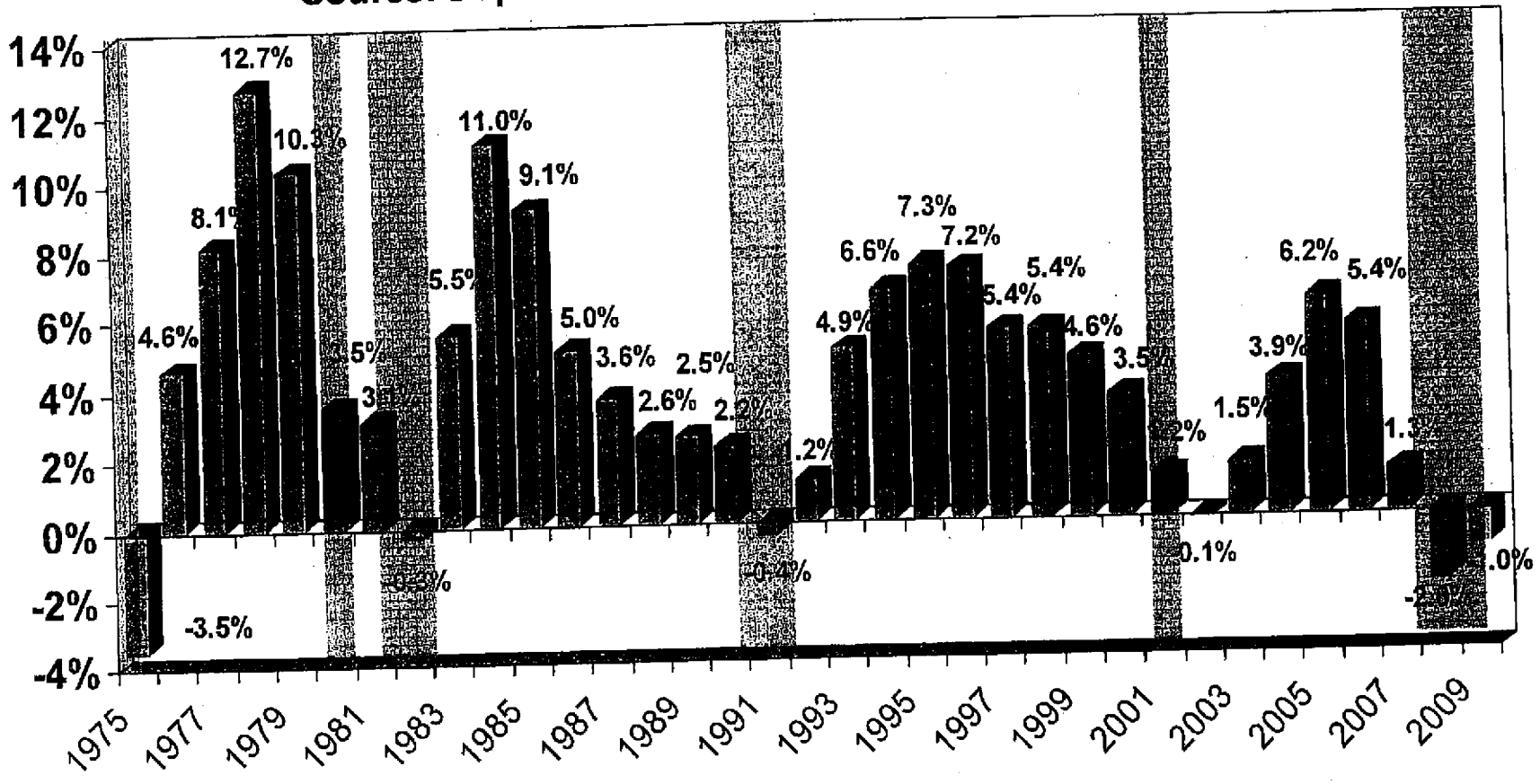
APS Experiencing Slowest Customer Growth in over 40 years



Source: APS

Phoenix-Mesa MSA Employment*
Annual Percent Change 1975–2009**

Source: Department of Commerce, Research Administration



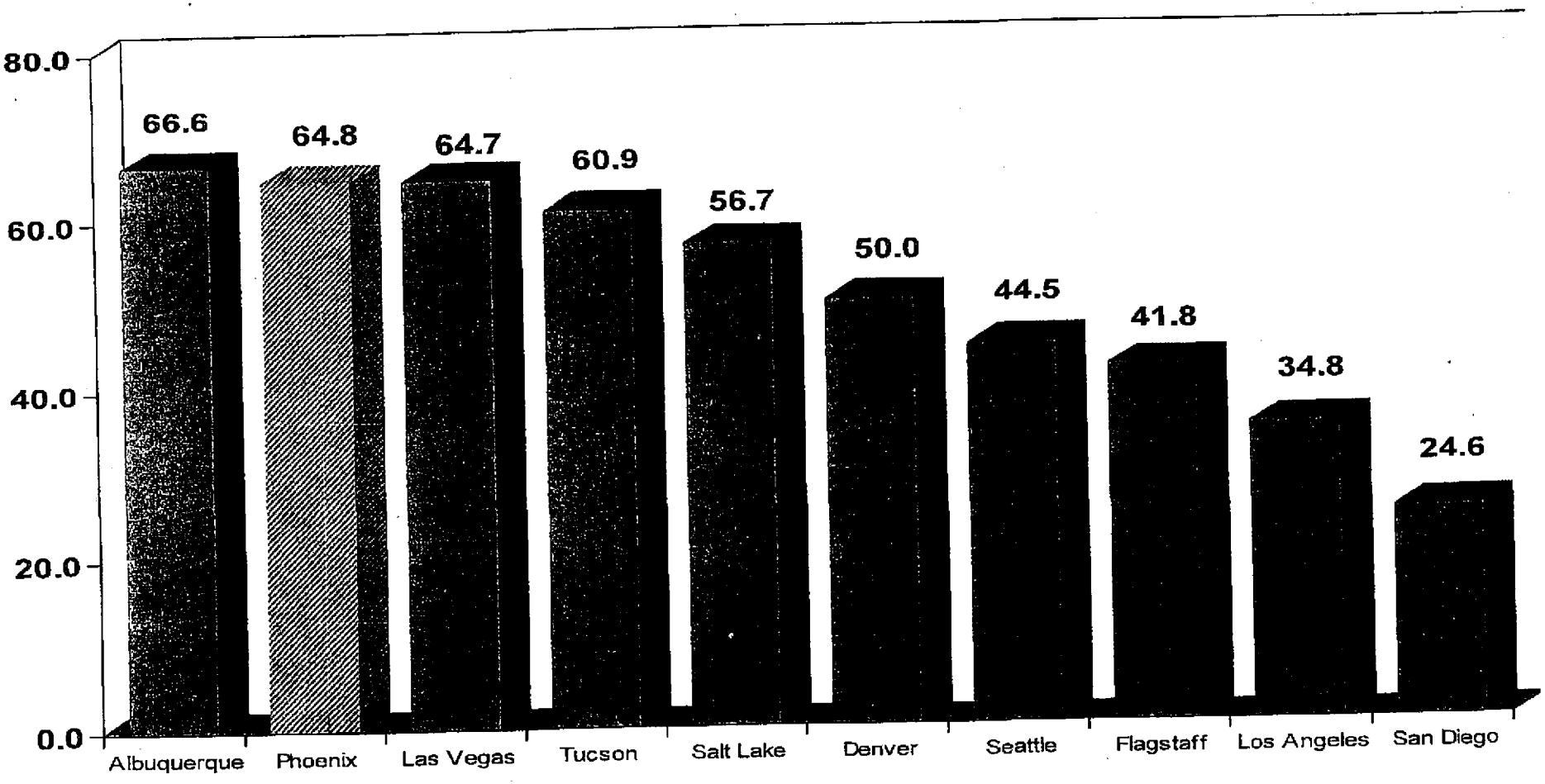
*Non-agricultural wage & salary employment. Changed from SIC to NAICS reporting in 1990.

** 2008 and 2009 forecast is from *Elliott D. Pollack & Co.*

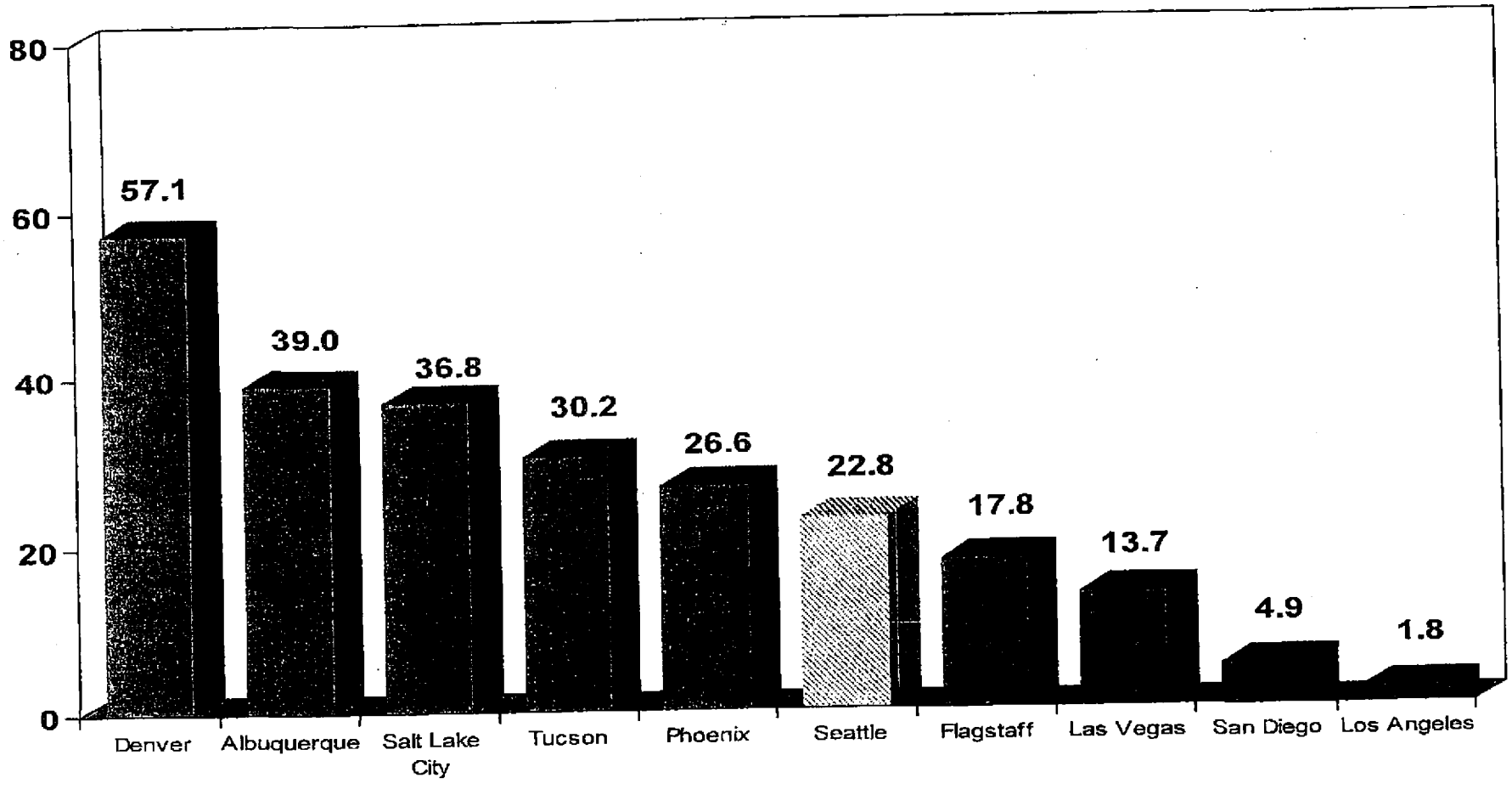
Recession Periods

Elliott D. Pollack & Company

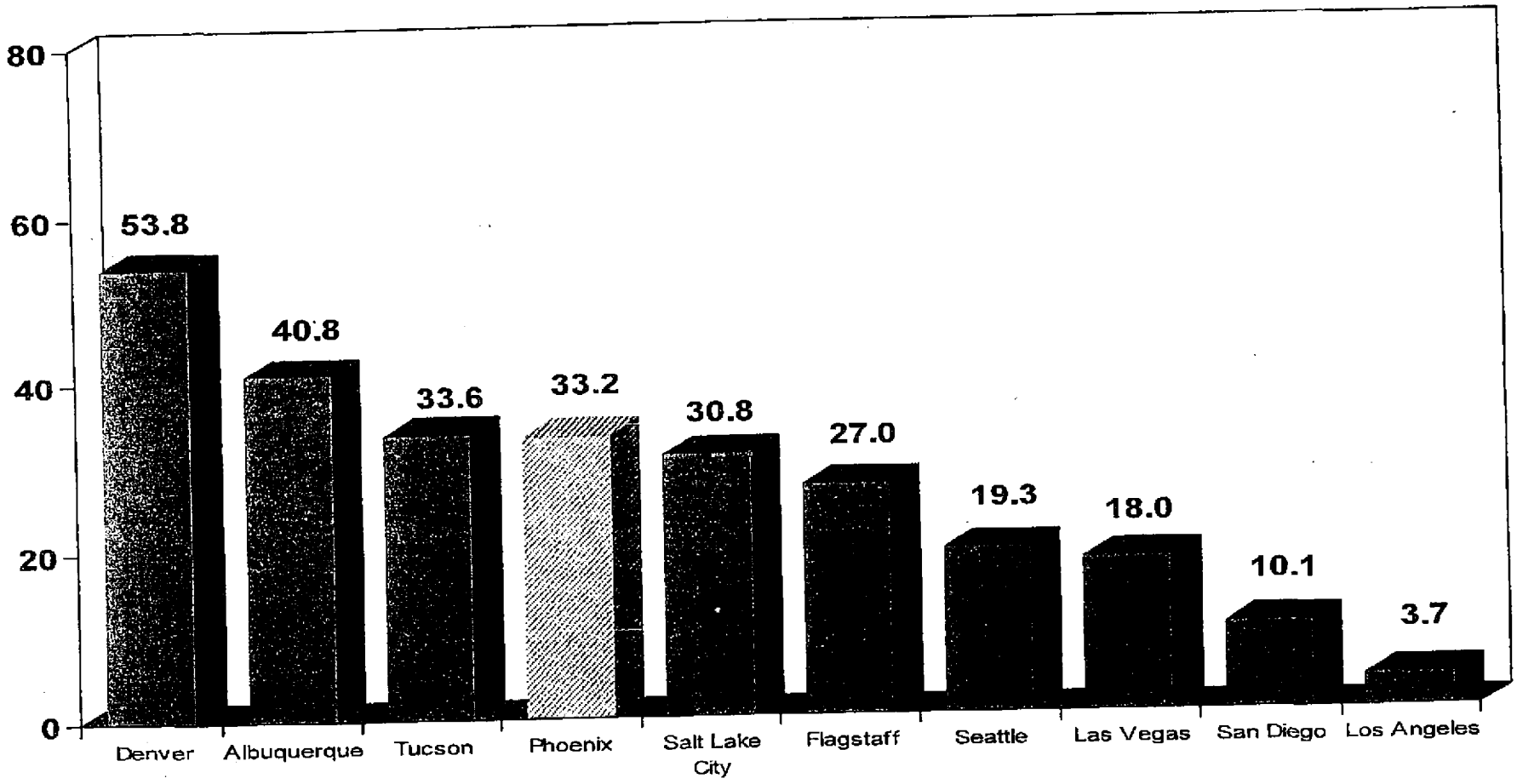
Housing Affordability Index
2000 q3
Source: NAHB



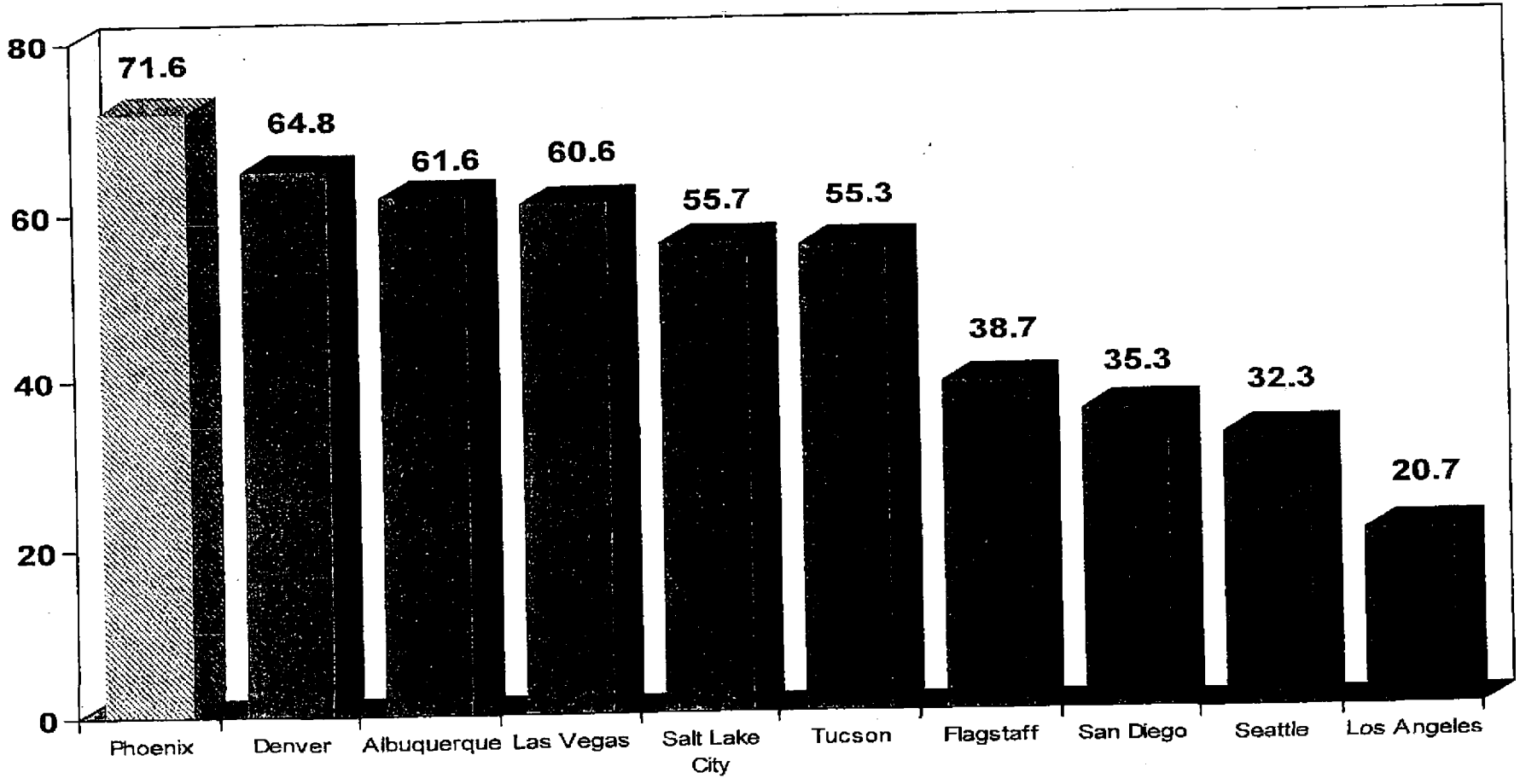
Housing Affordability Index
2006 q3
Source: NAHB



Housing Affordability Index
2007 q3
Source: NAHB



Housing Affordability Index
2008 q3
Source: NAHB



Commercial Real Estate Markets

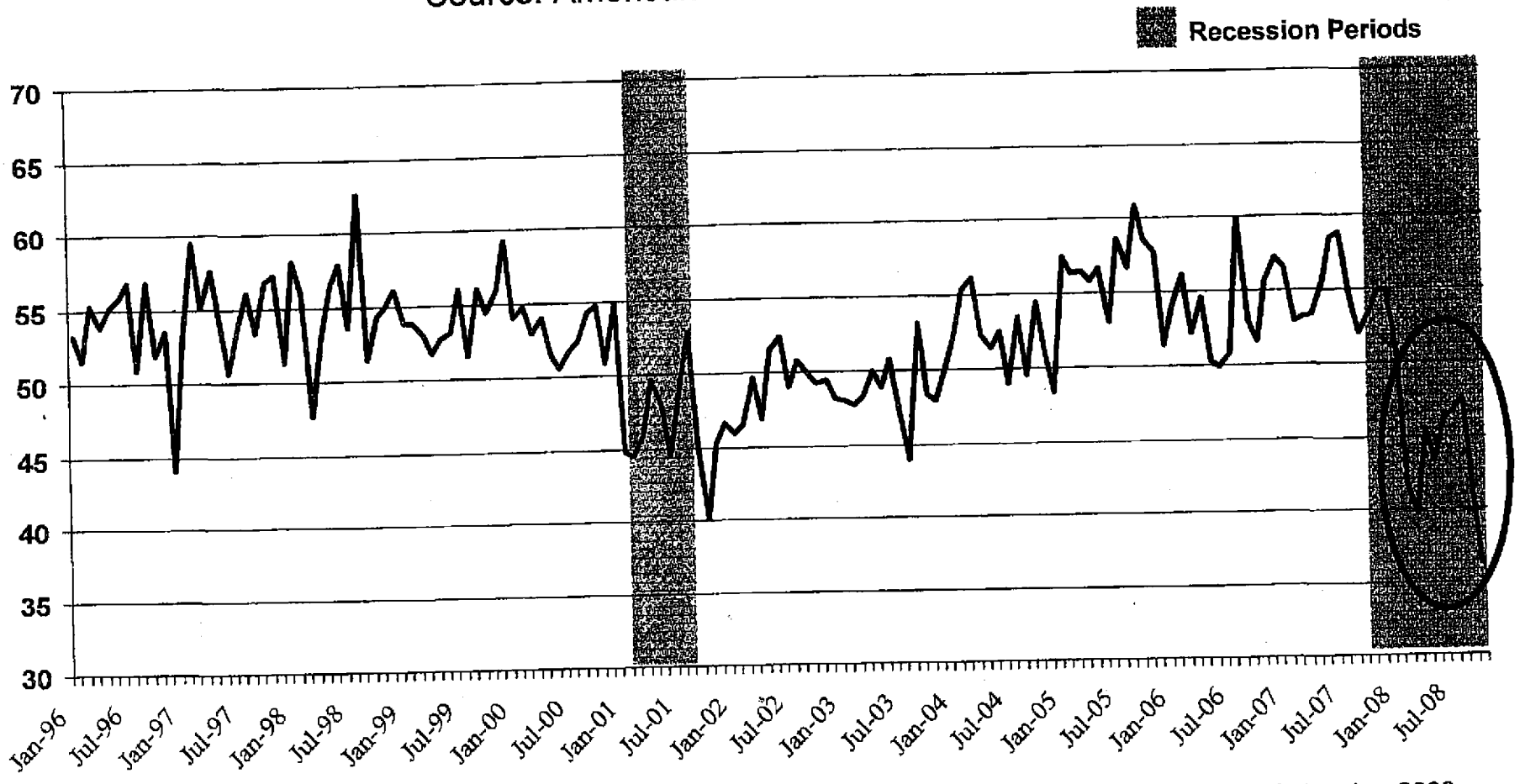
Elliott D. Pollack & Company

Commercial Forecast:

Chum!

Architectural Billings Index
1996 – 2008*

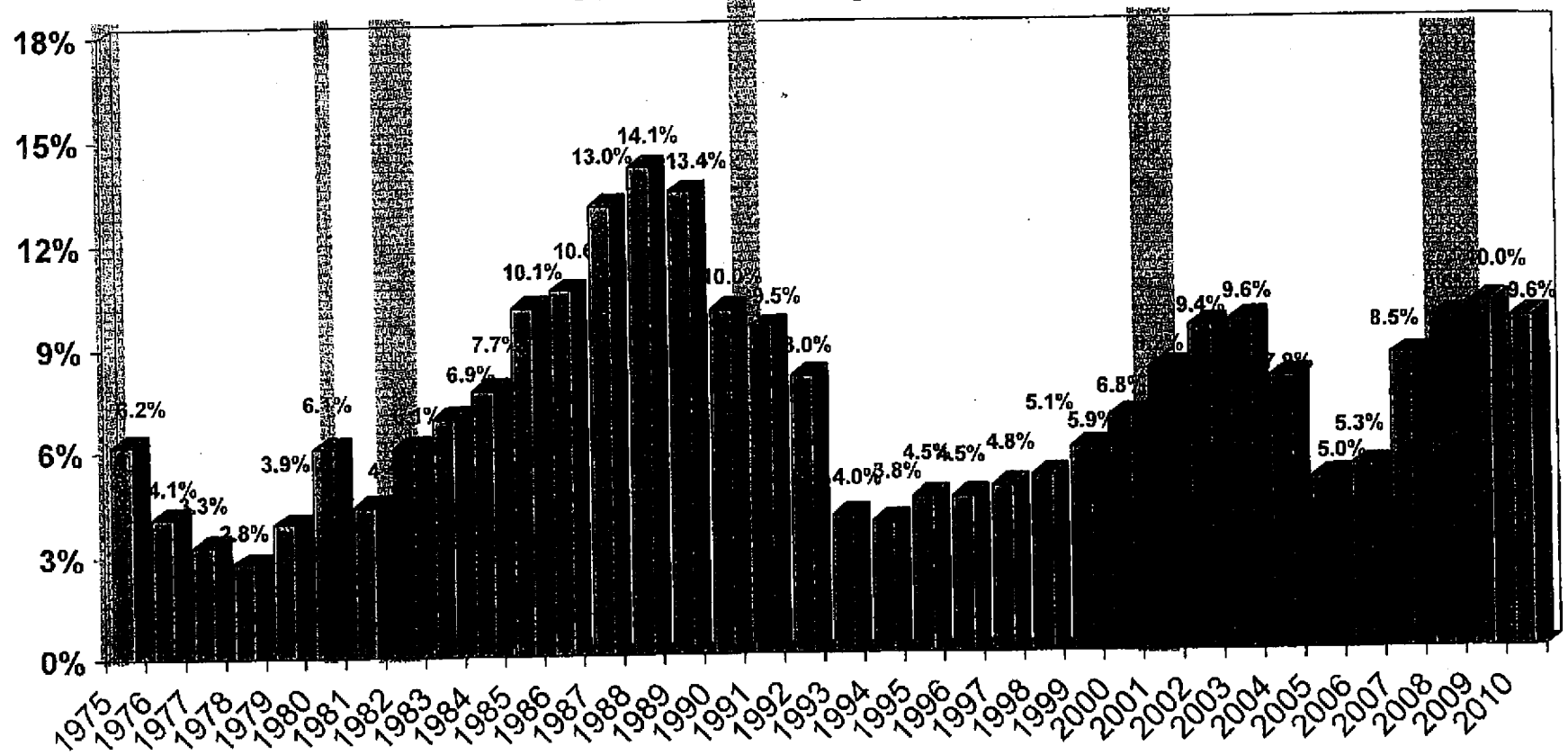
Source: American Institute of Architecture



*Data through October 2008

Multi-Family Year-End Vacancy Rates
Maricopa County 1986–2009*

Source: ASU Realty Studies



*2008 -2010 are forecasts from the Greater Phoenix Blue Chip

Elliott D. Pollack & Company

Multi-Family Construction Activity

Source: PMHS

	Absorption	Chg in Inventory*
2003	3,702	4,852
2004	9,230	3,980
2005	4,756	(5,169)
2006	(4,653)	(3,828)
2007	(5,846)	4,979
2008q3	4,115	2,490

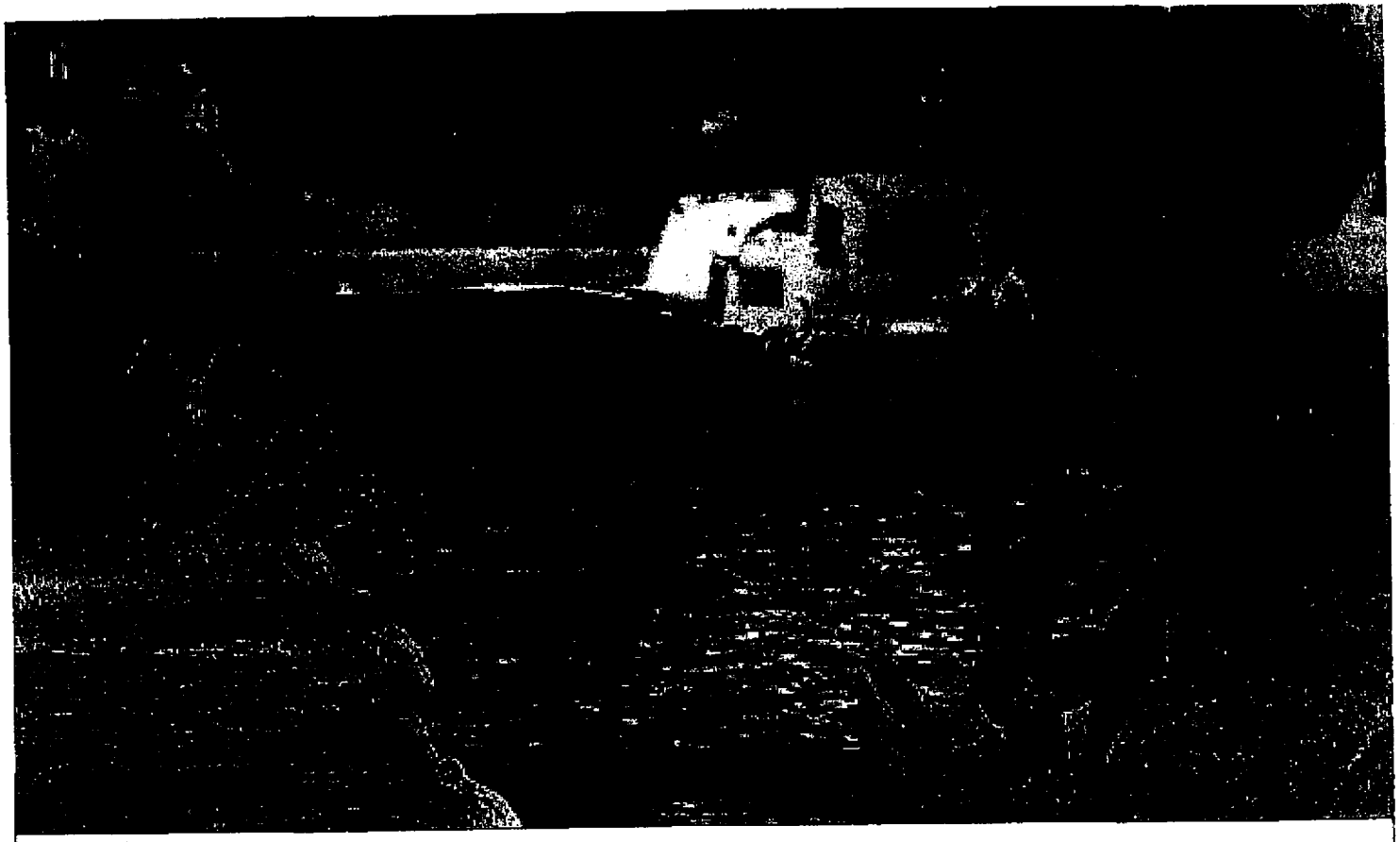
*There were 23,898 condo conversion in the Greater Phoenix area from q1 2005 through q1 2008.

There are currently 9,802 multi-family units under construction (q3 08).

There are currently 3.9 million square feet of office space under construction (q3 08).

The real estate outlook in the near term is UGLY.

Things are bad now, but...



"Bull Market" of 2008

Greater Phoenix economic fundamentals have not really changed (even housing is returning to more affordable levels).

The long term economic outlook remains favorable.

Getting there is half the fun!

ELLIOTT D. POLLACK
& Company

Economic and Real Estate Consulting

WWW.ARIZONAECONOMY.COM

INFO @ EDPCO.COM

7505 East Sixth Avenue, Suite 100 Scottsdale, Arizona 85251

480-423-9200 P **480-423-5942 F** **www.arizonaeconomy.com**

Hill 7

MEMORANDUM OF UNDERSTANDING

THIS MEMORANDUM OF UNDERSTANDING (this "MOU") is entered into as of December 6, 2005 between Global Water Resources, LLC, a Delaware limited liability company ("Global"), and the City of Maricopa, a municipal corporation ("City").

RECITALS

WHEREAS Global is engaged in the business of providing water, wastewater and reclaimed water infrastructure services both inside and outside the jurisdictional boundaries of the City;

WHEREAS Global is the owner of Santa Cruz Water Company, LLC ("SCW") and Palo Verde Utilities Company, LLC ("PVU") (collectively "Utility Companies") and provides utility services through these entities;

WHEREAS SCW and PVU are Arizona public service corporations defined in Article 15, Section 2, of the Arizona Constitution and, as such, are regulated by the Arizona Corporation Commission ("ACC"). SCW and PVU have been issued Certificates of Convenience and Necessity ("CC&N") by the ACC to provide water and waste water services (collectively the "Utility Services"), respectively in designated geographic areas within the State of Arizona;

WHEREAS the City is experiencing rapid growth, and in order to facilitate and manage further growth, the City wishes to strengthen its relationship with Global and its Utility Companies by working with them to generally improve the quality of Utility Services within the City;

WHEREAS the City intends to facilitate and manage further growth in accordance with its obligations under the Growing Smarter legislation and Growing Smarter Plus legislation enacted into law by the Arizona Legislature;

WHEREAS the City is in the process of annexing certain real property, as more fully

described on Exhibit A hereto (the "Subject Territories") and, in connection therewith, the Parties desire to work closely and cooperate with each other to assist the orderly assimilation of these areas;

WHEREAS the City is supportive of Global's pending application to the ACC for expansion of its CC&N for Utility Services in the areas formerly known as the 387 District Areas and the Parties acknowledge that the expansion of the CC&N over the Subject Territories may not be finalized until such time as the appropriate Arizona Department of Water Resources ("ADWR"), Arizona Department of Environmental Quality ("ADEQ") and Central Arizona Association of Governments ("CAAG") permits and approvals are in place and the Parties acknowledge that it will require cooperation and mutual support to achieve the necessary regulatory approvals;

WHEREAS the Parties wish to form a Public Private Partnership which will benefit both Parties and significantly enhance and streamline the manner in which the Parties currently work together;

WHEREAS the Parties believe such a Public Private Partnership currently represents the most cost-effective and efficient solution to the water and wastewater challenges facing the City's current and anticipated future residents;

WHEREAS the Parties believe that such a Public Private Partnership will result in the harmonization of rates within Global's service area, thereby mitigating customer confusion regarding rates and utility services;

WHEREAS the City seeks to increase its involvement in the water and wastewater business within its current municipal limits and its entire planning area;

WHEREAS the City seeks innovative revenue streams that maintain the City's long-term fiscal health and defray cost impacts that may occur in areas that are outside current municipal limits but within its planning area;

WHEREAS the Parties acknowledge Global's commitment to the City to date, including

Global's material capital expenditures, its expressed intent to be a contributing corporate citizen in the community, and its desire to have a positive working relationship with the City;

WHEREAS the Parties acknowledge the significant material capital expenditures and the consequent strong commitment that will be required by Global to meet the challenges created by the current rapid growth occurring within the City, and the anticipated continuing future growth;

WHEREAS the Parties acknowledge the universal importance of water and wastewater services to all governmental jurisdictions, the unique challenges faced by the City in meeting the needs of the development community, and the unprecedented growth the City is currently experiencing;

WHEREAS the Parties acknowledge that the following terms are not intended to limit or increase the legal responsibilities of the City nor the statutory requirements of Global or its Utility Companies;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

1. Acquisition of the Assets of Sonoran Utilities Services LLC. The City of Maricopa will support the acquisition of the assets of Sonoran Utilities Services LLC by Global, the dissolution of the 387 Districts, and Global's submission to the ACC to acquire the CC&Ns required to provide the Utility Services in the areas formerly known as the 387 District Area, and in the future use of the assets and/or rights acquired from Sonoran with respect to those areas within Global's Planning Area as more particularly described on Exhibit C attached hereto and incorporated herein by this reference.

2. Coordination and Communications. Staff of the City and Global shall meet on a regularly scheduled monthly basis, and more or less often as needed by mutual consent. City representatives at these meetings shall normally be the City Manager, the Public Works Director, and the Planning Director, and/or their designees. Global's representatives at these meeting shall normally be the President, the Chief Financial Officer and the Manager of Construction, or their designees. Other meetings with other representatives may be arranged as needed.

3. Annual Report to the City of Maricopa. Global shall submit an Annual Report to the Mayor and City Council. This Annual Report shall normally be submitted by April 1st each year, unless the Parties agree on a different date. The report shall include: Annual revenues and expenditures, total number of water and wastewater customers, customers added this past year, number of customers anticipated to be connected next year, water and wastewater facilities completed in preceding year, planned projects for the next year(s), and a copy of the annual report to the ACC. Global shall provide free of charge to the City copies of any annual reports Global provides to ADEQ and/or ADWR.

4. Proposed Rate and/or Fee Adjustments. Global shall submit proposed rate and/or fee adjustments to the Mayor and City Council for review and comment prior to submission to the ACC. Global shall allow the City thirty days for the Mayor and City Council to conduct a public hearing at the City's next regularly scheduled City Council meeting regarding the proposed rate and/or fee adjustment before submission to the ACC.

5. Operating/License Agreement and Fees. The parties shall enter into an operating/license agreement for utility services provided within the City's current and existing incorporated limits, and for utility services provided within Global's Planning Area (as set forth on Exhibit C attached hereto which relates to areas outside of the City's current and existing incorporated limits), with the understanding that the City will endeavor in good faith to promptly replace the operating/license agreement with a franchise agreement on or before October 15, 2007 in the event that the ACC Order provided for below has not been entered by April 14, 2006. Pursuant to the operating/license agreement, and subject to the earlier of (i) entry of a final order (the "ACC Order") by the Arizona Corporation Commission approving the fee provided for herein; or (ii) April 14, 2006, a fee of 3% of Gross Revenues as it relates to consumptive use of water and wastewater by residential and commercial customers within the existing incorporated limits of the City, the Subject Territories and in Global's Planning Area shall be paid by Global to the City of Maricopa. If the ACC Order has not been entered by April 14, 2006 following diligent efforts (which the City will in good faith support and take reasonable steps to cause other interested parties to support), then the fee of 3% as provided for above shall be reduced to 2% with respect to the consumptive use of water and wastewater residential and commercial customers located outside the jurisdictional limits of the City but within Global's Planning Area;

however, if any property located outside the City's jurisdictional limits becomes a part of the City's jurisdictional limits through an annexation, then the fee shall automatically be increased from 2% to 3% for the annexed property on the date the annexation is effective. In the event the ACC declines to enter the ACC Order, the City will then proceed with a franchise election (at Global's cost) seeking approval of the fees provided for in this Section 5 and to grant Global a franchise in connection therewith for a term of 25 years. The franchise election shall take place on a date to be set by the City and shall occur no later than the earlier of 18 months following the ACC declining to enter the ACC Order or October 15, 2007. Upon the request of Global, the City agrees to continue to cause franchise elections to occur (at Global's cost) on at least an annual basis seeking approval of the franchise provided for herein. All of the foregoing payments shall be made on a quarterly basis. Gross Revenues shall include base fees, consumptive fees, and industrial and commercial reclaimed water sales but shall not include revenues as they arise from hook up fees, service connection fees, termination fees, reconnect or disconnect fees, late fees, NSF fees, account handling fees, or bulk service rate on the sale of construction water. The parties acknowledge that Global will seek the consent of the ACC to allow for inclusion of all fees described within this Section in the monthly consumptive billing of the utilities. The fees provided for in this Section 5 are flow through fees to PVU and SCW and are incremental to the rates currently set in place by the ACC; however, if the ACC does not approve these fees to be added to the monthly consumptive billings of the Utility Companies, Global shall pay the fees as an operating expense.

6. Financing Options. The City of Maricopa shall explore potential financing options for Global to finance its projects within the City. Global and City will commit to jointly funding the formation of the necessary structures required to access Industrial Development Authority finances. If the City and Global agree to jointly finance a project, the Parties will enter into a separate agreement for each project.

7 Local Office. Global shall maintain an office at the City of Maricopa's new City Hall primarily for customer service or in the alternative at its Maricopa headquarters facilities to be located at the Palo Verde Water Reclamation Campus. Global will make this decision with input from the City. If Global elects to maintain an office at the new City Hall, the Parties will enter into a separate lease agreement for that office.

8. Conservation Efforts. The City will assist Global in promoting community and school water conservation programs. Assistance may include distribution of educational materials and access to making presentations at City and school functions.

9. Reclamation Projects. The City and Global will explore water reclamation projects for parks and school playgrounds, and will encourage the development of light commercial and industrial uses of reclaimed water. If financially feasible, as determined by the City, the City will install dual plumbing in all future City owned buildings such that reclaimed water can be used to flush toilets and serve other non-potable water demands, per Global's guidelines and State and Federal law. The City shall bear the cost of this infrastructure, and shall provide signage to announce the use of reclaimed water in all public places to assist with conservation and public education efforts.

10. Economic Development. The City and Global will explore possible joint efforts to support industrial and commercial uses in the City. Global will augment the City's economic development efforts with its corporate network wherever possible. The City and Global will explore co-funding of specific employment generating economic development initiatives and participate on economic development committee(s).

11. Land Use Planning and Water/Wastewater Planning. Global shall prepare an annual "Plan for Growth" for the City of Maricopa's planning area. The City staff shall provide input and comments on changing land use and density patterns to assist Global in this planning effort. Global shall submit its annual "Plan for Growth" report to the Mayor and City Council by April 1st, unless the Parties agree to a different date.

12. Fee. ***Effective January 1, 2006*** Global shall pay a voluntary fee totaling Fifty Dollars ($50.00) for each residential home connecting to Global's water and wastewater system within the jurisdictional limits of the City, as amended from time to time. The fee will assist the City in defraying administrative costs for water and wastewater services. The voluntary fee shall be increased to One Hundred Dollars ($100.00) for all other areas within Global's Planning Area (attached hereto as Exhibit C, exclusive of the Ak-Chin Indian Reservation). The fee shall be payable quarterly in arrears and will become due upon the connection of a water meter to an occupied residential dwelling by a homeowner.

13. Community Outreach. The City and Global shall work cooperatively to prepare, cost-share (in-kind services such as web hosting, graphic design, etc. is considered equitable to actual funds), and disseminate a community outreach packet. The community outreach packet will be a collaborative effort by multiple entities within the City, to be distributed to existing and new homeowners. Global will explore commitments to fund and conduct extensive water conservation programs and outreach education programs to promote water conservation in the community, schools, and public facilities. Global will explore co-sponsoring significant water reclamation demonstration projects. Global will support community events with bottled water and a presence at all major municipal functions and events.

14. Geographic Information System and Information Technology. The City and Global shall work collaboratively in developing and updating the City's Geographical Information System ("GIS"). This may include data sharing and/or integration, cost-sharing on GIS surveying, cost-sharing on a GIS Geodesic Marker, and other GIS related administrative items. The City and Global shall share and integrate SCADA systems, CCD Security Data and Vulnerability Preparedness, Emergency, Operations, and Rapid Response Plans, Broadband Wireless network sharing, and Internet Site Linking. The City and Global shall also explore opportunities for collaborative billing services.

15. Annexation. Global shall support the annexation efforts of the City. Global shall support the City's efforts to manage and coordinate development in Global's Planning Areas. Global will provide water and wastewater modeling services to determine the impact of proposed developments. Global will share and publish long-term master plans with the City and continuously update the plans so that the water and wastewater infrastructure is coordinated with the City's infrastructure plans.

16. Permits. The City will endeavor to streamline permit issuance, plan review, and related design and construction regulatory issues for Global. The City will endeavor to treat Global's permitting submissions as a priority and shall provide the highest priority review the City can produce in order to return permits promptly. The City will endeavor to assist and support Global's efforts to obtain CAAG 208, CC&N, ADEQ, ADWR and other regulatory approvals required within the Subject Territories. If the City cannot provide a prompt review of

Global's permits or plans, Global shall have the option of reimbursing the City for any costs incurred by the City if the City, at Global's request, hires an outside consultant to expedite the review of Global's permits and plans.

17. Maricopa Domestic Water District. The City and Global will consider and cooperate in achieving operational integration efforts and the potential sale of water to Global by the Maricopa Domestic Water District.

18. Designated Management Area. The City and Global shall work together to facilitate the designation of the City of Maricopa as a Designated Management Agency to implement and enforce the portions of the area wide Water Quality Management Plan within its designated area, which will be the City's current planning area, as illustrated by the City of Maricopa General Plan.

19. Joint Actions and Conditions. In order to effectuate this MOU, and in addition to the actions otherwise set forth herein which shall in good faith be pursued by the parties hereto, the parties shall undertake (or the parties shall support one another in taking) the following actions in good faith:

a. ACC approval of SCW and PVU's proposed expansion of the CC&N over Global's Planning Area;

b. Execution and approval of an operating/license agreement with the City for Utility Services provided within the City's current and existing jurisdictional boundary and for Utility Services provided outside the City's current and existing jurisdictional boundary but within Global's Planning Area;

c. ACC approval of the operating/license agreement described in Section 5 and Section 19(b) above;

d. ACC approval of Global's request for inclusion of all fees set forth in Section 5 above in the monthly consumptive billings of the Utility Companies.

e. If necessary, the franchise election provided for in Section 5 above.

20. Effective Date. Except as otherwise set forth herein, the obligation of the parties pursuant to this MOU shall commence thirty days after approval of said MOU by the Maricopa City Council.

21. Entire Agreement. This MOU contains the entire agreement between the parties hereto and supersedes all previous communications, representations or agreements, written or verbal, with respect to its subject matter.

22. Construction. This MOU shall be construed in accordance with the laws of the State of Arizona.

23. Modification or Amendment. This MOU may not be modified, amended, rescinded, cancelled or waived, in whole or in part, except by a written instrument signed by the all parties hereto.

24. Jurisdiction, Venue and Attorneys' Fees and Costs. Subject to the provisions of this MOU, the prevailing party in any arbitration, proceeding, lawsuit, appeal or other proceeding brought to enforce or otherwise implement the terms and conditions of this MOU shall be entitled to an award of attorneys' fees and costs from the losing party. Jurisdiction and venue shall be in Pinal County, Arizona.

25. Mediation/Arbitration. In the event that any dispute arises between the parties to this MOU, the parties first shall attempt to find a neutral person, who is mutually acceptable to both parties, and who has experience in matters such as those provided for in this MOU, and request that person to mediate the dispute. In the event that such mediation is not undertaken or successfully concluded within 45 days after the dispute arises, the parties to any such dispute shall submit the dispute to binding arbitration in accordance with the rules of commercial arbitration ("Rules") for the American Arbitration Association ("AAA"). If the claim in the dispute involves a non-monetary default or breach or does not exceed One Hundred Thousand Dollars ($100,000), there shall be a single arbitrator selected by mutual agreement of the Parties, and in the absence of agreement, appointed according to the Rules. If the claim in the dispute,

exceeds One Hundred Thousand Dollars ($100,000), the arbitration panel shall consist of three (3) arbitrators, one of whom shall be selected by each party and the third, who shall serve as chairman, shall be selected by the AAA. The arbitrator or arbitrators must be knowledgeable in the subject matter of the dispute. The costs and fees of the arbitrator(s) shall be divided equally among the parties. Any decision of the arbitrator(s) shall be supported by written findings of fact and conclusions of law. The decision of the arbitrator(s) shall be final, subject to the exceptions outlined in the Arizona Uniform Arbitration Act, A.R.S. § 12-1502, et seq., and judgment may be entered upon the same. The arbitrator(s) shall control discovery in the proceedings and shall award the prevailing party its reasonable attorneys' fees and costs. Any arbitration arising from this MOU shall occur within Pinal County, or at any other location mutually agreed to by the Parties.

26. Assignment. The terms and conditions of this MOU shall bind and inure to the benefit of the parties hereto and their successors and assigns and legal representatives. Neither Party shall be allowed to assign this MOU without the express written consent of the other Party.

27. Waiver. Any waiver of any provision of this MOU shall not constitute a waiver of any other provision, whether or not similar, nor shall any waiver be a continuing waiver. A party may waive any provision of this MOU intended for its benefit; provided, however, that such waiver shall in no way excuse the other parties from the performance of any of their other obligations under this MOU.

28. Section Headings. The section headings used herein are for reference only and shall not enter into the interpretation hereof.

29. Relationship of Parties. Nothing contained in this MOU shall be deemed or construed to create the relationship of principal and agent or of limited or general partnership or of joint venture or of any other association between the City and Global.

30. Notices. Any notices given pursuant to this MOU shall be in writing and shall be personally delivered or deposited in the United States mail, certified mail, postage prepaid, return receipt requested, to a party hereunder. Notices shall be deemed given and received when

personally delivered or three (3) days after deposit in the United States mail to the address set forth below such party's signature.

31. Time of Essence. Time is of the essence for all purposes of this MOU.

32. Conflict of Interest. This Agreement is subject to the conflict of interest provisions set forth in A.R.S. § 38-511.

IN WITNESS WHEREOF, each of the parties has executed this MOU as of the date first above written.

CITY OF MARICOPA

By: _____

Title: Mayor

Address: _____

_____

GLOBAL WATER RESOURCES, LLC

By: _____

Title: PRESIDENT & CEO

Address: 2260 N. 19TH AVE, SUITE 210
PHOENIX, 85027

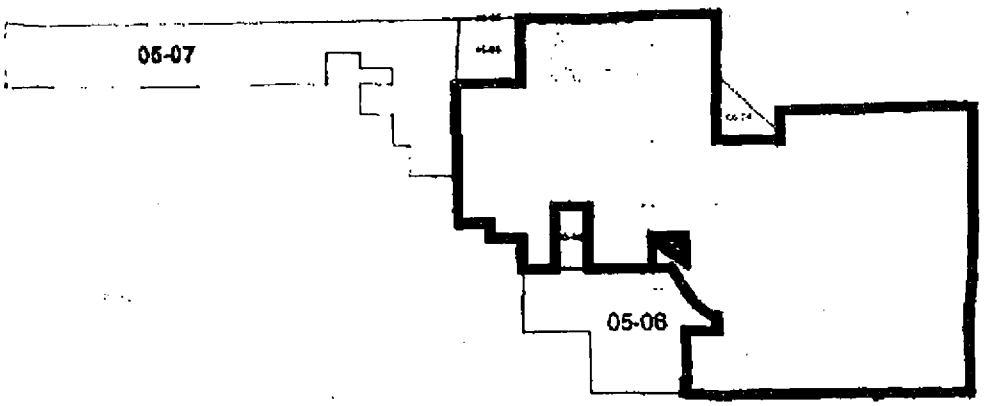
ATTEST:

By: _____
City Clerk

APPROVED AS TO FORM:

_____
City Attorney

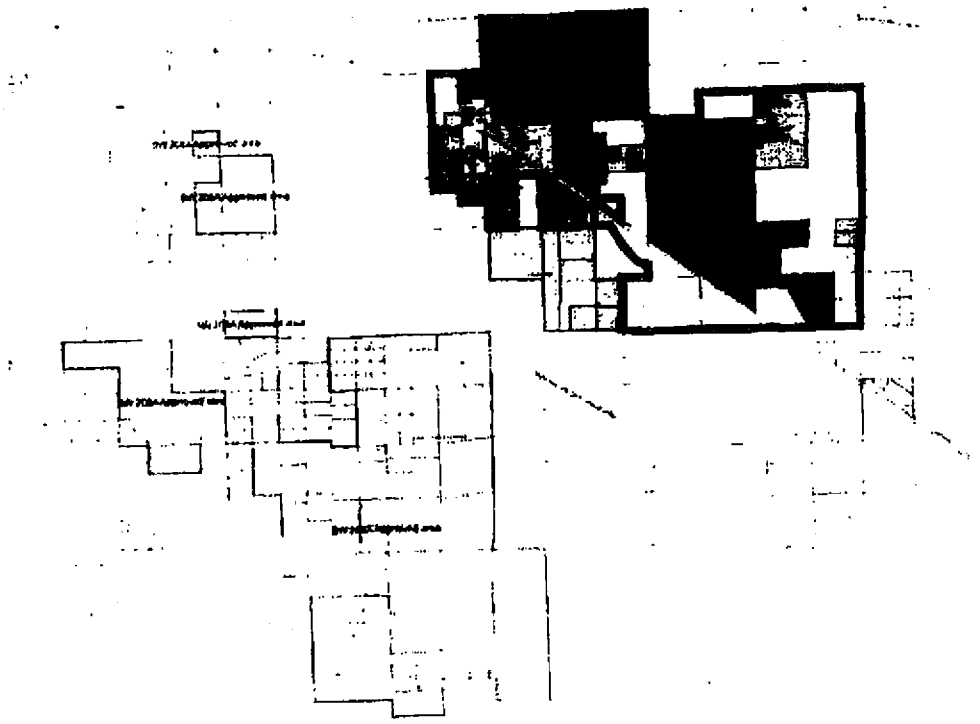
EXHIBIT A- SUBJECT TERRITORIES ***(As defined in this MOU includes the current jurisdictional limits for the City of Maricopa and the Annexation Petitions that are currently pending with the City of Maricopa)***



Legend

- City Limits
- Gila River Reservation
- Maricopa (Ak-Chin) Reservation
- Annex 05-07
- Annex 05-04
- Annex 05-05
- Annex 05-06

EXHIBIT B – GLOBAL SERVICE AREA



Legend

City Limits

Global_Water

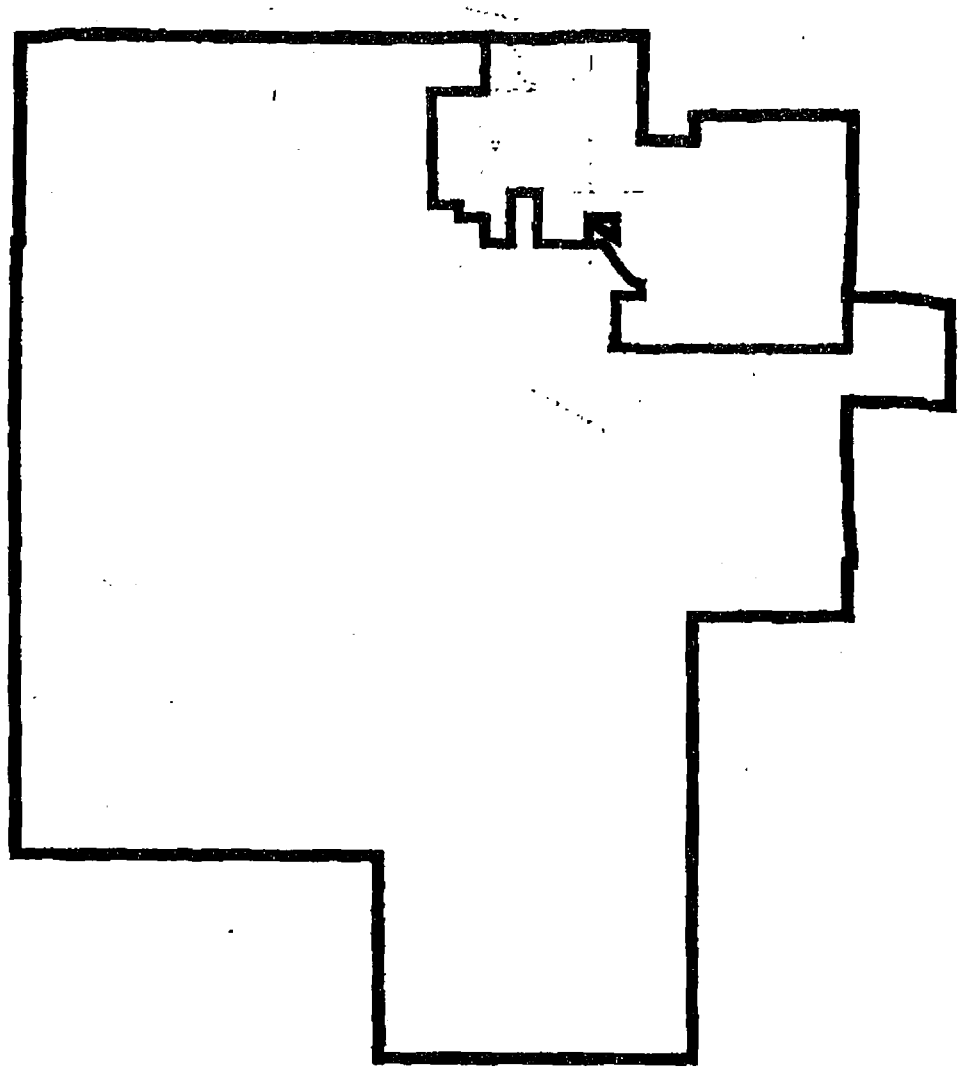
SW208_Approved

Sonoran 387 acuisition

Gila River Reservation

Maricopa (Ak-Chin) Reservation

EXHIBIT C – GLOBAL'S PLANNING AREA



Legend

City Limits	Gila River Reservation
Planning	Maricopa (Ak-Chin) Reservation

Hill 8

MEMORANDUM OF UNDERSTANDING

1205-9
200.00.14

THIS MEMORANDUM OF UNDERSTANDING (this "MOU") is entered into as of December 19, 2005 between Global Water Resources, LLC, a Delaware limited liability company ("Global"), and the City of Casa Grande, a municipal corporation ("City").

RECITALS

WHEREAS Global is engaged in the business of providing water, wastewater and reclaimed water infrastructure services both inside and outside the jurisdictional boundaries of the City;

WHEREAS Global is the owner of Santa Cruz Water Company, LLC ("SCW") and Palo Verde Utilities Company, LLC ("PVU") (collectively "Utility Companies") and provides utility services through these entities;

WHEREAS SCW and PVU are Arizona public service corporations defined in Article 15, Section 2, of the Arizona Constitution and, as such, are regulated by the Arizona Corporation Commission ("ACC"). SCW and PVU have been issued Certificates of Convenience and Necessity ("CC&N") by the ACC to provide water and waste water services (collectively the "Utility Services"), respectively in designated geographic areas within the State of Arizona;

WHEREAS the City is experiencing rapid growth, and in order to facilitate and manage further growth, the City wishes to strengthen its relationship with Global and its Utility Companies by working with them to generally improve the quality of Utility Services within the City;

WHEREAS the City intends to facilitate and manage further growth in accordance with its obligations under the Growing Smarter legislation and Growing Smarter Plus legislation enacted into law by the Arizona Legislature;

WHEREAS the City is in the process of annexing certain real property, as more fully described on Exhibit A hereto (the "Subject Territories") and, in connection therewith, the Parties desire to work closely and cooperate with each other to assist the orderly assimilation of these areas;

WHEREAS the City is supportive of Global's pending application to the ACC for expansion of its CC&N for Utility Services in the City's General Planning Area and the Parties acknowledge that the expansion of the CC&N over the Subject Territories may not be finalized until such time as the appropriate Arizona Department of Water Resources ("ADWR"), Arizona Department of Environmental Quality ("ADEQ") and Central Arizona Association of Governments ("CAAG") permits and approvals are in place and the Parties acknowledge that it will require cooperation and mutual support to achieve the necessary regulatory approvals;

WHEREAS the Parties wish to form a Public Private Partnership which will benefit both Parties and significantly enhance and streamline the manner in which the Parties currently work together;

WHEREAS the Parties believe such a Public Private Partnership currently represents the most cost-effective and efficient solution to the water and wastewater challenges facing the City's current and anticipated future residents;

WHEREAS the Parties believe that such a Public Private Partnership will result in the harmonization of rates within Global's service area, thereby mitigating customer confusion regarding rates and utility services;

WHEREAS the City seeks to increase its involvement in the water and wastewater business within its current municipal limits and its entire planning area;

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limits but within its planning area;

WHEREAS the Parties acknowledge Global's commitment to the City to date, including Global's material capital expenditures, its expressed intent to be a contributing corporate citizen in the community, and its desire to have a positive working relationship with the City;

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WHEREAS the Parties acknowledge that the following terms are not intended to limit or increase the legal responsibilities of the City nor the statutory requirements of Global or its Utility Companies;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

1. Coordination and Communications. Staff of the City and Global shall meet on a regularly scheduled monthly basis, and more or less often as needed by mutual consent. City representatives at these meetings shall normally be the City Manager, the Public Works Director, and the Planning Director, and/or their designees. Global's representatives at these meeting shall normally be the President, the Chief Financial Officer and the Manager of Construction, or their designees. Other meetings with other representatives may be arranged as needed.

2. Annual Report to the City of Casa Grande. Global shall submit an Annual Report to the Mayor and City Council. This Annual Report shall normally be submitted by April 1st

each year, unless the Parties agree on a different date. The report shall include: Annual revenues and expenditures, total number of water and wastewater customers, customers added this past year, number of customers anticipated to be connected next year, water and wastewater facilities completed in preceding year, planned projects for the next year(s), and a copy of the annual report to the ACC. Global shall provide free of charge to the City copies of any annual reports Global provides to ADEQ and/or ADWR.

3. Proposed Rate and/or Fee Adjustments. Global shall submit proposed rate and/or fee adjustments to the Mayor and City Council for review and comment prior to submission to the ACC. Global shall allow the City thirty days for the Mayor and City Council to conduct a public hearing at the City's next properly noticeable regularly scheduled City Council meeting regarding the proposed rate and/or fee adjustment before submission to the ACC.

4. Operating/License Agreement and Fees. The parties shall enter into an operating/license agreement for utility services provided within the City's current and existing incorporated limits, and for utility services provided within Global's Planning Area (as set forth on Exhibit A attached hereto which relates to areas outside of the City's current and existing incorporated limits), with the understanding that the City will endeavor in good faith to promptly replace the operating/license agreement with a franchise agreement on or before October 15, 2007 in the event that the ACC Order provided for below has not been entered by April 14, 2006. Pursuant to the operating/license agreement, and subject to the earlier of (i) entry of a final order (the "ACC Order") by the Arizona Corporation Commission approving the fee provided for herein; or (ii) April 14, 2006, a fee of 3% of Gross Revenues as it relates to consumptive use of water and wastewater by residential and commercial customers within the existing incorporated limits of the City, the Subject Territories and in Global's Planning Area shall be paid by Global to the City of Casa Grande. If the ACC Order has not been entered by April 14, 2006 following diligent efforts (which the City will in good faith support and take reasonable steps to cause other interested parties to support), then the fee of 3% as provided for above shall be reduced to 2% with respect to the consumptive use of water and wastewater residential and commercial customers located outside the jurisdictional limits of the City but within Global's Planning Area; however, if any property located outside the City's jurisdictional limits becomes a part of the

City's jurisdictional limits through an annexation, then the fee shall automatically be increased from 2% to 3% for the annexed property on the date the annexation is effective. In the event the ACC declines to enter the ACC Order, the City will then proceed with a franchise election (at Global's cost) seeking approval of the fees provided for in this Section 5 and to grant Global a franchise in connection therewith for a term of 25 years. The franchise election shall take place on a date to be set by the City and shall occur no later than the earlier of 18 months following the ACC declining to enter the ACC Order or October 15, 2007. Upon the request of Global, the City agrees to continue to cause franchise elections to occur (at Global's cost) on at least an annual basis seeking approval of the franchise provided for herein. All of the foregoing payments shall be made on a quarterly basis. Gross Revenues shall include base fees, consumptive fees, and industrial and commercial reclaimed water sales but shall not include revenues as they arise from hook up fees, service connection fees, termination fees, reconnect or disconnect fees, late fees, NSF fees, account handling fees, or bulk service rate on the sale of construction water. The parties acknowledge that Global will seek the consent of the ACC to allow for inclusion of all fees described within this Section in the monthly consumptive billing of the utilities. The fees provided for in this Section 5 are flow through fees to PVU and SCW and are incremental to the rates currently set in place by the ACC; however, if the ACC does not approve these fees to be added to the monthly consumptive billings of the Utility Companies, Global shall pay the fees as an operating expense.

5. Financing Options. The City of Casa Grande and Global shall jointly explore potential financing options for Global to finance its projects within the City. If the City and Global agree to jointly finance a project, the Parties will enter into a separate agreement for each project.

6. Local Office. Global shall maintain an office at its Casa Grande headquarters facilities to be located at the Palo Verde South East Water Reclamation Campus or in an alternative location within Global's Planning Area until such time as sufficient customers are in place so as to warrant the office being in another location which will be established by Global with input from the City.

7. Conservation Efforts. The City will assist Global in promoting community and school water conservation programs. Assistance may include distribution of educational materials and access to making presentations at City and school functions.

8. Reclaimed Water and Reclamation Projects. The parties acknowledge the City's interest in long term access to reclaimed water. The parties further acknowledge Global Water's leadership in the field of water reuse in the region and the critical nature of reclaimed water to the Global Water business and regional conservation plan. Accordingly, Global Water agrees to use reasonable best commercial efforts to use and utilize reclaimed water in the region to the extent permissible under existing and future Arizona Department of Environmental Quality ("ADEQ") policy for all residential, commercial and industrial applications within Global's service area. The City and Global will explore water reclamation projects for parks and school playgrounds, and will encourage the development of light commercial and industrial uses of reclaimed water. Additionally, for that water which cannot be beneficially used within the service area, Global will either recharge for its benefit that certain volume of water or make that certain volume of water available to the City for recharge on a long term basis. if financially feasible, as determined in the sole discretion of the City, the City will install dual plumbing in all future City owned buildings serviced by Global such that reclaimed water can be used to flush toilets and serve other non-potable water demands, per Global's guidelines and State and Federal law. The City shall bear the cost of this infrastructure, and shall provide signage to announce the use of reclaimed water in all public places to assist with conservation and public education efforts.

9. Economic Development. The City and Global will explore possible joint efforts to support industrial and commercial uses in the City. Global will augment the City's economic development efforts with its corporate network wherever possible. The City and Global will explore co-funding of specific employment generating economic development initiatives and participate on economic development committee(s).

10. Land Use Planning and Water/Wastewater Planning. Global shall prepare an annual "Plan for Growth" for the City of Casa Grande's planning area. The City staff shall

provide input and comments on changing land use and density patterns to assist Global in this planning effort. Global shall submit its annual "Plan for Growth" report to the Mayor and City Council by April 1st, unless the Parties agree to a different date.

11. Fee. ***Effective January 1, 2006*** Global shall pay a voluntary fee totaling One Hundred Dollars ($100.00) for each residential home connecting to Global's water and wastewater system within the jurisdictions of the City, as amended from time to time, or outside the jurisdictions of the City but within Global's Planning Area (attached hereto as Exhibit A). To the extent a home connects to only one service, the fee shall be reduced to fifty dollars ($50.00). The fee will assist the City in defraying administrative costs for water and wastewater services, including regional planning. The fee shall be payable quarterly in arrears and will become due upon the connection of a water meter to an occupied residential dwelling by a homeowner.

12. Community Outreach. The City and Global shall work cooperatively to prepare, cost-share (in-kind services such as web hosting, graphic design, etc. is considered equitable to actual funds), and disseminate a community outreach packet. The community outreach packet will be a collaborative effort by multiple entities within the City, to be distributed to existing and new homeowners. Global will explore commitments to fund and conduct extensive water conservation programs and outreach education programs to promote water conservation in the community, schools, and public facilities. Global will explore co-sponsoring significant water reclamation demonstration projects. Global will support community events with bottled water and a presence at all major municipal functions and events.

13. Geographic Information System and Information Technology. The City and Global shall work collaboratively in developing and updating the City's Geographical Information System ("GIS"). This may include data sharing and/or integration, cost-sharing on GIS surveying, cost-sharing on a GIS Geodesic Marker, and other GIS related administrative items. The City and Global shall share and integrate SCADA systems, CCD Security Data and Vulnerability Preparedness, Emergency, Operations, and Rapid Response Plans, Broadband Wireless network sharing, and Internet Site Linking. The City and Global shall also explore opportunities for collaborative billing services.

14. Annexation. Global shall support the annexation efforts of the City. Global shall support the City's efforts to manage and coordinate development in Global's Planning Areas. Global will provide water and wastewater modeling services to determine the impact of proposed developments. Global will share and publish long-term master plans with the City and continuously update the plans so that the water and wastewater infrastructure is coordinated with the City's infrastructure plans.

15. Permits. The City will endeavor to streamline permit issuance, plan review, and related design and construction regulatory issues for Global. The City will endeavor to treat Global's permitting submissions as a priority and shall provide the highest priority review the City can produce in order to return permits promptly. The City will endeavor to assist and support Global's efforts to obtain CAAG 208, CC&N, ADEQ, ADWR and other regulatory approvals required within the Subject Territories. If the City cannot provide a prompt review of Global's permits or plans, Global shall have the option of reimbursing the City for any costs incurred by the City if the City, at Global's request, hires an outside consultant to expedite the review of Global's permits and plans. Any such consultants shall report directly to the City and take direction only therefrom.

16. Designated Management Area. The City and Global shall work together to facilitate the designation of the City of Casa Grande as a Designated Management Agency to implement and enforce the portions of the area wide Water Quality Management Plan within its designated area, which will be the City's current planning area, as illustrated by the City of Casa Grande General Plan.

17. Joint Actions and Conditions. In order to effectuate this MOU, and in addition to the actions otherwise set forth herein which shall in good faith be pursued by the parties hereto, the parties shall undertake (or the parties shall support one another in taking) the following actions in good faith:

a. ACC approval of SCW and PVU's proposed expansion of the CC&N over Global's Planning Area;

b. Execution and approval of an operating/license agreement with the City for Utility Services provided within the City's current and existing jurisdictional boundary and for Utility Services provided outside the City's current and existing jurisdictional boundary but within Global's Planning Area;

c. ACC approval of the operating/license agreement described in Section 5 and Section 19(b) above;

d. ACC approval of Global's request for inclusion of all fees set forth in Section 5 above in the monthly consumptive billings of the Utility Companies.

e. If necessary, the franchise election provided for in Section 5 above.

18. Effective Date. Except as otherwise set forth herein, the obligation of the parties pursuant to this MOU shall commence thirty days after approval of said MOU by the Casa Grande City Council.

19. Entire Agreement. This MOU contains the entire agreement between the parties hereto and supersedes all previous communications, representations or agreements, written or verbal, with respect to its subject matter.

20. Construction. This MOU shall be construed in accordance with the laws of the State of Arizona.

21. Modification or Amendment. This MOU may not be modified, amended, rescinded, cancelled or waived, in whole or in part, except by a written instrument signed by the all parties hereto.

22. Jurisdiction, Venue and Attorneys' Fees and Costs. Subject to the provisions of this MOU, the prevailing party in any arbitration, proceeding, lawsuit, appeal or other proceeding brought to enforce or otherwise implement the terms and conditions of this MOU shall be entitled to an award of attorneys' fees and costs from the losing party. Jurisdiction and venue shall be in Pinal County, Arizona.

23. Mediation/Arbitration. In the event that any dispute arises between the parties to this MOU, the parties first shall attempt to find a neutral person, who is mutually acceptable to both parties, and who has experience in matters such as those provided for in this MOU, and request that person to mediate the dispute. In the event that such mediation is not undertaken or successfully concluded within 45 days after the dispute arises, the parties to any such dispute shall submit the dispute to binding arbitration in accordance with the rules of commercial arbitration ("Rules") for the American Arbitration Association ("AAA"). If the claim in the dispute involves a non-monetary default or breach or does not exceed One Hundred Thousand Dollars ($100,000), there shall be a single arbitrator selected by mutual agreement of the Parties, and in the absence of agreement, appointed according to the Rules. If the claim in the dispute, exceeds One Hundred Thousand Dollars ($100,000), the arbitration panel shall consist of three (3) arbitrators, one of whom shall be selected by each party and the third, who shall serve as chairman, shall be selected by the AAA. The arbitrator or arbitrators must be knowledgeable in the subject matter of the dispute. The costs and fees of the arbitrator(s) shall be divided equally among the parties. Any decision of the arbitrator(s) shall be supported by written findings of fact and conclusions of law. The decision of the arbitrator(s) shall be final, subject to the exceptions outlined in the Arizona Uniform Arbitration Act, A.R.S. § 12-1502, et seq., and judgment may be entered upon the same. The arbitrator(s) shall control discovery in the proceedings and shall award the prevailing party its reasonable attorneys' fees and costs. Any arbitration arising from this MOU shall occur within Pinal County, or at any other location mutually agreed to by the Parties.

24. Assignment. The terms and conditions of this MOU shall bind and inure to the benefit of the parties hereto and their successors and assigns and legal representatives. Neither Party shall be allowed to assign this MOU without the express written consent of the other Party.

25. Waiver. Any waiver of any provision of this MOU shall not constitute a waiver of any other provision, whether or not similar, nor shall any waiver be a continuing waiver. A party may waive any provision of this MOU intended for its benefit; provided, however, that such waiver shall in no way excuse the other parties from the performance of any of their other obligations under this MOU.

26. Section Headings. The section headings used herein are for reference only and shall not enter into the interpretation hereof.

27. Relationship of Parties. Nothing contained in this MOU shall be deemed or construed to create the relationship of principal and agent or of limited or general partnership or of joint venture or of any other association between the City and Global.

28. Notices. Any notices given pursuant to this MOU shall be in writing and shall be personally delivered or deposited in the United States mail, certified mail, postage prepaid, return receipt requested, to a party hereunder. Notices shall be deemed given and received when personally delivered or three (3) days after deposit in the United States mail to the address set forth below such party's signature.

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29. Time of Essence. Time is of the essence for all purposes of this MOU.

30. Conflict of Interest. This Agreement is subject to the conflict of interest provisions set forth in A.R.S. § 38-511.

IN WITNESS WHEREOF, each of the parties has executed this MOU as of the date first above written.

CITY OF CASA GRANDE

By: _____

Title: Acting City Manager

Address: 510 E. Florence Blvd.
Casa Grande, AZ
85222

GLOBAL WATER RESOURCES, LLC

By: _____

Title: President

Address: 22601 N. 19th Ave
Phoenix, AZ, 85[illegible]

ATTEST:

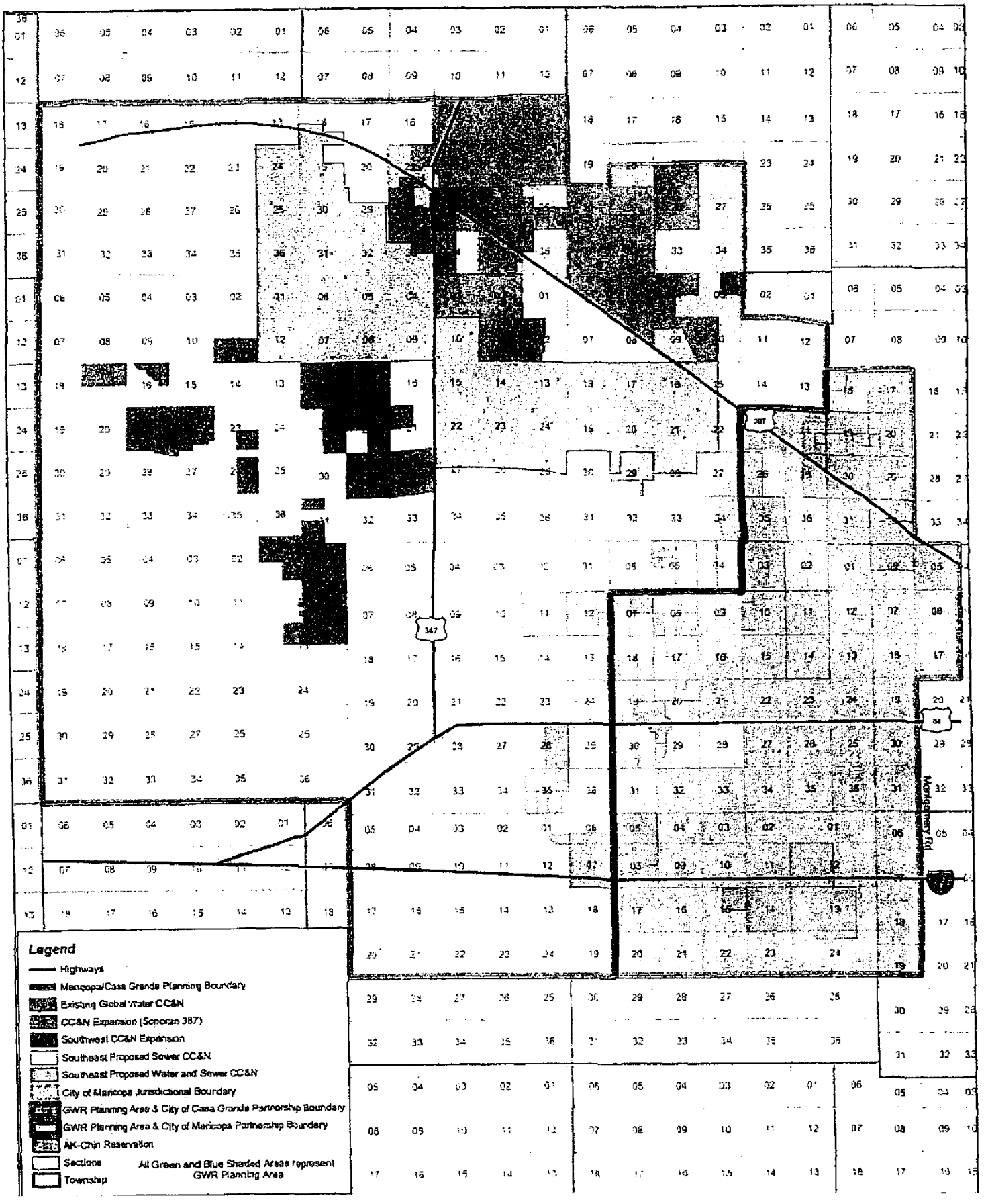
By: _____
City Clerk

APPROVED AS TO FORM:

_____
City Attorney

EXHIBIT A

Exhibit A - Subject Territories



Hill 9

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MEMORANDUM OF UNDERSTANDING

THIS MEMORANDUM OF UNDERSTANDING (this "MOU") is entered into as of August 25, 2008 between Global Water Resources, LLC, a Delaware limited liability company ("Global"), and the City of Eloy, a municipal corporation ("City").

RECITALS

WHEREAS, the Utility Companies (as defined below) will be engaged in the business of providing water, wastewater and reclaimed water infrastructure services;

WHEREAS, Global is the owner of Global Water-Picacho Cove Water Company ("PCWC") and Global Water-Picacho Cove Utilities Company ("PCUC") (collectively "Utility Companies");

WHEREAS, PCWC and PCUC are Arizona public service corporations defined in Article 15, Section 2, of the Arizona Constitution and, as such, are regulated by the Arizona Corporation Commission ("ACC"). PCWC and PCUC have applied for Certificates of Convenience and Necessity ("CC&N") by the ACC to provide water and waste water services (collectively the "Utility Services"), respectively, in the subject area set forth in Exhibit "A" (hereinafter refered to as the "Subject Territory").

WHEREAS, Global has existing commitments in place to provide water, wastewater and reclaimed water infrastructure services to developments both within and outside the Subject Territory. These developments include projects/properties known as Piccacho Cove, Citrus Ranch, and La Osa.

WHEREAS, the City intends to facilitate and manage future growth in accordance with its obligations under the Growing Smarter legislation and Growing Smarter Plus legislation

enacted into law by the Arizona Legislature;

WHEREAS, the City and Utility Companies have jointly identified certain land areas to regionally plan and permit for Utility Services, as more fully shown on the Subject Territory set forth in Exhibit A hereto;

WHEREAS, the City has identified land areas as their municipal planning area ("MPA") as future annexations, a portion of which includes the Subject Territory, and, in connection therewith, the Parties desire to work closely and cooperate with each other to assist the orderly assimilation of these areas;

WHEREAS, the City has the potential of experiencing rapid growth, and in order to facilitate and manage this potential future growth, the City wishes work with Global and its Utility Companies to establish Utility Services within the Subject Territory;

WHEREAS, the City is supportive of the Utility Companies's pending application to the ACC for the establishment of their CC&N for Utility Services in the City's Municipal Planning Area, more specifically within the Subject Territory attached as Exhibit "A", and the Parties acknowledge that the establishment/expansion of the CC&N over the Subject Territory may not be finalized until such time as the appropriate Arizona Department of Water Resources ("ADWR"), Arizona Department of Environmental Quality ("ADEQ") and Central Arizona Association of Governments ("CAAG") permits and approvals are in place and the Parties acknowledge that it will require cooperation and mutual support to achieve the necessary regulatory approvals;

WHEREAS, the Parties wish to form an Agreement which will benefit both Parties and significantly enhance and streamline the manner in which the Parties currently work together;

WHEREAS, the Parties believe such an Agreement represents a cost-effective and efficient solution to the water and wastewater challenges facing the City's current and anticipated future residents within the Subject Territory;

WHEREAS, the City seeks innovative revenue streams that maintain the City's long-term fiscal health and defray cost impacts that may occur within the Subject Territory;

WHEREAS, the City acknowledges Global's commitment to water conservation to date in other parts of the State/County, and its expressed intent to be a contributing corporate citizen in the community, and its desire to have a positive working relationship with the City;

WHEREAS, the Parties acknowledge the significant material capital expenditures and the consequent strong commitment that will be required by Global to meet the challenges created by the potential rapid growth within the Subject Territory;

WHEREAS, the Parties acknowledge the universal importance of water and wastewater services to all governmental jurisdictions, the unique challenges faced by the City in meeting the needs of the development community, and the unprecedented potential growth facing the City;

WHEREAS, the Parties acknowledge that the following terms are not intended to limit or increase the legal responsibilities of the City nor the statutory requirements of Global or its Utility Companies;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

1. Coordination and Communications. Staff of the City and Global shall meet on a regularly scheduled monthly basis, and more or less often as needed by mutual consent. City representatives at these meetings shall normally be the City Manager, the Public Works Director, and the Community Development Director, and/or their designees. Global's representatives at these meeting shall normally be the Regional General Manager, or their designees. Other meetings with other representatives may be arranged as needed.

2. Annual Report to the City of Eloy. Global shall submit an Annual Report to the Mayor and City Council. This Annual Report shall normally be submitted by April 1st each year, unless the Parties agree on a different date. The report shall include: Annual revenues and expenditures, total number of water and wastewater customers, customers added this past year, number of customers anticipated to be connected next year, water and wastewater facilities completed in preceding year, planned projects for the next year(s), and a copy of the annual report to the ACC. Global shall provide free of charge to the City copies of any annual reports Global provides to ADEQ and/or ADWR.

3. Proposed Rate and/or Fee Adjustments. Global shall submit proposed rate and/or fee adjustments of the Utility Companies to the Mayor and City Council for review and comment prior to submission to the ACC.

4. Franchise or Operating/License Agreement and Fees. Global shall pursue in good faith the necessary franchise agreement for the Utility Companies from Pinal County and operating/license agreement with the City for the Subject Territory. For areas annexed into the City, and if required by the City, the City will promptly replace the Pinal County franchise agreement with a franchise agreement issued by the City. Subject to the earlier of (i) entry of a final order (the "ACC Order") by the Arizona Corporation Commission approving the fee provided for herein; or (ii) _____, a fee of 3% of Gross Revenues as it relates to consumptive use of water and wastewater by residential, commercial, and industrial customers within the existing incorporated limits of the City, the Subject Territories and in Utility Companies' Planning Area, subject to conditions set forth in Section 9, shall be paid by Global to the City of Eloy. If the ACC Order has not been entered by _____ following diligent efforts (which the City will in good faith support and take reasonable steps to cause other interested parties to support), then the fee of 3% provided for above shall be reduced to 2% with respect to the consumptive use of water and wastewater residential, commercial and industrial customers located outside the jurisdictional limits of the City but within the Utility Companies' Subject Territory. However, if any property located outside the the City's jurisdictional limits become a part of the City's jurisdictional limit through an annexation, the the fee shall automatically be increased from 2% to 3% for the annexed property on the date the annexation is

effective. In the event the ACC declines to enter the ACC Order, the City will then proceed with a franchise election (at Global's sole cost) seeking approval of the franchise fees provided for in this Section 4 and to grant the Utility Companies a franchise in connection therewith for a term of 25 years. The franchise election shall take place on a date to be set by the City and shall occur no later than the earlier of 18 months following the ACC declining to enter the ACC Order or _____. Upon the request of Global, the City agrees to continue to cause franchise elections to occur (at Global's cost) on at least an annual basis seeking approval of the franchise provided for herein. All of the foregoing payments shall be made on a quarterly basis. Gross Revenues shall include base fees, consumptive fees, and industrial and commercial reclaimed water sales but shall not include revenues as they arise from hook up fees, service connection fees, termination fees, reconnect or disconnect fees, late fees, NSF fees, account handling fees, or bulk service rate on the sale of construction water. The parties acknowledge that Global will seek the consent of the ACC to allow for inclusion of all fees described within this Section in the monthly consumptive billing of the utilities. The fees provided for in this Section 4 are flow through fees to PCUC and PCWC and are incremental to the rates currently set in place by the ACC; however, if the ACC does not approve these fees to be added to the monthly consumptive billings of the Utility Companies, Global shall pay the fees as an operating expense to City.

5. Financing Options. The City of Eloy and Global shall jointly explore potential financing options for Global to finance its projects within the City. If the City and Global agree to jointly finance a project, the Parties will enter into a separate agreement for each project.

6. Local Office. Global shall maintain a satellite office in downtown Eloy after all applicable regulatory approvals have been obtained. Once customer counts within the Subject Territory necessitate new accommodations, Global may terminate its lease of the satellite office and relocate the same to another facility. If the satellite office is not staffed by Global, an appropriate portion of space within the building will be offered to the Economic Development Group of Eloy (EDGE) and/or City at a lease rate of One Dollar ($1.00) per year.

7. Conservation Efforts. The City and Global will work together in promoting community and school water conservation programs. Conservation programs may be City-wide and include passing of water and waste water conservation ordinances, distribution of educational materials and access to making presentations at City and school functions.

8. Reclaimed Water and Reclamation Projects. The parties acknowledge the City's interest in long term access to reclaimed water. The City further acknowledges Global's expertise in the field of water reuse in the region and the critical nature of reclaimed water to the Global business and regional conservation plan. Accordingly, Global agrees that the Utility Companies will use reasonable best commercial efforts to use and utilize reclaimed water in the region to the extent permissible under existing and future Arizona Department of Environmental Quality ("ADEQ") policy for all residential, commercial and industrial applications within the Subject Territory of the Utility Companies. The City and the Utility Companies will explore joint water reclamation projects for parks and school playgrounds, and will encourage the development of light commercial and industrial uses of reclaimed water. Additionally, for that water which cannot be beneficially used within the Subject Territory, the Utility Companies, at the Global's sole discretion, will either recharge or reuse that certain volume of water or make that certain volume of water available to the City for recharge or reuse. If financially feasible, as determined in the sole discretion of the City, the City will install dual plumbing in all future City owned buildings or facilities serviced by the Utility Companies such that reclaimed water can be used to flush toilets and serve other non-potablewater demands, per Global's guidelines and State and Federal law. Global shall assist the City with the cost of this dual infrastructure plumbing, and shall provide signage to announce the use of reclaimed water in all public places to assist with conservation and public education efforts.

9. Economic Development. The City and Global will explore possible joint efforts to support industrial and commercial uses in the City. The City and Global will explore co-funding of specific employment generating economic development initiatives and participate on economic development committee(s). Not withstanding the provisions of Section 4 above Global agrees to augment the City's economic development efforts. To that end, Global shall fund a total of Three Hundred Sixty Nine Thousand Dollars ($369,000) at a rate of Seventy

Three Thousand Eight Hundred Dollars ($73,800) per year for a period of five years to the Economic Development Group of Eloy (EDGE) "Economic Contribution".

a. The installments of the Economic Contribution shall be paid in increments of $6150.00 per month commencing on the first day of the month following the full execution of this agreement and will continue for a period of 60 months.

b. For each period of time where the value of the Economic Contribution exceeds the amount of the Franchise Fees established in Section 4 for such period, the amount due from Global for payment of Franchise Fees will be zero dollars ($0). The value of that period's Franchise Fees shall be credited to the City against repayment of the Economic Contribution ("Credit").

c. Repayment for the Economic Contribution shall be made through an offset of Franshise Fees and shall commence after 60 months of Economic Contribution ("Repayment"). The value of the Franchise Fees offset will be established so that the Repayment will be made in full within ten (10) years from the termination of the Economic Contribution obligation. The amount of Repayment will be equal to the total value of the Economic Contribution less any Credit as noted in Section 9.b above.

d. If the Repayment value for a given period exceeds the Franchise Fees due for that same period, the amount due from Global for payment of Franchise Fees will be zero dollars ($0). The value by which the Repayment exceeds the Franchise Fees will carryover for offset in the next period. "Carryover".

e. If the Repayment value for a given period plus Carryover exceeds the Franchise Fees due for the applicable period, the amount due from Global for payment of Franchise Fees will be zero dollars ($0). The value by which the Repayment plus Carryover exceeds the Franchise Fees will carryover for offset in the next period. "Carryover".

An "Example Calculation Sheet" depicting annual payment of Franchise Fees and Economic Contribution and a repayment schedule for the cumulative Economic Contribution is included as Exhibit "B".

10. Land Use Planning and Water/Wastewater Planning. Global shall prepare an annual "Plan for Growth" for the City of Eloy's municipal planning area. The City staff shall provide input and comments on changing land use and density patterns to assist Global in this planning effort. Global shall submit its annual "Plan for Growth" report to the Mayor and City Council by April 1st, unless the Parties agree to a different date.

11. Fee. *Effective January 1, 2009* Global shall pay a voluntary fee totaling One Hundred Dollars ($100.00) for each residential home connecting to the Utility Companies' water and wastewater system within the Subject Territory . The fee will assist the City in defraying administrative costs for water and wastewater services, including regional planning. The fee shall be payable quarterly in arrears and will become due upon the connection of a water meter to an occupied residential dwelling by a homeowner.

12. Community Outreach. The City and Global shall work cooperatively to prepare, cost-share (in-kind services such as web hosting, graphic design, etc. is considered equitable to actual funds), and disseminate a community outreach packet. The community outreach packet will be a collaborative effort by multiple entities within the City, to be distributed to existing and new homeowners. Global will explore commitments to fund and conduct extensive water conservation programs and outreach education programs to promote water conservation in the community, schools, and public facilities. Global will explore co-sponsoring significant water reclamation demonstration projects. Global will support community events with bottled water and a presence at all major municipal, Chamber of Commerce, or EDGE functions and events.

13. Geographic Information System and Information Technology. The City and Global shall work collaboratively in developing and updating the City's Geographical Information System ("GIS"). This may include data sharing and/or integration, cost-sharing on GIS surveying, cost-sharing on a GIS Geodesic Marker, and other GIS related administrative

items. The City and Global will endeavor to share and integrate SCADA systems, CCD Security Data and Vulnerability Preparedness, Emergency, Operations, and Rapid Response Plans, Broadband Wireless network sharing, and Internet Site Linking. The City and Global shall also explore opportunities for collaborative billing services.

14. Annexation. Global shall support all annexation efforts of the City within the Subject Territory. Global shall support the City's efforts to manage and coordinate development in the Utility Companies' Subject Territory. Global will provide water and wastewater modeling services to determine the impact of proposed developments. Global will share and publish long-term master plans with the City and continuously update the plans so that the water and wastewater infrastructure is coordinated with the City's infrastructure plans.

15. Permits. The City will endeavor to streamline and expidite permit issuance, plan review, and related design and construction regulatory issues for Global. The City will endeavor to assist and support Global's efforts to obtain CAAG 208, CC&N, ADEQ, ADWR and other regulatory approvals required within the Subject Territory. If the City cannot provide a prompt review of Global's permits or plans, Global shall have the option of reimbursing the City for any costs incurred by the City if the City, at Global's request, hires an outside consultant to expedite the review of Global's permits and plans. Any such consultants shall report directly to the City and take direction only therefrom.

16. Joint Actions and Conditions. In order to effectuate this MOU, and in addition to the actions otherwise set forth herein which shall in good faith be pursued by the parties hereto, the parties shall undertake (or the parties shall support one another in taking) the following actions in good faith:

a. ACC approval of PCWC and PCUC's proposed expansion of the CC&N over the Utility Companies' Subject Territory;

b. Execution and approval of an operating/license agreement with the City for Utility Services provided within the City's current and existing jurisdictional

boundary and for Utility Services provided outside the City's current and existing jurisdictional boundary but within the Utility Companies' Subject Territory;

c. ACC approval of the operating/license agreement described in Section 4 and Section 16(b) above;

d. ACC approval of Global's request for inclusion of all fees set forth in Section 4 above in the monthly consumptive billings of the Utility Companies.

e. If necessary, the franchise election provided for in Section 4 above.

18. Right to Review. As set forth in the recitals to this Agreement, the City acknowledges certain rights of Global to provide water, wastewater and reclaimed water infrastructure services to developments outside the Subject Territory as defined in this agreement. As a result, the City agrees to give Global a first and prior right to review and negotiate with the City (and the City shall in good faith negotiate with Global) on future opportunities to expand the Subject Territory at such time expansion becomes an option as reasonably determined by either the City or Global.

19. Effective Date. Except as otherwise set forth herein, the obligation of the parties pursuant to this MOU shall commence thirty days after approval of said MOU by the Eloy City Council.

20. Entire Agreement. This MOU contains the entire agreement between the parties hereto and supersedes all previous communications, representations or agreements, written or verbal, with respect to its subject matter.

21. Construction. This MOU shall be construed in accordance with the laws of the State of Arizona.

22. Modification or Amendment. This MOU may not be modified, amended, rescinded, cancelled or waived, in whole or in part, except by a written instrument signed by the all parties hereto.

23. Jurisdiction, Venue and Attorneys' Fees and Costs. Subject to the provisions of this MOU, the prevailing party in any arbitration, proceeding, lawsuit, appeal or other proceeding brought to enforce or otherwise implement the terms and conditions of this MOU shall be entitled to an award of attorneys' fees and costs from the losing party. Jurisdiction and venue shall be in Pinal County, Arizona, and the parties waive any right to a trial by jury.

24. Mediation/Arbitration. In the event that any dispute arises between the parties to this MOU, the parties first shall attempt to find a neutral person, who is mutually acceptable to both parties, and who has experience in matters such as those provided for in this MOU, and request that person to mediate the dispute. In the event that such mediation is not undertaken or successfully concluded within 45 days after the dispute arises, the parties to any such dispute shall submit the dispute to binding arbitration in accordance with the rules of commercial arbitration ("Rules") for the American Arbitration Association ("AAA"). If the claim in the dispute involves a non-monetary default or breach or does not exceed One Hundred Thousand Dollars ($100,000), there shall be a single arbitrator selected by mutual agreement of the Parties, and in the absence of agreement, appointed according to the Rules. If the claim in the dispute, exceeds One Hundred Thousand Dollars ($100,000), the arbitration panel shall consist of three (3) arbitrators, one of whom shall be selected by each party and the third, who shall serve as chairman, shall be selected by the AAA. The arbitrator or arbitrators must be knowledgeable in the subject matter of the dispute. The costs and fees of the arbitrator(s) shall be divided equally among the parties. Any decision of the arbitrator(s) shall be supported by written findings of fact and conclusions of law. The decision of the arbitrator(s) shall be final, subject to the exceptions outlined in the Arizona Uniform Arbitration Act, A.R.S. § 12-1502, et seq., and judgment may be entered upon the same. The arbitrator(s) shall control discovery in the proceedings and shall award the prevailing party its reasonable attorneys' fees and costs. Any arbitration arising from this MOU shall occur within Pinal County, or at any other location mutually agreed to by the Parties.

25. Assignment. The terms and conditions of this MOU shall bind and inure to the benefit of the parties hereto and their successors and assigns and legal representatives. Neither Party shall be allowed to assign this MOU without the express written consent of the other Party.

26. Waiver. Any waiver of any provision of this MOU shall not constitute a waiver of any other provision, whether or not similar, nor shall any waiver be a continuing waiver. A party may waive any provision of this MOU intended for its benefit; provided, however, that such waiver shall in no way excuse the other parties from the performance of any of their other obligations under this MOU.

27. Section Headings. The section headings used herein are for reference only and shall not enter into the interpretation hereof.

28. Relationship of Parties. Nothing contained in this MOU shall be deemed or construed to create the relationship of principal and agent or of limited or general partnership or of joint venture or of any other association between the City and Global.

29. Notices. Any notices given pursuant to this MOU shall be in writing and shall be personally delivered or deposited in the United States mail, certified mail, postage prepaid, return receipt requested, to a party hereunder. Notices shall be deemed given and received when personally delivered or three (3) days after deposit in the United States mail to the address set forth below such party's signature.

30. Time of Essence. Time is of the essence for all purposes of this MOU.

31. Conflict of Interest. This Agreement is subject to the conflict of interest provisions set forth in A.R.S. § 38-511.

32. Limitation of Damages on Taxpayer Initiatives. Global waives its rights (as well as its successors' rights, to the extent permitted by law) to any claim for diminution of value pursuant to A.R.S. Section 12-1134 (Proposition 207).

33. Indemnification.

A. Global agrees to defend, indemnify and hold harmless City, its officers, officials and employees ("Indemnified Group") for liability from and against claims, damages, losses and expenses of any nature whatsoever (including but not limited to reasonable attorney fees, court costs, the costs of appellate proceedings, and all claim adjusting and handling expense), relating to, arising out of, resulting from or alleged to have resulted from Global's negligent acts, errors, mistakes or omissions relating to any action or inaction of the Global under this Agreement, including but not limited to negligent work or services in the performance of this Agreement by any subcontractor or anyone directly or indirectly employed by or contracting with the Global or a subcontractor or anyone for whose acts any of them may be liable. This indemnity provision shall apply solely to the extent that such claim, damage, loss, and/or expense is caused by Global's negligent act or omission. This indemnity provision shall not apply to the extent the claim, damage, loss, and/or expense is caused, in whole or part, by the City and/or any third party unrelated to Global.

B. If any claim, action or proceeding is brought against the Indemnified Group, by reason of any event that is the subject of this Agreement, Global (at its sole cost and expense) shall pay, resist or defend such claim or action on behalf of the Indemnified Group by the attorney of Global, or if covered by insurance, Global's insurer, all of which must be approved by City, which approval shall not be unreasonably withheld or delayed. The City shall cooperate with all reasonable efforts in the handling and defense of such claim. Notwithstanding the foregoing, the City may at its own expense engage its own attorney to defend or assist in its defense.

C. Any settlement of claims must fully release and discharge the Indemnified Group from any liability for such claims. The release and discharge shall be in writing and shall

be subject to approval by the City, which approval shall not be unreasonably withheld or delayed.

D. If Global neglects or refuses to defend any of the Indemnified Group as required by this Agreement, any recovery or judgment against the Indemnified Group for a claim covered by this Agreement shall conclusively establish Global's liability to the Indemnified Group in connection with such recovery or judgment. If the City desires to settle such dispute, the City shall, following written notice to Global and Global having an opportunity to participate, be entitled to settle such dispute in good faith and Global shall be liable for the amount of such settlement, and all expenses in connection with such settlement.

34. Exercise of Authority. It is understood and agreed that neither Global nor its affliates or related entities shall in any way exercise any portion of the authority or sovereign powers of the City and shall not make or contract or commit or in any way represent itself as an agent for the City. Nothing in this Agreement be construed to create a principal agency relationship between the parties.

IN WITNESS WHEREOF, each of the parties has executed this MOU as of the date first above written.

CITY OF ELOY

By: _____

Title: MAYOR

Address: 628 N. Main Street
Eloy, AZ 85231

GLOBAL WATER RESOURCES, LLC

By: _____

Title: PRESIDENT & CEO

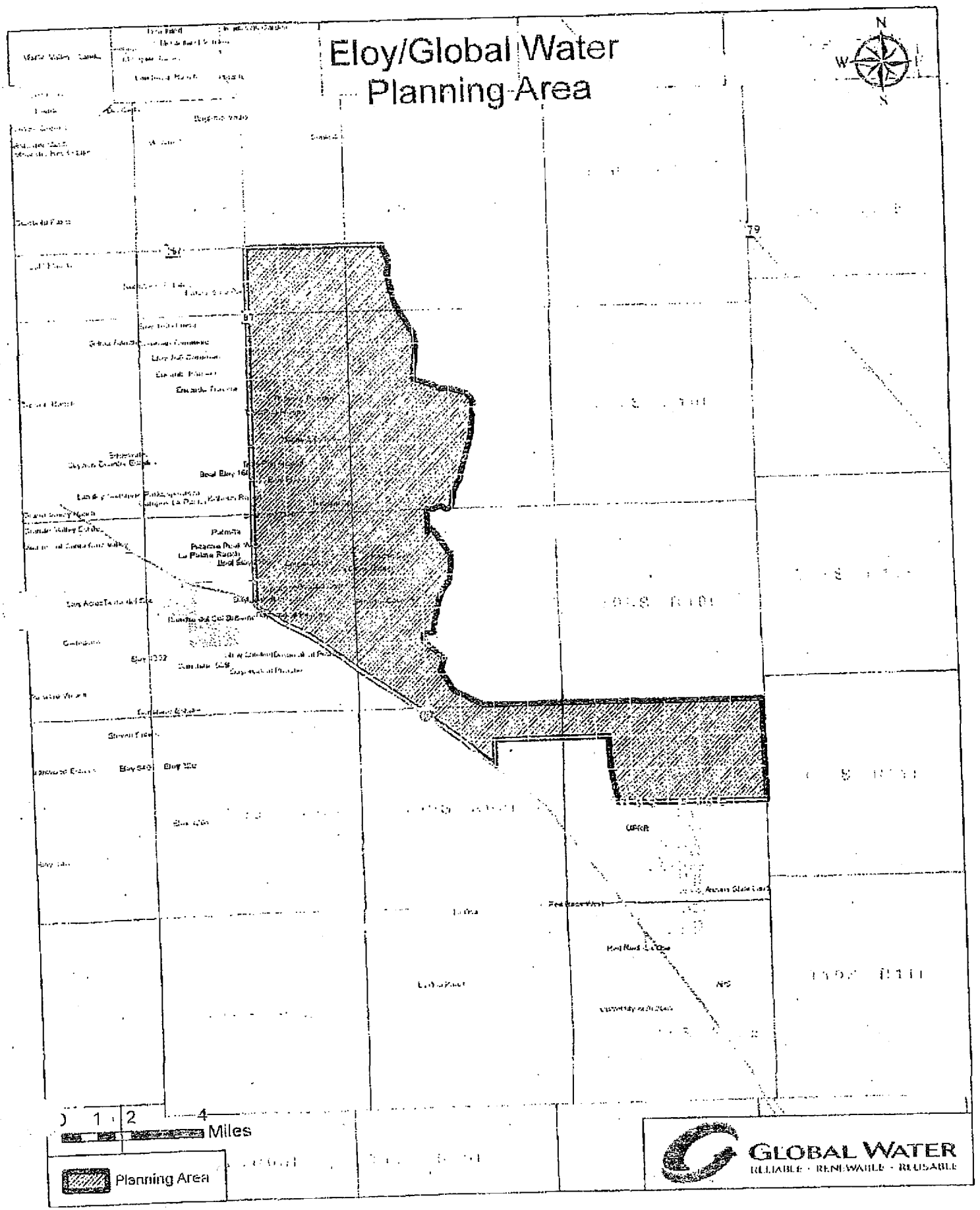
Address: 21410 N 19TH AVE SUITE 201
PHOENIX, ARIZONA, 85027

ATTEST:

By: _____
City Clerk

APPROVED AS TO FORM:

_____
City Attorney


Eloy/Global Water
Planning Area
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Planning Area
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Exhibit "B"

Global Water
City of Eloy Economic Contribution
Example Calculation Sheet - Values Listed are Examples Only

	Year	Economic Contribution (1)	Estimated Franchise Fees (2)	Credit	Amount To Be Repaid	Cummulative Amount To Be Repaid	Repayment	Adjusted Franchise Fee Payment (3)
		$ -	$ -	$ -	$ -	$ -	$ -	$ -
1	2008	$ -	$ 871	$ (871)	$ 72,929	$ 72,929	$ -	$ -
2	2009	$ 73,800	$ 2,527	$ (2,527)	$ 71,273	$ 144,202	$ -	$ -
3	2010	$ 73,800	$ 4,075	$ (4,075)	$ 69,725	$ 213,927	$ -	$ -
4	2011	$ 73,800	$ 11,040	$ (11,040)	$ 62,760	$ 276,686	$ -	$ -
5	2012	$ 73,800	$ 24,414	$ (24,414)	$ 49,386	$ 326,072	$ -	$ -
6	2013	$ -	$ 39,860	$ -	$ -	$ 326,072	$ (32,607)	$ 7,253
7	2014	$ -	$ 58,562	$ -	$ -	$ 293,465	$ (32,607)	$ 25,954
8	2015	$ -	$ 81,533	$ -	$ -	$ 260,858	$ (32,607)	$ 48,926
9	2016	$ -	$ 112,308	$ -	$ -	$ 228,250	$ (32,607)	$ 79,701
10	2017	$ -	$ 153,932	$ -	$ -	$ 195,643	$ (32,607)	$ 121,325
11	2018	$ -	$ 203,996	$ -	$ -	$ 163,036	$ (32,607)	$ 171,388
12	2019	$ -	$ 260,329	$ -	$ -	$ 130,429	$ (32,607)	$ 227,722
13	2020	$ -	$ 322,157	$ -	$ -	$ 97,822	$ (32,607)	$ 289,550
14	2021	$ -	$ 388,759	$ -	$ -	$ 65,214	$ (32,607)	$ 356,152
15	2022	$ -	$ 459,464	$ -	$ -	$ 32,607	$ (32,607)	$ 426,856
16	2023	$ -	$ 533,649	$ -	$ -	$ -	$ -	$ 533,649
17	2024	$ -	$ 610,740	$ -	$ -	$ -	$ -	$ 610,740
18	2025	$ -	$ 690,200	$ -	$ -	$ -	$ -	$ 690,200
19	2026	$ -	$ 717,731	$ -	$ -	$ -	$ -	$ 717,731
20	2027	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	TOTAL	$ 369,000	$ 4,676,147	$ (42,928)	$ 326,072		$ (326,072)	$ 4,307,147

(1) Payable to Economic Development Group of Eloy (EDGE)
(2) Based on Absorption Estimates (Example Only)
(3) Payable to the City of Eloy

Hill 10

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Index of Infrastructure Coordination and Finance Agreement Areas

Reference #	Name	Reference #	Name	Reference #	Name
1	Rancho El Dorado	59	McDavid Office Park	116	Redfield
2	Acacia Crossings	60	ABCDW LLC	117	Sunset Mountain Dev. Group
3	Cobblestone Farms	60	Torrey Pines	118	Daltessa Heights
4	Villages at Rancho El Dorado	60	Marathon Farming	119	Kelly Anderson
5	Rancho El Dorado Phase 3	61	Langley Properties(Talla West)	120	Eagle Shadow
6	Province	62	Hay Hollow	121	Hartman Ranch
7	Homestead Village North	63	Langley Properties	122	Smith Farms
8	Glennwilde	64	Langley Properties Stanmar 160	123	HBE Farms
9	Sunset Landing	65	CCB Stanfield Estates	124	Chris Whitt
10	Dunn Ranch	66	Carranza Associates	125	Brian Stevenson
11	El Rancho Santa Rosa	67	Stanfield Estates:Turner Dunn	126	KSK Land Ventures (Geddes)
12	Santa Rosa Springs	68	Dart Property	127	Nicholas Toronto
13	Chandler Boys Ventures, LLC	69	Santa Cruz Ranch	128	Quassey Holdings
14	Neely	70	SCR	129	Ivett Aviles
15	Neely	71	El Dorado:Big Trail	130	Dana Byron
16	Neely	72	El Dorado:Lonely Trail 780	131	Byron / Tse
17	Neely	73	El Dorado:Parker Estates	132	Dana Byron
18	Rancho Mirage	74	El Dorado:Hondo 640	133	Byron / Macdlum
19	Rancho Mirage	75	Rio Lobo	134	Cactus Springs
20	Sorrento - ph 1	76	Solana Ranch North	135	Beauchene LP (Ray Christian)
21	Sorrento - ph 2	77	Solana Ranch South	136	Gene Montemore
22	Sorrento - ph 3	78	120 Townsend	137	Redfield Financial Partners V
23	Cook / El Dorado, LLC	79	NS120	138	Rio Blanco
24	Little / El Dorado, LLC	80	Montgomery 156	139	Redfield Financial
25	Paul Gore	81	CG 215	140	Cando Ranch
26	Ray Christrian	82	CG Montgomery 240	141	Ray Morrow
27	Eagle Mountain Shadows	83	RRY CG 320	142	K Investment Enterprises
28	Eagle Mountain Shadows	84	SVVM 30	143	Redfield Ring
29	Kruze Farms	85	VV Monty	144	Redfield Financial
30	Maricopa 240, LLC	86	RRY Real Estate	145	Maricopa Opus
31	Desert Sunrise, LLC	87	Robin R Yount LTD	146	Kevin Norby
32	Santa Rosa Crossings	88	Richard and Dana	147	JCON
33	Residential Palomino Ranch	89	Bruce and Karen	148	NF 26 Land
34	Commercial Palomino Ranch	90	Sacaton BL	149	DYE Equities
35	Westpac/Shea	91	Trading Post Road LLC	150	The Orchard at Picacho
36	Amarillo Creek S Desert Cedars	92	Chartwell Casa Grande	152	Legends
37	Sunset Canyon	93	Polich-Non Pulte	153	Copperleaf
38	HAM Maricopa, LLC	94	Polich-Grande Valley	154	Sierra Negra
39	HAM Papago, LLC	95	Vistoso	155	Hassayampa Ranch
40	HAM-Mesa, L.L.C.	96	Vistoso Partners	156	Belmont
41	Pecan Woods. LLC	97	ABCDW	157	339th & I-10
42	Westpac	98	Vanderbilt Farms		
43	HAMs and Trusts	99	CRW Holdings LLC		
44	HAM Maricopa / HAM Queen Creek	100	Val Vista and Montgomery		
45	Hidden Valley Ranch 1	101	Williams Trusts		
46	Hidden Valley Ranch 2	102	Blevins		
47	Dennis and Carolyn Peed	103	Terbus Investments		
48	NF 26 Land LLC / Maricopa Opus	104	Douglas Payne		
49	Vineyards	105	Kronwald Family Trust		
50	RAJAC Dev Real Estate Partners	106	Teel 80		
51	Stanfield Holdings	107	Matt Montgomery:SPD Inc		
52	Langley Farms	108	Ken Lowman		
53	Pinal 347	109	Hampden and Chambers		
54	Alterra & Desert Cedars Ph 1	110	McMillan and McMillan		
55	Dietz-Crane & Pulte Home	111	Ari DJong:Vistoso		
56	Smith Farms N./Desert Passage	112	Lisa Melancon		
57	Tortosa S	113	Southern Dunes		
58	Red Valley	114	Hogenes Dairy		
		115	TOTTR(JCON)		

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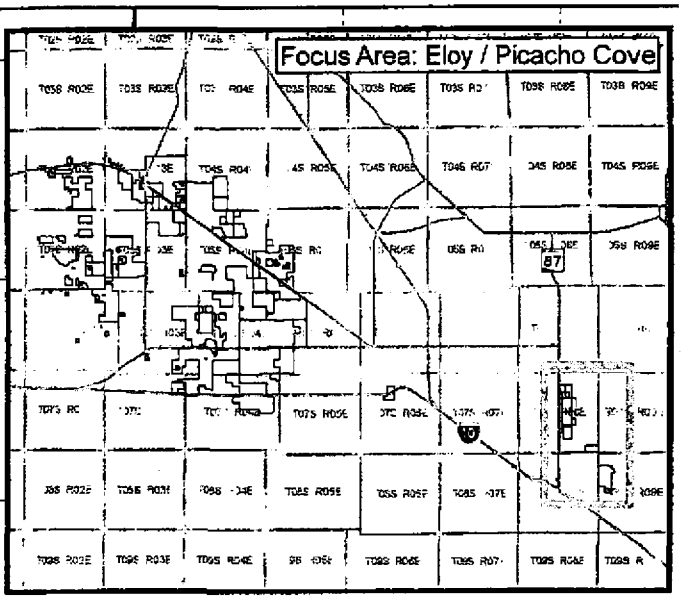

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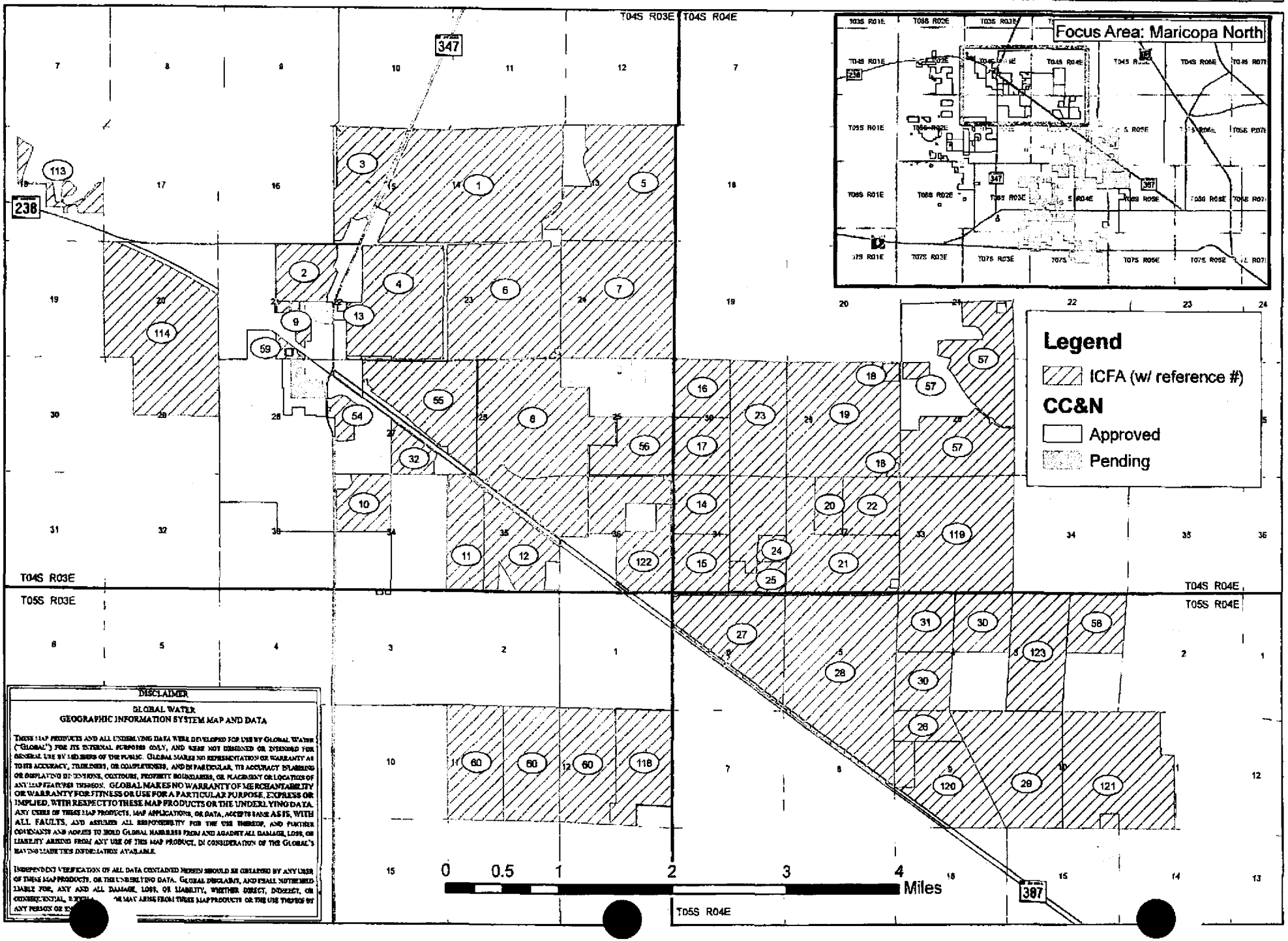

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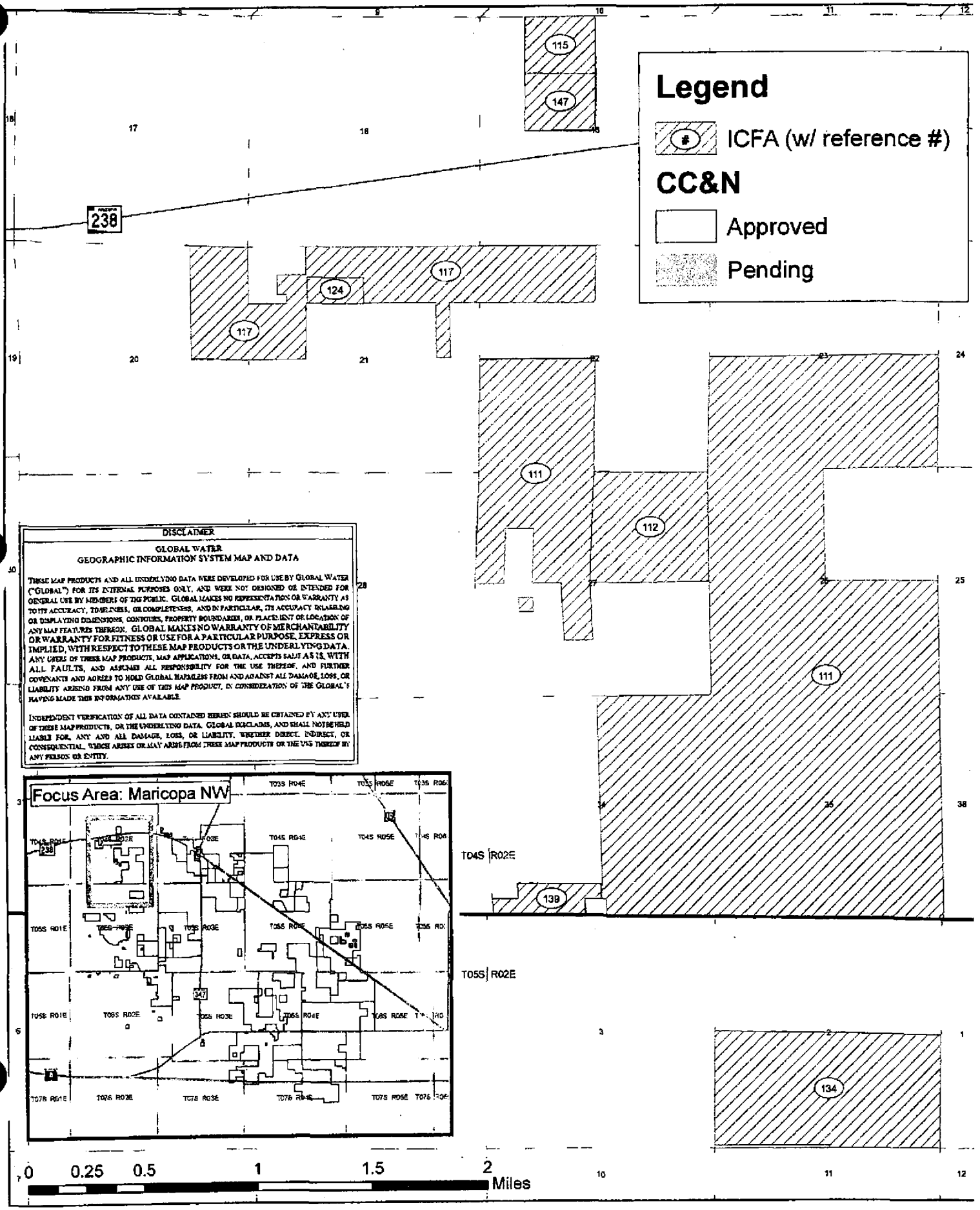

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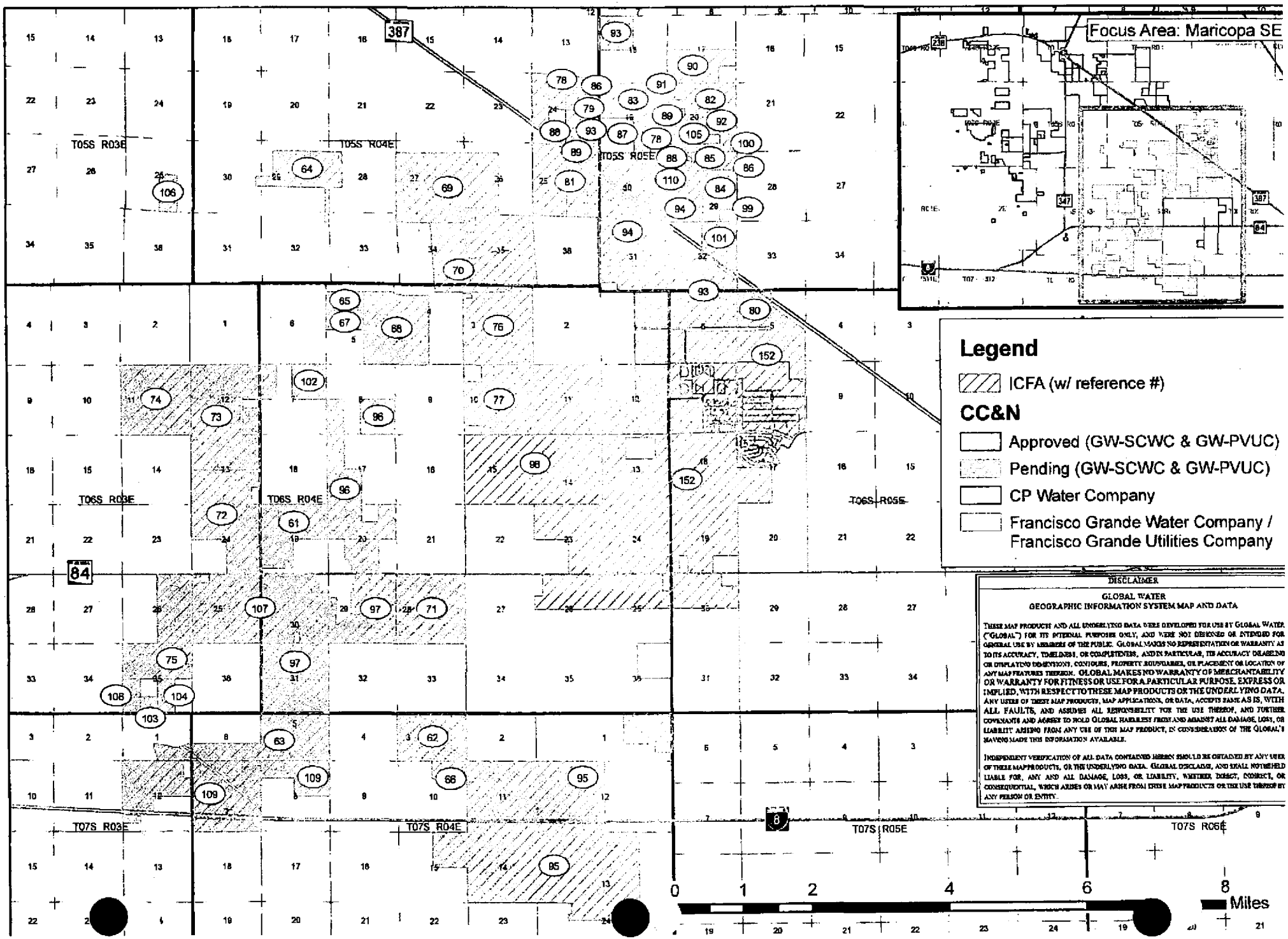

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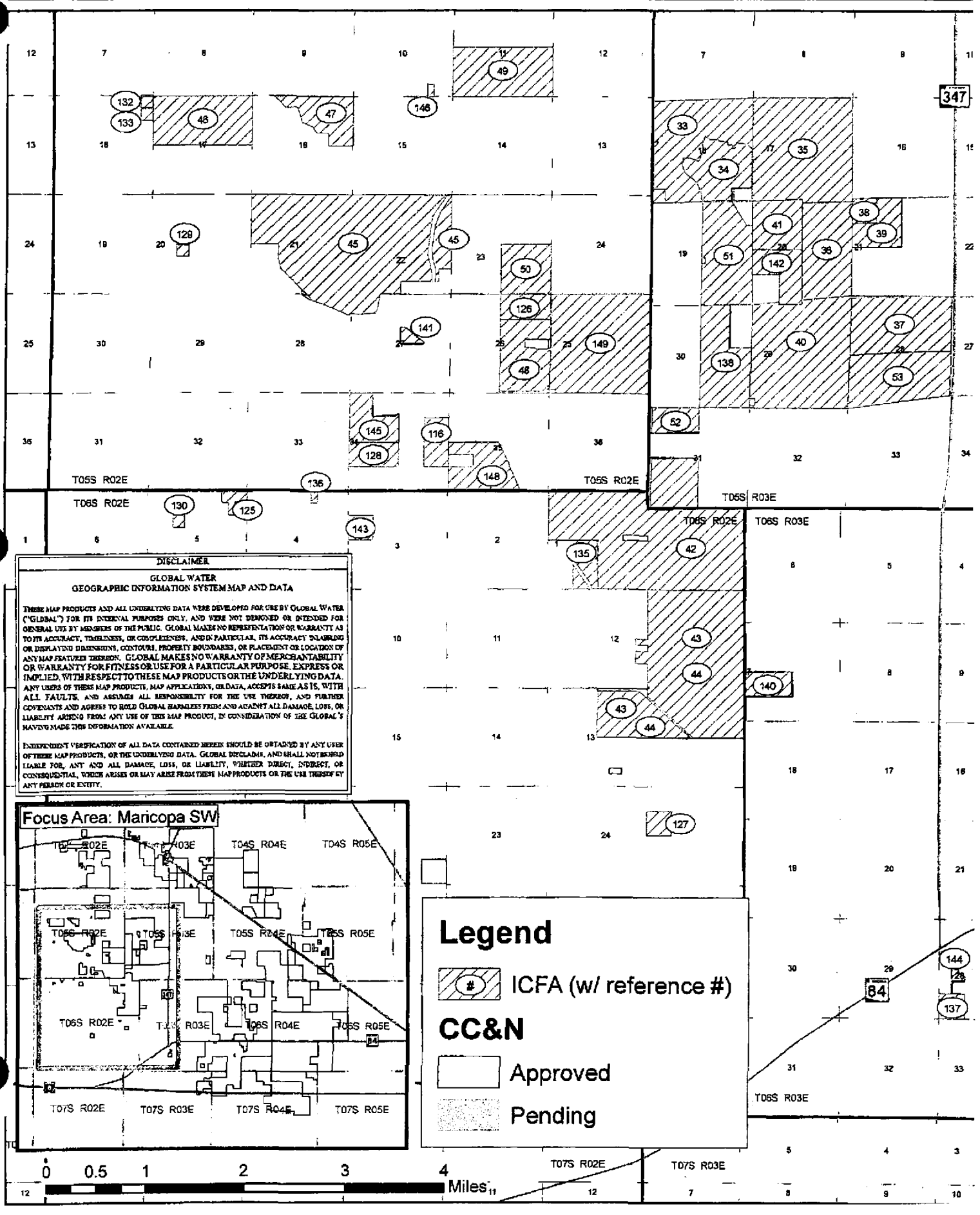

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ICFA Status

- Approved
- Other
- Pending
- CC&N

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ICFA (w/ reference #)

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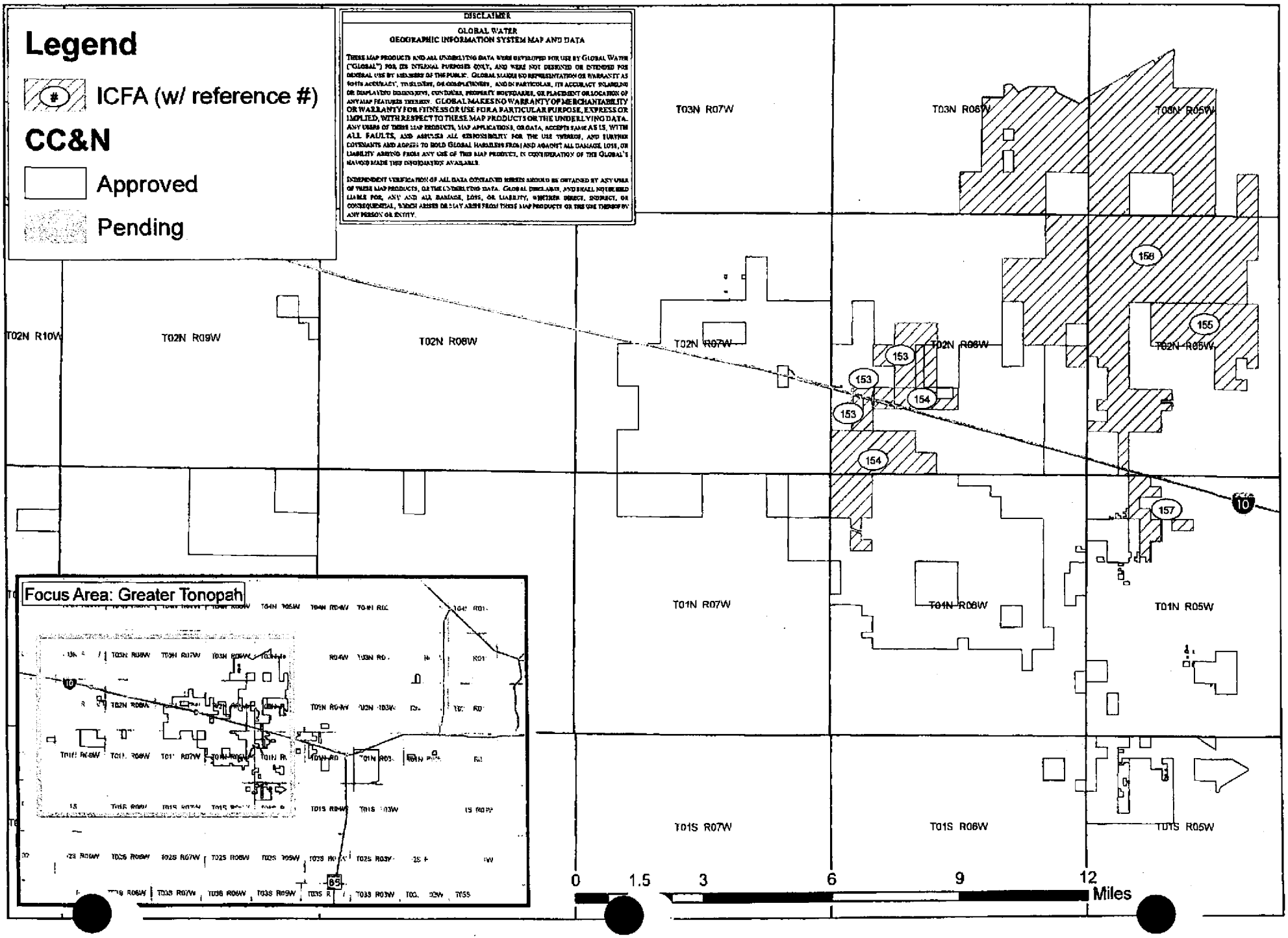

Focus Area: Greater Tonopah

Hill 11

U.S. Census Bureau News
U.S. Department of Commerce · Washington, D.C. 20233

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CB05-52

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Detailed tables

Florida, California and Texas to Dominate Future Population Growth, Census Bureau Reports

Three states □ Florida, California and Texas □ would account for nearly one-half (46 percent) of total U.S. population growth between 2000 and 2030, according to Census Bureau state population projections released today. Consequently, Florida, now the fourth most populous state, would edge past New York into third place in

total population by 2011; California and Texas would continue to rank first and second, respectively, in 2030. (See attached table.)

These three states would each gain more than 12 million people between 2000 and 2030. Arizona, projected to add 5.6 million people, and North Carolina, with 4.2 million, would round out the top five numerical gainers. As a result, Arizona and North Carolina would move into the top 10 in total population by 2030 □ Arizona rising from 20th place in 2000 to 10th place in 2030 and North Carolina from 11th place to seventh place. Michigan and New Jersey are projected to drop out of the top 10. (See attached table.)

The projections indicate that the top five fastest-growing states between 2000 and 2030 would be Nevada (114 percent), Arizona (109 percent), Florida (80 percent), Texas (60 percent) and Utah (56 percent).

Most (88 percent) of the nation□s population growth between 2000 and 2030 would occur in the South and West, which would be home to the 10 fastest-growing states over the period. The share of the population living in the South and West would increase from 58 percent in 2000 to 65 percent in 2030, while the share in the Northeast and Midwest would decline from 42 percent to 35 percent.

Other highlights:

- In 2000, each of the nation□s 50 states had more people under 18 than 65 and older. In fact, in about half of the states, the ratio was more than two to one. In 2030, 10 states are projected to have more people 65 and older than under 18: Florida, Delaware, Maine, Montana, New Mexico, North Dakota, Pennsylvania, Vermont, West Virginia and Wyoming.
- In six states, more than one in every four residents would be age 65 and older in 2030: Florida, Wyoming, Maine, New Mexico, Montana and North Dakota.
- As the oldest baby boomers become senior citizens in 2011, the population 65 and older is projected to grow faster than the total population in every state. In fact, 26 states are projected to double their 65- and-older population between 2000 and 2030.

These projections were produced by the Population Division in correspondence with the U.S. interim projections released in March 2004. They were developed for each of the 50 states and the District of Columbia by age and sex for the years 2000 to 2030, based on Census 2000 results. These projections differ from forecasts in that they represent the results of the mathematical projection model given that current state-specific trends in fertility, mortality, internal migration and international migration continue. The projections to 2004 have been superseded by population estimates at <http://www.census.gov/popest/estimates.php>.

For more information about Census Bureau interim state population projections, including a discussion of the methodology and assumptions, please see the following Web site:
<http://www.census.gov/population/www/projections/stproj.html>.

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Source: U.S. Census Bureau | Public Information Office | Last Revised: November 17, 2008

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Table 1: Interim Projections: Ranking of Census 2000 and Projected 2030 State Population and Change: 2000 to 2030

Census 2000			2030 projections			Change: 2000 to 2030			
State	Population	Rank	State	Population	Rank	State	Number	Percent	Rank in percent change
United States	281,421,906	(x)	United States	363,584,436	(x)	United States	82,162,529	29.2	(x)
California	33,871,648	1	California	48,444,861	1	Nevada	2,283,845	114.3	1
Texas	20,851,820	2	Texas	33,317,744	2	Arizona	5,581,765	108.8	2
New York	18,976,457	3	Florida	28,685,789	3	Florida	12,703,391	78.5	3
Florida	15,982,378	4	New York	19,477,429	4	Texas	12,465,924	59.8	4
Illinois	12,419,293	5	Illinois	13,432,892	5	Utah	1,252,198	56.1	5
Pennsylvania	12,281,054	6	Pennsylvania	12,768,184	6	Idaho	675,671	52.2	6
Ohio	11,353,140	7	North Carolina	12,227,739	7	North Carolina	4,178,426	51.9	7
Michigan	9,938,444	8	Georgia	12,017,838	8	Georgia	3,831,385	46.8	8
New Jersey	8,414,350	9	Ohio	11,550,528	9	Washington	2,730,680	46.3	9
Georgia	8,186,453	10	Arizona	10,712,397	10	Oregon	1,412,519	41.3	10
North Carolina	8,049,313	11	Michigan	10,694,172	11	Virginia	2,746,504	38.8	11
Virginia	7,078,515	12	Virginia	9,825,019	12	Alaska	240,742	38.4	12
Massachusetts	6,349,097	13	New Jersey	9,802,440	13	California	12,573,213	37.1	13
Indiana	6,080,485	14	Washington	8,624,801	14	Colorado	1,491,096	34.7	14
Washington	5,894,121	15	Tennessee	7,380,634	15	New Hampshire	410,685	33.2	15
Tennessee	5,689,283	16	Maryland	7,022,251	16	Maryland	1,725,765	32.6	16
Missouri	5,595,211	17	Massachusetts	7,012,009	17	Tennessee	1,691,351	29.7	17
Wisconsin	5,363,675	18	Indiana	6,810,108	18	Delaware	229,058	29.2	18
Maryland	5,296,486	19	Missouri	6,430,173	19	South Carolina	1,136,557	28.3	19
Arizona	5,130,632	20	Minnesota	6,306,130	20	Minnesota	1,386,651	28.2	20
Minnesota	4,919,479	21	Wisconsin	6,150,764	21	Arkansas	566,808	21.2	21
Louisiana	4,468,976	22	Colorado	5,792,357	22	Hawaii	254,509	21.0	22
Alabama	4,447,100	23	South Carolina	5,148,569	23	Vermont	103,040	16.9	23
Colorado	4,301,261	24	Alabama	4,874,243	24	New Jersey	1,388,090	16.5	24
Kentucky	4,041,769	25	Oregon	4,833,918	25	Montana	142,703	15.8	25
South Carolina	4,012,012	26	Louisiana	4,802,633	26	New Mexico	280,662	15.4	26
Oklahoma	3,450,654	27	Kentucky	4,554,998	27	Missouri	834,962	14.9	27
Oregon	3,421,399	28	Nevada	4,282,102	28	Wisconsin	787,089	14.7	28
Connecticut	3,405,565	29	Oklahoma	3,913,251	29	Oklahoma	462,597	13.4	29
Iowa	2,926,324	30	Connecticut	3,688,630	30	Kentucky	513,229	12.7	30
Mississippi	2,844,658	31	Utah	3,485,367	31	Indiana	729,623	12.0	31
Kansas	2,688,418	32	Arkansas	3,240,208	32	Maine	136,174	10.7	32
Arkansas	2,673,400	33	Mississippi	3,092,410	33	Massachusetts	662,912	10.4	33
Utah	2,233,169	34	Iowa	2,955,172	34	Rhode Island	104,622	10.0	34
Nevada	1,998,257	35	Kansas	2,940,084	35	Alabama	427,143	9.6	35
New Mexico	1,819,046	36	New Mexico	2,099,708	36	Kansas	251,666	9.4	36
West Virginia	1,808,344	37	Idaho	1,989,624	37	Mississippi	247,752	8.7	37
Nebraska	1,711,263	38	Nebraska	1,820,247	38	Connecticut	283,065	8.3	38
Idaho	1,293,953	39	West Virginia	1,719,959	38	Illinois	1,013,599	8.2	39
Maine	1,274,923	40	New Hampshire	1,646,471	40	Michigan	755,728	7.6	40
New Hampshire	1,235,786	41	Hawaii	1,466,046	41	Louisiana	333,657	7.5	41
Hawaii	1,211,537	42	Maine	1,411,097	42	Nebraska	108,984	6.4	42
Rhode Island	1,048,319	43	Rhode Island	1,152,941	43	South Dakota	45,618	6.0	43
Montana	902,195	44	Montana	1,044,898	44	Wyoming	29,197	5.9	44
Delaware	783,600	45	Delaware	1,012,658	45	Pennsylvania	487,130	4.0	45
South Dakota	754,844	46	Alaska	867,674	46	New York	500,972	2.6	46
North Dakota	642,200	47	South Dakota	800,462	47	Ohio	197,388	1.7	47
Alaska	626,932	48	Vermont	711,867	48	Iowa	28,848	1.0	48
Vermont	608,827	49	North Dakota	606,566	49	West Virginia	-88,385	-4.9	49
District of Columbia	572,059	50	Wyoming	522,979	50	North Dakota	-35,634	-5.5	50
Wyoming	493,782	51	District of Columbia	433,414	51	District of Columbia	-138,645	-24.2	51

U.S. Census Bureau, Population Division, Interim State Population Projections, 2005.

Table 7: Interim Projections: Change in Total Population for Regions, Divisions, and States: 2000 to 2030

Region, division, and state	Numerical change				Percent change			
	2000 to 2010	2010 to 2020	2020 to 2030	2000 to 2030	2000 to 2010	2010 to 2020	2020 to 2030	2000 to 2030
United States	**27,513,675**	**26,868,965**	**27,779,889**	**82,162,529**	**9.8**	**8.7**	**8.3**	**29.2**
Northeast	**2,190,801**	**1,350,258**	**535,631**	**4,076,690**	**4.1**	**2.4**	**0.9**	**7.6**
New England	818,272	570,739	313,487	1,700,498	5.9	3.9	2.0	12.2
Maine	82,211	51,531	2,432	136,174	6.4	3.8	0.2	10.7
New Hampshire	149,774	139,191	121,720	410,685	12.1	10.0	8.0	33.2
Vermont	43,685	38,174	21,181	103,040	7.2	5.9	3.1	16.9
Massachusetts	300,344	208,105	156,463	662,912	4.7	3.1	2.3	10.4
Rhode Island	68,333	37,578	-1,289	104,622	6.5	3.4	-0.1	10.0
Connecticut	171,925	98,160	12,980	283,065	5.0	2.7	0.4	8.3
Middle Atlantic	1,374,529	779,519	222,144	2,376,192	3.5	1.9	0.5	6.0
New York	467,215	133,248	-99,491	500,972	2.5	0.7	-0.5	2.6
New Jersey	603,881	443,404	340,805	1,388,090	7.2	4.9	3.6	16.5
Pennsylvania	303,433	202,867	-19,170	487,130	2.5	1.6	-0.1	4.0
Midwest	**2,998,657**	**2,063,742**	**1,042,123**	**6,104,522**	**4.7**	**3.1**	**1.5**	**9.5**
East North Central	1,886,286	1,167,410	429,731	3,483,427	4.2	2.5	0.9	7.7
Ohio	223,041	67,877	-93,530	197,388	2.0	0.6	-0.8	1.7
Indiana	311,654	234,869	183,100	729,623	5.1	3.7	2.8	12.0
Illinois	497,601	319,826	196,172	1,013,599	4.0	2.5	1.5	8.2
Michigan	490,239	267,310	-1,821	755,728	4.9	2.6	0.0	7.6
Wisconsin	363,751	277,528	145,810	787,089	6.8	4.8	2.4	14.7
West North Central	1,112,371	896,332	612,392	2,621,095	5.8	4.4	2.9	13.6
Minnesota	501,157	480,133	405,361	1,386,651	10.2	8.9	6.9	28.2
Iowa	83,583	10,589	-65,324	28,848	2.9	0.4	-2.2	1.0
Missouri	326,867	277,804	230,291	834,962	5.8	4.7	3.7	14.9
North Dakota	-5,577	-6,511	-23,546	-35,634	-0.9	-1.0	-3.7	-5.5
South Dakota	31,555	15,540	-1,477	45,618	4.2	2.0	-0.2	6.0
Nebraska	57,734	33,681	17,569	108,984	3.4	1.9	1.0	6.4
Kansas	117,052	85,096	49,518	251,666	4.4	3.0	1.7	9.4
South	**13,346,794**	**13,987,205**	**15,698,518**	**43,032,517**	**13.3**	**12.3**	**12.3**	**42.9**
South Atlantic	8,022,621	8,660,245	9,651,190	26,324,056	15.5	14.5	14.1	50.8
Delaware	100,742	78,867	49,449	229,058	12.9	8.9	5.1	29.2
Maryland	608,484	592,656	524,625	1,725,765	11.5	10.0	8.1	32.6
District of Columbia	-42,274	-49,245	-47,126	-138,645	-7.4	-9.3	-9.8	-24.2
Virginia	931,730	907,150	907,624	2,746,504	13.2	11.3	10.2	38.8
West Virginia	20,797	-28,029	-81,153	-88,385	1.2	-1.5	-4.5	-4.9
North Carolina	1,296,510	1,363,466	1,518,450	4,178,426	16.1	14.6	14.2	51.9
South Carolina	434,692	375,873	325,992	1,136,557	10.8	8.5	6.8	28.3
Georgia	1,402,627	1,254,673	1,174,085	3,831,385	17.1	13.1	10.8	46.8
Florida	3,269,313	4,154,834	5,279,244	12,703,391	20.5	21.6	22.6	79.5
East South Central	1,040,901	915,117	923,457	2,879,475	6.1	5.1	4.9	16.9
Kentucky	223,348	159,314	130,567	513,229	5.5	3.7	3.0	12.7
Tennessee	541,569	549,818	599,964	1,691,351	9.5	8.8	8.8	29.7
Alabama	149,230	132,585	145,328	427,143	3.4	2.9	3.1	9.6
Mississippi	126,754	73,400	47,598	247,752	4.5	2.5	1.6	8.7
West South Central	4,283,272	4,421,843	5,123,871	13,828,986	13.6	12.4	12.6	44.0
Arkansas	201,639	185,180	179,989	566,808	7.5	6.4	5.9	21.2
Louisiana	143,703	106,481	83,473	333,657	3.2	2.3	1.8	7.5
Oklahoma	140,862	144,174	177,561	462,597	4.1	4.0	4.8	13.4
Texas	3,797,068	3,986,003	4,682,848	12,465,924	18.2	16.2	16.4	59.8
West	**8,977,423**	**9,467,760**	**10,503,617**	**28,948,800**	**14.2**	**13.1**	**12.9**	**45.8**
Mountain	3,568,184	3,816,570	4,352,383	11,737,137	19.6	17.6	17.0	64.6
Montana	68,403	54,137	22,163	142,703	7.4	5.6	2.2	15.8
Idaho	223,338	224,042	228,291	675,671	17.3	14.8	13.1	52.2
Wyoming	26,104	11,062	-7,969	29,197	5.3	2.1	-1.5	5.9
Colorado	530,293	447,313	513,490	1,491,096	12.3	9.3	9.7	34.7
New Mexico	161,179	104,116	15,367	280,662	8.9	5.3	0.7	15.4
Arizona	1,506,749	1,819,067	2,255,949	5,581,765	29.4	27.4	26.7	108.8
Utah	381,844	395,081	495,273	1,252,198	16.2	15.2	16.6	56.1
Nevada	692,274	781,752	829,819	2,283,845	34.6	28.3	24.0	114.3
Pacific	5,409,239	5,651,190	6,151,234	17,211,663	12.0	11.2	11.0	38.2
Washington	647,842	890,173	1,192,665	2,730,680	11.0	13.6	16.0	46.3
Oregon	369,597	469,397	573,525	1,412,519	10.8	12.4	13.5	41.3
California	4,195,486	4,139,609	4,238,118	12,573,213	12.4	10.9	10.0	37.1
Alaska	67,177	80,312	93,253	240,742	10.7	11.6	12.0	38.4
Hawaii	129,137	71,699	53,673	254,509	10.7	5.3	3.8	21.0

U.S. Census Bureau, Population Division, Interim State Population Projections, 2005.

Hill 12

Winning the Water Infrastructure Battle:
6 Strategies for Success

A Special Report prepared by the staff of *Clean Water Report*

Winning the Water Infrastructure Battle:

6 Strategies for Success

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INTRODUCTION

As they prepared to mark the Clean Water Act's 35th anniversary, utilities, water-quality managers and environmental groups sounded similar themes: celebrating the industry's accomplishments and lamenting America's continuing water infrastructure problems.

Local and regional water systems are plagued by aging pipes, outdated systems and a lack of capacity to meet development demands. Droughts in much of the country add concerns for the future. Yet, even without the potential implications of climate change on water supplies, the question of adequate infrastructure is daunting. Consider these statistics:

- In a 2003 gap analysis, the Environmental Protection Agency predicted that future spending on clean-water and drinking-water infrastructure could rise by $271 billion over the next 20 years.
- With current infrastructure in many communities reaching 50 to 100 years in age, the cost of modernizing America's system could reach $300 billion to $500 billion over the next 20 years, according to EPA and the Congressional Budget Office.
- Inadequately treated wastewater also damages the nation's rivers and streams. In a report to Congress, EPA said 44 percent of estuaries and 35 percent of rivers and streams suffer from impaired water quality.

"While the Clean Water Act has been hugely successful in helping us meet our clean-water objectives, we must not stop and pat ourselves on the back for a job well done," said Christopher Westhoff, public works general counsel in Los Angeles who represented the National Association of Clean Water Agencies (NACWA) at a recent congressional hearing. "Unfortunately, the job is far from finished."

To make at least a short-term push for more funding, many utilities and organizations are focusing on H.R. 720, the Water Quality Financing Act of 2007, which would increase the federal role in infrastructure funding. Among other provisions, the bill would authorize $14 billion over four years to improve water infrastructure. The Government Accountability Office also would study the viability of a national clean-water trust fund.

While extra funding is certainly welcome, the idea of creating a trust fund for water infrastructure could end up as the bill's most important lasting provision. NACWA officials say a nationally supported trust fund — similar to other trust funds for highways and airports — is the only real solution to addressing the nation's vast water-infrastructure needs.

"Clean and safe water is no less a national priority than an adequate system of interstate highways and a safe and efficient aviation system," Westhoff said.

The House passed H.R. 720 in March by a wide margin, but the plan still faces obstacles as the Senate begins considering the measure, largely due to implementation issues. One reason: a labor provision attached to the House bill that would require municipalities to pay the "prevailing wage" on all projects funded with revolving-loan proceeds.

If enacted into law, the labor provision likely would increase construction costs. But advocates note that those working on water projects generally are skilled laborers, so the potential cost additions are as yet unclear.

But the issue does present some procedural challenges. Many senators oppose the pro-labor provision, and any final House/Senate negotiations would have to address the issue. In the meantime, advocates are pressing for Senate action on H.R. 720's other core concepts: namely, the support for additional funding.

While those discussions continue, state and local officials are analyzing their own needs and seeking creative ways to fund water infrastructure. In this Special Report, the editors and staff of ***Clean Water Report*** provide information on several cutting-edge trends, including:

- ✓ Partnerships among water agencies, creating economies of scale that can save money for local utilities.
- ✓ Strategic planning, through which local agencies set goals to improve their infrastructure and map a strategy to convince local residents of the need for fee increases.
- ✓ Increasing the use of recycled water to help conserve regional supplies.
- ✓ Developing desalination projects that provide ways for coastal communities to find new sources of water.

In addition to those innovations, this Special Report offers profiles of two existing federal programs: the Clean Water State Revolving Fund and the Drinking Water State Revolving Fund. The federal government provides capitalization funds for those programs, through which states offer low-cost loans and more funding to communities of all sizes.

Through this Special Report, ***Clean Water Report*** will provide readers with important insights into water-infrastructure issues and solutions to help meet community needs.

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Strategy 1: Create Economies of Scale

El Valle Water Alliance Paying Dividends for New Mexico Providers

Twelve small water systems in New Mexico have joined forces to deal with common concerns, seek cost savings and pursue funding options. In the process, they just may have created a model that other local water providers in the United States can use to their advantage.

The El Valle Water Alliance has brought together a group of small community water systems in San Miguel County — each with fewer than 100 connections — in an attempt to overhaul the individual systems' management and improve overall efficiency.

While the systems — most built in the 1950s and 1960s — diverge in process, they still share similar administrative costs, says Blanca Surgeon, of the Santa Fe, N.M.-based Rural Community Assistance Corp.

The alliance approach is reducing costs, thanks in part to "economies of scale," which have resulted in lower rate increases for member systems than for nonparticipating systems. Prior to creating the partnership, the individual systems weren't able to hire certified operators. But the coalition now offers experts for each member, and the two-year-old alliance has opened a single billing office for all its member systems.

Alliance members convene to discuss common infrastructure problems and pursue funding for improvements. New projects in three communities are slated to begin soon, says Kathy Romero, alliance president and secretary/treasurer of the North San Ysidro system.

$900,000 From the State

"We secured over $900,000 from the legislature," said Romero, "and we will be breaking ground for those three projects in the next month or so. That work includes installing water lines, water meters and fire and flush hydrants. We probably will do water tanks, as well," she added.

The new water tanks were not in the original plans for upgrading the communities' infrastructure, "but we got better pricing on the materials because we were able to bid them together," Romero explained. The alliance had hoped to begin work in 12 communities, but because "the money comes in portions, we weren't able to do full projects in all the communities at once," Romero said.

Those three communities were selected because they have the largest number of people with the most critical water-infrastructure needs.

The alliance also is pursuing assistance from the state Water Trust Board to support additional work.

In the next legislative session, the alliance plans to request slightly more than $2 million. Those funds will help it complete scheduled work in the first three communities and break ground on new projects in the remaining nine communities.

"We want to finish off what we don't complete this time," Romero said, "but that won't be very much."

After completing water-infrastructure improvements for the communities, she says, the alliance plans to look at wastewater projects sometime in the future.

Previous Attempts: 'Dismal Failure'

Regionalization efforts face many challenges, and the El Valle alliance has its predecessors.

Previous attempts to regionalize New Mexico's small water systems "met with dismal failure, with a few exceptions," says New Mexico Rural Water Association Executive Director Matthew Holmes. The reason: cultural history.

"In New Mexico," Holmes explains, "'*agua es vida*': 'water is life.'" It "also is power."

Rural communities are "well acquainted with others' interest in their watersheds and their senior water rights," Holmes said. "The concept of regionalization could be perceived to lead to increased state control of the precious water resource and a loss of autonomy by rural communities."

In addition to cultural and political considerations, economic, technologic, geographic and geologic problems exist.

Rural water systems are "often remote, surrounded by mountainous terrain," Holmes explains, and with few options for good supply sources.

The state promotes regionalization with emphasis on best practices (such as leak prevention and use audits) and regional cooperation "as much as it can on a voluntary basis," Holmes said. In some cases, regionalization efforts have been worked into funding criteria, he added.

Holmes says the challenges of managing a drinking-water system are "many and ever-increasing," including stringent regulations, meeting rapid population growth and dealing with escalating costs. Adding to those challenges — which are common to systems of all sizes and throughout the country — small systems in New Mexico have additional problems, Holmes says.

Most of New Mexico's small systems are managed by volunteer board members who have served their communities for many years.

"It is hard work," Holmes says, "with little recognition for the time spent." Moreover, it's difficult to raise water rates "when your neighbors can complain to you in the post office, the grocery store and on the phone at night."

Certified Operators

Rural water systems often have trouble finding and retaining certified operators, with nearly 40 percent lacking operators with the appropriate level of certification.

"Paying a sufficient salary to keep someone employed in a small town is challenging," Holmes said. "Even if the system commits the financial resources, operators can often make more money by increasing their level of certification and working for the nearest municipality down the road. Economics ultimately determines the quality of drinking water in rural New Mexico, [despite the] extraordinary efforts of the federal government to regulate a baseline standard."

When it comes to water-infrastructure problems, state officials are "sympathetic nearly to a fault," said Holmes. Still, New Mexico's legislature appropriated about $66.7 million last year in capital outlay and other grant funding to water and wastewater projects, while communities had requested $544 million.

Much of the money is earmarked for replacing aging infrastructure and failing water sources in small communities around the state.

"Unfortunately," says Holmes, "this type of funding is not awarded by any kind of rational methodology, being more a function of political connections than sustainable planning. Most projects are only partially funded, requiring systems to break apart engineering plans into smaller and smaller phases."

Some systems replace infrastructure only just as it is about to fail, "leaving themselves in perpetual emergency status," Holmes added. But, facing an ongoing drought and an estimated $5 billion infrastructure investment requirement in water projects over the succeeding 10 years, state officials in 2004 concluded that it was "time for a new approach."

Pilot Project

State agencies and technical assistance providers partnered to facilitate a regional collaboration plan among the rural water systems, while allowing individual communities to maintain control over the future of their water systems.

The governor's office and the state Legislature funded a pilot project through the New Mexico Department of Finance and Administration's Local Governments Division. The project was supported by the Office of the State Engineer, New Mexico's Environment Department and the state Finance Authority.

Those entities formed a management team and enlisted the help of the New Mexico Rural Water Association, the Rural Community Assistance Corp. and the Environmental Finance Center to provide technical and facilitation resources.

The management team chose those water systems based on geographic location, common water issues and "perceived interest in collaboration," Holmes says.

Three areas were selected initially, with nine more added the following year. System representatives were told that participation would help them create area-wide collaborative solutions to meet their current and future drinking-water needs and increase their opportunity to seek the necessary funding for planning and implementation.

A range of potential collaborative options was presented, with the understanding that systems could choose to implement any, some or none of the options. Stakeholders from the project area identified critical water issues and developed goals for their individual regions.

Participants include a wide variety of representatives from municipalities, public and private small-water systems, federal and state agencies — such as U.S. Forest Service, Bureau of Land Management and New Mexico Department of Game and Fish — along with county governments, tribal governments and water districts.

Steering Committee

Regions typically formed a steering committee and considered developing a formal agreement via a memorandum of understanding or a joint-powers agreement. Holmes says that, while the "identified needs and the political dynamic" were unique to each region, all the groups across the state encountered similar challenges.

"The first barrier to overcome was the issue of trust," Holmes explains. "Communities had to be comfortable with each other and — perhaps more difficult — they had to trust the intentions of the state."

Technical-assistance providers had established relationships with local entities "and placed their credibility on the line when communicating the objectives of the state agencies," Holmes says. "This led to intense discussions with the project management team, with all parties eventually reaching a common viewpoint — more or less — with the project."

That allowed the technical-assistance providers to communicate the project objectives clearly to the regional groups and create "an open and honest dialogue with all parties," Holmes said.

"Perhaps the most surprising outcome was the regional groups' willingness to work together and consider collaborative approaches that had been previously rejected," he said. "It seemed that the time had come for a new approach at the local level as well. No

one was ready to commit to regional consolidation, but no one rejected the idea outright, either."

Cooperation Among Public, Private Entities

Holmes says when communities talked to their neighbors, they found more shared interests than differences. Unfortunately, the next barriers became immediately apparent:

- ✓ Just how do rural entities collaborate with the state in this new program?
- ✓ How do public and private entities agree to work together, and even to merge?
- ✓ Where will the money originate to fund the projects that result from communities working together?

Holmes says New Mexico "is *still developing the answers to these questions.*"

A review by the University of New Mexico's Utton Center uncovered "no less than 27 statutes that a water system can be organized under." But Holmes says none of those are suitable for regional rural water systems.

Because of that, Holmes says, the Legislature will have to consider updating New Mexico's statutes to provide water systems with the tools they need.

"The biggest challenge will come in the form of reforming the funding process itself," Holmes contends. "To give priority to well-planned, regional projects will require the cooperation of all of the region's legislators and the governor. Without this key component, all of this work will fall apart."

Other states — perhaps most — have addressed such problems already. But Holmes says a new spirit of cooperation is taking hold among New Mexico water systems — as evidenced by the El Valle Water Alliance — that will help the state promote regional initiatives to help meet its water needs.

20-Year Total Need for U.S. Water Systems, by Project Type
(in millions of dollars)

State	Transmission & Distribution	Treatment	Storage	Source	Other	Total
Alabama	$917.2	$415.2	$302.9	$48.3	$4.9	$1,688.9
Alaska	444.2	83.2	126.4	45.1	2.6	681.5
Arizona	7,262.9	1,114.2	483.5	216.8	42.5	9,119.8
Arkansas	2,296.3	727.5	346.3	156.1	12.5	3,538.7
California	18,052.7	4,830.1	3,005.5	1,704.3	278.8	27,871.5
Colorado	3,472.8	996.3	452.2	370.8	31.5	5,323.5
Connecticut	336.2	176.5	96.3	40.1	4.0	653.1
Delaware	143.2	36.9	39.3	20.3	1.1	240.8
District of Columbia	132.5	0.0	15.5	0.0	1.3	149.4
Florida	10,387.3	2,595.5	983.4	936.6	137.9	15,040.7
Georgia	6,911.1	1,073.3	573.5	318.5	141.2	9,017.8
Hawaii	630.5	48.7	94.6	34.7	4.2	812.5
Idaho	430.7	126.9	111.8	52.1	5.6	727.0
Illinois	8,383.3	2,463.0	1,170.3	1,284.7	225.5	13,496.8
Indiana	2,503.6	741.4	477.2	284.4	25.2	4,031.8
Iowa	2,602.5	373.4	328.4	170.7	28.9	3,503.9
Kansas	1,303.9	238.8	256.4	115.0	16.8	1,930.9
Kentucky	2,162.0	318.0	254.8	53.4	20.6	2,808.8
Louisiana	2,923.6	576.7	317.0	242.2	42.7	4,106.8
Maine	547.8	110.8	120.6	47.2	5.4	831.8
Maryland	2,562.8	800.2	453.2	115.4	31.7	3,963.2
Massachusetts	6,611.0	877.1	622.1	318.2	126.2	8,554.7
Michigan	7,937.4	1,985.5	834.6	371.5	182.0	11,311.1
Minnesota	3,362.3	1,179.7	566.0	274.5	77.8	5,460.5
Mississippi	914.5	291.6	270.3	160.1	7.9	1,544.5
Missouri	4,625.5	686.9	453.9	171.4	10.3	5,958.2
Montana	469.0	152.7	115.8	48.2	3.6	789.3
Nebraska	737.3	371.0	125.8	107.8	12.2	1,354.0
Nevada	564.0	152.9	134.6	53.5	7.0	912.1
New Hampshire	321.2	109.3	114.7	47.5	2.9	595.6
New Jersey	5,081.1	703.5	736.2	322.7	72.1	6,915.6
New Mexico	498.9	261.8	112.7	46.2	2.7	922.2
New York	10,654.8	2,408.1	1,166.6	449.1	124.0	14,812.5
North Carolina	7,502.5	1,889.9	960.3	478.6	158.9	10,980.2
North Dakota	282.8	160.7	77.1	60.5	5.7	606.8
Ohio	7,084.6	1,330.5	827.0	371.0	71.1	9,684.1
Oklahoma	3,714.3	635.6	267.2	162.3	6.8	4,804.2
Oregon	2,519.8	659.9	842.7	230.6	14.8	4,267.6
Pennsylvania	7,838.9	1,550.9	1,090.1	457.5	52.9	10,990.3
Puerto Rico	1,593.3	471.9	154.5	45.6	13.5	2,278.8
Rhode Island	290.1	71.8	28.0	9.3	3.4	402.6
South Carolina	970.3	109.6	105.6	50.9	10.2	1,245.6
South Dakota	704.4	151.4	92.9	37.8	3.3	989.8
Tennessee	2,131.3	313.0	242.5	63.6	20.0	2,770.4
Texas	19,423.0	5,631.7	1,941.9	1,033.5	139.6	28,169.6
Utah	481.2	97.0	92.6	34.4	1.7	706.9
Vermont	229.4	77.7	60.3	24.1	3.3	394.8
Virginia	1,986.7	403.4	324.0	133.5	17.5	2,865.0
Washington	4,382.3	785.3	1,077.3	382.6	44.2	6,671.7
West Virginia	478.8	156.7	159.8	48.5	8.1	861.9
Wisconsin	3,948.4	1,054.7	575.0	337.7	22.3	5,938.1
Wyoming	193.4	45.7	42.7	15.1	1.3	298.2
Subtotal	181,920.0	42,650.9	24,223.6	12,604.8	2,296.7	263,696.1
American Samoa	12.1	5.3	11.1	2.7	1.2	32.3
Guam	204.8	8.1	27.7	32.2	6.3	279.0
North Mariana is.	69.8	78.1	35.9	9.2	4.8	197.8
Virgin Islands	77.1	36.8	53.7	11.6	1.2	180.4
Subtotal	363.8	128.3	128.3	55.7	13.5	689.5
Total	$181,283.8	$42,779.2	$24,351.9	$12,660.5	$2,310.2	$264,385.6

Source: 2003 Drinking Water Infrastructure Needs Survey and Assessment, EPA.

Strategy 2: Use Reclaimed Water to Fill Pressing Needs

Incentives Promote Wastewater Reuse, Produce Savings in Florida

The threat of water shortages is encouraging policymakers in southwest Florida to diversify the water supply.

How to maintain a pristine golf course year round without exhausting the water supply? Use reclaimed water, or recycled wastewater that is treated and purified for reuse. While often not suitable for drinking, reclaimed water can provide major advantages to communities by serving as water for irrigation in gardens, public fountains and — in a natural extension — golf courses.

Few locations across the United States have as much demand for reclaimed water as the Southwest Florida Water Management District (SWFWMD), a state agency charged with flood control, water supply and water quality. The agency uses property-tax revenue to fund half of the cost of reclaimed-water projects in a 100,000-square-mile region in central Florida.

Cities and towns across the region — as well as golf courses — have embraced water-reuse policies, which conserve drinking-water supplies and add long-term benefits.

"It's been embraced by everyone," says SWFWMD Reuse Project Manager Anthony Andrade: "utilities, the public and golf courses."

Across the Southwest district alone, more than 45 percent of wastewater is reused for beneficial purposes. Wastewater reuse is popular at more than 160 golf courses, and 78,000 local residential customers irrigate with reclaimed water, usually through local agreements that provide neighborhoods with dual piping to keep reclaimed water separate from drinking water.

In addition, six local power plants use reclaimed water for cooling, and nearly 9,000 acres of citrus crops receive irrigation through the system.

Common uses of reclaimed water include:

- ✓ Street-sweeping operations.
- ✓ Power generation.
- ✓ Decorative foundations.
- ✓ Fire protection, including through fire hydrants.
- ✓ Cooling or makeup water for various industrial processes.

Reclaimed water generally is not used in body-contact settings, such as swimming pools. Yet, the goal is to produce water that is clear and free of pathogens.

"We seem to have everybody on the same page," said Andrade. "It's a wonderful cooperation that doesn't always happen elsewhere."

Monetary Incentives Matter

Easing the pressure on drinking-water supplies makes sense in most communities. But it helps that SWFWMD provides monetary incentive for residential and business customers to embrace reclaimed water.

In fiscal 2007, the agency allocated more than $20 million to reclaimed-water projects, dropping from $29 million in 2006.

Under SWFWMD's reclaimed-water system, the agency generally pays half of the cost of reclaimed-water projects. *Example:* A golf course that agrees to use reclaimed water can send its bills to the agency, which will cover half.

"It's been a phenomenal success," Andrade said, with 275 projects.

It helps that legislative and regulatory guidelines encourage such projects, as well. Golf courses and other entities are supposed to use reclaimed water "to the extent practicable," Andrade says. That provides a ready-made audience for the district's aggressive outreach and assistance efforts.

Anyone seeking a development permit must first undergo a reclaimed-water feasibility study, after which appropriate state or regional agencies review the data.

"If feasible," Andrade says, "they must do it, by law." Projects qualify for aid only if they can offset the use of potable quality water.

SWFWMD's chief focus — to better manage water supplies and distribution — is unusual among states. It also serves as the chief regional permitting agency.

"We don't physically own any wastewater-treatment plants," Andrade said. But since SWFWMD receives a share of property taxes, it functions as a financial conduit to promote reclaimed-water use.

Since the agency's inception nearly two decades ago, the district has funded $240 million worth of water-reuse projects: half of the $500 million local communities and industries have committed to the effort.

While its most popular service is wastewater reuse, SWFWMD also promotes reclaimed water through other ways, including funding surface-water and stormwater reuse plans and reusing brackish water through desalination.

Those projects have included:

- ✓ Drilling wells at two Sarasota locations to determine whether SWFWMD can retrieve brackish groundwater from an intermediate aquifer to use in the water supply system.
- ✓ Recovering and storing stormwater in North Port during the region's wet season to build a 1.5 million-gallon reserve supply for the dry season.
- ✓ Adding pumping and capacity to Tampa's surface-water flows treatment for possible water system use.

Overall, SWFWMD funded $1.2 million worth of reclaimed stormwater projects in 2006, up from less than $100,000 two years ago, Andrade says. In 2007, the agency already has funded $410,000 for reclaims through desalination of brackish water.

The Reuse Process

Instead of sending treated wastewater back into a watershed, reclaimed water promotes more immediate use of treated effluent.

The reclaimed-water process has multiple steps:

- Screens and other materials remove all sand and debris.
- Sedimentation removes large solids.
- Microorganisms break down organic materials, and clarifiers remove remaining solids.
- Filters make water clear.
- Chlorine or other disinfectants then kill remaining microorganisms.

SWFWMD isn't alone in its commitment to using reclaimed water. In Southern California, a regional effort has recycled about 500,000 acre-feet of wastewater, says the National Resources Defense Council (NRDC). The council includes reclaimed water on its list of options for conserving drinking-water supplies and promoting environmental responsibility. *Example:* By not releasing treated wastewater back into waterways, municipalities can help cut nutrients in rivers and other water sources.

But the process isn't without challenges. SWFWMD and the WasteReuse Foundation are jointly funding new studies to promote higher-quality reclaimed water. A soil-aquifer study will determine how effectively the soils and aquifer treat or remove undesirable compounds.

In addition, many consumers need guidance on how to best use reclaimed water during irrigation, since it may reduce the need for fertilizers. Those using reclaimed water on their yards must place a sign on their property warning people not to drink from the irrigation system. Experts also discourage using reclaimed water on fruits and vegetables.

There's also the challenge of too much success with reclaimed water.

In western Florida's Pinellas County, interest is so strong that the county has had to issue warnings against overusing the system. Last spring, during the region's dry season, utilities urged residents to cut their rate of use. Demand had reached such a high level that outflows often equaled or exceeded production.

"We have lots of areas that run out of reclaimed water," Andrade said.

State Developing Model

With two decades of success in reclaimed water, SWFWMD's approach is spreading statewide. The state has set a "Vision for 2020" calling for the widespread use of reclaimed water to meet many daily needs. To support such a goal, Florida enacted a law in 2004 requiring all state colleges, universities and government agencies to use reclaimed water, wherever feasible.

The effort is spreading to the state's four other water-management districts, which are copying SWFWMD's program.

The state approved a Water Protection and Sustainability Trust Fund with an additional $100 million for reclaimed-water efforts spread across the water districts. About $25 million is available for SWFWMD alone, but other districts are following the southwest district's lead. As a result, agencies have begun reimbursing businesses and residents for the use of reclaimed water at many sites across the nation.

"The decision was made that the rest of the state should model what SWFWMD has done," Andrade said.

This combined effort, dubbed the Florida Water Reuse Program, also has won kudos nationwide, receiving a 2006 Water Efficiency Leaders award from the Environmental Protection Agency for providing 660 million gallons of reclaimed water daily to homes, parks, schools, golf courses and industries.

Aside from the water-management districts, partners include the state Health and Environmental Protection departments.

Major jurisdictions also have launched their own reclaimed-water agencies. In Tampa, the city's reclaimed-water project distributes highly treated wastewater from the Howard F. Current Advanced Wastewater Treatment Plant for use by residents and businesses in south Tampa. The service came in handy during the region's dry season from March to June. With irrigation claims high during that time of year, reclaimed water can help assure that available potable water meets the city's drinking-water needs.

Nearby St. Petersburg also has a water-reuse track record dating back to the 1970s, when local officials stopped the discharge of effluent into Tampa Bay. The city's reclaimed water meets an estimated 95 percent of drinking-water standards.

Those advances show that reclaimed water is perhaps the key ingredient to meeting the region's water needs during a drought.

"People are in competition for reclaimed water here," says Andrade. "It's a healthy competition."

20-Year Current Need for U.S. Water Systems, by Project Type
(in millions of dollars)

State	Transmission & Distribution	Treatment	Storage	Source	Other	Total
Alabama	$304.7	$48.3	$44.7	$13.0	$3.1	$413.8
Alaska	257.3	21.6	48.3	19.8	1.4	348.4
Arizona	6,346.6	624.8	272.7	119.8	41.0	7,404.8
Arkansas	1,539.0	291.6	149.8	77.5	10.1	2,068.0
California	11,819.4	3,252.8	1,860.6	1,134.0	183.7	18,250.6
Colorado	1,672.8	513.3	241.3	315.5	29.6	2,772.4
Connecticut	242.1	94.7	34.2	20.5	2.6	394.2
Delaware	112.1	18.6	16.1	10.8	0.9	158.3
District of Columbia	69.5	0.0	8.1	0.0	1.3	78.9
Florida	9,495.0	1,809.7	720.0	599.0	117.1	12,740.8
Georgia	6,331.4	625.0	381.9	266.4	134.4	7,739.1
Hawaii	286.4	33.5	56.1	29.9	2.5	408.2
Idaho	318.1	50.2	44.4	30.2	4.9	447.7
Illinois	4,653.1	908.1	513.1	236.0	139.0	6,449.3
Indiana	1,588.6	343.0	225.7	140.1	22.6	2,320.0
Iowa	1,935.5	136.5	158.9	70.4	19.1	2,320.4
Kansas	847.1	98.6	151.5	71.3	10.6	1,179.2
Kentucky	1,379.1	155.2	154.6	25.1	14.8	1,728.8
Louisiana	2,267.1	272.0	182.1	147.7	42.4	2,911.4
Maine	381.8	49.1	67.6	25.4	3.9	527.5
Maryland	2,217.6	562.8	353.8	71.4	29.8	3,335.4
Massachusetts	4,737.4	290.0	365.3	118.7	50.7	5,562.1
Michigan	5,447.1	1,097.1	341.9	154.2	125.9	7,166.2
Minnesota	1,759.0	619.0	216.4	101.8	45.1	2,741.3
Mississippi	730.6	139.1	130.9	96.0	5.5	1,102.2
Missouri	2,166.2	171.8	142.8	68.1	6.9	2,555.8
Montana	405.8	39.8	50.1	25.7	3.2	524.6
Nebraska	441.4	262.1	47.0	49.2	6.9	806.6
Nevada	284.3	17.3	54.2	18.8	2.0	376.6
New Hampshire	201.1	35.5	41.5	24.1	2.4	304.5
New Jersey	2,641.7	442.3	408.5	222.1	42.4	3,757.0
New Mexico	375.4	31.5	34.2	20.1	2.2	463.8
New York	9,078.0	2,066.4	687.0	248.0	115.2	12,194.6
North Carolina	2,987.0	636.2	309.7	186.8	109.1	4,228.8
North Dakota	201.2	74.2	37.8	39.7	4.6	357.4
Ohio	2,934.5	824.1	337.2	177.6	51.3	4,324.8
Oklahoma	1,524.1	128.7	86.0	51.3	5.6	1,795.7
Oregon	2,242.3	499.6	660.4	142.0	14.0	3,558.3
Pennsylvania	6,297.0	1,166.9	674.5	345.1	41.9	8,545.3
Puerto Rico	1,003.3	294.6	97.9	31.5	9.4	1,436.7
Rhode Island	234.6	25.0	10.7	4.6	2.2	277.1
South Carolina	573.1	39.8	47.8	29.3	7.1	697.1
South Dakota	220.7	60.5	38.9	20.7	2.7	343.4
Tennessee	1,014.6	111.3	112.3	27.4	10.2	1,275.9
Texas	9,974.2	2,981.6	656.8	376.2	51.3	14,040.1
Utah	382.1	31.7	64.5	14.9	1.4	494.7
Vermont	157.31	34.9	24.9	14.1	2.2	233.5
Virginia	997.0	174.2	130.5	59.4	13.4	1,374.6
Washington	3,198.7	285.2	679.1	211.3	22.2	4,296.7
West Virginia	336.2	66.3	66.5	28.4	5.4	522.7
Wisconsin	1,708.3	529.3	215.0	198.7	17.4	2,668.6
Wyoming	96.8	16.0	17.3	8.7	1.1	138.8
Subtotal	118,414.9	23,240.9	12,372.9	6,538.0	1,595.9	162,162.5
American Samoa	11.4	4.1	10.9	2.6	1.1	30.0
Guam	204.6	7.7	27.6	32.1	6.3	278.5
North Mariana Is.	56.2	64.8	12.2	7.5	2.9	143.6
Virgin Islands	70.7	24.1	33.7	10.5	1.2	140.1
Subtotal	342.9	100.7	84.4	52.7	11.4	592.2
Total	$118,757.8	$23,341.5	$12,457.3	$6,590.7	$1,607.4	$162,754.7

Source: 2003 Drinking Water Infrastructure Needs Survey and Assessment, EPA.

Strategy 3: Tap Into Sea Water

Texas's Rio Grande Valley Using Technology to Satisfy Increasing Water Demand

One of the most famous — if often incorrectly quoted — descriptions of the ocean refers to "water, water, everywhere, nor any drop to drink."

But modern desalination technology now allows for the transformation of saltwater into drinking water. And areas such as Texas's Rio Grande Valley are using that technology to satisfy increasing water demand in areas where seawater is abundant, but freshwater supplies are limited.

Brownsville, Texas, is "at the very end of the river" that supplies water not only to south Texas but also to northern Mexico, says John Bruciak, general manager and CEO of the Brownsville Public Utilities Board.

"The whole area is dependent on the Rio Grande for its water supply," he says.

But that supply is limited and involves a complex tangle of water rights dating back in some cases to Mexico or even the Republic of Texas.

Further complicating matters: international treaties.

Water in the Rio Grande already is over-appropriated, with existing supplies expected to decline more than 25 percent over the next 50 years, due in large part to sedimentation in reservoirs. The water deficit in the eight-county region exceeds 1 million acre-feet, according to the 2005 Rio Grande Regional Water Plan. Only half the demand for water could be met during recent drought of record proportions.

The area also is experiencing rapid population growth — especially toward the coast — and economic development, along with continued demand for agricultural irrigation water. So, it's not surprising that local officials are looking to the Gulf of Mexico as a water source.

Texas Desal Day

Officials inaugurated the Brownsville desalination plant in February 2007, although the state celebrated "Texas Desal Day" on March 7. The Texas Legislature has called for continued investment in "practical applications for desalination technology in Texas for the benefit of all citizens."

In addition to seawater, the area has large amounts of brackish groundwater. The Southmost Regional Water Authority operates the largest desalination plant in Texas, treating that brackish water and providing 7.5 million gallons per day (gpd) of high-quality water to meet 40 percent of authority members' municipal and industrial water needs.

Brownsville's pilot desalination plant on the Brownsville Ship Channel has been operating for about seven months and is scheduled to treat water for a year to determine the cost, Bruciak says.

"Right now," he says, "the cost is $1.20 per 1,000 gallons."

Eventually, the authority will build a 25-million-gpd facility.

Perry's Mission

Texas Gov. Rick Perry (R) began promoting Gulf of Mexico desalination in 2002, after a state water plan concluded that hundreds of communities, including ones in the coastal area, would face water shortages within 50 years.

It's "not a matter of whether saltwater will be one day be used as an abundant source of public use, but when," Perry said in 2002. "There is no greater untapped source of water than the ocean water, which Texas can easily access."

The state has provided $10 million for the Brownsville venture, which was placed on a funding "fast track" because of the region's rapid growth. Between 1990 and 2000, the area's population grew by 43 percent, to 372,000, and is expected to reach nearly 500,000 by 2020.

The Brownsville Ship Channel desalination plant site was selected because ship traffic in the area stirs the water, creating additional treatment challenges for the facility's filters.

Water is sucked into a culvert and then sent by three pumps to separate pretreatment units operated by different companies, all competing for a contract at the planned full-scale plant. The water then is chemically treated for bacteria and other contaminants, leaving water that has been clarified but remains salty. That water is sent to a reverse-osmosis plant, where it is pumped at high pressure through filter pipes to trap the salts, which are then discharged. Purified water collects in the center of the filter pipes.

The pilot facility cost $2.2 million. The Texas Water Development Board provided $1.34 million, with $500,000 in cash and $385,000 in in-kind contributions from the Brownsville Public Utility Board. The full-scale plant has an estimated cost of $150 million, with planned construction in 2010.

Ready for Transition

The Brownsville pilot plant project was selected "in large part" because of the Brownsville Public Utilities Board's readiness "to transition from a pilot plant study to formal design and permitting" in the near future, says the Water Development Board. "Any significant time lapse between piloting and implementing the full-scale project creates the risk that the piloted technology becomes dated and less valuable as a project to demonstrate the latest technologies," the board said in a December 2006 report.

The board reported proposals for pilot plants at Corpus Christi and Freeport "also showed potential," but appeared "less likely to be implemented in the near future." The board did recommend that those sites remain under consideration for future funding, particularly if they promote full-scale seawater desalination projects "designed to be integrated into broader interregional initiatives."

But while the emphasis currently is on projects situated close to the Gulf Coast, the Water Development Board stresses that desalination isn't something that will benefit only that area. Seawater-derived drinking water could feed into a regional water supply distribution or allocation system, extending inland and beyond the Texas coast.

Integrating seawater-derived drinking water supplies into a broader regional water supply system "is gaining increasing attention as major inland metropolitan areas struggle to find reliable sources of water to meet their future water supply needs," the Brownsville Public Utilities Board said.

Potential Partnership

Officials from Laredo and Brownsville have discussed a potential partnership to develop a full-scale seawater desalination plant. The 2006 Regional Water Plan for South Central Texas recommended building a major, large-scale seawater-desalination facility in the San Antonio Bay area and a water-transmission pipeline between San Antonio Bay and Bexar County to provide more than 84,000 acre-feet a year of drinking water to the San Antonio metropolitan area by 2060.

San Antonio currently depends on groundwater from the Edwards Aquifer for its municipal supplies and is reported to be the largest city in the United States dependent solely on groundwater. The San Antonio metropolitan area boasts the third-largest populous in Texas, with San Antonio itself the second-most populous city.

"Seawater desalination can no longer be considered a water-supply option available only to communities along the Texas Gulf Coast," said the Texas Water Development Board. "It must also be considered as an increasingly viable water-supply option for major metropolitan areas throughout Texas."

Brackish Groundwater

Texas also is looking at desalinizing more brackish groundwater. In 2003, the Water Development Board estimated that Texas had 2.7 billion acre-feet of brackish groundwater, with the use of that water "becoming more common in water-scarce areas."

But "some important difficulties [are] associated with implementing brackish groundwater desalination projects," said the Brownsville board, "that can be particularly challenging for smaller communities. Most important among these are managing desalination concentrate and predicting the long-term performance of brackish groundwater aquifers."

Environmental groups are concerned about how such concentrates will be disposed of, especially in connection with the Brownsville pilot plant. The Texas Water Development Board already has funded brackish-groundwater desalination projects, but sees ocean saltwater as the key to meeting long-term water needs.

"Seawater, by virtue of its unlimited supply, is relatively free of the increasingly contentious ownership and allocation issues associated with groundwater and surface water in Texas," the board says.

The Cost of Power

The cost of power is a major consideration for seawater-desalination facilities using reverse-osmosis filtration. Energy costs are related directly to the salt content of the water source and — in the case of seawater desalination — may represent as much as half of a system's operational costs.

The Brownsville Public Utility Board, in its dual role as a water and electrical power provider, is in an ideal position to deal with that issue. Researchers say advances in technology — such as improved filter techniques — are expected to reduce costs in the future and that increased use of desalination will help spur that research. More widespread desalination use also has led to improvements in operating procedures that will help lower the cost of the water being produced, researchers say.

Other issues: the cost of building desalination plants and the public's perception of those costs.

"In general, the greatest perceived challenge to developing seawater desalination is its relatively high cost," the Water Development Board says, "particularly when compared to water supplies that are already developed. Sound water-development policies lean toward developing the lower-cost water options first and implementing the more complex and expensive ones later as the need arises."

In Texas, the growing need for water "is sharpened by the known vulnerability of the state to drought events that can quickly and drastically decimate all water sources ... all except seawater," the board says. Seawater desalination lessens a regional water system's vulnerability to drought.

Another advantage of desalination: once the initial investment in intake and outfall structures is made, treatment components can be increased incrementally and economically in a modular fashion to meet demands and reduce the impact on a utility's cash flow.

With the apparent success of the South Texas projects, the Lone Star State is expected to increase state seawater desalination.

Seawater, Bruciak notes, is something "that we're not going to run out of."

Strategy 4: Tap Into the Drinking Water State Revolving Fund

DWSRF Supports Communities on Major Improvements

Finding funds for drinking-water infrastructure is no easy task. But a federal revolving fund has provided $9.5 billion in low-interest loans for more than 4,300 projects during the past decade, enough to fund improvements that, in turn, promote better public health.

Community projects receive funds through the Drinking Water State Revolving Fund (DWSRF), a federal program that serves as an infrastructure "bank" capitalized with contributions approved by Congress. Using DWSRF funds, states and the federal government provide loans to communities, and the repayments flow back into the program for more drinking-water projects.

In this way, DWSRF is similar to its companion program in the wastewater area, the Clean Water State Revolving Fund. One important difference: DWSRF has a strong public-health component.

"It's a public health-focused program instead of an environmental health program," said Peter Shanaghan, leader of the DWSRF team at the Environmental Protection Agency.

Overall, loans from the program can fund:

- ✓ Projects that help communities meet health-related drinking-water standards for contaminants.
- ✓ Installing or replacing transmission and distribution mains, pumps and other infrastructure.
- ✓ Rehabilitating wells or developing new water sources to replace contaminated ones.
- ✓ Installing or improving eligible storage facilities.
- ✓ Consolidating water systems.

With annual capitalization grants from Congress — usually totaling about $850 million — and proceeds from loan repayments, the program offers funds to states based on their infrastructure needs. To identify those needs, EPA conducts a comprehensive survey every four years, Shanaghan said. The survey solicits written input from 580 large water systems serving populations of 100,000 or more people.

EPA also conducts a large sampling of medium-size water districts and makes site visits to 600 very small systems. While the survey plays a significant role in final allocations, each state is guaranteed at least 1 percent of the available funds.

States can spend the funding on "hard" infrastructure costs — such as new or improved water lines — and "soft costs" that may help agencies build capacity, Shanaghan says. Soft costs include wellhead-protection programs and activities to promote the use of less chemicals in local agriculture.

At a Glance: Drinking Water State Revolving Fund

- Created by Congress in 1996.
- Operates in all 50 states and Puerto Rico.
- An $11 billion federal/state partnership funding $9.5 billion in infrastructure spread across more than 4,300 projects.
- 73 percent of projects and 39 percent of assistance has gone to small communities serving fewer than 10,000 residents.
- EPA estimates that the program has improved water and, consequently, public-health protection for 100 million Americans.

Source: DWSRF 2005 Annual Report, Delivering Sustainable Public Health Protection for America

To access the federal DWSRF bank, states submit an intended-use plan listing projects in order of priority.

"It's an ongoing process," said Shanaghan. "Each year, there's a backlog of projects. There are always projects lined up and waiting to go."

Success Stories

Cape May, N.J., — a small coastal town known for its Victorian homes — had a scenic downtown but a major problem: the lack of quality drinking water. It had long used Cohansey Aquifer as its water source, but saltwater intrusion threatened to put an end to that practice. Cape May was left with two choices: buy water from a neighboring jurisdiction or become the first community in the mid-Atlantic area to open a desalination facility.

Using DWSRF funds, city officials chose the latter solution, a desalination plant that would continue to give the municipality control over residents' drinking water.

"It's better for the city to maintain control of its water system," says Cape May Chief Water Treatment Operator Carl Behrens. For Behrens, control allows the community not only to monitor the quality of water but also the residential costs.

The best solution, Behrens said, was to build a brackish-water reverse-osmosis plant that could remove the salt from aquifer water.

"It has allowed us to control rates," he says.

The city used a 4-percent loan — among other financing — to build the plant, the first of its kind in the area. So far, the city has won a state drinking-water taste contest and strong support from residents.

"It's been hugely successful," Behrens said. "The quality of the water is incomparable, and customer complaints are way down."

Cape May's story is one of hundreds of DWSRF success stories that federal officials cite. Other examples include large, medium and small communities:

- The Mount Pleasant, Iowa, Municipal Utilities struggled with high levels of radium: manmade or natural elements that emit radiation. With a $5.9 million DWSRF loan, the agency installed a new treatment system that allowed the town to meet standards on radium.

- Oshkosh, Wis., wanted to update a 100-year-old water system that was subject to many microbial contaminants. Through the state's DWSRF capitalization grant, the city received a loan of $25.6 million to build a new water-treatment plant to benefit 55,000 residents.

- Lamar County, Ga., officials wanted to address fecal coliform bacteria that had contaminated wells in several remote areas. The county received a $3.5 million, no-interest loan under DWSRF's disadvantaged community program to extend water mains, hydrants and meters to serve residents who had relied on well service. The state also forgave $350,000 of the loan for this rural area south of Atlanta.

- The Texas Water Development Board approved $3.1 million to improve drinking-water systems in three counties in a low-income area 100 miles northeast of Dallas. Among the planned projects: improvements in water transmission, storage and distribution to increase the reach of water systems in the area.

- Talent, Ore., used a $2 million loan for disadvantaged communities to find an alternative water source to its current one beset by a serious cryptosporidiosis outbreak that EPA labeled "the worst in Oregon." The loan allowed the town of 5,050 to begin buying treated water from the nearby Medford Water Commission to provide quality drinking water.

- At Arizona's Fort Apache Indian Reservation, DWSRF funds helped complete a new project designed to alleviate an acute housing shortage. A $3 million disadvantaged-community loan funded construction for a drinking-water treatment plant that will provide water for the new housing community.

Program Operation

Loans through DWSRF typically carry 20-year repayment terms. But states have the ability to establish special programs for communities considered economically disadvantaged, as was the case with the Lamar County, Ga., example cited above.

Communities can receive 30-year payback terms and — in some cases — forgiveness of principal, thereby making the loans roughly equivalent to grants.

Once projects are approved for DWSRF support, the loan basically operates as a line of credit for the local agency. Officials seek cost reimbursements as they receive bills. States also rank their top priorities using three principal criteria:

1. Immediate public health needs.
2. Compliance with the Safe Water Drinking Act.
3. Projects with the greatest need.

States also must commit some of their own funds. Before receiving a capitalization grant, states must provide a 20 percent match to the DWSRF funds. In addition to revolving loan dollars, states can issue tax-exempt bonds to increase the total available funds. Overall, 20 states have issued leveraged bonds, EPA says, raising nearly $4 billion in additional capital.

DWSRF also includes setasides of:

- ✓ 2 percent for technical assistance to small communities serving no more than 10,000 residents.
- ✓ 4 percent to administer and provide technical assistance to public water systems.
- ✓ 10 percent for state program management, including help with water-source protection and implementing capacity-development strategies or employee operator certification programs.
- ✓ 15 percent for local assistance, including: rate studies, source-water studies, wellhead-protection programs, loans to acquire land or conservation easements, capacity-development assistance, and acquiring technical assistance and related services from experts.

In 2005, more than 15,000 small systems received technical assistance through the fund. Another 5,000 received aid through the 15 percent local-assistance setaside, according to EPA data.

Since small communities make up the majority of loan recipients, the program literally can make or break water programs in such locales. Small communities use the funds to promote better water quality and cut long-term maintenance costs.

"This is very important for small systems," Shanaghan says.

States and localities also have shown a strong record of compliance since 1996, when Congress enacted the program. No DWSRF program has ever defaulted on a loan, Shanaghan says, and the program generally provides about $1.3 billion a year in annual assistance.

Given the program's success stories, Shanaghan is quick to draw attention to its importance in the ongoing battle to improve the nation's water infrastructure. Despite its emphasis on low-cost loans, "this is not primarily a banking program," he said. "It's a public-health program."

2003 Total Need for U.S. Water Systems, by System Size
(in millions of dollars)

State	Large CWSs	Medium CWSs	Small CWSs	NPNCWSs	Recently Promulgated Arsenic Rule	Total
Alabama	$815.2	$782.4	$288.1	$3.2	$0.0	$1,888.9
Alaska	163.6	264.4	187.0	51.0	15.4	681.5
Arizona	5,556.5	2,968.3	467.1	15.5	92.5	9,119.8
Arkansas	778.7	2,187.3	566.6	6.1	0.0	3,538.7
California	19,828.6	5,823.3	2,016.7	84.6	118.2	27,871.5
Colorado	2,664.7	2,022.8	627.0	1.1	7.9	5,323.5
Connecticut	165.0	121.5	326.5	22.9	15.0	653.1
Delaware	72.1	7.4	157.9	2.7	0.8	240.8
District of Columbia	149.4	0.0	0.0	0.0	0.0	149.4
Florida	7,903.1	6,011.5	1,018.2	106.6	1.2	15,040.7
Georgia	4,825.6	3,411.1	768.6	11.5	0.8	9,017.6
Hawaii	477.7	213.0	115.4	0.8	5.5	812.5
Idaho	83.4	169.8	406.9	31.5	33.3	727.0
Illinois	6,095.0	5,835.5	1,450.9	92.0	23.4	13,498.8
Indiana	1,064.1	2,157.4	662.7	147.3	0.4	4,031.8
Iowa	716.3	1,953.9	792.6	15.4	25.7	3,503.9
Kansas	475.1	716.1	729.7	2.9	7.1	1,930.9
Kentucky	656.9	1,878.8	272.2	0.9	0.0	2,808.8
Louisiana	1,143.6	2,175.8	757.5	12.5	17.4	4,106.8
Maine	78.3	429.2	287.7	28.8	9.9	831.8
Maryland	2,947.0	640.4	292.7	82.0	1.2	3,963.2
Massachusetts	2,808.7	5,459.5	248.7	27.5	10.3	8,554.7
Michigan	5,994.0	3,840.8	1,012.2	394.4	69.7	11,311.1
Minnesota	1,453.9	3,018.2	743.3	224.1	21.0	5,460.5
Mississippi	65.2	654.5	906.0	8.0	0.8	1,644.5
Missouri	1,027.1	3,889.0	1,005.5	32.7	4.0	5,958.2
Montana	121.1	246.2	373.0	42.3	6.7	789.3
Nebraska	484.1	472.4	375.5	13.4	8.7	1,354.0
Nevada	522.8	171.4	172.8	11.9	33.3	912.1
New Hampshire	22.4	121.5	369.9	51.7	30.1	595.6
New Jersey	2,887.6	3,486.3	370.9	170.0	0.8	6,915.6
New Mexico	369.8	159.8	358.8	12.8	21.0	922.2
New York	10,130.4	2,517.6	2,003.0	105.4	56.2	14,812.5
North Carolina	4,632.5	4,997.2	1,035.8	308.8	5.9	10,980.2
North Dakota	35.6	343.8	209.8	4.5	13.1	606.8
Ohio	4,189.1	4,186.2	1,054.0	235.7	19.0	9,684.1
Oklahoma	1,060.7	2,857.8	854.0	18.6	13.1	4,804.2
Oregon	1,409.0	2,122.5	674.2	46.4	15.4	4,267.6
Pennsylvania	5,733.7	3,495.3	1,520.7	235.3	5.1	10,990.3
Puerto Rico	1,094.5	707.1	471.0	1.0	5.1	2,278.8
Rhode Island	234.9	116.7	36.0	13.5	1.6	402.6
South Carolina	451.7	498.6	280.2	13.5	1.6	1,245.6
South Dakota	11.1	722.2	243.5	4.3	8.7	989.8
Tennessee	530.0	1,820.4	396.0	24.1	0.0	2,770.4
Texas	15,212.5	9,896.8	2,964.2	39.8	56.2	28,169.6
Utah	154.3	300.5	231.4	10.8	9.9	706.9
Vermont	2.2	107.9	274.6	0.1	9.9	394.8
Virginia	1,203.5	872.3	709.1	76.6	3.6	2,865.0
Washington	2,299.8	2,764.2	1,404.8	96.9	105.1	6,671.7
West Virginia	43.6	209.1	568.3	40.2	0.8	861.9
Wisconsin	1,895.3	2,834.7	776.6	403.8	27.7	5,938.1
Wyoming	16.2	122.3	144.7	10.2	4.8	298.2
Subtotal	122,555.0	102,812.6	33,985.1	3,397.5	945.8	263,696.1
American Samoa	0.0	13.2	18.7	0.0	0.4	32.3
Guam	221.6	50.2	7.2	0.0	0.0	279.0
North Mariana Is.	75.0	96.9	25.1	0.0	0.8	197.8
Virgin Islands	0.0	44.6	135.4	0.0	0.4	180.4
Subtotal	296.7	204.8	186.4	0.0	1.6	689.5
Total	$122,851.7	$103,017.4	$34,171.5	$3,397.5	$947.4	$264,385.6

Source: 2003 Drinking Water Infrastructure Needs Survey and Assessment, EPA.

Strategy 5: Win Support From CWSRF

Wastewater Cleanup Fund Provides Flexibility, Cost Savings

The Environmental Protection Agency's wastewater-cleanup fund is providing flexibility and cost savings to a cross-section of water authorities in the United States, and the program continues to grow in popularity.

The agency anticipates that the program will continue for the foreseeable future, fueled by water officials' constant demand for maintenance, upgrades and additional wastewater infrastructure, assures EPA spokesperson Enesta Jones.

"We believe the program has been very successful," Jones says, "and we don't envision any changes, unless so directed by law, which we don't anticipate."

In recent years, Clean Water State Revolving Fund (CWSRF) programs have provided more than $4.5 billion annually to fund water-quality protection projects for wastewater treatment, nonpoint source-pollution control and watershed and estuary management. Overall, EPA says, the programs have provided more than $57 billion in project funding, offering more than 18,600 low-interest loans to date.

The best advantages of CWSRF funding, say both by EPA officials and participants, are low-interest rates and flexible terms. The programs also provide significant funding for nonpoint source-pollution control and estuary protection, while offering assistance to a variety of borrowers and partnerships with other funding sources.

Interest Rates Average 2 Percent

But the program's actual benefits and details may vary from state to state, EPA officials note.

Nationally, interest rates for CWSRF loans average 2.0 percent, compared to market rates that average 4.5 percent. Obviously, that translates into significant savings for borrowers.

For a CWSRF program offering such an average rate, a project funded through the program would cost 20 percent less than projects funded at the market rate. The programs also can fund 100 percent of the project cost and provide flexible repayment terms up to 20 years.

CWSRF programs provided more than $370 million in 2006 to control pollution from nonpoint sources and for estuary protection (bringing the total for such lending to more than $2.4 billion). The program also provides assistance directly to borrowers, including municipalities, communities of all sizes, farmers, homeowners, small businesses and nonprofit organizations. In addition, the programs partner with banks, nonprofit organizations, local governments, and other federal and state agencies to secure an effective water quality financing source for communities.

Through CWSRF, each state and Puerto Rico maintains revolving loan funds to provide independent and permanent sources of low-cost financing for water-quality infrastructure projects. Funds to establish or capitalize the CWSRF programs are provided through federal government grants, with states matching funds equal to 20 percent of the federal grants. All 51 jurisdictions now are operating successful CWSRF programs, says EPA.

CWSRF programs operate like environmental infrastructure banks that are capitalized with federal and state contributions. CWSRF monies are lent to communities, and loan repayments are recycled back into the program to fund additional water-quality protection projects.

"The revolving nature of these programs provides for an ongoing funding source that will last far into the future," EPA says.

State officials say the demand for program assistance continues to grow, with requests for assistance exceeding available funding, resulting in priority ranking for certain projects.

Texas

For example, the Texas Water Development Board — which administers the state's CWSRF program — reports that it received applications for 61 eligible projects in fiscal 2007, totaling more than $774.5 million requested for about $48 million in available funding.

The CWSRF program is "far more flexible" than its predecessor, the Construction Grants program, EPA officials assert. Under CWSRF, states have a wide range of assistance options, including loans, refinancing, purchasing, or guaranteeing local debt and buying bond insurance. States have the authority to set specific loan terms, including interest rates — from zero percent to market rate — and repayment periods up to 20 years.

States also have the flexibility to target resources for particular environmental needs, including contaminated runoff from urban and agricultural areas, wetlands restoration, groundwater protection, brownfields remediation, estuary management and wastewater treatment. And states may customize loan terms to meet the needs of small and disadvantaged communities.

In 2006, 72 percent of all CWSRF loans — representing 21 percent of funding — were provided to communities with populations under 10,000, says EPA. Moreover, some states provide specialized assistance for communities that are disadvantaged or experiencing financial hardship, offering low- or no-interest loans to provide greater subsidies for such areas.

Anchorage, Alaska

State programs have funded a wide variety of infrastructure needs in recent years. CWSRF "is our choice of funding source," says Anchorage, Alaska, Water and Wastewater Utility General Manager Mark Premo.

"In terms of debt, it is the most attractive financing we have available to us," Premo says. "It offers low-interest and long-term bonds. We're very aggressive in trying to use it."

The utility has used a variety of financing mechanisms — including local bonds — to finance $30 million in wastewater-infrastructure work over the past six years, Premo says. Part of the work on the Anchorage system has included use of "supervisory control and data acquisition" (SCADA), he adds.

The Anchorage system has five water and wastewater treatment facilities and more than 200 remote facilities, such as pump stations, lift stations and booster pumps. The utility system's project involved installing modern technology to allow operators to communicate with all five treatment plants and all remote stations, Premo reports.

"It lets us bring back information into the centralized control environment where we can monitor what's happening in the field. Not all of the locations are staffed 24 hours a day.

"The system lets us take voluminous amounts of data and put them into a database format, so we can query it for better operational efficiency," Premo says.

He recommends that communities interested in obtaining assistance contact their state programs and determine the criteria needed to qualify for assistance.

Kalispell, Montana

Kalispell, Mont., is preparing to expand its 1992 advanced wastewater-treatment and biological nutrient-removal facility, which was designed to protect pristine Flathead Lake, the largest freshwater lake west of the Mississippi River.

The 3.1-million-gallon-a-day plant is a modified University of Cape Town process and contains a SCADA system and a programmable logical controller. The plant removes solids, nutrients and fecal coliform without the use of chemicals, receiving a national first place and two EPA Region 8 first-place operations and maintenance excellence awards, as well as awards from the Flathead Basin Commission and Montana Rural Water Systems.

The city plans to double the plant's size over the next several years to accommodate growth.

The project will add to or replace some units and modify others to maintain the current chemical-free water treatment. The improvements also will include a biological state-of-the-art odor-control system, although the facility gives off comparatively little odor at present. Solid waste from the operation is used for fuel or compost.

The expansion will be financed partially through Montana's CWSRF program, "but we haven't started to draw against it yet," says Kalispell Water Resources Manager Joni Emrick.

The city has used the fund "for a number of years," says Kalispell finance director Amy Robertson, and it intends to finance $14 million of the $20 million project through the fund.

"The rates are better than we could do on a bond sale," Robertson says. The city will pay 3.75 percent fixed interest. "We just refinanced some water bonds with them," Robertson added. "The rate was much better for us."

The Kalispell City Council recently approved an operating budget of about $65 million for its 2007-2008 fiscal year, so the $20 million project represents a considerable commitment for the community.

Robertson says the long-term relationship established between the city and program officials has helped in obtaining assistance. Other communities would need to become familiar with the process for obtaining help from their state funds, Robertson says.

EPA notes that funding is available for projects regardless of size, although large projects typically are funded in stages over a number of years. The agency selects projects annually throughout the nation for recognition based on innovation, environmental impact and other factors.

Other Success Stories

One recipient of EPA's 2006 recognition awards — **Evanston, Ill.** — has worked to eliminate combined-sewer overflow problems by building the capacity needed to access the Metropolitan Water Reclamation District of Greater Chicago's North Side Water Reclamation Plant. The $152 million project has required 25 CWSRF loans since 1991, and involved an innovative partnership with the district, which saved Evanston millions of dollars in additional expenses, EPA says.

Lynchburg , Va., developed a three-part plan to address the city's combined-sewer overflow problems by using complete sewer separation and interceptor replacement, reducing overflow volume in the James River by 78 percent. Lynchburg has borrowed $70 million from the Virginia Clean Water Revolving Loan Fund for the direct costs associated with the project.

Projects toward the lower end of the cost scale included AMD Reclamation Inc. in **Dunkard Township, Pa.,** which received a $4.3 million loan to help build an acid mine-drainage treatment facility and outfall sewer. That project is to prevent raw minewater discharge into area surface waters. EPA says creating a mine-drainage pond not only protected those waters but also allowed the mine to reopen, "creating an economic benefit to the community."

The loan was the first in the nation to address acid mine drainage, the agency added.

Examples stressing technology include the **Atlantic County Utilities Authority** in New Jersey, which used a $2.1 million CWSRF loan and $1.9 million in rebates from the New

Jersey Board of Public Utilities to implement a photovoltaic generation system at its wastewater-treatment facility.

Since it began operating in October 2005, the system has generated more than 390,000 kilowatt hours of electricity, eliminating the need for 388 barrels of crude oil and reducing carbon dioxide emissions by some 660,000 pounds. The system is estimated to save at least $115,000 per year in energy costs.

Holloway Technology Inc., in **Leesburg, Fla.,** received a $226,935 CWSRF loan in 2003 to develop a process for large-scale plant irrigation that uses 20 percent less water per plant than conventional irrigation systems. The closed-loop system doesn't draw any water from surface or aquifer sources and has no agricultural wastewater runoff. To date, the system has conserved more than 100 million gallons of water, EPA reports.

The agency says some projects also reflect state efforts to promote particular environment concerns. In **Maryland,** a $1.4 million loan funded the planning, design and restoration of the main stem of Watts Branch. Restoration work included enhancing existing wetlands, restoring a stream buffer, stabilizing eroding stream bank and upgrading storm-drain outfalls.

The project helps reduce nonpoint source pollution in streams and the Chesapeake Bay and enhances aquatic habitat. The project was the first in Maryland to benefit from a zero-percent-interest loan, part of the governor's effort to encourage more nonpoint source projects.

The Private Sector

One question in CWSRF's future: how much the private sector will become involved as infrastructure needs continue to mount. The well-publicized and tragic collapse of the IH-35 bridge in Minneapolis has focused attention on those needs and prompted debate in government circles and the public on how to address the problem.

Aqua Pennsylvania President Karl Kyriss is convinced that the private sector needs to play a greater role.

"I know this sounds like a message from our sponsor," Kyriss says, but points to his company's funding through the Pennsylvania Infrastructure Investment Authority (PENNVEST) to upgrade the Bristol water treatment plant.

Aqua Pennsylvania bought the facility from the township and invested $10 million to rehabilitate and upgrade it, including using a $5.9 million low-interest loan from PENNVEST. The loan rate was well below what the company would've paid in the commercial market, Kyriss says, which means it can keep charges to ratepayers lower.

"Private ownership of infrastructure elements," Kyriss says, "provides the best opportunity for those investments to take place."

Answering that question will take some time. But for the present and immediate future, CWSRF programs will provide welcome help to entities seeking to satisfy their local infrastructure demands.

Strategy 6: Make the Case for Change

Communities Use Strategic Planning to Improve Water Outlook

Like many other communities across the United States, Columbus, Ga., always balked at raising its water and sewer rates. But in a theme also common throughout U.S. cities and towns, aging infrastructure prompted Columbus officials to rethink that philosophy.

"When I first came here, we'd put off a rate increase as long as we could," said Jim Patterson, vice president of strategic planning at Columbus Water Works, which provides drinking water and wastewater treatment to more than 230,000 residents of Columbus, adjoining Harris and Talbot counties and Fort Benning, Ga.

The utility might propose a double-digit increase in rates, Patterson said, but only once every five to seven years. Leaders gradually realized that approach wasn't sufficient to meet current and future needs.

Instead, the water works launched a major effort focused on strategic planning. Complete with focus groups and resident surveys, the planning effort helped generate community support for improvements to aging infrastructure, some of it dating back nearly 100 years. The process also led to coordinated planning with other city agencies and a long-term financing plan to fund improvements.

Strong Statement

"We've communicated to the public that infrastructure *does not last forever*," Patterson said.

In developing a 10-year strategic plan, Columbus is making a strong statement that other utilities are embracing with increased regularity.

"Strategic planning is not something you tack on says Gina Wammock, strategic planning and communication vice president, at CH2Hill, a consulting firm that works with many utilities. "It's something that becomes part of the process."

From management teams to customer focus groups to comprehensive goals and objectives, strategic planning is increasingly a requirement for forward-thinking water agencies. While the general elements are the same, the process may look different in each community.

Planning 101

"It's a simple process," Wammock says, "but one that is adapted to each utility's organizational culture."

A guide from the American Water Works Association Research Foundation (AwwaRF) outlines a basic approach to strategic planning, summed up in the phrase, "scan, plan and

do." That means scanning the community to identify needed changes, planning (with community input) for change and executing the plan with broad-based support.

It's a basic philosophy that Columbus embraced early in its planning efforts.

"This is an ongoing process," says Patterson. In the case of Columbus, the water works conducted focus groups with a variety of stakeholder groups, including residential, commercial and industrial customers, to solicit opinions about service, as well as current and future client needs.

The water works also established six employee strategy teams, each led by managers," Patterson says, "so there's buy-in from the beginning." The city also hosted a three-day retreat for middle and senior managers to address issues from rate increases to infrastructure needs and long-range planning.

With that input, the water works established a 10-year financing plan for capital improvements, with support from loans, bonds and — in a departure from past practice — regular rate increases.

Columbus approached the issue of public input in a systematic way. Early resident surveys showed greater satisfaction with sewer service than water service, which Patterson attributed to the fact that local residents never really "see" the city's sewer system. By comparison, many residents believed that the city's water rates were not as fair as sewer rates for the service received.

Armed with such information, Patterson and colleagues launched a major public-awareness campaign. For as little as $400 each, the water works could produce 30-second TV spots for local stations. The ads emphasized the importance of the water works as well as the challenges of aging infrastructure.

The water works also began to insert short informational flyers into its monthly bills.

With help from EMA, a St. Paul, Minn., consulting firm specializing in utilities and government, Columbus developed the outreach effort, which also included more public forums and focus groups.

"The culture changed," Patterson said. "Talk to the public, and let them talk back to you."

Throughout this planning process, it was clear that the old system of occasional double-digit rate increases would no longer suffice. In the end, the city designed a $45 million capital-improvement plan, with help from rate increases, bond issues and low-interest loans from state revolving loan funds. Under the plan, the water works would make annual small increases in rates to cover a portion of the new investment.

"It takes some pretty hefty increases if you do it once every five to seven years," Patterson said. "People never realized that the increases were so infrequent."

Making Improvements

In serving 65,000 homes, businesses and industries on a daily basis, Columbus's infrastructure had held up well. But there was no shortage of potential capital improvements. As part of their in-depth planning process, Columbus water officials identified several key priorities:

- ✓ Replacing aged water and sewer pipes.
- ✓ Relining other older pipes with cement to extend their life.
- ✓ Performing "in-place" rehabilitation of additional sewer lines with minimal disruption.

The plan presented logistical challenges, since some of the oldest pipes were concentrated in downtown areas where work would interfere with normal routines.

But with buy-in from other city officials, solid lines of communication helped the water works piggyback on other downtown repair projects. *Example:* The water works scheduled many pipeline upgrades to coincide with city streetscaping projects; as a result, the city minimized disruption to residents by conducting large initiatives simultaneously.

Using AwwaRF's guide, *Strategic Planning and Organizational Development for Water Utilities*, Columbus also sought to link strategic planning to tactical-operational plans and activities, reflected through strategies, goals and objectives. Each goal and objective includes tactics, action items, roles and responsibilities with measurable performance targets. A Strategic Plan Implementation Division (SPID) within the agency implements the Columbus Water Works Strategic Plan.

With small but annual rate increases now planned, the water works retained consultants to conduct monthly resident surveys. The project consisted of random phone surveys of 100 customers each month, in which each customer would respond to dozens of questions about water and sewer services. Patterson said he was initially surprised that residents would participate in such long surveys each month. But the surveys became an important forum for obtaining public feedback and building good will.

Interestingly, customer satisfaction increased after the initial rate increases.

"We seemed to gain a lot of support," Patterson says.

He attributes that in part to the entire strategic-planning effort, which provided a consistent message of commitment to high-quality service.

Other Components

Columbus Water Works also has a customer-friendly Web site with a clear mission statement to sustain and improve water service, including responsible environmental stewardship of its water source, the middle Chattahoochee River watershed. A list of

"frequently asked questions" provide customers with advice on billing, reporting a leak, help for new residents, payment options, water-quality and water-safety issues.

Such communication outlets form an integral part of any strategic planning effort, says Wammock.

"You need to gather information from customers to develop a solid strategic plan," she says. Within the water agency, officials use that input to set priorities and strategic goals.

One challenge facing many communities: water agencies are viewed as what Wammock calls a "silent provider of services": an agency with low visibility whose services often are taken for granted.

"A huge part of a utility's job is communication to reflect the needs of the community it serves," Wammock says. Soliciting broad community input "gives you a friendlier audience for a rate increase. You don't want rate shock."

Another part of strategic planning: promoting asset management, or an integrated approach to develop, maintain and manage utility assets at minimal costs while delivering high-quality service. That includes investigating and using new technology and, in Columbus's case, a detailed study of its chief asset for water: the Chattahoochee River.

One of the first utilities in the state to do such work, Columbus Water Works conducted a comprehensive source-water study. Through that process, it was able to document all waste sources in the streams and tributaries feeding into the river. So, the agency can assess the pollution load the river can take without compromising water quality.

The project also gives the water works' information system real-time notification of most issues involving the river.

The water works is well on its way to accomplishing its 10-year plan, but the agency continues to monitor progress through its strategic planning office.

Patterson describes it as a continuous process.

It helps that consumers are giving the agency's work increasingly high marks, illustrating both community knowledge of and satisfaction with the agency's work.

"Our satisfaction rates are going up," Patterson says, "and we're strengthening our infrastructure."

EXHIBIT A-8

DOCKET NOs. SW-02445A-09-0077 *et al.*

Rebuttal Testimony
of
Trevor T. Hill

November 20, 2009

TABLE OF CONTENTS

I. Introduction.

Q. What is your general reaction to Staff and RUCO's testimony in this case?

A. In general, we are very pleased that they have audited our financials, inspected our infrastructure, pored over our decisions to build and grow the company and have found that our plant is well-engineered, properly-sized, and performs satisfactorily.

I am disappointed, however, that Staff and RUCO have not recognized the public policy benefits of our ICFA agreements, which allow us to create sustainable water infrastructure and which allow us to acquire small, troubled utilities.

Q. What topics do you address in your Rebuttal Testimony?

A. I will explain why the Commission should emphasize and support Total Water Management, and why water sustainability is crucial for Arizona's future. I will also explain how the infrastructure financing methods chosen by regulators have a direct impact on sustainability, the types of infrastructure constructed, and the health and structure of the water utility industry in Arizona. This includes explaining the problems that come with a traditional CIAC-based approach, and the benefits of our ICFA agreements. In the spirit of compromise, I also discuss possible "middle ground" approaches to ICFAs.

I will also respond to Staff's opposition to our Public Private Partnership (P3) agreements with the Cities of Maricopa and Casa Grande, and to their opposition to our Renewable Energy adjustor mechanism, which I found especially disappointing.

Q. What other witnesses are testifying for Global?

A. **Graham Symmonds** updates Arizona's drought situation, responds to Staff's proposed accounting treatment of recharge credits, and provides updated data on home vacancies and delinquent payments. He also describes our proposed low-income tariff and our

proposed Demand-Side Management Program. Lastly, he provides an update on our extensive system upgrades in Willow Valley.

Jamie Moe responds to Staff's and RUCO's accounting adjustments and supports our requested pass-through and adjustment mechanisms.

Matt Rowell provides an economic and ratemaking policy analysis of Staff's and RUCO's positions on CIAC. He also responds to their positions on cost of capital.

II. The key issue in this case is whether the Commission will support Total Water Management.

Q. Do you have any general concerns with Staff and RUCO's testimony in this case?

A. My concern is that there appears to be some misunderstanding of what it is Global has set out to accomplish in Arizona: some of the comments point to the difference between Global's approach and the water utility norm as a negative. I want to be clear: we absolutely are different from the water utility norm in Arizona.

But we are different in important ways. And I make no apology for that. We sought out the highest growth areas with the worst water supply issues – and we used ICFAs to wrest water control from developers and that allowed us to emplace leading edge water reuse throughout those communities. We are passionate about the need to reuse water and to dramatically reduce water consumption – I don't mean BMP-type half-measures that yield a few percentage points, I mean we cut water use by 40% in Maricopa. And we plan to cut it by 60% in Belmont.

And that is what I believe this case is about. It's not about rate base, expenses, and rate of return – we made that evident in our application when we voluntarily excluded $32 million

of plant from our application because we didn't feel it was used and useful. We made that clear when we created a NARUC-style cost allocation model for our employees and management – and implemented a structure that results in an exclusion of 84% of all executive compensation from rates. We made it clear when we opted to not argue with Staff about the cost of equity. This case is about the ICFAs and what they have allowed Global Water to achieve – and why we believe the Commission should find ICFAs in the public interest.

ICFAs give utilities control over water resources and ensures economic development can continue in water scarce areas like Belmont. They are structured to incent developers to adopt Total Water Management in the absence of state policy to conserve – so there is no fight as with the APS hook-up fee. They create a means to conduct acquisitions and consolidations and begin the decade-long effort to create a manageable water industry in Arizona. They put all the risk of used and useful onto utility owners instead of customers. And they result in regional plant that reduces water usage by 40 to 60%.

That is what this case is about.

Q. What are the key factors in this case?

A. There is one principle that drives this case, and what one believes about that principle should drive every decision. That principle is that Arizona needs to adopt, support, and incent Total Water Management in order to avoid water crises that will destroy our state's economy, ecology, and future. The writing is on the wall. Proactive measures are already being implemented in the world's most water scarce areas which now include large portions of the United States and Australia. Arizona lags in meaningful water conservation policy.

Q. Why is Total Water Management necessary?

A. Because:

- Growth pressures and water limits remain, thus there is no easy solution to developing the supply to meet demand;
- Drought and Colorado River volatility remain, thus supply-side increases are not available;
- The Energy-Water nexus in Arizona will become more acute and high-cost, high-power solutions such as desalination will not be affordable; and
- Water and energy resources must become more sustainable now – right now – or Arizona will face unmanageably large and frequent crises.

Q. Is Total Water Management simply a marketing phrase that Global Water invented?

A. I have heard that suggested, but the reality is that Total Water Management is a fundamental concept in the world of water resource management. It is not a new concept – the American Water Works Association (AWWA) published a white paper outlining the Total Water Management concept in 1994.[1] Just last year, the AWWA published a book entitled *Total Water Management: Practices for a Sustainable Future*, which used the following definition: "Total Water Management means stewardship and management of water on a sustainable use basis."[2]

At Global, we strongly believe that sustainability is a core function of a water utility – that's why we promote water conservation, and why we have taken the lead in designing and constructing recycled water systems in Arizona. This concept is explained in the leading textbook on water recycling, *Water Reuse: Issues, Technologies and Applications*:

[1] American Water Works Association, "White Paper: Principles of Total Water Management Outlined", *MainStream* vol. 38, no. 11 (1994).

[2] N. Grigg, "Total Water Management: Practices for a Sustainable Future" (American Water Works Association 2008) at Page 1.

> The emerging paradigm of sustainable water resources management emphasizes whole-system solutions to reliably and equitably meet the water needs of present and future generations. Understanding the concepts of sustainable water resources management as a foundation of water reclamation and reuse is of fundamental importance.[3]

When Graham Symmonds, Leo Commandeur, and I began Global Water with Bill Levine and Dan Cracchiolo we made it our mission to move Arizona's water policy towards a "sustainable water" model. Referring again to the *Water Reuse* textbook:

> The goal of sustainable water resources development and management is to meet water needs reliably and equitably for current and future generations by designing integrated and adaptable systems, optimizing water-use efficiency, and making continuous efforts toward preservation and restoration of natural ecosystems.[4]

Dan Cracchiolo and Bill Levine have each lived in Arizona for over 40 years – they were and remain key players in Arizona's development story. And they both recognized that Arizona's water industry was far too often ignoring the needs of future generations and of our environment. They had come, on their own, to the same realization that Messrs. Symmonds, Commandeur, and I had, which is also reflected in *Water Reuse*:

> Because of the social, economic, and environmental impacts of past development and the prospects of potential water shortages, a new paradigm for water resources development is evolving, based on the principles of sustainability and environmental ethics.[5]

So, as one can see from those citations, everything that Global Water has been talking about (some would say proselytizing – and I don't necessarily disagree with that characterization), is based on truths that the world's leading water experts are pursuing. These concepts can be summed up by one of the recommendations from the Aspen Institute's 2009 report, "Sustainable Water Systems: Step One - Redefining the Nation's Infrastructure Challenge":[6]

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[3] T. Asano, et al., "Water Reuse: Issues, Technologies and Applications" (McGraw Hill 2007), at Page 6.
[4] *Id.* at Page 7.
[5] *Id.* at Page 7.
[6] Bolger, R., D.Monsma, R. Nelson. "Sustainable Water Systems: Step One - Redefining the Nation's Infrastructure Challenge." A report of the Aspen Institute's Dialogue on Sustainable Water Infrastructure in the U.S. May, 2009.

> Water utilities should employ a variety of practices on the path to sustainability, including: transparency in governance and operation; public outreach and consultation; integrated water management; asset management; workforce management; conservation and efficiency (both water and energy); advanced procurement and project delivery methods; adaptation to and mitigation of climate change; research and development; and technological and managerial innovation.

Q. Why is Total Water Management important for Arizona?

A. Total water management should be at the forefront of Arizona's regulatory agenda, because Arizona and rest of the Colorado River Basin face significant water resource challenges in the years to come. As explained in a recent National Academy of Sciences report:

> Steadily rising population and urban water demands in the Colorado River region will inevitably result in increasingly costly, controversial, and unavoidable trade-off choices to be made by water managers, politicians, and their constituents. These increasing demands are also impeding the region's ability to cope with droughts and water shortages.[7]

and:

> A future of increasing population growth and urban water demands in a hydroclimatic setting of limited – and likely decreasing – water supplies presents a sobering prospect for elected officials and water managers. If the region's water resources are to be managed sustainably and to continue to provide a broad range of benefits to an increasing number of users, the realities of Colorado River water demand and supply will have to be addressed openly and candidly.[8]

It's time that Arizona started making these choices, and the Commission can take the lead by clearly endorsing Total Water Management and Global's sustainable approach.

Q. How does Arizona fit into the larger picture?

A. We did not pick the name "Global Water" by accident – we believe that water is not merely a local issue, nor is it simply a local commodity to be used and priced as cheaply as possible. The world has a finite amount of potable, retrievable water. And what any

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[7] National Research Council, "Colorado River Basin Water Management: Evaluating and Adjusting to Hydroclimatic Variability" (National Academy of Sciences 2007) at Page 72.

[8] *Id.* at Page 153.

community does to its water affects the environment, and affects everyone's water. So, if China poisons water with its industrial waste that will affect more than China. And if Arizona continues to waste its water, or to ignore the long-term costs of using coal to pump water 334 miles uphill, Arizona will affect more than itself.

And on the positive side of the ledger – if Arizona decides to be the world's leader in Total Water Management, if we decide to be the most water-wise place in the world, we will be able to prove technologies and systems that will then be exported globally and we will save millions of people from water crises. I think it's important that the Commission understand clearly that that is what Global Water is about -- that is our goal, that is our mission, and that has driven all of our decisions (yes, even the ICFA was based on that view).

Q. How does the ICFA relate to that view?

A. In two ways. First, ICFAs take water planning away from homebuilders – so water is not about "fueling growth" in the short term, it's about sustaining communities and the environment, simultaneously. Second, ICFAs are structured so that no developer-owned water "utility" can compete – Global Parent wears all the risks of permitting, financing, growth, used and useful determinations, safety, and public-private relationships. This is how we came to have so many sections of CC&N area.

Q. What are the results of that effort?

A. In the Maricopa area, we use 40% less water than our neighbors. In the planned Belmont area, we will use 60% less water to sustain that community. In Belmont, we will be down to 0.2 acre-feet per house per year, from 0.5. And developers support us, because of the risk-bearing that Global Parent incurs. In the absence of these measures, economic

development is not practical in these areas. Total Water Management brings sustainability to water short regions.

III. Impact of the economy on our service areas and our company.

Q. Since your direct testimony in this case, has the situation in your service areas changed?

A. Fortunately, the decline we were seeing has stopped, as Graham Symmonds describes in his Rebuttal Testimony. We appear to have stabilized into a situation in which many homes are in foreclosure or are bank-owned, the vast majority of all home sales in our Maricopa region for example are bank-owned sales. But, like the rest of Metro Phoenix, housing in our service areas appears to have stabilized. And we are confident that with adequate rate relief our ability to serve and to attract capital will be assured.

Q. Has Global had an increase in late-paying customers?

A. We have seen late-paying customers dramatically increase. Since the beginning of the recession, 20% of our customers have had late-pay issues. To address that situation we have taken several steps, including an automated phone notification system that has made thousands of 'reminder calls' to late customers in the past year; and we have been very proactive in working out payment plans for customers who are having financial difficulty. The automated reminder calls have reduced our disconnect needs dramatically – I believe that many people really are 'just forgetting' to pay their bill as they deal with housing, employment, and financial situations that are rapidly deteriorating. The results we have achieved through this system bear out my belief, as shown on the attached Exhibit Hill-Rebuttal-1.

For those people who have difficulty paying and who let us know about that situation, our goal is to avoid disconnection. As part of our continuous improvement management approach, we have developed a low-income assistance program which Mr. Symmonds details in his rebuttal testimony. We have also developed a Demand-side Management program, to assist customers in reducing their usage – and thus their bill. Mr. Symmonds describes this program as well.

Q. Have any other factors affecting Global's financial situation changed?

A. Unfortunately, we have seen a continued deterioration in our banking relationships. As the Commission is aware, Global Parent has had a significant relationship with Wells Fargo since our primary shareholder, Bill Levine, joined our team. That relationship was extremely helpful during the 'boom years', but since the banking crisis began, and despite Wells Fargo's receipt of $25 billion in TARP funds it appears that our bank continues to have significant problems.

News reports in TheStreet.com point to a growing rift between management and analysts, driven by the latter group's conviction that Wells Fargo is understating its risks in home equity, commercial real estate, and credit card operations. From our view, as a customer, we have seen a continued increase in fees and interest, and a concurrent aversion to providing financing.

As a result, Global Parent has been forced to pay significantly higher banking fees – therefore we have committed to restructuring our debt, commercial paper, and banking relationships within the very near term. Rate relief will help us to more quickly resolve that situation.

That being said, Wells Fargo has renewed our line of credit, and we anticipate meeting all of our obligations – to regulators, customers, and creditors - while the Commission considers this case.

Q. Does Global continue to work on increasing efficiencies and reducing costs?

A. Yes. It is my belief that growth will not return to anything like the levels we saw in the past 20 years, let alone the past ten. We are organizing our operations on the assumption that growth in Arizona will move to a level one-half the 20 year average – about 1.5 percent. I also am confident that CAP water costs will double within seven years, and triple within 20. I believe the EPA's proposed rules on NOx emissions will be followed by rules on mercury, coal ash, and, eventually, carbon dioxide. All those costs will dramatically affect CAP, which relies on coal-fired generation for all its power.

Further exacerbating the CAP problem, Scripps Institution has twice studied the Colorado River, and the University of Colorado recently studied it, and all three studies said the river's flows will become smaller and increasingly variable. When a commodity becomes more scarce, its costs increase – this is a fundamental law in economics.

Because of these concerns, we are in the process of selling the CAP recharge facilities owned by our unregulated subsidiary, West Maricopa Combine. We will use the proceeds to further our financial restructuring goals – which, in combination with rate relief, will help us meet Staff's recommended equity/debt ratio on a shorter timeline.

As a result of our view on growth and CAP water, Global Water believes that the utility of the future must be very efficient, very lean, and very self-reliant in terms of water. I have discussed above the benefits of Total Water Management in terms of sustainability but it also allows for very efficient utilities. Mr. Symmonds in his Direct Testimony and Mr.

Rowell in his Rebuttal Testimony both provide clear evidence that Global's Total Water Management approach results in more efficient, cost-effective utilities.

While Global will always interact with developers, in the near term, we do not believe that growth services will require much staffing, nor will it require significant resources.

Q. Can you provide an update on capital projects?

A. On a going-forward basis, we have suspended all non-ARRA capital projects other than O&M and repair work.

In the past year we finished our work on the troubled Willow Valley system, and Mr. Symmonds details the tremendous improvements achieved for those customers. We have mothballed $32 million of plant in the Maricopa area – plant built only to comply with repeated Commission orders and indications from Staff to not ask for any further extensions of time.

Q. Do you have any concerns with Staff's treatment of the $32 million of plant Global Water 'Mothballed'?

A. It is worth noting that in this case, $32 million of plant we were ordered to build, and which we voluntarily held out of the case because we believe ICFAs oblige Global Parent to "wear" used and useful risk, was an issue Staff treated dismissively. Yet, in a pending matter, our regulated utility CC&Ns for the Belmont area, Staff has recommended that our CC&Ns be revoked because we hadn't built plant that was not needed due to the fact that no construction is occurring.

I want to highlight for Staff and the Commission the tremendous incongruity of the Staff's apparent "policy", which is this:

1. The Commission will provide CC&Ns but will order utilities to build plant and impose firm deadlines based on forecasts.
2. If the utility finds that the forecast won't be met due entirely to national economic factors and it asks for an extension, its CC&N will be revoked.
3. If the utility builds the plant despite the lack of need, and seeks rate recovery, the Commission will deny that the plant is used and useful.
4. If the utility builds the plant despite the lack of need, and does not seek rate recovery, the Commission will rule that the plant is CIAC anyway.

With a reasonable understanding of modern finance, of the state of the American banking and investment sectors, of the real estate and development market, or even of human nature itself, one can clearly see that the effect of such a policy will be to end any regional planning, and to forever end regional-build.

Looking beyond Global's horizon, the outcome of Arizona-American's rate case further demonstrates that fact – there is literally no person in the water industry who would say that Arizona-American's CAP treatment plant in the West Valley was anything short of a visionary, much-needed, and well-designed plant. Yet, because of the vagaries of growth (which no utility controls) Arizona-American is being punished for its planning and its efforts.

Q. Do you have any forecasts for ICFA revenues in 2010 and 2011?

A. Our forecast is for zero ICFA revenue in those years. Metro Phoenix has, by some reports, as many as 60,000 finished lots and an equal number of vacant homes. That equates to about 120,000 homes and lots that can be sold and built-out before any new developments would begin. If Metro Phoenix returned to its long-term average of about 30,000 homes/lots a year, that is still a four-year inventory.

Obviously, developers won't wait for inventory to be at zero before they begin work, but two factors are at play: First, nobody expects 2010 or 2011 to see 30,000 homes/lots a year in sales, and secondly, no developer will find financing until that inventory shrinks.

IV. Impact of financing methods approved by regulators on sustainability and industry structure.

A. CIAC creates poor infrastructure and weak, undercapitalized utilities.

Q. Staff points out that when it comes to CIAC, Global Water is "the exception to the rule," in that it has very little CIAC in any of its utilities. Can you explain why that is so?

A. We have very little CIAC on our books because CIAC destroys utility companies.

Q. Isn't 'destroys' an exaggeration?

A. No. Arizona is plagued with undercapitalized, poorly run water companies. Wastewater companies routinely have multiple lines and lift stations serving single developments. Recycled water use in Arizona is about 9.8% according to ADWR[9] -- and that includes recharge into aquifers, all of the water for the Palo Verde Nuclear Generating Station, and watering hundreds of golf courses.

When the federal government changed the arsenic standard it set off a near-panic in Arizona, and virtually every water company had to apply for WIFA loans and special adjustor mechanisms to manage those loans.

Does anyone really believe that Arizona is poised to confront the implications of water shortages? With arsenic we had water, we had multiple technological solutions to remove

[9] Presentation by ADWR Director Herb Guenther to Valley Forward Association, Phoenix, Arizona, March 16, 2006.

the arsenic, we had CAP water for blending, and we had federal funding – and it was still a virtual crisis.

So, no, I don't believe that saying CIAC destroys utilities is an exaggeration. The CIAC policy puts infrastructure decisions into the hands of homebuilders, it puts system planning into the hands of accountants, and it results in companies that have no ability to earn on a third, one-half, and in some cases even more, of their plant. As a result, when they need to secure financing to deal with an external event (e.g., arsenic rule changes) they cannot.

Normally, if companies cannot adapt to external changes, they perish – Schopenauer's "creative destruction" at work. In the utility world, they don't die; they get "emergency rates" and/or an endless series of general rate cases. At the root of this problem one finds inattentive management that has been too long sheltered by monopoly status. Using CIAC, and not pointing out the effects on capital structure, liquidity, and financeability is emblematic of that sort of "management".

When it comes to sustainable water management, Arizona is nowhere. California is spending tens of billions on next-generation water solutions. The State of South Australia survived and continues to survive a horrific drought, despite a 75% decline in water from their Murray-Darling River system.[10] Florida is building cutting-edge water reuse infrastructure. Asia is spending billions of dollars to reclaim and reuse water. And in Arizona, where drought is a fact of life and not an anomaly, where the Colorado River is running at one-half what we thought it would, where we burn coal to pump water (and are only just beginning to face the economics of that choice), we have well over 400 utility companies "managing" our most precious resource by kowtowing to developers, by failing

[10] Murray System Drought Update, November 2008.

to tell the Commission the truth about CIAC, and by seeking emergency rate relief whenever an external event occurs.

Q. Global Water does use the AIAC mechanism though, isn't that the same as CIAC?

A. No. AIAC is plant that the Global Utilities have to pay back as connections come online. AIAC really is a source of capital in that way, we receive plant, and we pay the developer back over time. When we are committed to repaying we actually have more leverage in requiring the plant to meet our standards. And because we repay the developer we are growing the rate base of the utility – which provides us with assets that can be used to attract further capital should events occur (like the arsenic rule, like wells running dry, etc.).

B. The Commission should consider sustainability when making infrastructure financing decisions.

Q. What should the Commission do?

A. Arizona must adopt sustainability as its primary goal in resource decisions. For water, I believe our goal should be this:

> Sustainable water resources management emphasizes whole-system solutions to meet the water needs of present and future generations reliably and equitably.[11]

It won't be easy – there are many challenges to meeting this goal:

> To make full use of the water resource created by reclaimed water, several challenges must be met. These include institutional and social obstacles such as regulatory developments and public acceptance. Technical and economic challenges must also be addressed.[12]

However, we all have responsibilities to meet the challenge:

> Federal, state and local governments and other entities should find ways to remove or modify institutional barriers and practices that impede or

[11] *Water Reuse, supra,* Page 30.
[12] *Id.,* Page 310.

prevent sustainable water resource management according to the principles of the Sustainable Path.[13]

Q. How can public acceptance be created?

A. As the *Water Reuse* textbook explains, the key is leadership – especially by political leaders:

> … The public's awareness of sustainable water resources management is essential: thus, planning should evolve through a community value-based decision-making model… [The challenge arises because the] incentives for a water reclamation and reuse program make perfect sense to technical experts… So why hasn't the concept been embraced and supported wholeheartedly by the community? The human side of politics, public policy, and decision-making associated with technological advances are not always in concert with technical experts and technological advances.[14]

Focusing on the *"human side of politics, public policy, and decision-making"* is the essence of what I believe the Commission does as it adjudicates utility matters. This case is about that equation – more than any debate we may have on rate base, rates of return, or expenses, this case will be remembered for good or ill, by the Commission's view of those factors.

Q. It sounds as if you have a pessimistic view of Arizona's situation, do you?

A. I am an entrepreneur, first and foremost. I believe that entrepreneurs see problems and create solutions – and when my partners and I looked for a place to start a Total Water Management company we looked for a place with problems. I would like to point out that the U.S. Department of the Interior agrees with my view:

> Chronic water supply problems in the West are some of the greatest challenges the United States will be facing in the coming decades. The U.S. Department of the Interior (2003) published a report entitled, Water 2025: Preventing Crises and Conflict in the West, which describes the issues that are driving major conflicts between water users in the West. The specific competing issues described in this report are (1) the explosive population growth in western urban areas, (2) the emerging need for water

[13] Sustainable Water Systems, Aspen Institute.
[14] *Water Reuse,* Page 31 (footnote omitted).

> for environmental and recreational uses, and (3) the national importance of the domestic production of food and fiber from western farms and ranches.[15]

Q. So you chose to locate Global Water in Arizona because it faced water problems?

A. Yes, because we knew that, and we looked into the Commission's authority and realized that if it would only choose to do so, it could solve Arizona's water problem.

Q. How could the Commission do that?

A. By solving the fundamental problem facing water planning:

> An important breakthrough in the evolution of sustainability for water resources was achieved when water reclamation and reuse were introduced as options to satisfy water demand. Water reclamation and reuse are also the most challenging options, technically and economically, because the source of water is normally of the lowest quality.[16]

Note the words: *"Water reclamation and reuse are also the most challenging options, technically and economically"*. What agency in Arizona solves technical and economic challenges that utilities face? The Commission.

C. ICFAs can solve sustainability and industry structure problems in Arizona.

Q. What steps should the Commission take to solve the technical and economic challenge of water reclamation and reuse?

A. **First**, put developers completely out of the business of planning, owning, or influencing water and wastewater companies. Their business is selling houses for profit – I am casting no aspersions on them for that, as I said, I am an entrepreneur and I believe that businesses solve problems. But developers solve the problem of providing houses people want and can afford – they don't solve the problem of long-term water resource planning and management.

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[15] *Id.*, Page 23.
[16] *Id.*, Page 25.

Second, require water reclamation and reuse in every new development.

Third, incent acquisitions and consolidations so that regional scale is achieved – which will enable water reclamation and reuse to be implemented.

Fourth, constantly seek ways to increase the usage of recycled water.

Q. Is Global following that four-step path?

A. Absolutely we are, and the tool we use to achieve that is the ICFA. Here is a point by point explanation:

First, ICFAs allowed Global Parent to move developers out of the water planning business – they don't build any plant for us, they don't design it for us, they don't give us CIAC (which would allow them control over planning and building).

Second, we absolutely require water recycling and reuse from every development – by moving developers to financial neutrality on water recycling and reuse, we were able to effectively emplace our vision throughout their communities. As a result, Arizona now has leading-edge applications that have saved nearly 2 billion gallons of water in one community alone.

Third, we used ICFAs to purchase and consolidate small, poorly run water companies that were in the path of growth. We never, ever sought an acquisition adjustment for any of those transactions – our customers will never pay a penny for that consolidation.

Fourth, as we grew in size and scope we continuously worked with regulators, academia, businesses, developers, and water experts to increase reclamation and reuse. I am proud that we work with the USDA, with Rita Maguire and Mike Pearce, that Phil Briggs (who wrote the rules enacting the 1980 Groundwater Management Act) has worked with Global Water. I am proud of the hundreds of presentations we have given and the 25+ awards we have received. All of that has allowed us to force reclamation and reuse deeper and deeper into the communities we serve and will serve in the future. The Belmont development has been lauded in print and at water resource conferences for its world-leading water reuse plan.

Q. If the Commission rejects Global Water's view of the ICFA, what will happen?

A. Eliminating the ICFA eliminates the best tool in Arizona's arsenal -- one that eliminates obstacles which have thwarted the currents of responsible water policy for decades, such as development at any pace and any cost, a belief that water should be as cheap as possible, and a belief that our reservoirs would never be less than full, and the Colorado River would always run at or above its historic average. Without the ICFA we will be at the mercy of developers, we will not be able to acquire troubled water companies, and we will have to build plant that is focused on near-term demand and not long-term needs.

Q. What should the Commission conclude about ICFAs?

A. That as long as the money is used for acquisitions (with no acquisition adjustment or premium ever passed on to ratepayers), for financing the carrying costs of installation of regional water reclamation and reuse infrastructure, and for offsetting 'used and useful' issues (by never allowing unused plant into rate base for any company that uses ICFAs), they are in the public interest. In addition, the Commission must recognize the real effect of taxes.

Q. How would the Commission gauge the use of ICFA?

A. **First**, the Commission should insist that ICFA utilities prove they used the ICFA in furtherance of those goals, and not as a dividend or earnings boost.

Second, they should apply the following view:

> Two of the main criteria for project evaluation are economic and financial feasibility. Economic feasibility… is a test of whether the total benefits that result with a project exceed those that would accrue without the project by an amount greater than the project cost… [F]inancial analysis is used to determine whether a project can be implemented rather than to measure the net benefits of a project. Expressed in simpler terms, an economic analysis addresses the question, should a project be constructed? A financial analysis addresses the question, can a project be constructed?[17]

In conducting those analyses, the Commission should assess the following issues, all of which are well within the Commission's purview, expertise, and authority:

> Issues related to planning perspectives, time horizons, the time value of money, and inflation and cost indexes are also considered… Costs and benefits are perceived differently depending on particular viewpoints. A common weakness in water reclamation and reuse is to take a singular viewpoint… Another common error is to ignore externalities. An externality can be defined as the impact or effect of an action or decision made by an individual, group, or entity on others (individual, group, or entities) who were not considered in the decision making process.[18]

As the Commission assesses those issues it must consider that:

> Determining the benefits and costs of a project depends on the perspective from which the analysis takes place: utility, ratepayer, or society perspective… When an analysis is done from the perspective of a utility, only the costs and benefits that directly impact the utility are included in the analysis… Analysis from the ratepayer perspective incorporates costs that are passed on to the water user by the utility plus costs or benefits directly experienced by the ratepayer… For the purpose of determining the optimum alternatives considering all project costs and benefits, including external effects, the society perspective is used. For this reason, the society perspective is appropriate for economic analysis.[19]

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[17] *Water Reuse, supra,* Pages 1406 – 1407 (footnote omitted).
[18] *Id.*, Page 1407.
[19] *Id.*, Page 1408.

The Commission is expert in conducting economic, systemic, and financial benefits analysis. I am not familiar with how, or whether the Commission evaluates societal benefits, so I would offer my view that the appropriate test for societal benefits is this:

> The goal of sustainable water resources development and management is to meet water needs reliably and equitably for current and future generations by designing integrated and adaptable systems, optimizing water-use efficiency, and making continuous efforts toward preservation and restoration of natural ecosystems.[20]

Q. Do you have any concluding remarks regarding the ICFAs?

A. Yes. I believe there is no debate that the consolidation of small undercapitalized utilities is a good thing. It is important to emphasize that such consolidation should not take place at the regulated utility level (e.g., Santa Cruz should not be buying other water companies.) Rather, consolidation should take place at the holding company level. Since ICFAs were used as a tool to effectuate consolidation they had to be executed at the holding company (GWR) level. Because of this, revenue generated by the ICFAs is parent-level revenue and thus is taxable. Ignoring the tax liability associated with the ICFA revenues is inappropriate regardless of the regulatory treatment ultimately decided upon for the ICFA revenue.

Global has never contended that ICFAs are non-jurisdictional. Global has always contended that ICFAs are in the public interest and that upon examination the Commission would conclude that as well. Global's position on ICFAs has been consistent: they are a tool that allows for consolidation and that offsets the carrying costs associated with emplacing regionally scaled infrastructure. The ICFA revenue available to use for these purposes is offset by the tax liability generated by those revenues. Also, as Staff points out, parent-level expenses (that are not allocated to the utilities) also offset the ICFA

[20] *Id.*, Page 7.

revenues available. When considering the regulatory treatment of ICFAs all of these issues must be considered.

In summary, the following factors must be considered when determining the regulatory treatment of the ICFA fees:

1. The tax liability generated by the ICFA revenue;
2. Acquisition premiums associated with consolidation;
3. Carrying costs associated with regionally scaled infrastructure; and
4. Parent-level expenses not allocated to the utilities

If it is determined that ICFA revenues exceed the sum of these four categories of offsets than the reminder might reasonably be considered to be CIAC. However, in this case the sum of these offsets actually exceeds the ICFA revenues collected and thus there is no reason to conclude that any of the ICFA revenues should be treated as CIAC.

D. Staff's negative rate base recommendation is extreme and inappropriate.

Q. What is the effect of Staff's decision to create negative rate base for the West Valley utilities?

A. Staff's adjustment takes ICFA revenue that we received and then used to acquire troubled water companies and drives the rate bases of those companies below zero.

I have no idea why Staff does this. Global Parent took that money and bought troubled water companies – for which we paid a premium in spite of their negligible rate bases. We didn't pay that premium because we had no "disincentive" not to, we paid that premium because of how CIAC-based utilities function financially. It's vitally important to understand this issue. When a utility has no rate base, the Commission pays an operating

margin above and beyond operating expenses. This totally incents CIAC-based companies to have high operating expenses (see Mr. Rowell's analysis of Global's performance relative to its peers) so that their operating margin will be quantitatively larger. [If a utility has $400,000 in operating expense and receives a 7% margin it receives $28,000. If that utility reduces operating expense to $300,000 that 7% margin will generate only $21,000.]

Now, when Global seeks to acquire one of these CIAC-based utility companies we deal with the fact that they have no investment (as in West Maricopa Combine, Francisco Grande, and CP Water) yet they generate cash flows. For their owners this is a very nice situation – they put no money in and they get paid a return. But it actually gets worse for Global. Because these utilities are incented to have high operating expenses they have lots of labor, and nearly always the owners and managers hire relatives and friends.

So Global has to pay an amount of money that is sufficient to get the owners to walk away from earning money on developers' investment, and that leads to friends and family being rolled into a big holding company (where, frankly, many of them do not succeed).

It is not in any way accurate to suggest that Global was indifferent to the prices we had to pay. The reality in Arizona is that the CIAC model has created absurd economic situations and wildly enriched many water company owners by allowing them to make money despite having no rate base whatsoever – and to employ their friends and family at the same time!

In spite of that, Global didn't seek any acquisition adjustment related to its purchase, thus those purchases had no effect on rate base whatsoever.

After we bought the companies, we infused $13 million in improvements. We fixed a horrible water quality situation in Willow Valley. We emplaced automated meters in Valencia and Greater Tonopah. We solved water quality and supply issues in Valencia – Greater Buckeye Division by interconnecting the system. We solved a very poorly planned arsenic treatment situation in Valencia – Town Division.

Staff's recommendation is to use money that no party believes we kept – clearly we gave it to the former owners of West Maricopa Combine, and destroy the value of every investment we made thereafter.

Q. If Staff's recommendation is adopted will it have any effect on Global Water's efforts to acquire and consolidate small water companies?

A. We will never do so in Arizona again.

Q. Why is it that extreme?

A. Because these CIAC-based water utilities cannot be bought cheaply. They earn money on money they didn't invest – who would want to sell such a business? They employ their friends and family and increase operating expenses – and they earn money on that as well – who would want to shut down such a business? Because they have no incentive to invest money, they will never have a rate base – thus any purchase price will always be at a 'premium'.

Because when we purchase a utility we usually know we will have to make it into a Total Water Management Company. That takes significant time and money.

Staff's position is that when we acquire these zombie companies we will be punished by not being allowed to recover the investments we make in plant until such time as the rate base becomes positive.

Again, let's be very clear: Global Water didn't seek any acquisition adjustment for any transaction it has ever completed.

We have acquired 15 utilities – and never sought a single penny in acquisition adjustment. Staff ignores that, and uses money that Global Parent spent on an acquisition to destroy all the subsequent plant investments the Global Utilities made. There is no more extreme position than that which Staff advocates – and if adopted, we will cease expansion in Arizona and will be forced to carefully evaluate whether or not to continue operations in Arizona or to seek a pathway out of the Arizona utility sector.

V. Response to specific Staff and RUCO positions.

A. RUCO'S position on ICFAs.

Q. *Can you respond to* RUCO's position that ICFAs should be treated as CIAC going forward from this case?

A. I appreciate that RUCO doesn't support 'after the fact' revisions and accounting treatments. I would ask RUCO to consider that using ICFAs for acquisitions may well be in the public interest, and the use of ICFAs to build regional water reclamation and reuse may well be in the State's interest, and that shielding customers from paying for unused plant is in the ratepayers' interest. I would ask RUCO to consider my arguments and rationale.

I believe the test of whether the ICFA is in the public interest is the benefits of ICFA. Using the ICFA, Global Water has achieved acquisition and consolidation on a scale unseen before in Arizona – despite the Water Task Force report a decade ago which said Arizona needed to encourage consolidation.

Using the ICFA, Global Water has built regional water reclamation infrastructure on a scale unseen before in Arizona – and proven that 40% reductions are possible, and planned a community that will use 60% less water than normal.

Using the ICFA, Global Water built ahead of hyper-growth in Pinal County, and when that growth collapsed, Global Parent was able to shield customers from $32 million in stranded plant.

B. Proposed compromise on ICFAs.

Q. Does Global believe that there is a 'middle ground' position on the ICFAs?

A. I appreciate that Staff and RUCO explicitly consider ICFA revenue to be CIAC on a going-forward basis.

I think we can all agree that long-term, regional planning and regional infrastructure are both desirable and essential. The real question is: how do we achieve it? A mechanism that requires the development community to pay for future growth, that develops and protects water resources, and that shields ratepayers from a used-and-useful impact is needed. In the case of the ICFA, Global Parent finances the installation of regional-scale infrastructure, the fees cover a portion of the carrying costs associated with that financing arrangement, and the ratepayers receive insulation from a used and useful argument, as well as being the beneficiaries of the facilities and water resources planning.

There will be times, however, when the ICFA revenue is not employed in the financing of facilities. In those cases, it is important that a determination on the identity of those funds be made. In the interest of moving towards consensus, I would like the parties to consider the following proposal: That the Commission find that ICFA revenue is CIAC unless the Company can prove it was used to enhance the public interest by engaging in acquisitions; regional planning and build; large-scale conservation; infusion of renewable water supplies into service areas; and reclamation and reuse.

With this definition in hand, the Commission retains its position of being the arbiter of plant finance, and can ensure that the policy goals of integrated water resources infrastructure, regional planning and the long-view of resource management are met.

Q. In what ways could ICFA revenue be used to enhance, or further, the public interest?

A. In order to protect the public from the certainty of increasing water scarcity and increasing water costs, the Commission should:

- Find that ICFA revenues used for acquisitions and consolidations are in the public interest,
- Find that ICFA revenues used to negate utility claims for rate base treatment of unused regional plant are in the public interest,
- Find that ICFA revenues used to purchase CAP water or other renewable water rights are in the public interest,
- Find that ICFA revenues used to acquire Designations of Assured Water Supply (modeling, analysis, exploration etc) are in the public interest,
- Find that ICFA revenues used to expand DSM and BMP programs beyond statutory and regulatory requirements are in the public interest.

Q. Who would bear the burden of proving that the ICFA revenues were used in those ways?

A. The Company.

Q. Who would bear the burden of proving that the ICFA achieved a public interest goal in each of those ways?

A. The Company.

Q. Who would make the final determination on the Company's application?

A. The Commission.

Q. How does Global Parent see the disposition of ICFA revenues in the future?

A. Our philosophy remains the same. Acquire and grow utilities in the path of growth and infuse our Total Water Management program to achieve sustainability. So I see the following:

- Assuming that Staff's recommendation with respect to ICFA revenues in this case is not upheld, we will continue to acquire and consolidate undercapitalized utilities and infuse them to the greatest extent possible with the Total Water Management philosophy.
- Continuing to allocate ICFA revenues to the financing of regional water, wastewater and recycled water infrastructure to achieve our Total Water Management goal as necessary.
- Continuing to build regional plant so we will always confront the used and useful issue at the Global Parent level, thereby insulating the rate-payers from this risk
- Acquiring renewable water supplies. While we are moving away from CAP water as a result of our concern with the Colorado River supply, the EPA rules on NOx (and the

looming rules on coal ash, mercury, and carbon), we may need to incorporate CAP or other renewable water rights acquisition at some future point.

- Implementing dramatic increases in DSM and BMPs will be necessitated by the erosion of CAP water and the increases in CAP costs.
- In cases where plant is directly funded by ICFA revenues, the after-tax, actual plant payments will be considered CIAC.

Q. Has any party indicated support for any of those pathways?

A. RUCO has stated in response to discovery requests that using ICFAs for acquisitions should be considered on a case-by-case basis[21]. And Staff's Direct Testimony included an off-set to their ICFA imputation for unused plant that Global excluded from rate base[22]. But neither party has addressed Global's achievements in water conservation, regional reclamation and reuse, or our efforts in public outreach and education. I would hope that the Commission would consider those elements in reaching its conclusions on Global Water's efforts and accomplishments.

C. Staff's recommendations concerning Public-Private Partnerships.

Q. What is your reaction to Staff's concern about the P3s?

A. Staff recommends that our Public-Private Partnership (P3) fees not be recovered, unless the P3 is approved in a franchise election. Staff's recommendation ignores the benefits of the P3, and that the P3 was approved by the elected representatives of the same voters who would vote in a franchise election. The list in Staff's testimony proves better than any evidence in the case the reasonableness of the P3s and MOUs:

- Each document is different, and

[21] RUCO Response to Global data request 2.2, Nov. 12, 2009.
[22] Direct Testimony of Linda Jaress, Page 14, lines 16-19.

- Each document meets the needs of the municipality or the tribe and demonstrates and commits Global Water to supporting that government.

This is exceptionally rare and should be encouraged – Global Water doesn't provide any funds to Ak-Chin or Buckeye, because funding was not a need for them. Global Water provided funding and coordinated development with Maricopa because the City needed that when its population increased over 500% in five years.

Growing Smarter requires cooperative efforts – and it requires Cities and Towns to look to their growth corridors and take responsibility for long-term planning of those areas. Maricopa, Casa Grande, and Buckeye all have done so, at significant cost.

As I explained on page 25 of my direct testimony, the P3s provide a number of benefits:

- Close cooperation on water conservation measures;
- Mutual exchange of development information, such as building permits, GIS data and water hook-ups;
- Coordination of Regional Planning;
- Coordination of the City's obligation under Arizona's Growing Smarter legislation;
- Emergency services co-ordination via SCADA (fire flow responses etc)
- Expedited processing of certain permits;
- A commitment to meet and discuss issues often; and
- Access to public streets rights of way.

While I understand Staff's desire to have the citizens of Maricopa hold an election to vote on the P3, I would point out that there have been city elections since the P3 and the issue has been raised in countless City Council meetings, it was written about extensively in the

local media, and at no point has the City Council felt the need to either hold an election on the issue, or to seek to rescind our cooperative relationship.

Global Water undertakes significant outreach under the P3s, because it is part of our philosophy, and because it is crucial to achieving our goal of being an environmentally ethical company:

> Environmental ethics plays a significant role in sustainable water resources management by bringing equity into consideration in the context of societal needs and environmental stewardship. Public participation in planning and project development is essential to identify community priorities and concerns, which include not only equity but also growth impacts, cost, and public safety.[23]

Public outreach and communication, which leads to public participation in planning and development, is critical to our core mission. Such cooperation is critical when planning for distributed recycled water systems and regional infrastructure. No longer are we "snapping" our facilities into an existing plan, but we are active participants in the development of the plan.

Cooperation in the earliest stages of planning is essential – and the P3s provide the method for that cooperation. I would add that this wholly comports with Arizona's Growing Smarter laws.

D. Renewable Energy Tariff.

Q. What is your reaction to Staff and RUCO's rejection of Global Water's renewable energy proposal?

A. I am very disappointed by their belief that renewable energy hasn't been proven beneficial and by their concern with whether renewable energy would work. And I do not understand

[23] *Water Reuse, supra,* Page 30.

how Staff and RUCO can be parties to the APS Settlement which, in Section 15.7 says that APS will recover the costs of its RE, transmission, and DSM work through its PSA and then say that the Global Utilities' renewable energy costs shouldn't flow through an adjustor. Citigroup's position on the APS Settlement is:

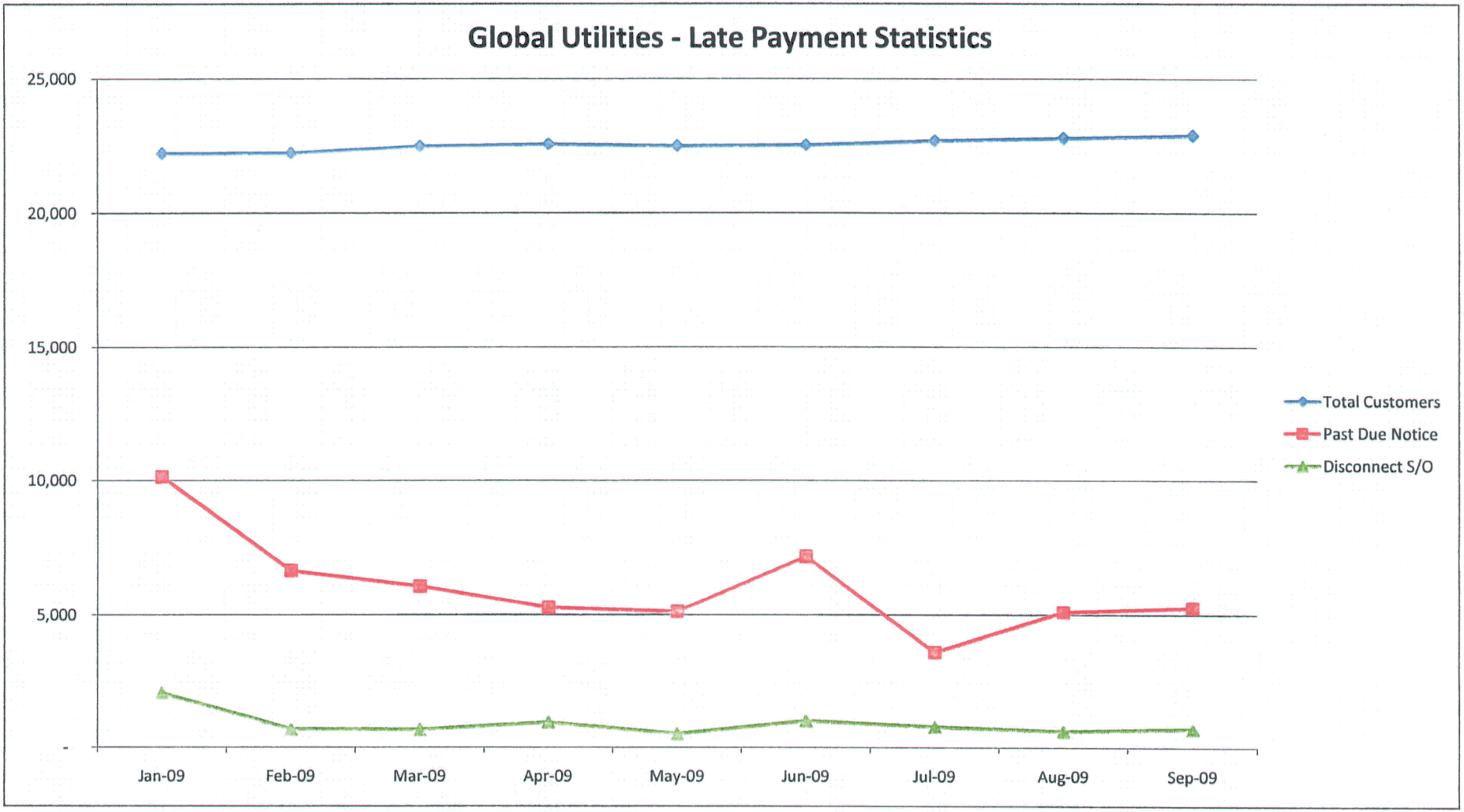
> Under the terms of the settlement, renewable rate treatment is more clarified. Prudently incurred operating costs and costs of capital are explicitly recoverable in the settlement for renewable projects through 1) renewable energy surcharges, 2) the transmission cost adjuster, or 3) the power supply adjuster, as appropriate.[24]

So while APS has numerous adjustors, a 10.5% ROE (which may rise to 11% if the RUCO-Staff Settlement is adopted), and virtual immunity from commodity price fluctuations, it can also look forward to annual pass-throughs of "operating costs **and costs of capital**" for RE, transmission, and DSM efforts. In Global's renewable energy proposal we would true up power expenses to mitigate the looming increases in electric rates that the Global Utilities face. I would have hoped that Staff and RUCO would have at least considered our proposal – because the difference between APS getting cost of capital recovery through adjustors while we cannot simply put plant into rate base is extraordinary.

[24] "Looking Ahead to the ALJ Recommendation", Citigroup Report on PNW, Nov. 12, 2009, Brian Chin, analyst

Hill

Rebuttal Exhibit 1


Global Utilities - Late Payment Statistics
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20,000
15,000
10,000
5,000
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Jan-09
Feb-09
Mar-09
Apr-09
May-09
Jun-09
Jul-09
Aug-09
Sep-09
Total Customers
Past Due Notice
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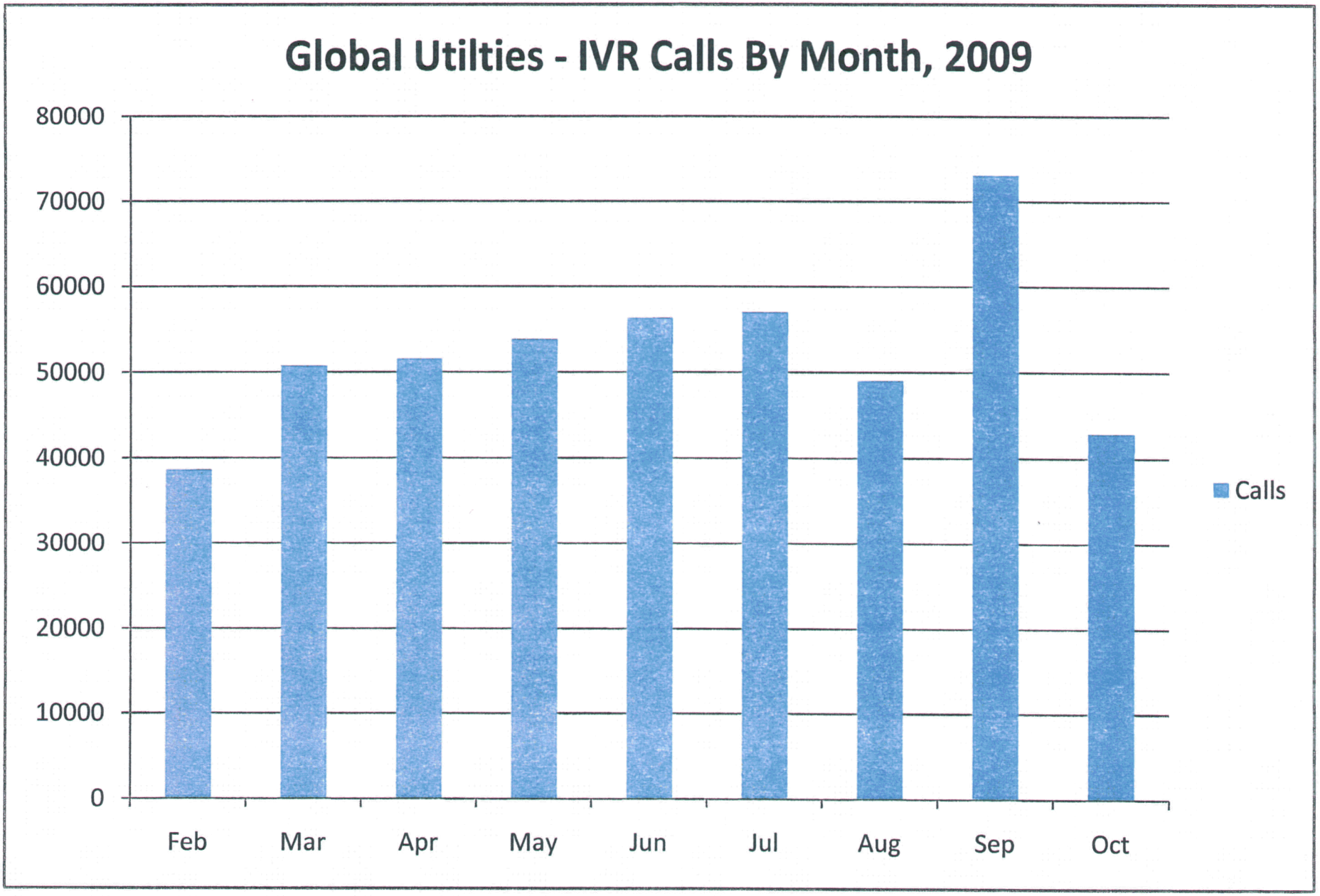
Global Utilties - IVR Calls By Month, 2009
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70000
60000
50000
40000
30000
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Feb
Mar
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Jul
Aug
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Oct
Calls

EXHIBIT A-9

DOCKET NOs. SW-02445A-09-0077 *et al.*

Rejoinder Testimony
of
Trevor T. Hill

December 10, 2009

TABLE OF CONTENTS

I. Introduction

Q. Can you give your overall impressions of the Staff and RUCO surrebuttal testimonies?

A. I am disappointed by Staff's position on ICFAs and RUCO's shift in position. Both positions, in my opinion, neglect the public policy benefits of deploying regional scale infrastructure and using methodologies to do so that insulate the consumer.

Q. What topics will you cover in your rejoinder testimony?

A. First, I wish to speak to some comments on executive salaries that were made at the Public Comment session held in Maricopa. I will clarify for Staff my concepts of Total Water Management. I will speak to what I perceive as obstacles for using AIAC and CIAC to fund this philosophy and I describe how Decision conditions do require facilities to be constructed. I will also describe my interpretation of past Staff deliberations on ICFAs and will demonstrate the uses of ICFA funds.

Q. What other witnesses will be providing testimony?

A. Mr. Rowell will address specific points brought up by Staff with respect to the economic analysis of ICFAs and Staff's adjustments to taxes and rate bases.

Mr. Symmonds will address HOA impacts of recycled water rates, comments made with respect to water quality, and the Hassayampa Recharge Facility.

Q. Are you providing rejoinder on Rate Design at this time?

A. No. We will submit our Rate Design rejoinder testimony on 11 December 2009.

II. Public Comment Session

Q. Can you give your overall impression of the Public Comment session?

A. I believe it is important for the Commission to hold these types of forums. At the session held in Maricopa on 1 December 2009, the Commission heard a lot of frustration – not just with the potential for a rate increase from Global Utilities. Dissatisfaction with the rate increases at Electrical District #3, dissatisfaction with tax rates in the City, and the Global rate increase were all mentioned.

Notwithstanding the level of frustration, I believe that some of the points were incorrectly portrayed, and I will cover those in this testimony. Mr. Symmonds addresses some other comments made at the Public Comment session.

Q. There was a lot of discussion of ED3 at the public comment meeting in Maricopa. Please comment on this issue.

A. I certainly understand our customers' frustration. Electrical District No. 3 (ED3) has implemented four rate increases since the beginning of 2008 to today. They had proposed a fifth rate increase, but that was withdrawn after a huge public outcry.

In contrast, this is our first rate increase for Santa Cruz and Palo Verde since these companies were established in 1999. As a major electric power customer, the Global Utilities are directly impacted by ED3 rate increases, so we share our customers' viewpoint concerning ED3's process of notifying customers of proposed rate increases, and their concerns with the level of review afforded those rate increases. In addition, ED3's support for distributed renewable energy projects is much less than that of APS, a factor that made our solar project at the Global Water Center more difficult.

Q. Would you consider the process for ED3 to raise rates comparable to that of the Global Utilities?

A. No. I understand that the ED3 rate increases were made with little or no public input. In contrast, the Global Utilities have exceeded all Commission requirements for public notice. We established a web site dedicated to the rate case, and established a special email address for questions about the rate case. In the Maricopa region (Santa Cruz and Palo Verde) alone, we conducted 12 public meetings to hear comments from our customers. We also met with 22 community leaders, and had 10 meetings with city council members. I also participated in a videotaped interview with the Mayor of Maricopa about the rate case. The interview has been broadcast on city's cable channel, and a link to the interview is also available on our web site.

Of course, we also complied with the Commission's notice requirements, including publishing notice of the rate case and mailing the notice to our 15,000 connections. We also issued a media advisory and publicized on our web site the Commission's public comment meeting in Maricopa on December 1, 2009.

Q. How has the public comment impacted the Global Utilities' position?

A. We take our customers' views very seriously. As a result, we are proposing additional modifications to our application in response. Mr. Symmonds details additions to the Demand-side Management Program, as well as proposing a five-year phase in for recycled water rates.

Q. Can you respond to the assertion that Global executives receive "million-dollar salaries"?

A. Absolutely. The allegation is without basis. First, my salary and any bonus, and those of the entire senior management team are in large part NOT borne by the utilities. Fully 84%

of executive salaries and 100% of bonuses are excluded from rates and are paid for at the parent level.

Q. Can you breakdown the executive compensation at Global?

A. The compensation that I and my management team received since the inception of Global is as follows:

EXECUTIVE COMPENSATION

Salary		2004	2005	2006	2007	2008
Trevor T. Hill	President and CEO	200,000	220,000	250,000	300,000	330,000
Leo Commandeur	SVP	175,000	192,500	200,000	207,000	214,245
Gregory Barber	SVP and CFO	0	0	0	0	88,462
Cindy M. Liles	SVP and COO	125,000	134,375	147,813	166,289	191,233
Graham S. Symmonds	SVP and CTO	125,000	134,375	147,813	166,289	191,233

Note: 2008 excludes Common Stock Award to Ms. Liles valued at $375,000 at the time of issuance.
Greg Barber was employed by the company from July 2008 to July 2009.

Bonus		2004	2005	2006	2007	2008
Trevor T. Hill	President and CEO	50,000	55,000	100,000	150,000	0
Leo Commandeur	SVP	35,000	40,000	50,000	60,000	0
Gregory Barber	SVP and CFO	0	0	0	0	0
Cindy M. Liles	SVP and COO	25,000	33,594	36,953	45,000	0
Graham S. Symmonds	SVP and CTO	25,000	33,594	36,953	45,000	0

401(k) Company Match		2004	2005	2006	2007	2008
Trevor T. Hill	President and CEO	5,000	6,997	7,500	7,750	6500
Leo Commandeur	SVP	4,375	7,000	7,500	7,750	6427
Gregory Barber	SVP and CFO	0	0	0	0	0
Cindy M. Liles	SVP and COO	4,424	5,034	5,543	6,339	6500
Graham S. Symmonds	SVP and CTO	2,558	4,195	5,543	6,339	5737

Total Compensation		2004	2005	2006	2007	2008
Trevor T. Hill	President and CEO	255,000	281,997	357,500	457,750	336,500
Leo Commandeur	SVP	214,375	239,500	257,500	274,750	220,672
Gregory Barber	SVP and CFO	-	-	-	-	88,462
Cindy M. Liles	SVP and COO	154,424	173,003	190,309	217,628	197,733
Graham S. Symmonds	SVP and CTO	152,558	172,164	190,309	217,628	196,970

Note: Last pay increase and bonus paid was 12/31/07

As you can see, the base salaries paid to the entire management team in 2008 was $1,015,353. The total bonuses paid to the entire management team in 2008 was $0. The total 401(k) company match provided to the entire management team in 2008 was $25,164. Thus, the total compensation paid to the entire management team in 2008 was $1,040,517, far less than the inflammatory remarks made at that the public comment session.

Furthermore, because we have allocated only 16% of base salary in the Test Year to the utilities (bonuses and 401(k) matching are not included in this allocation), the total amounts included in the rate case for all systems was $ 162,428.

Q. How about tax distributions?

A. As a Limited Liability Company (LLC), Global Water Resources tax liability flows through to the members of that LLC. Tax distributions are made to the members to provide directly to the Internal Revenue Service. I appreciate that many people do not understand this requirement of an LLC, and therefore incorrectly attribute the tax distribution as normal income. This is not the case. Those tax distributions went directly to the federal and state governments.

The total tax distributions made were as follows:

Tax Distributions on Div income earned in year		2004	2005	2006	2007	2008	Total
Trevor T. Hill	President and CEO	403,230	584,708	1,757,532	2,268,658	575,880	5,600,008
Leo Commandeur	SVP	201,728	292,355	1,115,833	943,316	287,940	2,841,171
Gregory Barber	SVP and CFO	-	-	-	-	-	-
Cindy M. Liles	SVP and COO	-	35,700	128,084	142,983	37,087	343,853
Graham S. Symmonds	SVP and CTO	-	59,500	213,473	238,304	61,811	573,088
Others		1,648,983	2,755,845	5,973,694	5,719,972	1,509,720	17,608,215
Total		2,253,941	3,728,108	9,198,616	9,313,233	2,472,438	26,966,336

III. Total Water Management

Q. Ms Jaress has trouble defining Total Water Management (Surrebuttal Testimony of Linda Jaress, Pg 3, Line 5). Can you provide one?

A. I'd like to take credit for the concept of Total Water Management (TWM) – and to be sure there are facets of TWM I believe that Global has developed more soundly or provided more structure for. Nonetheless, TWM is not a Global Water program. Rather it represents the philosophy of stewardship – managing our water resources throughout the water cycle. Maximizing water conservation, minimizing the environmental impacts, and

balancing the social, economic and environmental tensions that naturally occur in discussion of water resources management.

Dr. Neil Grigg defines Total Water Management in his 2008 book "Total Water Management: Practices for a Sustainable Future" thusly:

> TWM is not a new and secret weapon. It is a new way of using tried-and true methods to create a framework for principles and practices of sustainable water resources management. In explaining it, a working group of water utility officials defined TWM as the "exercise of stewardship of water resources for the greatest good of society and the environment" (AwwaRF, 1996).[1]

More importantly, Dr. Grigg calls on leadership to implement the vision of TWM:

> At the end of the day, TWM is about leadership. Given this, the question of "Whose point of view?" becomes critical. Are we focused on a utility serving its customers or on the needs of the broader society? The answer is, we focus on both. This is clear from the definition of TWM: "stewardship of water resources for the greatest good of society and the environment."
>
> Can TWM serve both the environment and society? Is what's good for General Motors also good for America? It will have to be. TWM requires participation of utilities, business, and government. [B]usiness and utilities are pulled in different directions but in different ways. One way is to make a profit or be a successful enterprise. The other is to reach out to handle social responsibilities.
>
> TWM is clearly in society's best interests, but what are the incentives for utilities to embrace it? This fundamental issue creates a clash of culture that is captured by the

[1] Grigg, Neil. Total Water Management: Practices for a Sustainable Future. 2008 American Water Works Association. Page 2

phrase "it's not my problem." TWM requires that incentives be created. Otherwise, TWM will be just a visionary concept with little practical value. The key is to move past vision and on to action.[2]

The definition of Total Water Management could not be more succinctly summarized: "stewardship of water resources for the greatest good of society and the environment." In Global, we include the concept of using the "right water for the right use". This means not using highly treated potable water for uses where non-potable water would suffice.

Peter Gleick of the Pacific Institute, a world leading scientist and water advocate, has written and spoken on water issues for a decade. In a 2007 interview on NPR, he stated:

> [I]in the20th century we built this water system and it brings incredibly high quality potable water to our homes, and we use it to drink and to flush our toilets and to water our lawns. It's a crazy use of a wonderful resource. And so one of the things that people are thinking about in the coming years is ways of using nonpotable water for nonpotable purposes.
>
> In new homes, for example, increasingly we're seeing homes that are what are called dual-plumbed. They have two sets of pipes. One brings high quality potable water to our faucets, and the other brings fairly high quality but not necessarily potable water, sometimes treated waste water, to flush our toilets and to use on our lawns, where we don't need potable water. It's expensive to do in homes that are already plumbed, but it's not as expensive to do in new developments where we have access to two different sources of water.

[2] Ibid. Page 5.

We're going to see more and more of that. We're going to see more and more use of treated waste water on golf courses, for industrial uses that don't require potable drinking water. I think figuring out how to match the quality of the water that we have with the quality of water and the different uses that we need is part of this new thinking for the 21st century.[3]

The world is awakening to the new water resources reality. Public policy, business, the environment and the public must adapt to meet these new challenges. The Aspen Institute recently laid out the framework in detail:

> The water management and policy community must redefine "water infrastructure" as one that integrates built infrastructure components with the protection and restoration of its supporting natural watershed infrastructure and the use of emerging small-scale water technologies and water management solutions.
>
> Federal, state and local officials should adopt watershed-oriented policies and regulations that incorporate the principles of the Sustainable Path into funding decisions. Resource management entities and water utilities should adopt the Sustainable Path principles in their operations and administration.
>
> Federal, state and local governments and other entities should find ways to remove or modify institutional barriers and practices that impede or prevent sustainable water resource management according to the principles of the Sustainable Path, and should actively address all sources of pollution, degradation and depletion on a watershed basis.[4]

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[3] WHYY Fresh Air Interview, National Public Radio, 27 November 2007.

[4] Partial list of recommendations from Bolger, R., D.Monsma, R. Nelson. Sustainable Water Systems: Step One - Redefining the Nation's Infrastructure Challenge. A report of the Aspen Institute's Dialogue on Sustainable Water Infrastructure in the U.S. May, 2009.

I agree with Ms. Jaress that TWM represents an "ambitious"[5] endeavor. Ms. Jaress quotes Mr. Eisner: "When you are trying to create things that are new, you have to be prepared to be on the edge of risk." I appreciate and accept that philosophy. I would challenge the Commission, however, that when you are faced with the certainty of an outcome, such as water scarcity, and you choose to ignore solutions, you have to be prepared to be on the edge of calamity. Total Water Management is a solution. A new operating paradigm for an industry mired in the past, and unfit for the future. A means of achieving sustainability while not sacrificing our resources, our environment or our way of life.

It is no good waiting until Lake Mead is empty to implement a new water paradigm in the southwest.

IV. Staff and RUCO's position on ICFAs

Q. Staff and RUCO rely on the staff report completed for the generic docket W-00000C-06-0149 as the basis for treating ICFAs as contributions. How do you read this staff report?

A. I believe there are a number of elements to consider before establishing that ICFAs must be Contributions[6]:

1. Staff clearly identified the need to provide regional solutions for water and wastewater:

> "Staff encourages the development of policies that will facilitate either regulated or non-regulated entities to seek regional solutions to Arizona's water and wastewater infrastructure development."

[5] Surrebuttal Testimony of Linda Jaress, 7 December 2009, Page 3 Line 15.
[6] Outlined in Staff Report in Docket W-00000C-06-0149

2. Staff clearly understands that ICFAs have potential benefits:

> "Staff concludes that IFCA type arrangements can provide appropriate long-term solutions which promote conservation of water supplies and efficient wastewater utilization."

3. Staff indicates that if ICFA revenue is contributed to the regulated entity, it's classification should be on a case-by-case basis:

> "If such costs are incurred at the parent level and subsequently contributed to the regulated utility, the cost of such contributed capital should be determined on a case by case basis."

From these criteria, and in Global's own belief, ICFA revenues that directly fund plant would and should be considered CIAC. This was made clear in our rebuttal testimony.

Where ICFA revenues are employed to finance the carrying costs of regional infrastructure (beyond that required by the development for which ICFA fees are received), or where ICFA revenues are used for acquisitions to effect consolidation, or where ICFA revenues shield rate-payers from costs not allocated to the utilities, then those fees should not be considered as "contributed to the regulated entity".

Q. Ms. Jaress indicates that "AIAC and CIAC could also be used to finance the program [Total Water Management] in place of ICFA fees."[7] Would you agree?

A. No. In fact I am convinced that the Commission's own rules prevent utilities from requiring developers to fund the deployment of the infrastructure associated with achieving the Total Water Management goals. The Main Extension Agreement rules (AAC R14-2-406) have been developed to ensure that developers pay for new growth, and only that.

[7] Surrebuttal Testimony of Linda Jaress, 7 December 2009, Page 3 Line 18.

AAC R14-2-406.B.2 states in part "If the extension is to include oversizing of facilities to be done at the utility's expense, appropriate details shall be set forth in the plans, specifications and cost estimates" (emphasis added). To me this indicates that developers cannot be responsible for providing regionally scaled facilities. I hesitate to use the word "oversizing" in my description of what is required. What we need is "right-sizing".

Further, AAC R14-2-406.B.1 states that refundable advances are applicable to facilties that are "required to provide pressure, storage or water supply, exclusively for the new service or services requested" (emphasis added). Again we are apparently limited to facilities that serve specific development interests – not facilities that serve the regional water management goals.

I believe that Ms. Jaress presents a simplistic view of the development world. Development decisions are made on economics – right or wrong, that is reality. If I charge more to achieve Total Water Management, and there is no State mandate to conserve, what economic driver is there for a developer to make that decision? None. Developers, as I have said in my prior testimony in this case, are not water stewards. That is the Utilities' job – and by extension, that is the Commission's charge.

Ironically, rules that were developed to ensure that growth pays for growth, have, in my opinion, resulted in just that. That growth pays ONLY for growth – and nothing for the future.

Q. Both RUCO and Staff have contrary positions to Global on CIAC. Have you changed your position?

A. No. As a business person, I see the pitfalls of CIAC on the financial health of many utilities. As an engineer, I see the impact of reliance on CIAC on the reliability,

operational availability and maintainability of those utilities. I stand by my comments in prior testimony.

Q. As a result of Staff's position on ICFAs, Ms Jaress states that "considerable additional investment in plant will need to be made"[8] in Greater Tonopah. Do you agree?

A. Yes, Ms. Jaress and I are in complete agreement that if Staff's proposal is upheld, Greater Tonopah will be in very bad shape.

Q. Ms. Jaress believes that Global was "paid" for the acquisition of Greater Tonopah, and therefore should be willing to invest in the utility. What are your thoughts?

A. To be honest I am completely flabbergasted. We were approached to provide service in the West Valley by several large developers. Knowing that the area was critically water short, it was obvious that the cobbled together nature of the water utilities in the region could not meet the needs of the community. The area demanded integrated utility service and a full-scale deployment of Total Water Management. West Maricopa Combine (WMC) stood in the way.

With the assistance of the developers, we structured a deal whereby a portion of their ICFA funds went directly to the acquisition of the WMC utilities. We negotiated with WMC owners and came to terms on the acquisition. We paid them contemporaneously with receiving ICFA funds, took over the utilities and set them on the path of sustainable water management. At no time did we seek an acquisition adjustment for these utilities – despite the fact they had little or no rate base.

[8] Surrebuttal Testimony of Linda Jaress, 7 December 2009, Page 9 Line 8.

Now Staff is saying, the ICFA funds that Global paid to WMC should have been retained in the utilities and therefore we are wiping out your rate base. But this is a clear case for the benefits of ICFAs. Those funds went to the former owners of WMC. The utilities are in much better shape than they have ever been, they are poised to respond to the growth once it returns – except for one thing: Staff has eliminated any incentive to invest with their draconian recommendation for a negative rate base.

In retrospect, perhaps we should have explicitly asked for an acquisition adjustment and had that removed by Staff's action on the ICFAs. The utilities would have fared better.

V. Staff's position on CC&N Conditions

Q. Ms. Jaress says that the ACC does not order utilities to construct plant.[9] Would you agree?

A. I wish that were the case. Specific construction conditions compromise regional planning. Nonetheless, she is incorrect. By saying that "the Commission is not ordering the utility to construct certain plant, but is ordering the company to file a document [Approval of Construction] that corroborates the need for service"[10] she believes that this is a paper exercise. The reality is that I cannot get an "approval of construction" without actually constructing that facility.

In order to receive an Approval of Construction, Global is required to submit an Engineer's Certificate of Completion. This document certifies that construction is complete in accordance with the approved plans, that all testing has been completed and requires that As-Built drawings be submitted. That sounds like completion of a construction project to me, and not a corroboration of the need.

[9] Surrebuttal Testimony of Linda Jaress, 7 December 2009, Page 10 Line 25.
[10] Surrebuttal Testimony of Linda Jaress, 7 December 2009, Page 11 Lines 2-3.

Q. Isn't she saying that you could simply request an extension?

A. Staff provides many mixed messages in this regard. On many occasions, Staff's reports for extensions state that asking for an extension demonstrates a lack of necessity, and therefore should not be granted. This is true even when accompanied by reaffirmed requests for service from the landowners. Further, when Staff recommends approval of an extension, they caveat their reports by saying "that no further extensions will be accepted". So no, we cannot simply request an extension.

And when the utility determines a specific condition is not the most efficient pathway to sustainability, we are required to undergo an application under ARS 40-252 to change the decision. If, as Ms. Jaress asserts, Staff is seeking "corroboration of the need for service", why should the infrastructure details matter? The fact is that they do to Staff, and they want infrastructure constructed and installed exactly in accordance with Decisions. Deviations are not allowed.

Q. Then why not opt for Orders Preliminary?

A. They are no different – specific task must be completed by specific times. In fact they are worse because at any time the Commission may void an Order Preliminary. From a business perspective, that sort of regulatory uncertainty precludes investment.

VI. <u>Uses for ICFA Funds</u>

Q. Can you describe the use of ICFA funds?

A. At the risk of being repetitive, we use ICFAs in the following ways:

1. We recognize them as revenue at Global Parent and pay tax on them.
2. We use the funds to acquire other utilities.
3. We finance regional plant – that plant that is above and beyond what is required for specific developments, and result in water conservation and efficiency.

Q. How much was received by year?

A. As detailed in my Direct Testimony, Global Parent has received the following funds related to ICFAs:

In 2004, Global Parent received $4,998,566

In 2005, Global Parent received $20,543,310

In 2006, Global Parent received $25,939,677

In 2007, Global Parent received $4,656,470

In 2008, Global Parent received $3,946,100

In 2009, Global Parent does not expect to collect any ICFA fees.

Q. Can you detail the Tax impact?

A. Mr. Rowell provides a detailed assessment on why taxes are incurred in his rejoinder testimony. From my perspective, our third party auditors (Deloitte) say they are taxable and so I comply with that determination.

As a result Global Parent has paid $24,057,683 in taxes on the ICFA funds received.

Q. How much of those ICFA revenues did Global Parent use for acquisitions and consolidation of utilities?

A. From 2004 through year-end 2008 we spent $83,080,153 for acquisitions and consolidations, but $33,762,427 of that total reflects our ownership group's initial acquisition of Palo Verde and Santa Cruz. Of the remaining $49,317,726 spent on acquisitions, $5,445,924 was for the acquisitions of Cave Creek Water Company and its affiliate Pacer Equities – that acquisition also did not involve ICFAs. Thus our ICFA-related acquisitions costs are $43,871,802; this is money that has been paid out and does not include any future obligations.

Q. Global has explained its view that ICFA funds offset the 'premium' paid for utilities, but has Global provided documentation that it has actually used ICFA funds for acquisitions?

A. We have, but I don't think we have explicitly taken the parties through the evidence to provide the clarity they needed. So let me make it clear here:

- Hill Exhibit 1 shows Audited Financial Statements for 2008, Page 19, Deloitte found that $6.2 million of ICFA funds were used to finance the first payment for the acquisition of West Maricopa Combine, Inc. (WMC)
- Hill Exhibit 2, Wells Fargo Treasury Information Reporting for July 11, 2006, show the following activity:
  - Incoming Wire $4,957,650.00 received from ICFA party Sierra Negra Ranch, LLC
  - Incoming Wire $2,156,250.00 received from ICFA party New World Properties, Inc.
  - Outgoing Wire $18,385,170.77 paid to WMC Owners for the first payment towards the acquisition of WMC.

Q. Global has also explained its view that ICFA funds offset the 'carrying costs' of regionally-sized infrastructure, but has Global provided documentation that it has actually incurred those costs?

A. Yes, and we have specifically shown that the Southwest Plant (which Staff excludes from all rate bases, forever) has actually already caused carrying costs. Because we have excluded this plant from rate base it is contributing nothing. And since it is clear that the Global Parent is responsible for all payments on this (and all IDA bonds), it is evident that Global Parent is thus foregoing revenue on this plant yet is still obliged to pay the debt obligations.

Global employs Industrial Development Authority (IDA) bonds as a means of providing low-cost debt financing for facilities. We presently have a total of $115,180,000 of IDA debt at the parent level that has, for the purposes of rate making, been imputed to the regulated utilities. The total amount of plant constructed in the Southwest is $32,391,318. Of this, we have debt financed through Industrial Development Authority bonds $26,810,477, or 23.3% of the total IDA bond debt is allocated to the Southwest facilities. I have attached Hill Exhibit 3 which shows bond payments from Global Parent from 2006 through 2009.

Q. What evidence shows that the Southwest Plant has carrying costs?

A. Without disavowing in any way Mr. Rowell's explanation of carrying costs – in which he uses our weighted average cost of capital, we have also shown in the evidence that the Southwest Plant was largely financed with IDA debt, that Global Parent is solely responsible for paying the principal and interest on those bonds, that Global Parent has made $13.6 million (see Hill Exhibit 4) in such payments specifically related to the Southwest Plant, and that Global Parent will continue to pay $2 million per year on these specific facilities for at least five[11] more years before we can begin any rate recovery for those assets[12].

I have included the payment schedules for the IDA bonds as Hill Exhibit 5.

[11] Years: 2010, 2011, 2012, 2013, 2014

[12] These assessments include the assumption that the next rate proceeding concludes in 2015 and that the SW facilities remain eligible for rate base – which is contrary to Staff's current position. If rate proceedings or rate base treatment are precluded, then the carrying costs continue to increase beyond that shown in the exhibits. In addition, we have assumed that no carrying costs are incurred prior to the assumption of the financing by the debt. In reality this is not true, and would increase the total carrying costs.

Q. That looks at the debt portion only. Would the numbers change if you considered the true Weighted Average Cost of Capital (WACC)?

A. Yes. If we consider the various WACC rates proposed by the parties in this application, the carrying costs increase to between 20.8 million dollars to 21.8 million dollars (see Hill Exhibit 6). Again we are assuming that no carrying costs were incurred prior to 2007 and that the carrying costs end at 2014.

Q. Can you summarize the uses of ICFA funds?

A. Yes. The following table spells out the use of ICFA funds since Global's inception:

ICFA Analysis	2004	2005	2006	2007	2008	Total
ICFA Fees Received	4,998,566	20,543,309	25,939,677	4,656,470	3,946,100	60,084,122
Less tax	(2,001,426)	(8,225,541)	(10,386,246)	(1,864,451)	(1,580,018)	(24,057,683)
Less acquisitions		-	(18,500,000)	(5,000,000)	(20,371,802)	(43,871,802)
Less carrying cost on Southwest Plant			-	(453,566)	(1,380,537)	(1,834,103)
						-
Net ICFA Money Received	2,997,140	12,317,768	(2,946,570)	(2,661,546)	(19,386,257)	(9,679,465)

Hill

Rejoinder Testimony

Exhibit 1

expected to occur in 2009. The ICFA fees prepaid by CHI will be reimbursed by way of reducing the ICFA fee of $750 per lot for lots 2,001 through 8,400. The total purchase price of the CP and FG shares has been allocated to the respective service areas acquired, which are considered to be indefinite life intangible assets. Legends Ranch was sold in 2008 and the buyer has assumed CHI's rights and obligations under the agreements.

WMC — On July 11, 2006, GWI purchased the total issued and outstanding shares of WMC in order to obtain utilities and service areas in the western portion of Maricopa County, Arizona. **The purchase price consisted of an initial payment of $18.5 million, of which $6.2 million was funded by the prepayment of ICFA fees by developers seeking service from Greater Tonopah and Hassayampa**, and additional noninterest-bearing purchase consideration totaling $41.5 million with the first payment due and paid July 11, 2007, in the amount of $5 million. The balance due is payable in the form of future growth premiums beginning on March 31, 2008, and payable on March 31 of each year thereafter through 2012, in an amount equal to $3,000 for each new meter connected during the previous calendar year, except for the payment due in 2008, which was based on the meters installed from July 12, 2006 through December 31, 2007, until the date on which the cumulative growth premium equals $36,500,000. The future purchase consideration was recorded at its fair value of $30,976,000, based on an imputed interest rate of 8.5% based on our weighted-average cost of capital and the minimum payment amounts set forth above, resulting in a total purchase price of $46,672,081, net of $2,803,919 cash acquired.

The total purchase price of WMC was allocated among tangible assets, identifiable intangible assets, goodwill, and assumable liabilities at their fair value as at the acquisition date of July 11, 2006, as follows:

Utility plant in service	$ 18,002,601
Current assets (including cash of $2,803,919)	3,609,377
Goodwill (not deductible for tax purposes)	45,809,111
Intangible asset — Hassayampa recharge permits	6,435,531
Current liabilities	(1,003,533)
Deferred tax liability	(3,225,968)
Advances in aid of construction	(17,612,715)
Contributions in aid of construction	(846,202)
Assumed debt	(1,692,202)
Net assets acquired	$ 49,476,000

In March 2008, pursuant to the terms of the original Stock Purchase Agreement (the "Agreement"), we asserted an indemnification claim against the selling shareholders of WMC. The indemnification claim asserted over $20,000,000 in estimated losses arising out of what we believed were materially inaccurate shareholder representations and warranties contained in the Agreement relating to contract terms, status of title on all real property, status of permitting, compliance with applicable law and business practice among other things. We reached a settlement agreement on June 16, 2008, with the former owners of WMC to recover our lost profit through reduction of the growth premiums owed over the next five years. Terms of the settlement included amending the purchase price of the WMC properties to be $54,000,000. All original terms remain the same except the value of the total growth premium is agreed to be $30,500,000 payable as follows:

- March 31, 2008 — $5,750,000 (paid as agreed in settlement)
- On or before March 31, 2009 — $5,000,000
- On or before March 31, 2010 — $5,000,000
- On or before March 31, 2011 — $4,750,000

Hill
Rejoinder Testimony
Exhibit 2

Currency: USD
Bank: 121000248
Account: 4050004589(AZ)

WELLS FARGO BANK, N.A.
GLOBAL WATER MANAGEMENT LLC

Balances

Closing Ledger Balance	6,531.33
Closing Collected Balance	6,531.33
Opening Available Balance	6,531.33
One Day Float	.00
Two+ Day Float	.00
MTD Average Closing Ledger Balance	8,268.26
MTD Average Closing Collected Balance	8,268.26
Total Credits	6,531.33
Total Debits	11,248.37
Total Number Credits	2
Total Number Debits	1

Summaries

Type of Credit	Number of Items	Amount
Total ACH Credits	2	6,531.33
Credit Totals	**2**	**6,531.33**

Type of Debit	Number of Items	Amount
Total Wire Transfer Debits	1	11,248.37
Debit Totals	**1**	**11,248.37**

Credit Transactions

7/11/2006	169 / MISCELLANEOUS ACH CREDIT **Cust Ref:** 00005160000 07/11BANKCARD DEPOSIT -0227950516	**Credit Amount:** **Bank Ref:** IA009981754794	5,953.26
7/11/2006	169 / MISCELLANEOUS ACH CREDIT **Cust Ref:** 05020581666 AMERICAN EXPRESS SETTLEMENT 060711 5020581666 GLOBAL WATER5020581666	**Credit Amount:** **Bank Ref:** IA000026527315	578.07
	MISCELLANEOUS ACH CREDIT Total	**Credit Amount**	**6,531.33**
	Credit Total	**Credit Amount**	**6,531.33**

Debit Transactions

7/11/2006	506 / BOOK TRANSFER DEBIT **Cust Ref:** 00000000000 WT SEQ#46517 GLOBAL WATER RESOURCES /BNF= SRF# IN06071111293751 TRN#060711046517 RFB# 000000664	**Debit Amount:** **Bank Ref:** IA009933516924	11,248.37
	Account Net Amount		**-4,717.04**

Currency: USD
Bank: 121000248
Account: 4100066307(AZ)

WELLS FARGO BANK, N.A.
Operating Account

Balances

Closing Ledger Balance	639.41
Closing Collected Balance	639.41
Opening Available Balance	639.41
One Day Float	.00
Two+ Day Float	.00
MTD Average Closing Ledger Balance	-11,797.75
MTD Average Closing Collected Balance	-11,797.75
Total Credits	20,668.87
Total Debits	20,668.87
Total Number Credits	1
Total Number Debits	1

Summaries

Type of Credit	Number of Items	Amount
Total Wire Transfer Credits	1	20,668.87
Credit Totals	**1**	**20,668.87**

Type of Debit	Number of Items	Amount
Total Controlled Disbursement Debits	1	20,668.87
Debit Totals	**1**	**20,668.87**

Credit Transactions

7/11/2006	206 / BOOK TRANSFER CREDIT	**Credit Amount:**	20,668.87
	Cust Ref: 00000000000	**Bank Ref:** IA009933517073	
	WT SEQ#46576 GLOBAL WATER RESOURCES /ORG=GLOBAL WATER RESOURCES LLC SRF# IN06071111301674 TRN#060711046576 RFB# 000000665		

Debit Transactions

7/11/2006	581 / CONTROLLED DISBURSEMENT DEBIT	**Debit Amount:**	20,668.87
	Cust Ref: 09600056231	**Bank Ref:** IA009988884770	
	CONTROLLED DISBURSEMENT VAN WERT FUNDING TO 000009600056231		
	Account Net Amount		**0.00**

Currency: USD
Bank: 121000248
Account: 4100070663(AZ)

WELLS FARGO BANK, N.A.
Main Account

Balances

Closing Ledger Balance	183,161.24
Closing Collected Balance	10,163.24
Opening Available Balance	165,851.24
One Day Float	155,688.00
Two+ Day Float	17,310.00
MTD Average Closing Ledger Balance	501,597.64
MTD Average Closing Collected Balance	9,544.55
Total Credits	25,590,826.38
Total Debits	25,575,647.35
Total Number Credits	10
Total Number Debits	4

Summaries

Type of Credit	Number of Items	Amount
Total Commercial Loan Credits	1	18,385,170.77
Total Deposits	4	2,399.03
Total Lockbox Credits	2	78,108.21
Total Wire Transfer Credits	3	7,125,148.37
Credit Totals	**10**	**25,590,826.38**

Type of Debit	Number of Items	Amount
Total Commercial Loan Debits	1	7,113,900.00
Total Miscellaneous Debits	1	55,907.71
Total Wire Transfer Debits	2	18,405,839.64
Debit Totals	**4**	**25,575,647.35**

Credit Transactions

7/11/2006	171 / INDIVIDUAL LOAN DEPOSIT	**Credit Amount:**	18,385,170.77
	Cust Ref: 00000000000	**Bank Ref:** IA009915223556	
	LOAN ADVANCE CUSTOMER# 7041026919 OBLIGATION# 0000000034		
7/11/2006	115 / LOCKBOX DEPOSIT	**Credit Amount:**	70,744.55
	Cust Ref: 00000052747	**Bank Ref:** IA000732399887	
	Float-Zero Day: 9,993.00 **One Day:** 54,857.00 **Two+ Day:** 5,894.00		
	RETAIL LOCKBOX DEPOSIT		

7/11/2006	115 / LOCKBOX DEPOSIT **Cust Ref:** 00000052747 **Bank Ref:** IA000732400247 **Float-Zero Day:** 1.00 **One Day:** 1,801.00 **Two+ Day:** 5,561.00 RETAIL LOCKBOX DEPOSIT	**Credit Amount:**	7,363.66
	LOCKBOX DEPOSIT Total **Float-Zero Day:** 9,994.00 **One Day:** 56,658.00 **Two+ Day:** 11,455.00	**Credit Amount**	**78,108.21**
7/11/2006	301 / COMMERCIAL DEPOSIT **Cust Ref:** 00000000000 **Bank Ref:** IA000284802311 **Float-Zero Day:** .00 **One Day:** 689.00 **Two+ Day:** 150.00 DESKTOP CHECK DEPOSIT	**Credit Amount:**	839.45
7/11/2006	301 / COMMERCIAL DEPOSIT **Cust Ref:** 00000000000 **Bank Ref:** IA000284806325 **Float-Zero Day:** .00 **One Day:** .00 **Two+ Day:** 742.00 DESKTOP CHECK DEPOSIT	**Credit Amount:**	742.15
7/11/2006	301 / COMMERCIAL DEPOSIT **Cust Ref:** 00000000000 **Bank Ref:** IA000284802726 **Float-Zero Day:** 63.00 **One Day:** 509.00 **Two+ Day:** .00 DESKTOP CHECK DEPOSIT	**Credit Amount:**	572.66
7/11/2006	301 / COMMERCIAL DEPOSIT **Cust Ref:** 00000000000 **Bank Ref:** IA000284805900 **Float-Zero Day:** 103.00 **One Day:** 100.00 **Two+ Day:** 41.00 DESKTOP CHECK DEPOSIT	**Credit Amount:**	244.77
	COMMERCIAL DEPOSIT Total **Float-Zero Day:** 166.00 **One Day:** 1,298.00 **Two+ Day:** 933.00	**Credit Amount**	**2,399.03**
7/11/2006	195 / INCOMING MONEY TRANSFER **Cust Ref:** 00000000000 **Bank Ref:** IA009933564450 WT FED#02347 FIRST AMERICAN TRU /ORG=FIRST AMERICAN TITLE INSURANCE COMP SRF# 0382800192IG TRN#060711068491 RFB# 402-4720441	**Credit Amount:**	4,957,650.00
7/11/2006	195 / INCOMING MONEY TRANSFER **Cust Ref:** 00000000000 **Bank Ref:** IA009933564476 WT FED#02352 FIRST AMERICAN TRU /ORG=FIRST AMERICAN TITLE INSURANCE COMP SRF# 0383300192IG TRN#060711068509 RFB# 402-4720482	**Credit Amount:**	2,156,250.00
	INCOMING MONEY TRANSFER Total	**Credit Amount**	**7,113,900.00**
7/11/2006	206 / BOOK TRANSFER CREDIT **Cust Ref:** 00000000000 **Bank Ref:** IA009933516925 WT SEQ#46517 GLOBAL WATER MANAGEMENT /ORG=GLOBAL WATER RESOURCES LLC SRF# IN06071111293751 TRN#060711046517 RFB# 000000664	**Credit Amount:**	11,248.37
	Credit Total **Float-Zero Day:** 25,520,478.00 **One Day:** 57,956.00 **Two+ Day:** 12,388.00	**Credit Amount**	**25,590,826.38**

Debit Transactions

7/11/2006	481 / LOAN PAYMENT **Cust Ref:** 00000000000 **Bank Ref:** IA009915223555 PRINCIPAL PAYMENT CUSTOMER# 7041026919 OBLIGATION# 0000000034	**Debit Amount:**	7,113,900.00
7/11/2006	501 / AUTOMATIC TRANSFER DEBIT **Cust Ref:** 00001622142 **Bank Ref:** IA009917646541 ONLINE LOAN PAYMENT	**Debit Amount:**	55,907.71
7/11/2006	495 / OUTGOING MONEY TRANSFER **Cust Ref:** 00000000000 **Bank Ref:** IA009933521180 WT FED#01635 FIRST AMERICAN TRU /FTR/BNF=FIRST AMERICAN TITLE INSURANCE SRF# TRN#060711048586 RFB#	**Debit Amount:**	18,385,170.77
7/11/2006	506 / BOOK TRANSFER DEBIT **Cust Ref:** 00000000000 **Bank Ref:** IA009933517072 WT SEQ#46576 GLOBAL WATER MANAGEMENT /BNF= SRF# IN06071111301674 TRN#060711046576 RFB# 000000665	**Debit Amount:**	20,668.87
	Debit Total	**Debit Amount**	**25,575,647.35**

Account Net Amount	**15,179.03**

Currency: USD
Bank: 121000248

Balances

Closing Ledger Balance	190,331.98
Closing Collected Balance	17,333.98
Opening Available Balance	173,021.98
One Day Float	155,688.00
Two+ Day Float	17,310.00
MTD Average Closing Ledger Balance	498,068.15
MTD Average Closing Collected Balance	6,015.06
Total Credits	25,618,026.58
Total Debits	25,607,564.59
Total Number Credits	13
Total Number Debits	6

Grand Total For Currency: USD

Balances

Closing Ledger Balance	190,331.98
Closing Collected Balance	17,333.98
Opening Available Balance	173,021.98
One Day Float	155,688.00
Two+ Day Float	17,310.00
MTD Average Closing Ledger Balance	498,068.15
MTD Average Closing Collected Balance	6,015.06
Total Credits	25,618,026.58
Total Debits	25,607,564.59
Total Number Credits	13
Total Number Debits	6

---- END OF REPORT ----

Hill
Rejoinder Testimony
Exhibit 3

P.O. Box 64111
St. Paul, MN 55164-0111

Ms Cindy Liles
CFO & SVP - Growth Management
Global Water Resources
21410 N 19th Ave, Suite 201
Phoenix, AZ 85027

Ph: 623-580-9600
Fax: 623-580-9659

RE: The Industrial Development Authority of the County of Pima
Water & Wastewater Revenue Bonds (Global Water Resources, LLC Projects) Series 2006

FOR DEBT SERVICE PAYMENT DUE: 8/1/2007

	Principal:	
	Premium:	
	INTEREST:	$879,074.25
TOTAL		$879,074.25
	Excess Reserve:	
	Reserve Requirement = $3,597,106.28	($3,611.04)
	Per Section 4.1 & 4.2 Loan Agmt.	
	Add Issuer Fee Due	$18,247.50
LESS: CASH ON HAND: (Lease payment Fund)		$0.00
TOTAL PAYMENT DUE:		**$893,710.71**

$14,883.46

OK to pay
Cmiles
05/09/07

NOT MST

PAYMENT INSTRUCTIONS

Please note: To ensure bondholder payments are disbursed on time, we encourage use of the following guidelines:
*WIRE: Wire due no later than 10:30 AM CST on the Payment Due Date.
*CHECK: Check must be received three business days before Payment Due Date for processing and clearance.
*OTHER: Please call the person referenced below.
Depositories may assess a penalty if Same Day Funds deadlines are not met, which may be passed on to you if funds are not received in a timely manner. Thank you.

WIRE INSTRUCTIONS, DUE: **5/31/2007**
BBK= U.S. BANK N.A. (ABA 091000022)
BNF= U.S. BANK TRUST N.A.
AC= 1801-2116-7365
OBI= DEBT MGMT #108395001
REF= 108395000
ATTN: Edwin Augustus Bannah
651-495-3778

CHECK INSTRUCTIONS DUE: **5/29/2007**
U.S. BANK TRUST, N.A.
CORPORATE TRUST - DEBT MANAGEMENT
CM - 9705
PO BOX 70870
ST PAUL, MN 55170-9705
REF= 108395000
ATTN: Edwin Augustus Bannah

Patty - attached includes amort schedule.

usbank
Five Star Service Guaranteed

pls get a copy to Patty.

Ms Cindy Liles
CFO & SVP - Growth Management
Global Water Resources
21410 N 19th Ave, Suite 201
Phoenix, AZ 85027

Ph: 623-580-9600
Fax: 623-580-9659

RE: The Industrial Development Authority of the County of Pima
Water & Wastewater Revenue Bonds (Global Water Resources, LLC Projects) Series 2006

FOR DEBT SERVICE PAYMENT DUE: 12/1/2007

Principal:		DR
Premium:		
INTEREST:	$1,034,205.00	905-30391
TOTAL	$1,034,205.00	
Less: Excess Reserve a/c #108395003		
Reserve Requirement = $3,597,106.28	($148,494.76)	CR 905-10065
Per Section 4.1 & 4.2 Loan Agmt.		
Add Issuer Fee Due	$18,247.50	DR 905-28101
LESS: CASH ON HAND: (Lease payment Fund)	$232.82	AR 905-10065
TOTAL PAYMENT DUE:	**$904,190.56**	

Should have added

SB 32107

GAB.

PAYMENT INSTRUCTIONS

Please note: To ensure bondholder payments are disbursed on time, we encourage use of the following guidelines:
*WIRE: Wire due no later than 10:30 AM CST on the Payment Due Date.
*CHECK: Check must be received three business days before Payment Due Date for processing and clearance.
*OTHER: Please call the person referenced below.
Depositories may assess a penalty if Same Day Funds deadlines are not met, which may be passed on to you if funds are not received in a timely manner. Thank you.

WIRE INSTRUCTIONS, DUE: **11/30/2007**
BBK= U.S. BANK N.A. (ABA 091000022)
BNF= U.S. BANK TRUST N.A.
AC= 1801-2115-7365
OBI= DEBT MGMT #108395001
REF= 10839500
ATTN: Edwin Augustus Bannah
651-495-3778

CHECK INSTRUCTIONS DUE: **11/28/2007**
U.S. BANK TRUST, N.A.
CORPORATE TRUST - DEBT MANAGEMENT
CM - 9705
PO BOX 70870
ST PAUL, MN 55170-9705
REF= 108395000
ATTN: Edwin Augustus Bannah

P.O. Box 64111
St. Paul, MN 55164-0111

The Industrial Development Authority of the County of Pima
Water & Wastewater Revenue Bonds (Global Water Resources, LLC Projects) Series 2006
Series 2006 & 2007

COMBINED BILLING INVOICE

Bond Interest Payment Date: June 1, 2008

	Rate	Principal Outstanding	Principal Due	Interest Due	Debt Service Total Due
Series 2006 Bonds	MULTIPLE	$ 36,495,000.00	$0.00	$1,034,205.00	$1,034,205.00
Series 2007 Bonds	MULTIPLE	$ 54,135,000.00	$0.00	$1,793,743.13	$1,793,743.13
				Total Debt COMBINED Service	$ 2,827,948.13

Series 2006 Bonds	Add Issuer Fee Due	$18,247.50	
Series 2007 Bonds	Add Issuer Fee Due	$27,067.50	
	Per Section 4.1 & 4.2 Loan Agmt.	Total Fee due	$ 45,315.00

CURRENT RESERVE REQUIRED	EXCESS RESERVE Fund	Principal Fund	Interest Fund
$8,418,746.21	$2,711,734.34		
Series 2006 Bonds		$0.00	$15,232.33
Series 2007 Bonds			

Total Available Credit: $2,726,966.67

TOTAL PAYMENT DUE: $146,296.45

Accrual
DR. 94035 9,063.00
Cr. 32207
(9063.00) Jan - May.

actual wire amount

Jamie to research to see if we may move more $ to debt reserve fund

move from

DR 905-32207) 45,315.00
DR 905-30391 2,827,948.13
CR Cash <146,296.45>
CR 905-10065 <2,711,734.34> (reserve funds)
CR 905-10065 <15,232.33> (interest fund)

ac to pay Cynthia

Attn:

Global Water Resources
Ms Cindy Liles
CFO & SVP - Growth Management
21410 N 19th Ave, Suite 201
Phoenix, AZ 85027
Ph: 623-580-9600
Fax: 623-580-9659

Please Wire Funds To:

US Bank
ABA # 091000022
USBANK CT WIRE CLRG
A/C # 180121167365
OBI: GLOBAL WATER 06 & 07
Ref: 108395000 & 108395010

SEND CHECKS TO:

Overnight Express Mail & Livechecks

U.S. Bank Trust National Association
Lockbox Services--CM9705
Attn: TFM/EDWIN "GUS BANNAH"
ENER 0106
1200 Energy Park Drive
St Paul, MN 55108
REF: GLOBAL WATER 06 & 07
Ref: 108395000 & 108395010

PHONE: 651-495-3778
FAX: 651-495-8115

*First Class Mail - Lockbox(CHECKS)*********

U.S. Bank Trust National Association
Attn: TFM./Edwin Augustus Bannah
Lockbox Services--CM9705
P.O. Box 70870
St Paul, MN 55170-9705
REF: GLOBAL WATER 06 & 07
Attn: TFM/EDWIN "GUS BANNAH"
Ref: 108395000 & 108395010

bank
Five Star Service Guaranteed

usbank.com

The Industrial Development Authority of the County of Pima
Water & Wastewater Revenue Bonds (Global Water Resources, LLC Projects) Seri
Series 2006 ; 2007 & 2008

COMBINED BILLING INVOICE (REVISION)

Bond Interest/Principal Payment Date: December 1, 2008

	Rate	Principal Outstanding	Principal Due	Interest Due	Debt Service Total Due
Series 2006 Bonds	MULTIPLE	$ 36,495,000.00	$0.00	$1,034,205.00 ✓	$1,034,205.00
Series 2007 Bonds	MULTIPLE	$ 54,135,000.00	$0.00	$1,764,337.50 ✓	$1,764,337.50
Series 2008 Bonds	MULTIPLE	$ 24,550,000.00	$0.00	$0.00	$0.00
				TOTAL COMBINED Debt Service	$2,798,542.50

905 30391

ADD

Series 2006 Bonds	Add Issuer Fee Due	$18,247.50	
Series 2007 Bonds	Add Issuer Fee Due	$27,067.50 ✓	we are awaiting in 32207
Series 2008 Bonds	Add Issuer Fee Due	$0.00 ✓	
	Per Section 4.1 & 4.2 Loan Agmt.	Total Fee due	$45,315.00 905-30999

Less:
Cash on hand ========> ($649.51) 905-10065

CURRENT RESERVE REQ.	FYI ONLY ! ***RESERVE SHORTFALL CURRENT CASH ON HAND	Cash on Hand Principal Pmt Fund	Cash on Hand Interest Fund		
$ 9,067,372.50	$8,722,140.59				
	($345,231.91)				
		$0.00	$61.61	========>	($61.61) 905-10065

***There is a deficiency in the Bond Reserve Fund but it does not need to be paid or reimbursed since the balance is more than 90% of the reserve requirement.

Total Available Credit: $711.12

TOTAL PAYMENT DUE: $2,843,146.38

Attn: ok to pay [signature] 10/30/08

Global Water Resources
Ms Cindy Liles
CFO & SVP - Growth Management
21410 N 19th Ave, Suite 201
Phoenix, AZ 85027
Ph: 623-580-9600
Fax: 623-580-9659

Please Wire Funds To:

US Bank
ABA # 091000022
USBANK CT WIRE CLRG
A/C # 180121167365
OBI: GLOBAL WATER 06 & 07
Ref: 108395000 ; 108395010 & 108395020

SEND CHECKS TO:

Overnight Express Mail & Livechecks

U.S. Bank Trust National Association
Lockbox Services--CM9705
Attn: TFM/EDWIN "GUS BANNAH"
ENER 0106
1200 Energy Park Drive
St Paul, MN 55108
REF: GLOBAL WATER 06 & 07
Ref: 108395000 ; 108395010 & 108395020

PHONE: 651-495-3778
FAX: 651-495-8115

*First Class Mail - Lockbox(CHECKS)*********

U.S. Bank Trust National Association
Attn: TFM./Edwin Augustus Bannah
Lockbox Services--CM9705
P.O. Box 70870
St Paul, MN 55170-9705
REF: GLOBAL WATER 06 & 07
Attn: TFM/EDWIN "GUS BANNAH"
Ref: 108395000 ; 108395010 & 108395020

10/27/08

Corporate Trust Services

The Industrial Development Authority of the County of Pima
Water & Wastewater Revenue Bonds (Global Water Resources, LLC Projects) Series
Series 2006 ; 2007 & 2008

COMBINED BILLING INVOICE (REVISION)

Bond Interest/Principal Payment Date: June 1, 2009

	Rate	Principal Outstanding	Principal Due	Interest Due	Debt Service Total Due
Series 2006 Bonds	MULTIPLE	$ 36,495,000.00	$0.00	$1,034,205.00	$1,034,205.00
Series 2007 Bonds	MULTIPLE	$ 54,135,000.00	$0.00	$1,764,337.50	$1,764,337.50
Series 2008 Bonds	MULTIPLE	$ 24,550,000.00	$0.00	$1,217,637.50	$1,217,637.50
				TOTAL COMBINED Debt Service	$4,016,180.00

ADD

Series 2006 Bonds	Add Issuer Fee Due	$18,247.50	
Series 2007 Bonds	Add Issuer Fee Due	$27,067.50	
Series 2008 Bonds	Add Issuer Fee Due	$12,275.00	
	Per Section 4.1 & 4.2 Loan Agmt.	Total Fee due	$57,590.00
	Less: Cash on hand	==========>	($8.12)

Principal Pmt Fund
~~COI~~ fund
10070
(

FYI ONLY !

CURRENT RESERVE REQ.	***RESERVE SHORTFALL CURRENT CASH ON HAND	Cash on Hand Principal Pmt Fund	Cash on Hand Interest Fund		
$ 9,087,372.50	($5,779,331.06				
	($294,039.41)	32107	32107		
		$5,959.71	$0.21	==========>	($5,959.92)

Reclass to 32107

***There is a deficiency in the Bond Reserve Fund but it does not need to be paid or reimbursed since the balance is more than 90% of the reserve requirement.

Total Available Credit: $5,960.04

TOTAL PAYMENT DUE: $4,067,801.96

Dr. 905 30995 $57,590
Dr 905 32107 $4016,180
Cr Cash <4,067,801.96>
Cr 905 32107 <5959.71> Prince Pmt Fund
Cr. 905 32107 <.21> Int Pmt Fund
Cr 905 10070 <8.12> COI fund

Attn:
Global Water Resources
Ms Cindy Liles
CFO & SVP - Growth Management
21410 N 19th Ave, Suite 201
Phoenix, AZ 85027
Ph: 623-580-9600
Fax: 623-580-9859

Please Wire Funds To:

US Bank
ABA # 091000022
USBANK CT WIRE CLRG
A/C # 180121167365
OBI: GLOBAL WATER 06 & 07
Ref: 108395000 ; 108395010 & 108395020

SEND CHECKS TO:

Overnight Express Mail & Livechecks

U.S. Bank Trust National Association
Lockbox Services--CM9705
Attn: TFM/EDWIN "GUS BANNAH"
ENER 0108
1200 Energy Park Drive
St Paul, MN 55108
REF: GLOBAL WATER 06 & 07
Ref: 108395000 ; 108395010 & 108395020

PHONE: 651-495-3778
FAX: 651-495-8115

*First Class Mail - Lockbox(CHECKS)*********

U.S. Bank Trust National Association
Attn: TFM/Edwin Augustus Bannah
Lockbox Services--CM9705
P.O. Box 70870
St Paul, MN 55170-9705
REF: GLOBAL WATER 06 & 07
Attn: TFM/EDWIN "GUS BANNAH"
Ref: 108395000 ; 108395010 & 108395020

usbank.

All of us serving you

The Industrial Development Authority of the County of Pima
Water & Wastewater Revenue Bonds (Global Water Resources, LLC Projects) Series
Series 2006 ; 2007 & 2008

COMBINED BILLING INVOICE (REVISION)

Bond Interest/Principal Payment Date: December 1, 2009

	Rate	Principal Outstanding	Principal Due	Interest Due	Debt Service Total Due
Series 2006 Bonds	MULTIPLE	$ 36,495,000.00	$0.00	$1,034,205.00	$1,034,205.00
Series 2007 Bonds	MULTIPLE	$ 54,135,000.00	$0.00	$1,764,337.50	$1,764,337.50
Series 2008 Bonds	MULTIPLE	$ 24,550,000.00	$0.00	$913,228.13	$913,228.13
				TOTAL COMBINED Debt Service	$3,711,770.63

30391 Dr.

ADD

Series 2006 Bonds	Add Issuer Fee Due		$18,247.50	
Series 2007 Bonds	Add Issuer Fee Due		$27,067.50	
Series 2008 Bonds	Add Issuer Fee Due		$12,275.00	
	Per Section 4.1 & 4.2 Loan Agmt.		Total Fee due	$57,590.00

30995 Dr.

Less:
Cash on hand ========> ($8.12) 31207 Cr.

FYI ONLY !

CURRENT RESERVE REQ.	***RESERVE SHORTFALL CURRENT CASH ON HAND	Cash on Hand Principal Pmt -2- Fund	Cash on Hand Interest -1- Fund		
$ 9,067,372.50	$8,776,990.79				
	($291,381.71)				
		$0.00	$34,564.61	========>	($34,564.61)

31207 Cr.

***There is a deficiency in the Bond Reserve Fund but it does not need to be paid or reimbursed since the balance is more than 90% of the reserve requirement.

Total Available Credit: $34,572.73

TOTAL PAYMENT DUE: ($3,734,787.90) 10012 Cr.

Attn:

Global Water Resources
Ms Cindy Liles
CFO & SVP - Growth Management
21410 N 19th Ave, Suite 201
Phoenix, AZ 85027
Ph: 623-580-9600
Fax: 623-580-9659

Please Wire Funds To:

US Bank
ABA # 091000022
USBANK CT WIRE CLRG
A/C # 180121167365
OBI: GLOBAL WATER 06 & 07
Ref: 108395000 ; 108395010 & 108395020

SEND CHECKS TO:
Overnight Express Mail & Livechecks

U.S. Bank Trust National Association
Lockbox Services--CM9705
Attn: TFM/EDWIN "GUS BANNAH"
ENER 0106
1200 Energy Park Drive
St Paul, MN 55108
REF: GLOBAL WATER 06 & 07
Ref: 108395000 ; 108395010 & 108395020

PHONE: 651-495-3778
FAX: 651-495-8115

*First Class Mail - Lockbox(CHECKS)*********

U.S. Bank Trust National Association
Attn: TFM/Edwin Augustus Bannah
Lockbox Services--CM9705
P.O. Box 70870
St Paul, MN 55170-9705
REF: GLOBAL WATER 06 & 07
Attn: TFM/EDWIN "GUS BANNAH"
Ref: 108395000 ; 108395010 & 108395020

Hill
Rejoinder Testimony
Exhibit 4

Considering Bond Debt Only

	Year									Total Carrying Cost
	2006	2007	2008	2009	2010	2011	2012	2013	2014	
Bond Debt	$ 36,495,000	$ 54,135,000	$ 24,550,000							
Cumulative Debt	$ 36,495,000	$ 90,630,000	$ 115,180,000	$ 115,180,000	$ 115,180,000	$ 115,180,000	$ 115,180,000	$ 115,180,000	$ 115,180,000	
Debt Attributable to SW Facilities	$ -	$ 21,484,943	$ 5,325,534							
Cumulative Debt for SW Facilities	$ -	$ 21,484,943	$ 26,810,477	$ 26,810,477	$ 26,810,477	$ 26,810,477	$ 26,810,477	$ 26,810,477	$ 26,810,477	
Pecentage	0.00%	23.71%	23.28%	23.28%	23.28%	23.28%	23.28%	23.28%	23.28%	
Total Debt Service (from Limited Offering Memoranda)	$ -	$ 1,913,279	$ 5,930,900	$ 7,423,541	$ 8,128,541	$ 8,645,119	$ 8,806,191	$ 8,808,280	$ 8,825,626	
Allocation to SW Facilities	$ -	$ 453,566	$ 1,380,537	$ 1,727,980	$ 1,892,083	$ 2,012,326	$ 2,049,819	$ 2,050,306	$ 2,054,343	$ 13,620,960

Notes Assumes no carrying cost prior to funding by IDA bonds

Hill
Rejoinder Testimony
Exhibit 5

ESTIMATED DEBT SERVICE REQUIREMENTS

The following table sets forth, for each calendar year, the amount required in such year for the payment of principal of and interest on the Series 2006 Bonds and the Series 2007 Bonds.

TABLE 6

Year	Series 2006 Bond Debt Service	Series 2007 Bond Debt Service		Total Debt Service
		Principal	Interest	
2007	$1,913,279.25			$1,913,279.25
2008	2,068,410.00		$3,558,080.63	5,626,490.63
2009	2,068,410.00		3,528,675.00	5,597,085.00
2010	2,773,410.00		3,528,675.00	6,302,085.00
2011	2,774,987.50	$515,000.00	3,528,675.00	6,818,662.50
2012	2,779,385.00	545,000.00	3,500,350.00	6,824,735.00
2013	2,781,330.00	575,000.00	3,470,375.00	6,826,705.00
2014	2,780,822.50	625,000.00	3,438,750.00	6,844,572.50
2015	2,782,862.50	660,000.00	3,397,812.50	6,840,675.00
2016	2,787,177.50	700,000.00	3,354,582.50	6,841,760.00
2017	2,788,495.00	745,000.00	3,308,732.50	6,842,227.50
2018	2,791,815.00	795,000.00	3,259,935.00	6,846,750.00
2019	2,800,215.00	835,000.00	3,207,862.50	6,843,077.50
2020	2,804,695.00	885,000.00	3,153,170.00	6,842,865.00
2021	2,810,255.00	940,000.00	3,095,202.50	6,845,457.50
2022	2,811,615.00	1,000,000.00	3,033,632.50	6,845,247.50
2023	2,818,775.00	1,055,000.00	2,968,132.50	6,841,907.50
2024	2,823,962.50	1,120,000.00	2,899,030.00	6,842,992.50
2025	2,833,975.00	1,180,000.00	2,825,670.00	6,839,645.00
2026	2,843,237.50	1,245,000.00	2,748,380.00	6,836,617.50
2027	2,851,462.50	1,320,000.00	2,666,832.50	6,838,295.00
2028	2,858,362.50	1,405,000.00	2,580,372.50	6,843,735.00
2029	2,873,650.00	1,480,000.00	2,488,345.00	6,841,995.00
2030	2,891,462.50	1,560,000.00	2,391,405.00	6,842,867.50
2031	2,906,225.00	1,645,000.00	2,289,225.00	6,840,450.00
2032	6,577,650.00	1,680,000.00	2,181,477.50	10,439,127.50
2033		4,600,000.00	2,071,437.50	6,671,437.50
2034		4,900,000.00	1,770,137.50	6,670,137.50
2035		5,225,000.00	1,449,187.50	6,674,187.50
2036		5,565,000.00	1,106,950.00	6,671,950.00
2037		11,335,000.00	742,442.50	12,077,442.50
TOTAL	$74,595,926.75	$54,135,000.00	$83,543,535.63	$212,274,462.38

The Company will covenant and agree pursuant to the Loan Agreement that it will use its best efforts through the Project Subsidiaries to obtain approval from the ACC of schedules of rates, fees and charges for all services supplied by the Project Subsidiaries, after making reasonable allowances for contingencies and errors in estimates, to produce Income Available for Debt Service in each fiscal year of the Company not less than 1.10 X Maximum Annual Debt Service on all Long Term Indebtedness (exclusive of Subordinated Indebtedness incurred in compliance with the Loan Agreement).

CERTAIN BONDHOLDERS' RISKS

The purchase of the Series 2007 Bonds involves certain investment risks that are discussed throughout this Limited Offering Memorandum. Certain of these risks are described below. The relatively high interest rates borne by the Series 2007 Bonds (as compared to prevailing interest rates on bonds that have an investment grade rating)

DEBT SERVICE REQUIREMENTS

The following table sets forth, for each calendar year, the amount required in such year for the payment of principal of and interest on the outstanding Bonds and the Series 2008 Bonds.

TABLE 6

Year	Outstanding Bond Debt Service	Series 2008 Bond Debt Service		Debt Service
		Principal	Interest	
2008	$5,626,490.63		$304,409.38	$5,930,900.01
2009	5,597,085.00		1,826,456.25	7,423,541.25
2010	6,302,085.00		1,826,456.25	8,128,541.25
2011	6,818,662.50		1,826,456.25	8,645,118.75
2012	6,824,735.00	$155,000.00	1,826,456.25	8,806,191.25
2013	6,826,705.00	165,000.00	1,816,575.00	8,808,280.00
2014	6,844,572.50	175,000.00	1,806,056.25	8,825,628.75
2015	6,840,675.00	185,000.00	1,794,900.00	8,820,575.00
2016	6,841,760.00	200,000.00	1,783,106.25	8,824,866.25
2017	6,842,227.50	210,000.00	1,770,356.25	8,822,583.75
2018	6,846,750.00	225,000.00	1,756,968.75	8,828,718.75
2019	6,843,077.50	475,000.00	1,742,625.00	9,060,702.50
2020	6,842,865.00	515,000.00	1,707,000.00	9,064,865.00
2021	6,845,457.50	550,000.00	1,668,375.00	9,063,832.50
2022	6,845,247.50	595,000.00	1,627,125.00	9,067,372.50
2023	6,841,907.50	635,000.00	1,582,500.00	9,059,407.50
2024	6,842,992.50	685,000.00	1,534,875.00	9,062,867.50
2025	6,839,645.00	735,000.00	1,483,500.00	9,058,145.00
2026	6,836,617.50	790,000.00	1,428,375.00	9,054,992.50
2027	6,838,295.00	850,000.00	1,369,125.00	9,057,420.00
2028	6,843,735.00	915,000.00	1,305,375.00	9,064,110.00
2029	6,841,995.00	985,000.00	1,236,750.00	9,063,745.00
2030	6,842,867.50	1,055,000.00	1,162,875.00	9,060,742.50
2031	6,840,450.00	1,135,000.00	1,083,750.00	9,059,200.00
2032	10,439,127.50	1,220,000.00	998,625.00	12,657,752.50
2033	6,671,437.50	1,315,000.00	907,125.00	8,893,562.50
2034	6,670,137.50	1,410,000.00	808,500.00	8,888,637.50
2035	6,674,187.50	1,515,000.00	702,750.00	8,891,937.50
2036	6,671,950.00	1,630,000.00	589,125.00	8,891,075.00
2037	12,077,442.50	1,755,000.00	466,875.00	14,299,317.50
2038		4,470,000.00	335,250.00	4,805,250.00
TOTAL	$210,361,183.13	$24,550,000.00	$42,078,696.88	$276,989,880.01

The Company will covenant and agree pursuant to the Loan Agreement that it will use its best efforts through the Project Subsidiaries to obtain approval from the ACC of schedules of rates, fees and charges for all services supplied by the Project Subsidiaries, after making reasonable allowances for contingencies and errors in estimates, to produce Income Available for Debt Service in each fiscal year of the Company not less than 1.10 X Maximum Annual Debt Service on all Long Term Indebtedness (exclusive of Subordinated Indebtedness incurred in compliance with the Loan Agreement).

CERTAIN BONDHOLDERS' RISKS

The purchase of the Series 2008 Bonds involves certain investment risks that are discussed throughout this Limited Offering Memorandum. Certain of these risks are described below. The relatively high interest rates borne by the Series 2008 Bonds (as compared to prevailing interest rates on bonds that have an investment grade rating) are intended to compensate investors in the Series 2008 Bonds for such risks. Accordingly, each prospective

Hill
Rejoinder Testimony
Exhibit 6

Considering Cost of Capital

		Year									
		2006	2007	2008	2009	2010	2011	2012	2013	2014	Total Carrying Cost
SW Investment in Plant	$ 32,391,318										
Santa Cruz	$ 17,941,342										
Palo Verde	$ 14,449,976										
Global Proposed WACC											
Santa Cruz	8.49%	$ -	$ 1,523,220	$ 1,523,220	$ 1,523,220	$ 1,523,220	$ 1,523,220	$ 1,523,220	$ 1,523,220	$ 1,523,220	
Palo Verde	8.34%	$ -	$ 1,205,128	$ 1,205,128	$ 1,205,128	$ 1,205,128	$ 1,205,128	$ 1,205,128	$ 1,205,128	$ 1,205,128	
Total		$ -	$ 2,728,348	$ 2,728,348	$ 2,728,348	$ 2,728,348	$ 2,728,348	$ 2,728,348	$ 2,728,348	$ 2,728,348	$ 21,826,783
Staff Proposed WACC											
Santa Cruz	8.50%	$ -	$ 1,525,014	$ 1,525,014	$ 1,525,014	$ 1,525,014	$ 1,525,014	$ 1,525,014	$ 1,525,014	$ 1,525,014	
Palo Verde	8.30%	$ -	$ 1,199,348	$ 1,199,348	$ 1,199,348	$ 1,199,348	$ 1,199,348	$ 1,199,348	$ 1,199,348	$ 1,199,348	
Total		$ -	$ 2,724,362	$ 2,724,362	$ 2,724,362	$ 2,724,362	$ 2,724,362	$ 2,724,362	$ 2,724,362	$ 2,724,362	$ 21,794,897
RUCO Proposed WACC	8.03%	$ -	$ 2,601,023	$ 2,601,023	$ 2,601,023	$ 2,601,023	$ 2,601,023	$ 2,601,023	$ 2,601,023	$ 2,601,023	$ 20,808,183

Notes RUCO WACC rate from Rebuttal Testimony

EXHIBIT A-10

TOTAL WATER MANAGEMENT:

RESOURCE CONSERVATION IN THE FACE OF POPULATION GROWTH AND WATER SCARCITY

TOTAL WATER MANAGEMENT: RESOURCE CONSERVATION IN THE FACE OF POPULATION GROWTH AND WATER SCARCITY

INTEGRATED SYSTEMS, REGIONAL PLANNING, AND THE ECONOMICS OF WATER RECLAMATION AND BENEFICIAL REUSE

By Trevor Hill, Graham Symmonds, and Wesley Smith

INTRODUCTION

Water management in Arizona and the arid southwestern United States is being influenced by two increasingly synchronous and alarming trends: explosive growth and water scarcity.

The intersection of these factors – a future certainty – will drive water policy to extreme measures. In the absence of action now, those measures will both arrive sooner and be significantly more expensive. Sustainability in the future will depend solely on what action is taken today to preserve and extend the region's limited and increasingly valuable water resources.

The State of Arizona is in the crosshairs of the collision between growth and supply. In the absence of action today, as a landlocked state, Arizona must rely on non-renewable groundwater supplies and limited surface water supplies in order to meet the needs of its current and future populations. Exacerbating the issue is the fact that the state is entering its 13th year of drought, whilst leading the nation in growth. Arizona must take the initiative now to establish regional conservation practices, develop and deploy regional infrastructure, and develop alternate water resources in order to meet the needs of today's – and tomorrow's – customers. In the absence of such planning, Arizona residents will be subjected to continuous scarcity concerns, and ultimately will face materially increased costs for an essential commodity.

With the uncertainty of surface water resources and dwindling groundwater aquifers, recycled water exists as the only water source experiencing an increase in availability.[1] While broad based water recycling programs have become sound public policy and have been widely adopted around the globe in regions facing water scarcity, the State of Arizona has taken relatively minor steps to promote this renewable resource.

[1] Under Arizona's Groundwater Management Act, there are three sources of water: Surface Water - from local rivers and lakes or Central Arizona Project Water ("CAP") from the canal system connected to the Colorado River and its reservoirs, Groundwater from underground aquifers, and Recycled water, which the Act calls 'Reclaimed water' - wastewater that has been highly treated and made safe for numerous non-potable uses. Global calls its "treated and reclaimed wastewater" "recycled water."

This paper discusses water scarcity and compares current policy in the State of Arizona with examples from other regions. It also identifies factors that hamper broad utilization of recycling and focuses on the drivers for alternate water sources in the State. Water recycling applications throughout the world are discussed, as are the benefits of direct reuse over recharge.[2] Finally the paper evaluates and analyzes the economics of recycled water infrastructure deployment. In doing so it presents theoretical and empirical data supporting both the concept and reality of deploying and using recycled water to the greatest extent possible.

ADDRESSING SCARCITY – THE ROLE OF RECYCLED WATER

Despite being one of the driest states in the country, the impetus for full development of recycled water resources have not occurred in Arizona. By contrast, the State of California has been in the vanguard of water reclamation. California took the lead in advancing water recycling some years ago with the creation of Title 22, Division 4 in the California Code of Regulations. It was Title 22 that defined the standards for recycled water and allowed its use to irrigate food crops, parks and playgrounds, school yards, residential landscaping, and unrestricted access golf courses.

The California Constitution, Article X, Section 2 addresses water use by establishing a "beneficial use" policy:

> It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the *waste or unreasonable use* or unreasonable method of use of water be prevented, and that the conservation of such water is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare [emphasis added].

[2] The US Geological Survey defines recharge as "The process involved in the absorption and addition of water to the zone of saturation." Reuse is defined by the US Environmental Protection Agency as "The use of wastewater or reclaimed water."

California Water Code[3], Section 13500 further clarifies the State's water policy by directly support water recycling:

> The Legislature hereby finds and declares that *the use of potable domestic water for nonpotable uses,* including, but not limited to, cemeteries, golf courses, parks, highway landscaped areas, and industrial uses, *is a waste or an unreasonable use of the water* within the meaning of Section 2 of Article X of the California Constitution *if recycled water is available* [emphasis added].

In 2001 the California State Assembly established a mission to evaluate the water policy framework of the State and its ability to increase the use of recycled water.[4] The result was a June 2003 report titled "Water Recycling 2030 – Recommendations of California's Recycled Water Taskforce" that concluded "recycled water could free up enough fresh water to meet the household water demands of *30 to 50 percent* of the additional 17 million Californians"[5] expected to populate the State by 2030 [emphasis added].

Examples of water scarcity and the drastic impact that it has on society are dramatically evident in Australia. Prolonged drought has brought severe water shortages to this "First World" Nation. In Brisbane, Queensland, as water reserves dropped to under 20% capacity, the government imposed Level 5 water restrictions on April 10, 2007. In addition to mandatory bans on outdoor uses, residents are being asked to make significant indoor water use savings to lower residential use from 180 liters per person per day (47 gallons per person per day) to 140 liters per person per day (40 gallons per person per day).[6] Similar scenarios are found throughout Australia where recognition of the impending crisis has been accompanied by policy shifts towards maximizing of use of recycled water.

[3] California Law consists of the State Constitution, Statutes, and 29 Codes covering various subject areas, one of which is the Water Code
[4] Assembly Bill 331, Chapter 590, Statues of 2001
[5] "Water Recycling 2030 – Recommendations of California's Recycled Water Taskforce", June 2003
[6] "No Rain, No Water, Big Problem – Water reuse should ease water supply strain in Brisbane, Australia", Water Environment & Technology, August 2007, p 60-63

In Sydney, the Government of New South Wales has included in their 2006 Metropolitan Water Plan a fourfold increase in reuse to 70 billion liters per year (over 50 million gallons per day) by the year 2015.[7] In October of 2006, the New South Wales government cut agricultural irrigation from the River Murray by 20%, an additional 32% cut came weeks later, most recently, regional agriculture receives a zero allocation from the River.[8]

The Government of Western Australia initiated the development of a water plan in 2007, stating that "the State Government has given water and the management of water resources strategic priority. This will continue into the future given climate change and variability, resource scarcity and continued increases in demand."[9] Within the report the Government announced plans to recycle 20% of its water by 2012 and 30% by 2030[10] when population is expected to increase by 40%. It is interesting to note that, also within the report, under the heading "Priority Actions 2007-2011", the Government listed "Use and recycle water wisely" as number one.[11]

Whether by progressive thought or a crisis response to extreme scarcity, the water recycling programs in California and Australia serve as examples of sound water policy. Despite similarities in population growth and resource scarcity, the State of Arizona lags amazingly far behind. While political leaders and regulators have established lofty goals in other regions, Arizona remains passive in its approach to water recycling.

In the Arizona Drought Preparedness Plan, drafted in 2004 by the Governor's Drought Task Force, water recycling is barely mentioned:

> "Effluent, or treated wastewater, can be treated to a quality that can be used for purposes such as agricultural irrigation, turf grass watering, industrial

[7] "2006 Metropolitan Water Plan Executive Summary", NSW Government, April 2006.
[8] "A River Ran Through It", Claire Scoby, The Observer, August 5, 2007.
[9] "State Water Plan 2007 Summary", Government of Western Australia.
[10] Ibid
[11] Ibid

cooling, or maintenance of riparian areas. Effluent has the potential to replace a potable water supply when potable water quality is not necessary for the use."[12]

"Effluent has the potential to replace a potable water supply..." is a far cry from "the use of potable domestic water for non-potable uses...is a waste or an unreasonable use of the water... if recycled water is available" (California Code) or "30% recycled water by 2030" (Western Australia).

FACTORS HAMPERING BROAD UTILIZATION OF RECYCLED WATER

While the regulatory environment in Arizona has adopted stringent standards for Class A+ Reclaimed Water and provides the framework for reuse[13], water providers have not embraced this resource. There are three factors that hamper broad utilization of recycled water in the State:

- A lack of policy direction from elected officials and state agencies
- A lack of integrated service suppliers[14] which are capable of providing the service
- Need for Regional Planning: To address the economic reality that recycled water use can only be achieved on a regional scale

Policy

Given the critical nature of water scarcity in Arizona, the current regulatory framework for water conservation is surprisingly weak. Utilities have limited obligations to conserve and there are no requirements to use recycled water. With rapid growth, finite water resources, and the reality of sustained drought, the State must do more.

[12] "Arizona Drought Preparedness Plan – Background & Impact Assessment Section", Governor's Drought Task Force, October 8, 2004.
[13] Arizona Administrative Code (AAC) R18-11-303 defines Class A+ Reclaimed Water and references a number of approved uses including irrigation of food crops, recreational impoundments, residential landscape irrigation, school ground landscape irrigation, open access landscape irrigation, toilet and urinal flushing, fire protection systems, vehicle and equipment washing, and snowmaking.
[14] Integrated Service Suppliers are those defined as providing water, wastewater and recycled water services.

Recent initiatives by the Arizona Corporation Commission (ACC) indicate that some progress is being made. For example, in certain cases the ACC has banned the use of groundwater to serve golf courses and similar amenities. More importantly, the ACC has made conservation-focused rate designs a priority. The Arizona Department of Water Resources (ADWR) is currently developing "Best Management Practices" (BMP's) for water conservation. While some of the draft BMP's appear to be useful, recycled water is not even mentioned. Glossy brochures and "Water – Use It Wisely" advertisements will only go so far. Long term sustainability requires moving toward regional water reclamation and reuse.

Reliance on the individual consumer for conservation will not ultimately serve to address water scarcity in the State. While individual efforts are helpful on the margins, radical reduction in water use must be initiated by the Utility. It is the Utility that can impact the individual, and the Utility that should bear the burden of long-term resource management.

Integration

Integrated service suppliers provide both water and wastewater services within a region. In situations where an integrated supplier does not exist, opportunities to make use of recycled water are difficult. Obviously, it is the wastewater utility that collects wastewater, treats it to regulatory standards, and distributes recycled water – often to the economic detriment of the water utility.[15] In some cases, water utilities have litigated over the right to distribute recycled water claiming they have such a 'right'[16],

[15] The use of recycled water in lieu of potable water means a diminished demand for the potable water produced by local water companies – reduced water sales diminish the water company's revenues.

[16] See Arizona Water Co. v. City of Casa Grande, No. CV2000-022448 (Superior Court, Maricopa County), Minute Entry dated March 27, 2002. AWC claimed a 'right' to sell City effluent to the Reliant Power Plant. AWC lost and appealed. The Court of Appeals, in an unpublished opinion, upheld the ruling against AWC. Arizona Water Co. v. City of Casa Grande, No. 1 CA-CV 02-0671 and 1 CA-CV 02-0724 (Arizona Court of Appeals), Memorandum Opinion filed October 14, 2003. AWC also lost a related case in federal court. See Arizona Water Co. v. City of Casa Grande, 33 Fed. Appx. 309 (9th Cir 2002)(unpublished opinion).

despite not owning the resource. This litigation further stifles recycled water's potential application. When water and wastewater utilities are placed at odds, neither party advances the use of this valuable resource.

Reducing the volume of water for potable uses directly reduces the costs of treatment to meet the National Primary Drinking Water Standards (obviously, the fewer gallons delivered, the fewer gallons treated, and the lower the costs of treatment). Considering the ever tightening regulatory environment for safe drinking water, reducing the overall capacity requirement of treatment systems means fewer such systems are required, and those that are required, because they treat less water, have lower operating and maintenance costs. The result is a partial sheltering of the consumer from the adverse financial impacts meeting future regulatory requirements of the Safe Drinking Water Act. Saving $0.50 to $2.00 per thousand gallons[18] is a very significant benefit to the consumer, and these funds can then be used for financing large-scale water recycling initiatives.

In addition to the technical aspects of integration, there are policy and financial benefits from integration. A joint Swedish-Polish research study viewed integration of water, wastewater and waste handling as part of a "municipal ecology". The study points out that the advantages of integration include "combinations with the energy sector...improved technical functions, possibilities in a large organization to employ qualified staff, simplification of fee collection system, and less environmental emissions and resources depletion."[17]

Regional Planning

Integration of water and wastewater service providers is a key element of planning for

[17] Current operation and maintenance costs associated with Arsenic treatment within a regional system range from $0.50 to $2.00 per 1,000 gallons of treated water. Treatment costs are likely to increase as other regulated contaminants are identified and must be addressed in the future.
[18] Integration of Water and Sanitation – A Challenge to Reach Sustainability Goals, B. Hultman, E. Plaza and T. Stypka.

total water management. Large-scale planning allows for the realization of a more diverse customer spectrum for recycled water and ensures that the benefits of recycled water are felt regionally. One can imagine that a single development may choose to deploy a significant recycled water scheme to reduce groundwater use, only to have those savings squandered by a neighboring development built solely on the basis of groundwater.

The concepts of total water management - "highest and best use for recycled water" and "the right source for the right use" are pillars of the new paradigm in the water industry. These foundations cannot be constructed without integrated and regional planning. Ultimately this will drive the deployment of dual water mains and maximize the use of recycled water regardless of scarcity. But in the face of scarcity, these tenets become paramount.

THE IMPETUS FOR ALTERNATIVE WATER SOURCES

There are certain realities that must be collectively addressed in order to ensure long term water sustainability in the State of Arizona and that must form the backbone of any sustainable water policy for the state:

- Growth will continue.
- As growth continues, underground aquifers will ultimately reach a rate of withdrawal that will exceed rates of natural recharge.
- Surface water in the region is over-allocated and has been impacted by sustained drought, legal disputes over available supplies, and environmental policies regarding required stream flows.
- Treatment costs are soaring and are unquantifiable in the future.
- Public opinion will evolve as resource availability scenarios change.

Growth

Arizona and the southwestern United States continue to experience unprecedented growth. Climate, cost of living, economic opportunity, and other considerations draw hundreds of thousands of people to the region every year.[19] This influx of new residents have served to enhance the state's quality of life. Entrepreneurs bring new business and opportunities. Recreational and cultural activities continue to evolve and develop. The region has become more attractive as it grows. Despite the recent adjustments in the housing market, all economic indicators point to prolonged growth in the Arizona and the southwest United States. In fact, RL Brown in his July 26, 2007 publication The Phoenix Housing Market Letter states "the metro Phoenix new-housing market remains on the best spots on the planet for new home builders, developers, and the trades."[20]

Limits on Groundwater Supplies (Aquifers)

The situation in Pinal County, Arizona serves to effectively illustrate the limits of groundwater and the impracticality of relying on it as a sole source to support growth. According to the U.S. Census Bureau, the County (located south of Maricopa County) has grown by 51% since the 2000 Census - largely as an exurb of Maricopa County. The aquifer in the Pinal Active Management Area (AMA) is naturally recharged at an average rate of 82,500 acre-feet a year.[21] This means that 82,500 acre-feet per year (the equivalent of roughly 26,883 million gallons) is available in perpetuity. Current regulation requires that each equivalent dwelling unit (EDU) be supported by a demonstrated perpetual availability of 0.5 acre-feet per year.[22] Calculations based on

[19] U.S. Census Bureau, 'Arizona's Maricopa Leads Counties in Population Growth Since Census 2000', http://www.census.gov/Press-Release/www/releases/archives/population/009756.html - which states, in part, "Maricopa County Arizona gained 696,000 residents between 2000 and 2006, the largest numerical increase of the nation's 3,141 counties...Arizona became the nation's fastest growing state between 2005 and 2006."
[20] "The Phoenix Housing Market Letter", RL Brown Housing Reports, Volume 272, July 26, 2007.
[21] Hydrologic studies completed in December 2004 as part of an evaluation of the Pinal AMA's groundwater budget determined that the AMA's renewable groundwater supplies total 82,500 acre feet on a long-term average annual basis.
[22] Arizona Department of Water Resources internal protocol.

this data indicate that 165,000 EDU's can be developed in the Pinal AMA given groundwater as the only water resource. Yet, entitlements currently within the County exceed 650,000 EDU's – threefold discrepancy between water supplies and projected water demand.[23] It is a fact that conservation and alternatives to groundwater utilization will be required to support the anticipated growth.

Over-allocation of Surface Water

The Colorado River provides a large percentage of the southwestern United States with the necessary water resources to promote growth and opportunity. Great engineering accomplishments throughout the twentieth century have tamed the river and diverted its flows to the population centers of the region. Arizona's claim to Colorado River water emanates from the original 1922 Colorado River Compact, and the state's share of the river was determined by the U.S. Supreme Court in Arizona v. California, 376 U.S. 340 (1964) – however recent studies have shown that the supply data the Court relied upon was from an abnormally high flow period – and the Colorado River's 16.5 million acre-feet per year allocation likely overstates its actual production, by two to five million acre-feet per year.[24] Flow measurements conducted from 1906 to 1995 recorded an average annual flow of 15.2 million acre-feet and recent studies indicate that average annual flow in the Colorado River Basin may be 13.5 million to 14.6 million acre-feet.[25]

[23] The Morrison Institute for Public Policy, in their July 2007 report "The Future at Pinal", identified 653,277 units, mostly single-family homes, that have been entitled on private land within Pinal County.

[24] See, e.g., Colorado River Basin Water Management, 'Evaluating and Adjusting to Hydroclimatic Variability', National Research Council of the National Academies, 2007; and 'The Tree-Ring Record of Severe Sustained Drought' by David Meko, Charles W. Stockton, and W.R. Boggess, published in American Water Resources Association's Water Resources Bulletin, Vol. 31, No. 5, October 1995; and 'Two Perspectives on Drought: Paleoclimate and Climate Change' as presented by Gregg M. Garfin for the University of Arizona at the New Mexico Rural Water Association Annual Conference, March 21, 2005.

[25] An original landmark Colorado River tree-ring-based reconstruction study was completed at the University of Arizona in 1976 and estimated a long-term average flow of 13.5 million acre-feet per year. A 2006 collaboration between the University of Arizona's Laboratory of Tree-Ring Research, the National Oceanic and Atmospheric Administration, the U.S. Geological Survey, and the University of Colorado estimates the average water flow at 14.6 million acre-feet per year.

Periodic droughts, extending over a number of years also impact the actual amount of surface water available. Prudent water management must take into account these emerging realities.

Cost of Treatment

The provision of potable water in Arizona is governed by AAC R18-4 *et seq* which embodies the requirements of the Safe Drinking Water Act into the Arizona regulatory environment. The United States Environmental Protection Agency (USEPA) is required by statute to maintain a Contaminant Candidate List (CCL) and evaluate a minimum of five contaminants on the CCL during each review period for possible regulation, based on the potential for human health impacts. Technology's ability to detect constituents down to part-per-trillion levels and the ever increasing scrutiny of the effect of the environment on human health demand that regulatory parameters become inevitably more stringent. Regardless of the identity of the next regulated contaminant, there can be no doubt that there will be a treatment requirement for all but the most pristine water sources.

Wise water resource management must account for both quality and quantity of the resource, yet also must take into account the cost to the consumer. By establishing dual water main systems – one potable and one non-potable – the costs of treatment can be dramatically reduced, and as water treatment is essentially a process of contaminant removal and concentration, the production of concentrated residuals can be significantly curtailed. In the case where dual water mains supply recycled water, a significant reduction in the overall potable water demand can be realized – reducing the volume of water required to be treated meet the National Primary Drinking Water standards.

Evolution of Public Opinion

As water becomes increasingly scarce, public perception of alternative water

sources tends to shift, and changes in public perception enable modifications to water policy. Utilization of alternate water sources in the safest, most practical applications become the best available solutions. Throughout the world, public policy has evolved as the realities of scarcity begin to be addressed. Drastic turnabout in public opinion can be documented in communities where water resources became less abundant and alternative sources were required to maintain quality of life.

In Arizona, and throughout the southwestern United States, water utilities must make the investment in public education and community involvement to address the realities of growth and scarcity and foster support for inevitable changes in water policy. The communities examined later in this paper provide robust evidence of the evolution in public opinion and openness to water recycling.

WATER RECYCLING APPLICATIONS

The concept of water reclamation and recycling is not new. Indeed society has been recycling water in some form or another for hundreds of years – the most common approach has been to treat wastewater and return it to rivers, streams and washes. Global Water's utilization of highly treated recycled water in and around the City of Maricopa, is neither unique nor is it on the cutting edge of technology, but it does differ in that Global's recycled water is reused (for uses not requiring potable water) instead of being returned to rivers. The advances of the past 150 years in wastewater treatment have allowed the production of recycled water to be more consistent and achieved with a higher degree of reliability – Global Water's focus is to use that increased reliability and safety to increase the use of recycled water.

The WateReuse Association estimates there are 1,500 water reuse utilities throughout the United States delivering recycled water for a myriad of end uses, more than half of which were established in part due to water scarcity or preservation and protection of available resources. From the WateReuse Association's National Database of Water Reuse Facilities and other sources, a compendium of eleven water utilities in the United States and Australia has been developed

and is included as **Appendix A**. These utilities are providing recycled water for a full spectrum of end uses.

Five of the reclamation applications are located in arid environments with limited availability of renewable water supplies and make use of dual distribution systems supplying homes and businesses for irrigation and toilet flushing, see Table 1.

Utility Name and Location	Year Implemented	Number of Current Connections
Irvine Ranch Water District, California	1967	3,812
El Dorado Irrigation District, California	1999	3,437
Tucson Water, Arizona	1984	900
Mawson Lakes, Australia	2005	4,300
Rouse Hill, Australia	1995	16,500

Table 1

Irvine Ranch Water District

Located in Orange County, California, the Irvine Ranch Water District (IRWD) services a 133 square mile area that includes the City of Irvine and portions of Costa Mesa, Lake Forest, Newport Beach, Orange, and Tustin. IRWD makes use of imported surface water to accommodate 35% of the service area's domestic supply.[26] The remaining 65% comes from local wells. IRWD currently makes use of reclaimed water to offset 20% of their total water needs. Situated in a semi-arid region with an annual rainfall of 12 to 13 inches, water scarcity issues initiated the water recycling program forty years ago. Design and construction of reclaimed water infrastructure was completed as the community developed. As agricultural fields converted to rooftops, businessmen and planners, along with the water supplier, made a sound decision to utilize recycled water within the community.

[26] According to the IRWD Fact Sheet, dated July 2005, approximately 35 percent of IRWD's drinking water is purchased from the Metropolitan Water District of Southern California. Imported water comes from the Colorado River via the Colorado River Aqueduct and from Northern California via the State Water Project.

IRWD operates under the philosophy that water is too valuable to be used just once. "Every gallon of recycled water used...means a gallon of drinking water that can be saved for potable uses. Recycled water...reduce[es] the need to import expensive water and help[s] to keep water rates low."[27] The primary recycled water uses include landscape irrigation for parks, school grounds, golf courses, freeway landscaping, and irrigation of common areas managed by homeowners associations (HOAs). A majority of residences in Irvine have front yards that are owned by the HOA's and are thus irrigated with recycled water.

Utilization of recycled water was expanded in 1990 when the District, with support of the State of California, developed a policy requiring all new buildings over fifty- five feet high to install a dual distribution system for flushing toilets and urinals in areas where reclaimed water is available. In 1991, IRWD became the first water district in the nation to obtain health department permits for the interior use of reclaimed water from a community system. Reclaimed water currently makes use of dual-plumbing for toilet flushing in IRWD's facilities as well as in several high rise office buildings constructed with dual piping systems. Potable water demands in these buildings have dropped by as much as 80 percent due to reclaimed water use.[28]

The IRWD recycled water program is supervised by the California Department of Health Service and the Orange County Health Agency and the IRWD works in conjunction with these agencies to protect the public health while making the best use of reclaimed water. IRWD has established procedural guidelines and general design requirements for recycled water facilities that include construction specifications regarding pipe spacing and identification, guidelines for use, backflow prevention, and cross connection testing.[29]

[27] Taken from the IRWD Fact Sheet, dated July 2005.
[28] The IRWD website (www.irdw.com) represents that "in a typical office setting, approximately 80 percent of the water is used for toilet flushing. By using reclaimed water instead of drinking water to flush toilets, major savings can be realized."
[29] "Procedural Guidelines and General Design Requirements", Irvine Ranch Water District, Revised April, 2005 indicates in Section 5.1 that "all on-site facilities using recycled water will have an annual cross connection test unless otherwise approved by the state and county health agencies based on a case by case basis."

El Dorado Irrigation District

The Serrano development, located in the Sierra foothills community of El Dorado Hills, California near Sacramento, is serviced by the El Dorado Irrigation District (EID). In 1999 EID obtained approval from the State of California[30] to use recycled water to irrigate the front and backyards of residential units constructed in Serrano. Prior to the implementation of residential use, the community made use of reclaimed water on its golf course, parks and greenbelts and was recognized by the California WateReuse Association as the "Project of the Year" in 1998. With the application of advanced water reclamation, homes are equipped with dual plumbing (potable water for interior use and reclaimed water for landscape irrigation). The recycled water is delivered through a dedicated pressurized "purple pipe" system.[31] This system "puts Serrano in the forefront of the trend toward environmental sensitive development and greatly improves the community's ability to remain lush and green during normal drought cycles."[32] In 2005 Serrano received the National WateReuse Award of Merit, recognizing the community for its innovative and concerted efforts in using recycled water.

In managing the recycled system EID has developed an extensive set of policies and procedures to best serve the public. EID has established guidelines for water reuse and has created design and construction standards for both non-residential sites and residential dual plumbed homes. The standards included backflow prevention, trench details, and information regarding automatic controllers for onsite irrigation. They also included material standards and requirements for identifying above ground infrastructure.

[30] The California Code of Regulations, Title 22, Chapter 3, Division 4 defines the standards for recycled water used for surface irrigation and allows for its use to irrigate food crops, parks and playgrounds, school yards, residential landscaping, unrestricted access golf courses, and any other irrigation use not prohibited by other sections of the Code.
[31] Plumbing codes require that pipes containing reclaimed water be purple to prevent accidental cross-connection with potable water systems.
[32] Taken from the Serrano website (www.serranoeldorado.com). It should be noted that the community uses water recycling and reuse as a market differentiator, promoting its sensitivity to environmental issues.

Inspection procedures are in place during installation and the system is checked periodically to ensure continued compliance with all regulatory agencies.[33] All designers and contractors working with dual-plumbed communities are required to attend an EID workshop explaining the uses and regulations of recycled water before any design or installation begins. Refresher trainng is conducted every eighteen months.

EID promotes a public education program to continually inform their customers about the value of recycled water and how it can be safely utilized to supplement the water inventory. Monthly recycled water workshops for homeowners and publications periodically address different reuse issues. EID advocates reuse not only as good public policy in times of population growth and resource scarcity but promotes the fact that its dual-plumbed household customers use 20% less water than single-plumbed household customers.[34]

The success of advanced reclamation and dual-plumbing in Serrano has prompted the El Dorado Irrigation District to expand the program to all new communities within their service area that can feasibly connect to the backbone recycled water infrastructure. In addition to the 3,500 homes in Serrano, roughly 600 residences outside of the development make use of recycled water for front and backyard irrigation and another 1,400 in development.

Tucson Water

Development in Tucson, Arizona historically relied on groundwater to meet its water supply needs. Over time, withdrawals from the regional aquifer system surpassed the

[33] "Recycled Water Use Guidelines for Residential Dual Plumbed Homes", El Dorado Irrigation District, June 2003, Section 2.2.C.

[34] Taken from the El Dorado Irrigation District brochure titled "This Community Uses Recycled Water for Landscape Irrigation."

natural recharge and caused groundwater levels to fall. Despite aggressive demand management programs and a populace with a strong environmental ethic, Tucson began to see the declining water levels resulting in measurable land subsidence, increases in pumping costs, and the gradual loss of riparian habitats.

In order to address these issues the City of Tucson Water Department (Tucson Water) recognized that renewable water supplies, including recycled water would be needed to satisfy projected water demand.[35] Tucson Water constructed Arizona's first community reclaimed water system in the early 1980's consisting of one filtration plant, ten miles of pipeline, and two customers. In subsequent years, the system has grown to 160 miles of pipeline and delivers almost 13,000 acre-feet to more than 900 irrigation customers annually. Functions of the reclaimed water system are governed by an institutional framework of effluent entitlement[36] and use is regulated by the Arizona Department of Environmental Quality (ADEQ) and the Arizona Department of Water Resources (ADWR) through a series of permits. Current (2007) sources of reclaimed water are capable of supplying 15,750 acre-feet per year and are projected to increase by 22,250 acre-feet per year by 2015.[37]

Reclaimed Water System Design Standards have been developed by Tucson Water that address pipeline conveyances, private plumbing requirements, backflow prevention, on-site storage, water meters, utility separation, identification marking, and air gaps. Inspection protocols and procedures are established that include application for service and a formal user agreement, a backflow permit, site inspection, and dye testing[38] to ensure that there is no cross connection with the potable system.

[35] Tucson Water addressed renewable water supplies in their "Water Plan: 2000-2050" dated November 22, 2004 which was presented to the Mayor and Council of Tucson.
[36] Effluent ownership is governed by a series of inter-governmental agreements (IGA's). The basic framework was established in 1979 in an IGA between the City of Tucson and Pima County and has expanded to include the Bureau of Reclamation, the Metropolitan Domestic Water Improvement District, and the Town of Oro Valley.
[37] "Reclaimed Water System Status Report – 2007", Tucson Water Department, p. 6.

Mawson Lakes

Mawson Lakes is a community in suburban Adelaide, South Australia that is currently home to 10,000 residents. Australia is enduring a prolonged drought and reservoirs are at critically low levels. Conditions have deteriorated to a point that recently the South Australian Government suspended domestic outdoor watering for the months of July and August 2007 to help conserve water.[39] The restrictions ban the use of household sprinklers, hoses, and irrigation systems for those months. These restrictions are in addition to previous limitations on nurseries, car washing, pools, spas, fountains, and ponds.

In the face of water scarcity, Mawson Lakes and South Australia Water (SA Water), which provides service to the community, implemented advanced water reclamation to extend utilization of a valuable resource. Home construction began in 2005 and the development features a dual water supply system, supplying drinking water and recycled water to homes via completely separate mains. The community employs advanced reclamation, where not only are lawns irrigated, but toilets are flushed with reclaimed water. As a result, Mawson Lakes has demonstrated a 50% reduction in water use, saving 800 megaliters (211 million gallons) annually.[40] The use of recycled water is not mandatory but residents of the community are required to accept the terms and conditions of a Recycled Water Supply Agreement. Within the Agreement, any customer that elects not to use recycled water must pay for the internal alterations required to irrigate and flush toilets with drinking water.[41]

[38] A dye test is conducted after the reclaimed meter and backflow prevention assembly are installed. Dye is added to the irrigation system on the customer's side of the new reclaimed water meter. At the time of testing, the irrigation system is not connected to the reclaimed water meter. Potable water is used to conduct the test. The inspector turns on each drinking water faucet and the presence of dye indicates a cross- connection. All cross-connections must be eliminated prior to the initiation of recycle water service.

[39] "News Release", Government of South Australia, June 17, 2007 (announcing July 2007 restrictions) and "News Release", Government of South Australia, July 24, 2007 (announcing the extension of the restrictions into August 2007).

[40] From South Australia Water website (www.sawater.com.au) What's New – News Room – "$16 million recycle system saves water."

[41] Mawson Lakes Recycled Water Supply Agreement, Terms and Conditions of Supply.

In April 2006 SA Water and the Government of South Australia published a Recycled Water Plumbing Guide with the intent to "ensure proper installation of the recycled water service and provide a clear guide for safe use of recycled water."[42] The document provides guidelines for use and installation and includes information on water mains, meter assemblies, approved products, and details on commissioning the system. An extensive public education program continues to inform and update customers on issues that range from how a recycled water system works to the proper use of the resource.

Rouse Hill

Australia's largest residential recycled water scheme is the Rouse Hill area located in northwestern Sydney. Since commencement in 2001, over 16,500 homes are using 1.9 billion liters (roughly 500 million gallons) each year to flush toilets, irrigate landscapes, and wash cars. On average the Rouse Hill scheme has reduced demand for drinking water by 35 percent. Eventually 35,000 homes will be served. Water reclamation and recycling have been staples of Sydney Water's resource policy for the last decade. In fact, across greater Sydney more than 20 recycled water systems recycle 22 billion liters (almost 6 billion gallons or roughly 18,000 acre-feet) each year[43]. This renewable resource has proven valuable during the drought conditions that are currently impacting the region.

Periodic droughts are a feature of Sydney's climate and have shaped water policy in the area. Over the past 120 years, the region has experienced three prolonged droughts – one in the 1890's, a second in the 1940's, and is currently in the midst of the third. Questions regarding climate change and uncertainties about rainfall patterns only complicate planning for water in the future. The New South Wales (NSW) Government, which wholly owns Sydney Water, has advocated extensive reuse as policy and has included water recycling as a major component of their Metropolitan Water Plan. NSW states in an

[42] "Recycled Water Plumbing Guide", Government of South Australia, SA Water, April 2006, p. 3.
[43] From Sydney Water website (www.sydneywater.com.au).

executive summary of their 2006 Plan that "wastewater can be safely recycled and used in industry, agriculture and in new homes for garden watering, toilet flushing and other non-drinking uses. Recycling can...diversify the system with a supply source not relying on rainfall."[44]

DIRECT REUSE VERSUS RECHARGE

Direct reuse of recycled water is relatively straightforward. Wastewater is treated to a high level at a reclamation facility for reuse and, rather than discharging the product unused into the environment, purple pipe (plumbing code requires that the pipe color be purple to reflect its recycled status) moves the water from the treatment facility to its point of use. While recharging recycled water into the underlying water table is an important aspect of resource management, it is inferior to direct reuse. Recharge is a method of achieving seasonal resource equalization (i.e., storing recycled water in winter months for withdrawal and use in summer months), but it falls short in the "highest-and-best-use" category. There are a number of benefits that direct reuse has over recharge.

- Water is pumped once and then used repeatedly, reducing pumping and SDWA treatment costs
- Recharge facilities are complicated by local geology, wildlife and cultural concerns
- Recharge has the potential to increase salinity in the aquifer
- Contaminants of emerging concern may be better addressed by direct reuse
- Recharge is often conducted in areas remote from the use of the water resource

Water is Pumped Once

Groundwater requires a substantial amount of energy to lift it from the aquifer to the surface. The cost of groundwater extraction is in the order of $0.80 per 1000

[44] "2006 Metropolitan Water Plan Executive Summary", NSW Government, April 2006.

gallons. Once on the surface, it can be distributed and redeployed for $0.10 per 1,000 gallons. Recharge requires that the water be removed once from the aquifer, distributed to homes, treated, pumped back into the aquifer (if using vadose zone wells or Aquifer Storage Recovery (ASR) wells), then recovered (pumped out again) from the aquifer, and treated again for SDWA compliance (as noted at a cost ranging from $0.50 to $2.00 per 1,000 gallons). The result is a three-fold increase in energy costs.

Recharge Facilities are Complicated

Recharge basins and wells are notoriously difficult to operate and maintain. Often soils (particularly in Arizona) do not percolate well, and they can be compromised by fines or bacteriological growth. Vadose zone and ASR wells require routine maintenance and have a useful life of 5 to 7 years. Furthermore, wildlife and cultural concerns greatly diminish the areas available for recharge and discharge.

Recharge and Salinity in the Aquifer

When a direct reuse scenario is implemented, the amount of water withdrawn from the underlying aquifer is less than that required when recharge is utilized (water already on the surface is recycled, supplementing the need for additional groundwater). As a result a direct reuse scenario has much less impact on the aquifer. Operating under a recharge scenario, more water is extracted from the aquifer and is replaced with water of a potentially significantly higher total dissolved solids (TDS) level. The result is increased salinity in the aquifer. This concept is more fully discussed in **Appendix B**.

Contaminants of Emerging Concern

Much research is ongoing to evaluate contaminants of emerging concern (CEC) in municipal effluents and recycled water. CEC's include endocrine disrupting compounds (EDC), pharmaceuticals and personal care products (PPCP). By creating a continuous loop of non-potable water on the surface, direct reuse minimizes exposure of CEC's

to the underlying aquifer. More information on EDC's and how they relate to direct reuse and recharge are presented in **Appendix C**.

Remote Recharge

Recharge is often conducted in areas remote from the water resource use. Because of land requirements needed for recharge and recovery, recharge areas are often well outside impacted areas. Direct reuse allows the water resource to be employed where it is required. Decentralized water reclamation and direct reuse allow for the minimization of material and resource flux – a key concept of sustainability.[45]

THE ECONOMICS OF WATER RECYCLING

The introduction of water reclamation and reuse into a region has substantial impact on water conservation and long term sustainability. The front end financial outlay required to execute a regional water reclamation plan is a sound investment and is good public policy when analyzed in the broader contexts of growth, resource scarcity issues, and resource quality issues.

As growth continues in Arizona and scarcity issues become paramount, the price to acquire water rights will continue to escalate. Pricing for surface water rights within the southwestern United States has surged upward; this trend will continue. In addition to acquisition considerations, the ever tightening regulatory environment presents a future laden with ever more stringent treatment requirements. Recent regulatory changes governing the maximum contaminant level (MCL) of arsenic have added significant costs to the operation of water utilities, both in capital investment for new infrastructure and in increased operating expenses. When the costs associated with reclamation are analyzed within the emerging water acquisition andtreatment realities, the economics further shift in favor of reuse.

[45] Water Recycling and Decentralized Management: The Policy and Organizational Challenges for Innovative Approaches – Daniel J. Livingston, Nyree Stenekes, Hal K. Colebatch, Nicholas J. Ashbolt and T. David Waite.

Water reuse activities also allow for the maintenance of greenspace in the urban/suburban environment. This has a significant impact on overall temperatures in the region, and can significantly reduce overall power costs. Demand for electricity in United States cities increases by 3 to 4 percent for every one degree Celsius increase in ambient temperature.[46] Urbanization has increased the overall temperatures 0.1° to 1° C per decade in the past 50 years.[47] The maintenance of greenspace "measurably affects the thermal behavior of different sites within a city. Maximum temperatures within the greenspace of individual building sites may be 3° C cooler than outside the greenspace."[48] Significant power savings can be achieved by ensuring that water resources are available for greenspace activities.

Global Water, through its regulated utilities, Santa Cruz Water Company and Palo Verde Utilities Company, has made significant investment in water reclamation treatment and transmission infrastructure throughout developing communities in and around the Cities of Casa Grande and Maricopa, Arizona. This investment lays the foundation for long term total water management opportunities in the area, supporting growth while addressing scarcity and obviating treatment to meet the Safe Drinking Water Act (SDWA) for a significant volume of water. An analysis of the systems in the Maricopa/Casa Grande Region (MCSR) provides an opportunity to examine the economics of recycling.

MODELING AND ECONOMIC ANALYSIS

Modeling was developed to analyze capital investment for infrastructure, system operations and maintenance costs, and the rate requirements associated with various water resource scenarios. This model was calibrated from field experience and data accumulated from Santa Cruz Water Company and Palo Verde Utilities Company. The model is a quantitative analysis. The qualitative impacts of implementing a regional reclamation program (community amenities, recreational opportunities, power savings by employing greenspace etc.), while warranting consideration, were not included.

[46] Quantifying the Impact of Trees: The Chicago Urban Forest Climate Project – D.J. Nowak and E.G. McPherson.
[47] Ibid
[48] Ibid

The analysis was structured as follows:

- Parameters such as underlying regional conditions, population density, consumptive demand, and availability of recycled water were defined.
- Quantifiable assessments were developed for relevant parameters (capital expenditures and Advances In Aid of Construction "AIAC", operations and maintenance, capital structure, and profit and loss).
- Three water resource scenarios were identified for evaluation:

    o Groundwater Only/No Treatment – Assumes complete reliance on groundwater within the region. In this scenario, the underlying water source is assumed to meet compliance with all regulatory mandates without a requirement for significant treatment facilities.

    o Surface Water – Assumes that surface water is acquired and delivered to the region for use in lieu of groundwater.

    o Groundwater with Arsenic Treatment – Assumes that groundwater must be treated for compliance with one of the 90 regulated contaminants of the SDWA to meet changes in the Maximum Contaminent Levels (MCL).

- Each water resource scenario was evaluated in the context of no reclamation, basic reclamation, and advanced reclamation:

    o No Reclamation is defined as employing groundwater for all water uses in a single-plumbed community.

    o Basic Reclamation is defined as reusing water produced by a water reclamation facility for irrigation of common areas, Homeowners Association ("HOA") open spaces, community amenities and schoolyards.

o Advanced Reclamation is defined as a dual-plumbed, highly distributed network of delivery of recycled water for the best and highest uses possible.

Detailed discussion of baseline parameters is included as **Appendix D**.

ANALYSIS OF RESULTS

Modeling allowed for analysis of many different areas including:

- Water savings
- Baseline Costs (both capital costs and cost to the customer)
- The impact of surface water acquisition
- The impact of treatment.

Results depicting front-end capital expenditures (infrastructure) and cost to the consumer (monthly billing) are summarized in the following Table 2 (calculation sheets are included as **Appendix E**) and analysis is made in the pages that follow.

Water Resource Scenario	Level of Reclamation	Infrastructure Total (per EDU)	Monthly Billing (per EDU/Mo)
Groundwater/No Treatment	None	$6,494	$83.19
Groundwater/No Treatment	Basic	$6,694	$80.99
Groundwater/No Treatment	Advanced	$8,214	$85.94
Surface Water	None	$12,428	$164.26
Surface Water	Basic	$10,533	$133.45
Surface Water	Advanced	$11,610	$132.33
Arsenic Treatment	None	$6,945	$104.03
Arsenic Treatment	Basic	$6,985	$94.48
Arsenic Treatment	Advanced	$8,472	$97.87
		EDU - Equivalent Dwelling Unit • EDU/Mo - Equivalent Dwelling Unit Monthly	

Table 2

Water Savings in Groundwater Only/No Treatment

Water recycling results in substantial water savings, reducing demand by 35% (basic recycling) to 43% (advanced recycling).

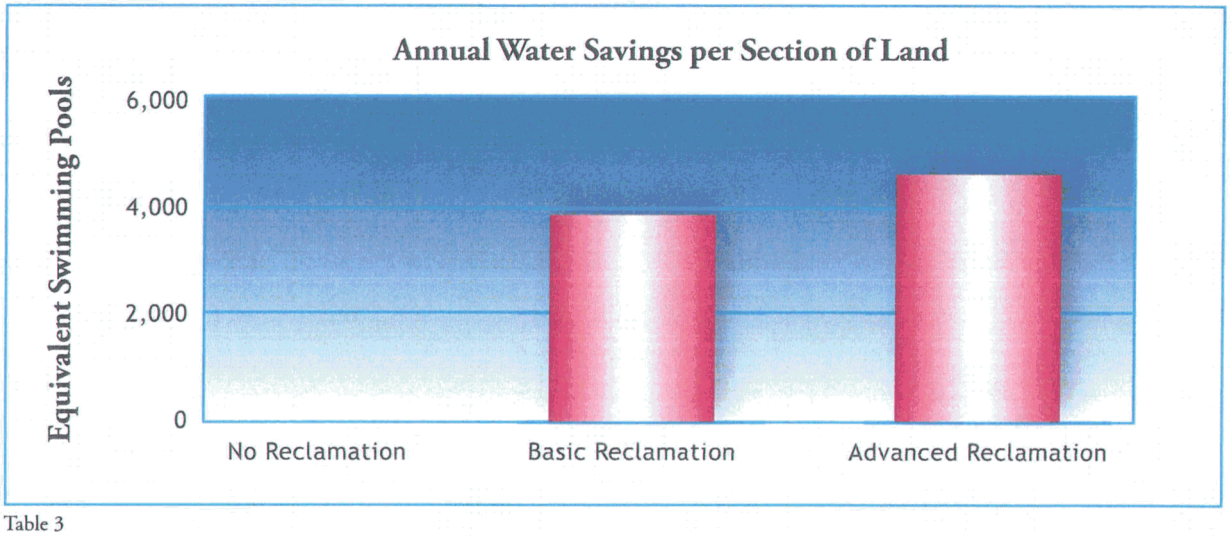


Table 3

The water savings associated with basic and advanced reclamation is tremendous, see Table 3. Without reclamation, groundwater consumed on an annual basis within a section of developed land is approximately 273 million gallons (the equivalent of 10,919 swimming pools). The incorporation of basic reclamation to the section reduces consumption to 177 million gallons annually (7,065 swimming pools), a savings of 35%. [49] Advanced reclamation reduces the consumption to 156 million gallons (6,248 swimming pools), representing a 43% savings.[50]

As a result of these water savings, more growth may be sustained within the same volume of potable water. An additional 1,222 units may be serviced through the introduction of Basic reclamation. Advanced reclamation increases that number to 1,481 units, this increase in

[49] (10,919-7,065)/10,919 = 3,854/10,919 = 0.35 (35%)
[50] (10,919-6,248)/10,919 = 4,671/10,919 = 0.43 (43%)

housing density yields other environmental benefits ranging from reduced transportation demand, increased community coherence, and increased local business development opportunities.[51]

Baseline Costs (Groundwater Only/No Treatment Scenario)

When analyzed in the Groundwater Only/No Treatment scenario it is apparent that the front-end capital costs associated with Basic reclamation are only slightly higher (+3%) than those associated with the provision of No reclamation. Capital cost for Advanced reclamation are higher than that of Basic reclamation (it should be noted that, while capital cost are higher, costs to the consumer are lower – as discussed below).

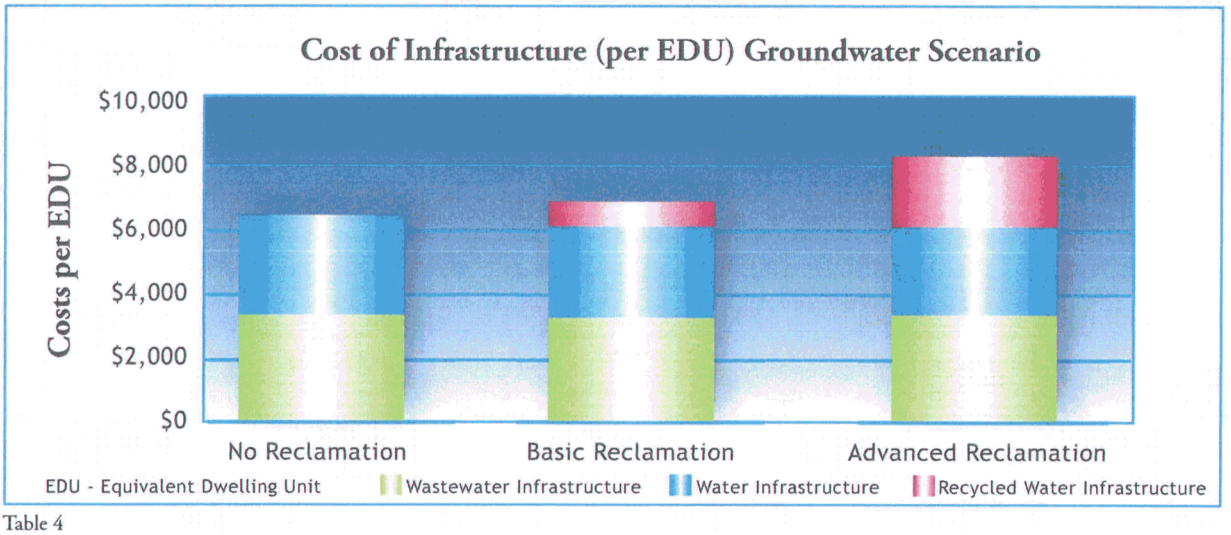


Table 4

Basic reclamation requires the installation of pipes and infrastructure to distribute recycled water from the water reclamation facility to its point of use, see Table 4. This is a non-pressurized system, where water is delivered at atmospheric pressure to Recycled Water Retention Structures (typically lake-type facilities). The point of use, from the perspective of the utility, is the onsite retention structure from which the development draws to irrigate common areas,

[51] See work of Urban Land Institute, generally, and Urban Land Institute/National Multi-Housing Council/American Institute of Architects' "Joint Forum on Housing Density", Feb. 7, 2002.

parks, ball fields, school grounds, etc. The cost of the pipeline is offset by a downsizing of facilities that treat and distribute potable water. These include well sites and distribution centers (storage & pumping). Total cost per EDU without reclamation is calculated to be $6,494. Cost per EDU with Basic reclamation calculates to $6,694 (an increase of 3.1%).

Advanced reclamation includes all aspects of Basic reclamation but adds infrastructure to distribute recycled water directly to each residence for irrigation purposes rather than simply delivering to centrally located retention structures. Under this scenario, each individual property has two meters, one for potable water and one for recycled water. Distribution must be pressurized, requiring construction of recycled water distribution centers for storage and pumping (typically large water tanks in excess of 1,000,000 to 2,000,000 gallons). Advanced reclamation also requires construction of in-parcel distribution pipelines. Cost per EDU is $8,214 (an increase of 26.5% when compared to no reclamation).

Operating under the Groundwater-only Scenario, cost to the consumer can be reduced by 2.6% when employing Basic direct reuse. When Advanced reclamation is utilized, the cost increases slightly (+ 3.3%).

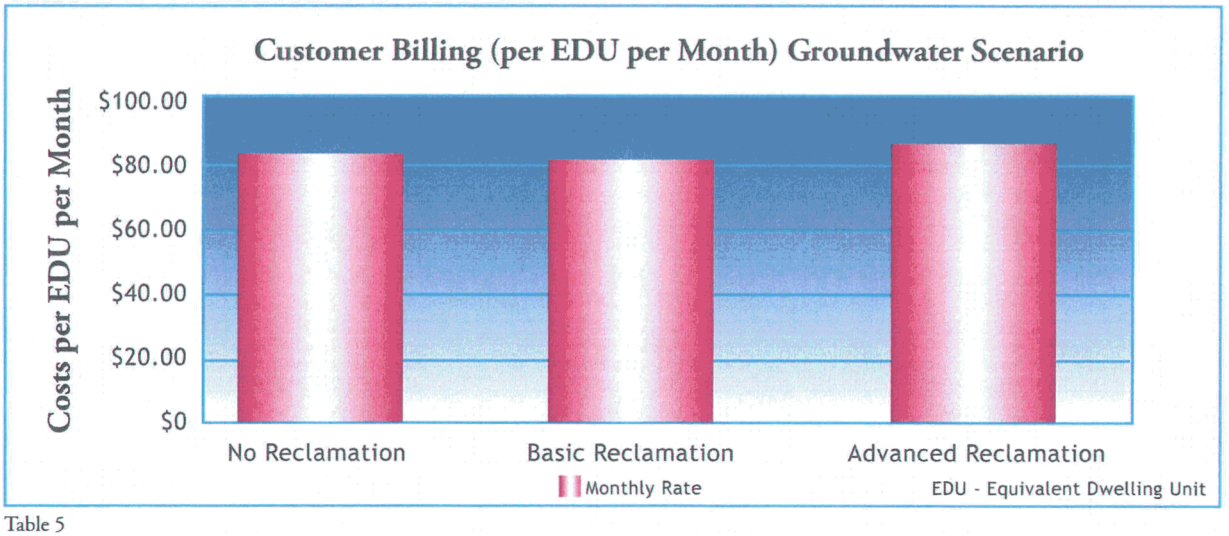


Table 5

While capital costs are slightly more expensive, implementation of Basic water reclamation creates a scenario where the consumer recognizes a cost savings on monthly billing, see Table 5.

Without water reclamation, rates associated with the Groundwater-only scenario are in the order of $83.19 per EDU per month. Reuse creates a decrease in treatment of potable water, reducing costs to the consumer. Consumer billing with Basic reclamation will decrease to $80.99 per EDU per month (-2.6%). Advanced reclamation utilizes a pressurized distribution system, including storage and pumping. As a result, monthly cost to the consumer increases to $85.94 per EDU per month (+3.3%) when compared with the No reclamation scenario.

A comparison of water savings to capital cost and consumer billings in Table 6 illustrates that significant opportunities can be achieved through minimal front end capital investment.

Water Resource Scenario	No Reclamation	Basic Reclamation	Advanced Reclamation
Water Savings in Gallons/Year/Section	0	96,347,624 35% Savings	116,784,998 43% Savings
Additional EDU's Liberated @ 216 Gallons/EDU	0	1,222	1,481
Capital Cost per EDU	$6,494	$6,694 +3.1%	$8,214 +26.5%
Consumer Billing per EDU/Month	$83.19	$80.99	$85.94

EDU - Equivalent Dwelling Unit • EDU/Mo - Equivalent Dwelling Unit Monthly

Table 6

Impact of Surface Water

Introduction of surface water has substantial impact on the economics of water reclamation. When the cost associated with a perpetual water right is added to the equation, cost per EDU increases by over 90% (from $6,494 to $12,428). In this scenario, water reclamation offers substantial savings in front end capital cost. When factoring in surface water, a

savings of over 15% can be realized with Basic reclamation ($12,428 per EDU drops to $10,533 per EDU). Advanced reclamation recognizes a cost savings of almost 7%.

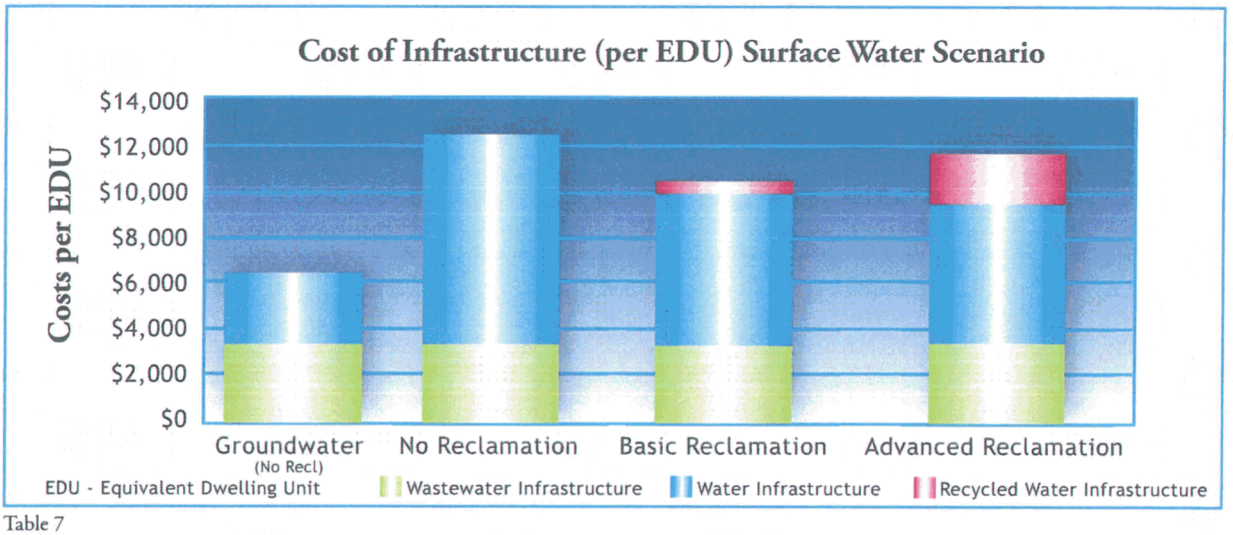


Table 7

The emerging reality of groundwater scarcity necessitates acquisition of renewable surface water as a supplemental resource. Research into the water rights market in the southwestern United States indicates an ongoing upward surge in prices. It is anticipated that this price surge will continue as growth and scarcity issues become increasingly polarized, see Table 7. For purposes of analysis a baseline value for acquisition of surface water rights was established at $11,000 per acre foot.[52] The impact on front end capital requirements and cost to the consumer is staggering. Total front end capital cost per EDU increases from $6,494 per EDU (utilizing groundwater) to $12,428 per EDU when the cost of surface water acquisition is included (an increase of 91.4%). This value can be decreased substantially by utilizing water reclamation in the regional plan. By recycling water, the need for incremental surface water supplies is diminished. With Basic reuse the cost drops to $10,533 per EDU (a decrease of 15.3% of the surface water scenario with no reclamation). Advanced reclamation in the surface water scenario calculates to $11,610 per EDU (a decrease of 6.6%).

[52] Discussion of $11,000 price per acre foot is included in Appendix D

In the surface water scenario, the cost of treatment has a great impact on the cost to the consumer -- monthly billings nearly double ($83.19 per EDU per Month with groundwater, $164.26 per EDU per Month with surface water). By utilizing recycled water in lieu of surface water, consumer cost can be reduced by 18% to 20%.

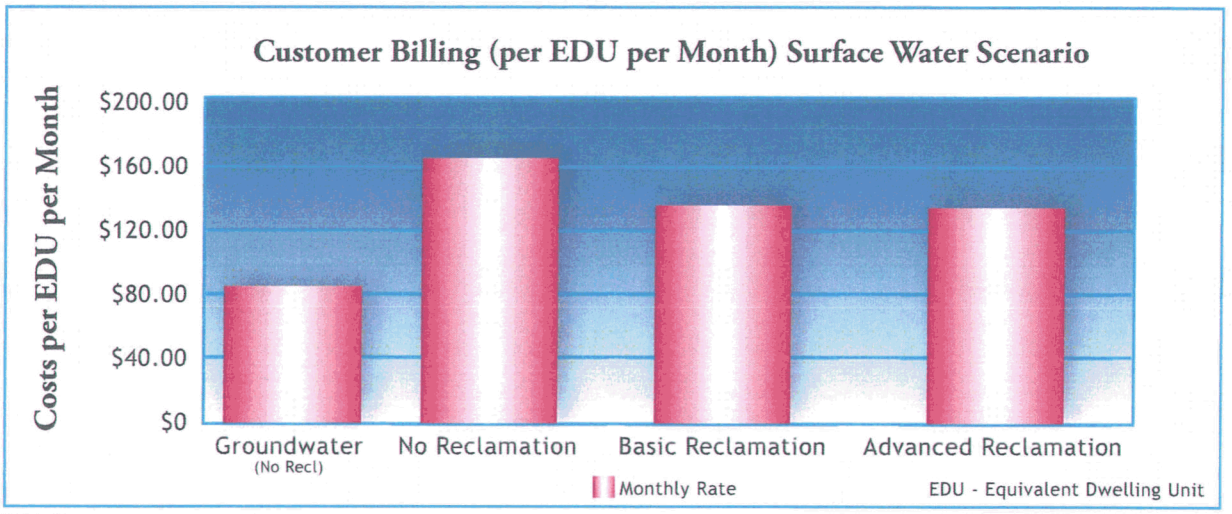


Table 8

In the surface water scenario, monthly billings calculated to $164.26 per EDU, see Table 8. Basic reclamation reduces that number to $133.45 per EDU (-18.8%) while advanced reclamation reduces the monthly billing even more to $132.33 per EDU (-19.4%).

Impact of Treatment

Treatment considerations have impacts on capital costs. When the cost associated with arsenic removal equipment is added to the model, cost per EDU increases by over 7%. When treatment is factored in, a slight savings of 0.6% can be realized with Basic reclamation. In-parcel distribution pipelines increase the cost of Advanced reclamation by 18% when compared to the no reclamation-groundwater only/no treatment scenario. Note that the model conservatively assumes that treatment is required for only one contaminant. In the event that the next regulated contaminant requires a separate and distinct treatment system, the effect on cost is compounded.

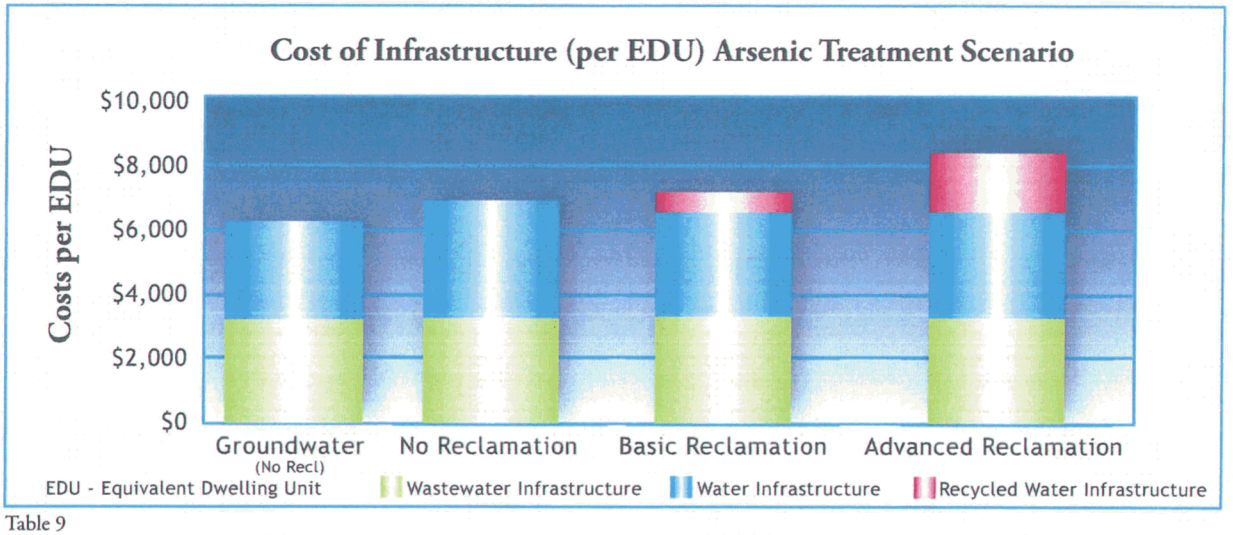


Table 9

The cost per EDU increases from $6,494 per EDU (utilizing groundwater that does not require treatment) to $6,945 per EDU when the cost of treatment is included (an increase of 11.1%), see Table 9. With basic reuse the cost drops to $6,985 per EDU (a decrease of 0.6% of the treatment scenario with No reclamation). Advanced reclamation in the treatment scenario calculates to $8,472 per EDU (an increase of 18.0%).

When treatment is required, monthly billing to the consumer will increase by over 25%. Water reclamation in this scenario offers a savings to the consumer.

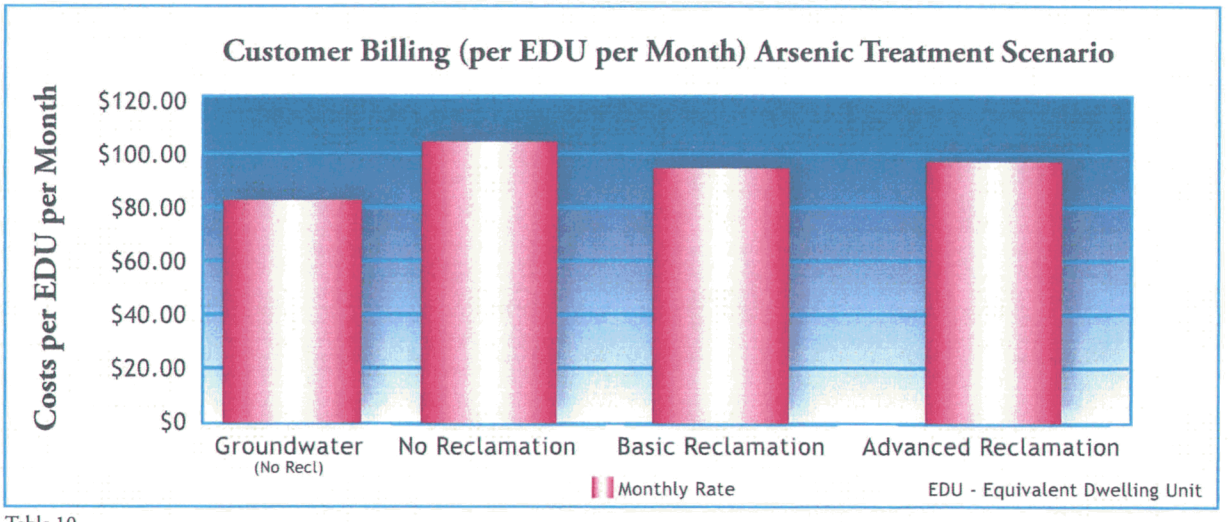


Table 10

Monthly billings within the treatment scenario calculated to $104.03 per EDU (an increase of 25.1% when compared to the scenario where groundwater does not require treatment), see Table 10. Basic reclamation reduces that number to $94.48 per EDU (-9.2%). Advanced reclamation reduces the monthly billing under treatment scenarios to $97.87 per EDU (-5.9%).

CONCLUSIONS

According to a 2006 Arizona Department of Water Resources presentation on Arizona water issues, the State is dependent upon three sources of water as listed in Table 11 below[52]:

Water Source	Available Annual Water Supply in Arizona Million Acre-Feet (MAF)	% of Total
Surface Water		
Colorado River	2.8	35.6%
In-State Rivers	1.4	17.8%
		53.4%
Ground Water	2.9	36.8%
Reclaimed Water	**0.77**	**9.8%**

Table 11

Based on these figures, over-allocated rivers and extended periods of drought have the potential to impact 53.4% of the State's water supply while another 36.8% of its reserve relies on depleting underground aquifers. Reclaimed water exists as the only water source experiencing an increase in availability (9.8% and growing). The State must move aggressively to support, and mandate water recycling as a long term solution to water scarcity.

An effective recycling program can only be deployed by an integrated services provider with the ability to plan regionally and construct infrastructure – early, in advance of development

[52] "Arizona Water Issues" presentation of ADWR, at Valley Forward Association meeting, March 16, 2006.

– of the appropriate size and capacity. The benefits of recycling can also be exploited by an integrated utility through common-trench construction, consistency of recycling objectives, commonality of standards and economies of scale for labor.

Global Water is not on the vanguard of successful water reuse programs. In fact there are thousands of applications throughout the world. Much can be learned and emulated from utilities that have been implementing water recycling for some time.

- From examining the Irvine Ranch Water District it is apparent that much can be accomplished if the benefits of reclamation are recognized early and if recycled water is a part of the planning process from the beginning. Arizona has a unique opportunity in this regard – growth is driving the development of new communities. Deploying recycled water infrastructure while these communities sit on the drawing table is far superior to attempting a retrofit later, when the scarcity reality is more pronounced.
- The El Dorado Irrigation District has demonstrated that implementation of advanced water recycling serves to lower the customer's monthly water bill.
- Tucson Water determined that, despite a populace with a strong environmental ethic, aggressive demand management alone cannot necessarily curtail depletion of underlying aquifers.
- The Australian community of Mawson Lakes shows that recycled water can be safely and dependably used to flush toilets in private residences.
- Rouse Park in suburban Sydney, Australia is an example where large scale water reclamation planning has been of significant benefit during times of prolonged drought. These are but five examples of dual-plumbed applications that were driven by scarcity.

Recycled water has been safely utilized throughout the world for several decades. In preparation for a March 2007 referendum on recycled water use, the Local Government Association of Queensland, Australia commissioned a study by the University of NSW. The report by Stuart Khan and David Roser, of the UNSW Centre for Water and Waste Technology, reviewed recycled drinking water schemes in the US and Singapore. "Despite more than 40 years' experience,

no clear deleterious health effects...have been observed," the authors wrote.[54] Recycled drinking water in the schemes was of equal quality to that from traditional sources – or better.[55]

Direct reuse, ultimately using dual piping networks (one for potable water and one for pressurized recycled water), offers the most practical and inexpensive way to make use of reclaimed water. While recharge remains a method of achieving seasonal resource equalization, direct reuse is preferable as a mechanism to reduce pumping costs, reduces the mass loading of residual contaminants on the receiving environment and reduces the volume of water treated to National Primary Drinking Water Standards and used by customers.

Deployment of recycled water infrastructure offers substantial water savings, ranging from 35% to 43%. This savings allows for increased housing density with numerous environmental benefits. In the context of residential density, this increase in unit serviceability allows population cores to be developed with existing resources. Accordingly, growth need not seek out new sources of water thereby increasing consumption of raw, native or otherwise desirable open space.

From an economic standpoint, analysis shows that while the implementation of dual water mains and water recycling may be more expensive (up front), they are less costly (to the consumer). Under the likeliest scenarios, i.e., groundwater must be treated to SDWA standards and surface water must be purchased and delivered to customers, the practice of water recycling has an immediate and profound impact on water scarcity management.

With the emerging concerns of groundwater scarcity and impending treatment considerations, the economics of reclamation have shifted sharply in favor of water recycling. Regions across the globe are vigorously changing their water policy, and emplacing billions of dollars in infrastructure to achieve water savings up to 50%.

The introduction of water reuse provides substantial benefits in the arid southwestern United

[54] From the article "All-clear for recycled water." The Courier Mail, January 22, 2007.
[55] Ibid

States. The pressures of drought, growth and aquifer overdraft are conspiring to limit the availability of water resources in the area. Significantly, these impacts can have a dramatic impact on the quality of life in Arizona. Consequently, it is in the public interest to maximize the availability of alternative water resources, and to minimize the consumption of limited groundwater and surface water resources. It is therefore critical that water recycling form a pillar of water policy in Arizona. Policy in Arizona lags surprisingly behind other areas. The emerging realities of population growth and water scarcity have already impacted the region's future. Failing to act now will accelerate that impact.

Arizona is now at a crossroads – its growth is incessant and historic, its water supplies diminished by 13 years of drought, its CAP water system has been thrice proven to be over- allocated – the time for decisive, progressive action is now.

By making the safest and best use of reclaimed water, the demand for expensive surface water and the requisite substantial drinking water treatment will be greatly reduced, saving up front capital and acquisition costs and forever reducing operating and treatment costs for Arizona residents – all while ensuring that the State's water resources are used for their highest and best use.

It is widely accepted that a culture of conservation is in the public interest, and that utilizing less water per capita is also in the public interest. It is interesting to note that the very capital intensive advanced water recycling model provides long term rate protection to ratepayers – another key element of sound water policy. The only remaining question is whether the State's leaders will act now to protect the public interest for the next generations of Arizonans.

APPENDIX A – COMPENDIUM OF UTILITIES

Utility Name and Location	Number of Years Practicing Water Reuse	List of End Use Types	Driver for Water Reuse	Rate Information	Total Annual Volume of Water Reused (ac-ft/yr)	Miles of Water Reuse Distribution System
Irvine Ranch Water District, CA (IRWD)	40 (since 1967) (dual plumbing since 1991)	Residential landscape irrigation 3742, commercial 13, industrial 2, and agricultural 55 (total 3812 reclaimed water connections) in 2005	Scarcity	$1.18/1000 gallons for non-agricultural landscape irrigation base rate; $0.79/1000 gallons for commercial and industrial	22,434	245 miles of pipelines, 8 storage reservoirs, and 12 pumping stations
Notes Service area of 133 mi2. Reclaimed water makes up over 20% of the water used in the IRWD service area. Water scarcity initiated water recycling program - *semiarid region* (an annual rainfall of 12 to 13 in). **An ordinance was enacted in 1990** requiring all new buildings over 55 ft high to install a dual distribution system for flushing toilets and urinals in areas where reclaimed water is available. In 1991, IRWD became the first water district in the nation to obtain health department permits for the interior use of reclaimed water from a community system. Reclaimed water is currently used for **toilet flushing** in IRWD's facilities as well as in several high rise office buildings constructed with **dual piping systems**. Potable, or drinking water demands in these buildings have dropped by as much as 75 percent due to the reclaimed water use.						
Serrano, CA	8 (since 1999)	3437 active accounts in 2006 (3277 dual recycled residentials, 139 commercials/industrials (irrigation), 8 construction meters, 13 recreational turf)	Scarcity	$1.096/1000 gallons for Residential (plus $106 basic charge for Commercial/ Industrial)	2,782	N/A
Notes Serrano is one of the first master-planned communities to use recycled water to irrigate the front and backyards of residential units. Homes are equipped with **dual plumbing** (potable water for interior use and reclaimed water for landscape irrigation). A dual plumbed home pays 50% of the normal (all potable) connection charge for delivery system capacity (i.e., $2,323 rather than $4,646). The Serrano El Dorado **Owners Association** made an agreement with the El Dorado Irrigation District to supply reclaimed water from the districts' WWTPs for irrigation purposes.						
Tucson Water, AZ	23 (since 1984)	Residential front yard irrigation - 900 sites (14 golf courses, 35 parks, 47 schools, > 700 single family homes)	Scarcity	$2.14/1000 gallons (usage charge) + service charge	11,350	160 miles
Notes The use of reclaimed water is regulated by the ADEQ and the ADWR through a series of permits. Water scarcity initiated water recycling program. In 2005, reclaimed customers saved 4.2 billion gallons of drinking water, enough for 39,000 families for a year.						

WWTP - WasteWater Treatment Plant • ac-ft/yr - Acre Feet per Year • ADEQ - AZ Dept. of Environmental Quality • ADWR - Arizona Department of Water Resources

Utility Name and Location	Number of Years Practicing Water Reuse	List of End Use Types	Driver for Water Reuse	Rate Information	Total Annual Volume of Water Reused (ac-ft/yr)	Miles of Water Reuse Distribution System
Mawson Lakes, Australia	2 (since 2005)	Toilet flushing, residential yard irrigation (4300 homes by 2010)	Scarcity	Set at 75% of the price of mains drinking water (AUD $2.91/1000 gallons for 2004/05 financial year, 1 AUD = 0.884 USD)	N/A	N/A
Notes Mawson Lakes is a fully planned 620 hectare (2.4 mi2) community. **All homes and businesses are dual plumbed and use recycled water for front yard irrigation and toilet flushing.** This reduce usage of drinking water by 50% as compared to the Adelaide average. Recycled water from two sources - SA Water's Bolivar WWTP and the City of Salisbury's wetlands (treated stormwater). An anticipated saving on the use of surface water by about 210 MG per year by the Mawson Lakes community. An average household in Mawson Lakes could save approximately AUD $30 each year.						
Rouse Hill, Australia	12 (since 1995)	Toilets flushing, residential yard irrigation, car washing (more than 16,500 homes)	Scarcity	AUD $2.70/1000 gallons plus quarterly service charge AUD $4.69 (in 2007)	1,540	N/A
Notes Rouse Hill, a suburb of Sydney, has Australia's largest residential recycled water scheme. Rouse Hill put an initial dual system in operation in 1995. **All customers are dual plumbed with both potable and reclaimed water lines inside for toilet flushing.** The reclaimed water system also provide water for fire protection, not as a water conservation measure, but to reduce the size of the potable water pipelines. On average the Rouse Hill scheme has reduced demand for drinking water by 35 percent.						
St. Petersburg, FL	30 (since 1977)	Irrigation for 9,992 residential lawns, 61 schools, 111 parks, and 6 golf courses (total 10,284 active customers) in 2006	Discharge limit	Unmetered service: $14.36/mo. for first acre + $8.22/mo. for each additional acre; Metered service $0.42/1000 gal. ($14.36 min.); plus 10% tax within City limits, rates outside City limits are 125% of City rates (Nov `06)	40,700 (four WRFs)	291 miles, 3909 valves, 316 fire hydrants
Notes One of the oldest **dual distribution systems** in the U.S. The dual distribution system has reduced potable water usage by 50%. In response to a state legislative act that required either advanced treatment or zero discharge to Tampa Bay, the City Council adopted the concept of zero discharge through wastewater reuse. A treated wastewater main ties all four plants together in a complete loop.						

AUD - Australian Dollar to U.S. Dollar Exchange Rate • USD - United States Dollar • WWTP - Watse Water Treatment Plant • ac-ft/yr - Acre Feet per Year

Utility Name and Location	Number of Years Practicing Water Reuse	List of End Use Types	Driver for Water Reuse	Rate Information	Total Annual Volume of Water Reused (ac-ft/yr)	Miles of Water Reuse Distribution System
Marin Municipal Water District, CA (MMWD)	16 (since 1991)	Residential yard irrigation, toilet flushing, car washes, industrial cooling, commercial laundries (over 250 customers)	Conservation	$2.18/1000 gal. (70% of potable water, $3.07/1000 gal.) plus service charge	2,200	25 miles
Notes MMWD was the first water supplier in California to use recycled water for car washes, air conditioning cooling towers, and commercial laundries. **First dual-plumbed new office building** was built in San Rafael in the mid-1990s.						
Orange County Water District, CA	16 (since 1991)	Urban irrigation, Industrial (cooling)	Scarcity	N/A	7,700	N/A
Notes Green Acres Project; distribute tertiary treated wastewater for uses in Fountain Valley, Huntington Beach, Costa Mesa, Newport Beach, and Santa Ana.						
West Basin Municipal Water District, CA	12 (since 1995)	Landscape irrigation, cooling towers, refineries, street sweeping, toilet flushing	Scarcity	N/A	33,000	75 miles
Notes West Basin Water Recycling Facility is the largest recycled water plant of its type in the United States, and produce six different qualities of recycled water.						
City of San Jose, CA	10 (since 1997)	Residential/ commercial toilet flushing, industrial cooling and process water, landscape irrigation	Conservation	$1.68/1000 gal. (71% of potable water) for irrigation, $1.09/1000 gal. (46% of potable water) for agricultural irrigation	27,800	105 miles
Notes In 1989 the cities of San Jose, Santa Clara and Milpitas in California launched the South Bay Water Recycling (SBWR) program to bring a reliable and sustainable water supply to the South Bay area. Most of the final treated water from the San Jose/Santa Clara Water Pollution Control Plant (167 MGD) is discharged as fresh water through Artesian Slough and into South San Francisco Bay. About 10% is recycled through SBWR pipelines around the South Bay where it is ultimately used for residential/commercial irrigation and toilet flushing.						
El Paso Water Utilities, TX (EPWU)	44 (since 1963)	Residential/ commercial yard irrigation,industrial cooling, irrigation - golf courses, schools, parks, recharge	Scarcity	$1.14/1000 gal. (70% of potable Block 1 rate, $1.63/1000 gal.)	6,850	40 miles
Notes EPWU delivered recycled water since the 1960s realizing scarcity of water resources. EPWU is operating the first wastewater treatment plant in the world to meet drinking water standards for its reclaimed water, and the other three plants meet the highest possible quality rating of Type I reclaimed water. Four facilities - Northwest WRF, Fred Hervey WRP, Haskell Street WWTP, Roberto Bustamante WWTP.						

WWTP - Watse Water Treatment Plant • ac-ft/yr - Acre Feet per Year • MGD - Million Gallons/Day

APPENDIX B – DETERMINATION OF ENVIRONMENTAL IMPACT RECHARGE VERSUS REUSE

In order to assess the relative merits of recharge versus re-use on the environment, in particular the underlying aquifer, a model has been developed to represent the following conditions:

1. *Water-only*
   Under this scenario, it is assumed that a non-integrated water-only solution has been deployed. There are no water demand reductions and hence all water for all uses must be treated from the aquifer.

2. *Recharge of Reclaimed Water*
   This scenario assumes that all reclaimed water treated from a water reclamation facility is directly recharged to the aquifer via vadose zone or ASR wells. No water is re-used in this scenario.

3. *Basic Re-Use of Recycled Water*
   This scenario provides recycled water for common area irrigation. Excess recycled water is recharged to the aquifer by vadose zone or ASR wells.

4. *Advanced Re-Use of Recycled Water*
   Under this case, recycled water is deployed for use as flush water in residential toilets, for use in residential irrigation, and for the uses included in the Basic Re-Use scenario. Shortfalls of this non-potable source to meet demand are made up with untreated surface water.

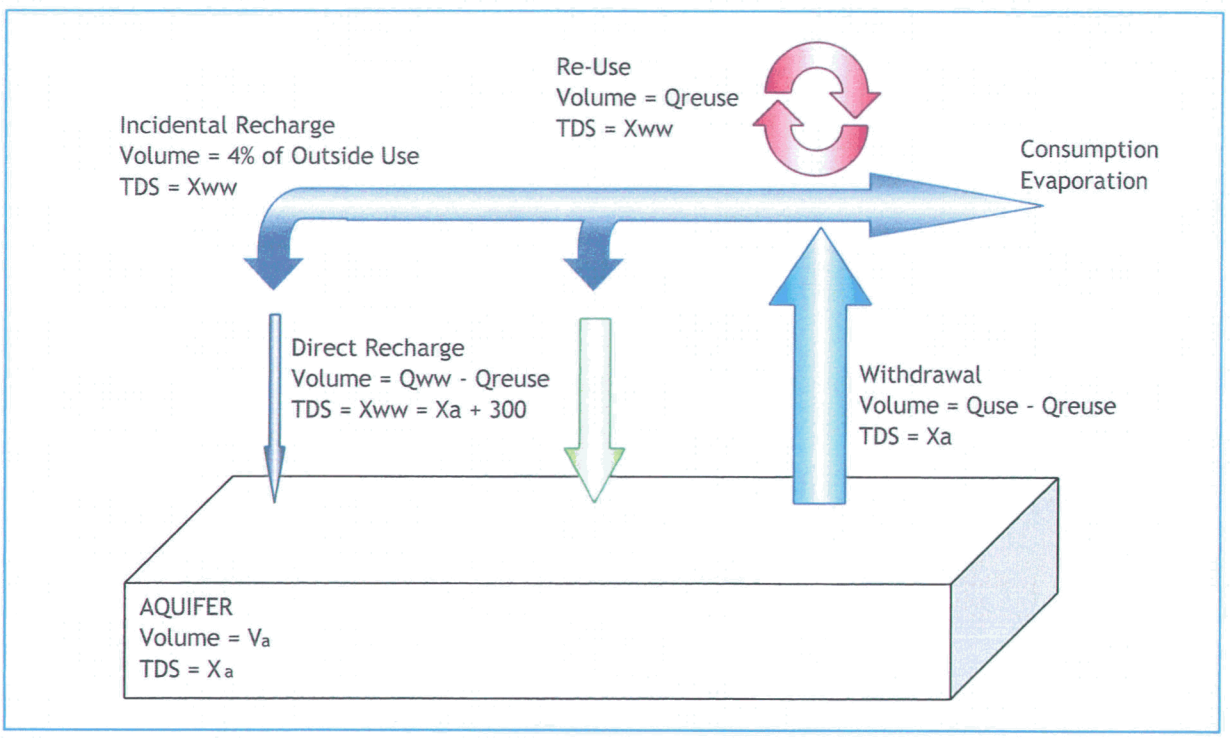
The model evaluates the impact of the above scenarios on total dissolved solids (TDS) in the aquifer and the impact on the overall available volume of the aquifer. This analysis is based on mass balance and volumetric considerations. The output of the model is termed the Impact

Factor, which represents the sum of the absolute values of the TDS and volume impacts. The model is run in a time sequence of EDU-days.[1]

The model employs volumetric consumptions derived from empirical data collected from Global Water's Santa Cruz Water Company system located in Maricopa, Az. This system is presently operating in the "Basic Re-Use" mode.

Model Architecture

The model architecture is for the four scenarios is shown in the accompanying figures. The control volume for the model is depicted below:



[1] The impact experienced over 1 EDU-day is equal to the effect of one EDU operating for one day. 1000 EDU-days is equivalent to one EDU operating for 1000 days, or 1000 EDUs operating for 1 day.

Model Results

The model shows that the water resources management plan that has the least impact on aquifer water levels and TDS is that of advanced re-use. This can be explained simplistically by examining the impact of recharge versus re-use. Under the recharge model, the volume removed from the aquifer is larger than under the re-use model. All of the water in the recharge case is consumed or produced reclaimed water of a higher TDS than the original supplied water (in the case of the model, 300 mg/L higher). This high TDS water is injected directly into the aquifer, with the resultant increase in aquifer TDS.

The various total impacts on the water resources can be combined to develop an Impact Factor. This factor is simply the change in percentage of TDS in the aquifer, combined with the absolute value of the reduction in aquifer volume. When plotted against time, it is apparent that the recharge model results in a greater overall impact. The least impact is determined to be that of Advanced Re-Use where smaller volumes are removed from the aquifer, correspondingly smaller volumes are recharged, with the concomitant reduction in mass loading of TDS on the aquifer.

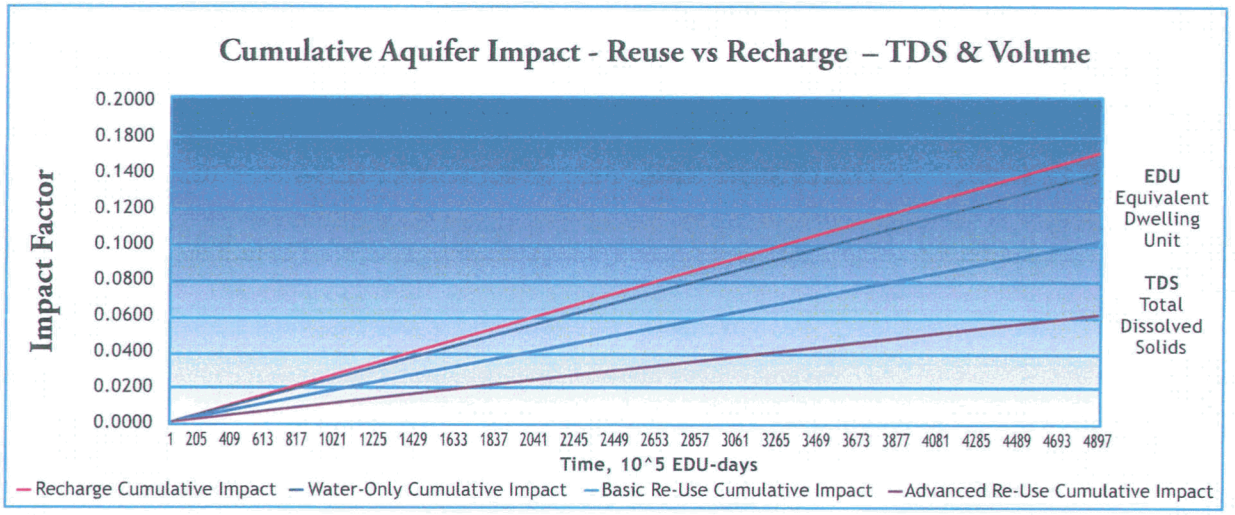


Table 1

Specifically:

1. The volume of high TDS water recharged directly to the aquifer under the Recharge scenario is significantly higher than under the Basic or Advanced Re-use scenarios. This increases the mass loading on the aquifer.
2. The volume of water required to be withdrawn from the aquifer under the Recharge scenario versus the Advanced Re-use scenario is significantly higher. This effectively removes low TDS-water from the aquifer at a greater rate and replaces it with a higher TDS water.

Direct Impact on Aquifer TDS

The following graph shows the impact of the four scenarios on the TDS concentrations in the Aquifer:

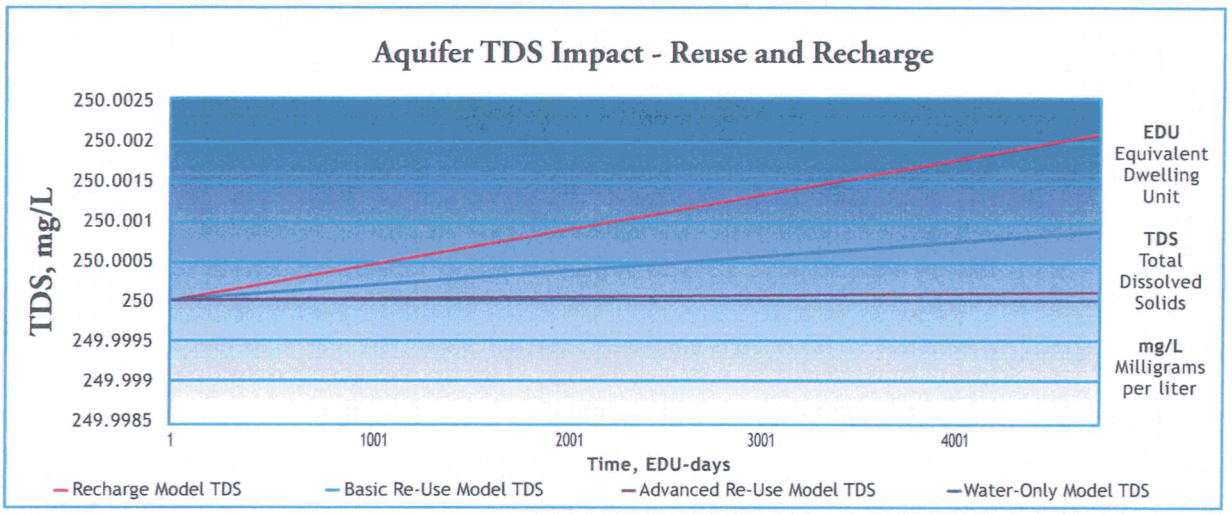


Table 2

Direct Impact on Aquifer Levels

The following graph shows the impact of the four scenarios on the water volume in the Aquifer[2]:

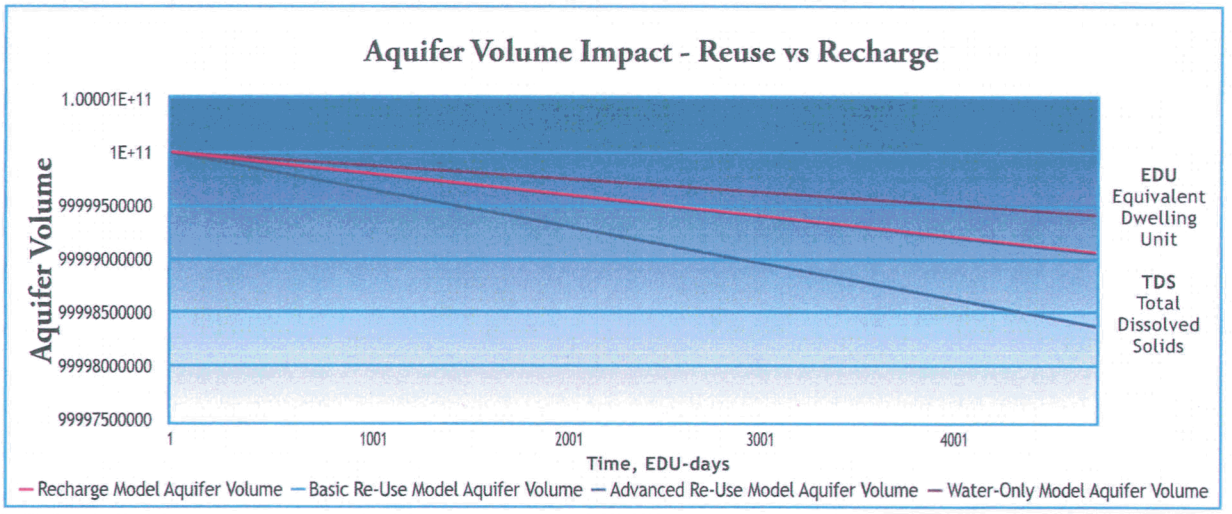


Table 3

[2] In the case of Recharge and Basic Re-Use, the aquifer volume impact is the same – only one line can be seen on the graph, but he results are coincindent.

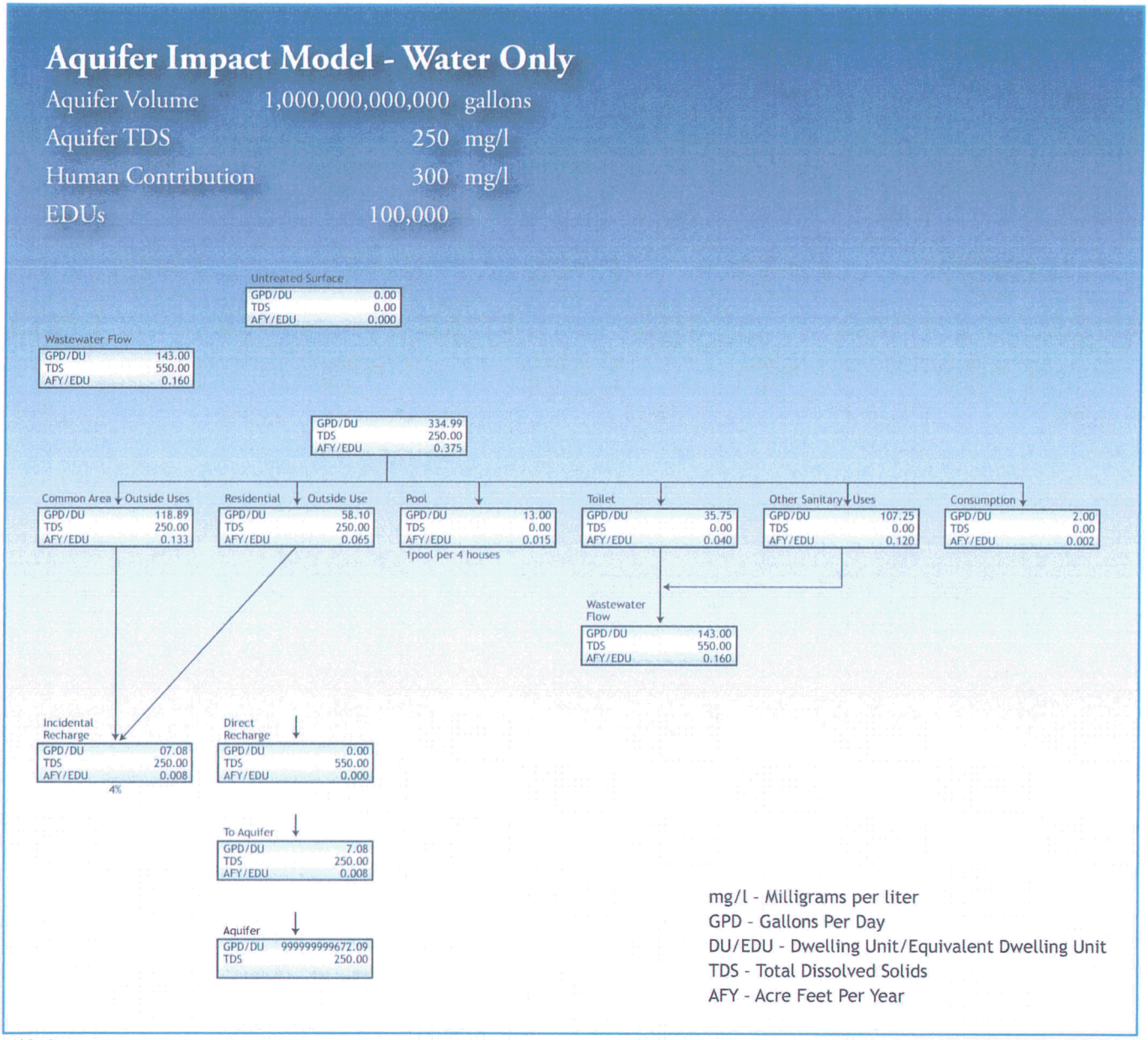

Aquifer Impact Model - Water Only
Aquifer Volume 1,000,000,000,000 gallons
Aquifer TDS 250 mg/l
Human Contribution 300 mg/l
EDUs 100,000
Untreated Surface
GPD/DU 0.00
TDS 0.00
AFY/EDU 0.000
Wastewater Flow
GPD/DU 143.00
TDS 550.00
AFY/EDU 0.160
GPD/DU 334.99
TDS 250.00
AFY/EDU 0.375
Common Area Outside Uses
GPD/DU 118.89
TDS 250.00
AFY/EDU 0.133
Residential Outside Use
GPD/DU 58.10
TDS 250.00
AFY/EDU 0.065
Pool
GPD/DU 13.00
TDS 0.00
AFY/EDU 0.015
1pool per 4 houses
Toilet
GPD/DU 35.75
TDS 0.00
AFY/EDU 0.040
Other Sanitary Uses
GPD/DU 107.25
TDS 0.00
AFY/EDU 0.120
Consumption
GPD/DU 2.00
TDS 0.00
AFY/EDU 0.002
Wastewater Flow
GPD/DU 143.00
TDS 550.00
AFY/EDU 0.160
Incidental Recharge
GPD/DU 07.08
TDS 250.00
AFY/EDU 0.008
4%
Direct Recharge
GPD/DU 0.00
TDS 550.00
AFY/EDU 0.000
To Aquifer
GPD/DU 7.08
TDS 250.00
AFY/EDU 0.008
Aquifer
GPD/DU 999999999672.09
TDS 250.00
mg/l - Milligrams per liter
GPD - Gallons Per Day
DU/EDU - Dwelling Unit/Equivalent Dwelling Unit
TDS - Total Dissolved Solids
AFY - Acre Feet Per Year

Table 4

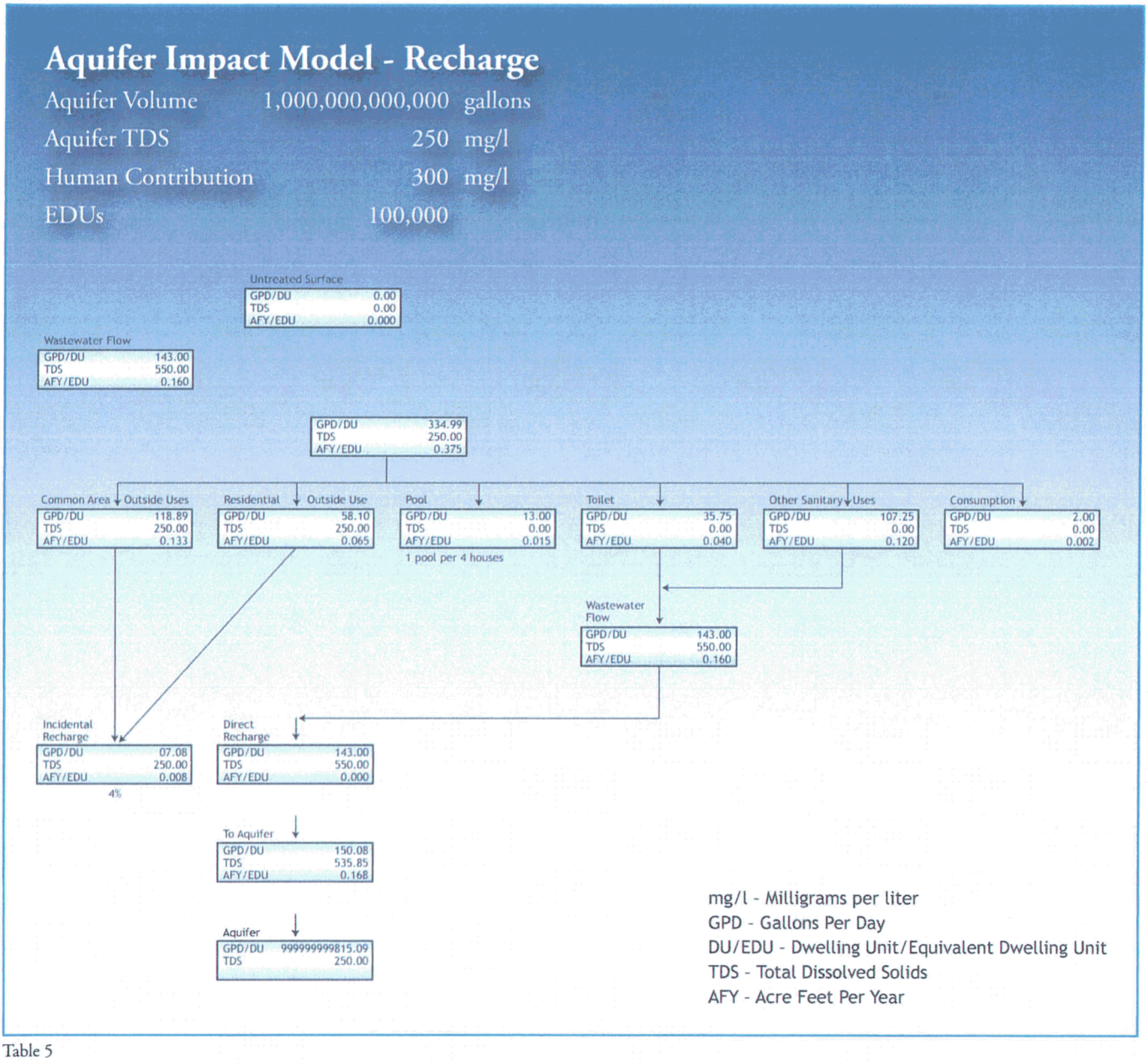

Aquifer Impact Model - Recharge
Aquifer Volume 1,000,000,000,000 gallons
Aquifer TDS 250 mg/l
Human Contribution 300 mg/l
EDUs 100,000
Untreated Surface
GPD/DU 0.00
TDS 0.00
AFY/EDU 0.000
Wastewater Flow
GPD/DU 143.00
TDS 550.00
AFY/EDU 0.160
GPD/DU 334.99
TDS 250.00
AFY/EDU 0.375
Common Area Outside Uses
GPD/DU 118.89
TDS 250.00
AFY/EDU 0.133
Residential Outside Use
GPD/DU 58.10
TDS 250.00
AFY/EDU 0.065
Pool
GPD/DU 13.00
TDS 0.00
AFY/EDU 0.015
1 pool per 4 houses
Toilet
GPD/DU 35.75
TDS 0.00
AFY/EDU 0.040
Other Sanitary Uses
GPD/DU 107.25
TDS 0.00
AFY/EDU 0.120
Consumption
GPD/DU 2.00
TDS 0.00
AFY/EDU 0.002
Wastewater Flow
GPD/DU 143.00
TDS 550.00
AFY/EDU 0.160
Incidental Recharge
GPD/DU 07.08
TDS 250.00
AFY/EDU 0.008
4%
Direct Recharge
GPD/DU 143.00
TDS 550.00
AFY/EDU 0.000
To Aquifer
GPD/DU 150.08
TDS 535.85
AFY/EDU 0.168
Aquifer
GPD/DU 999999999815.09
TDS 250.00
mg/l - Milligrams per liter
GPD - Gallons Per Day
DU/EDU - Dwelling Unit/Equivalent Dwelling Unit
TDS - Total Dissolved Solids
AFY - Acre Feet Per Year

Table 5

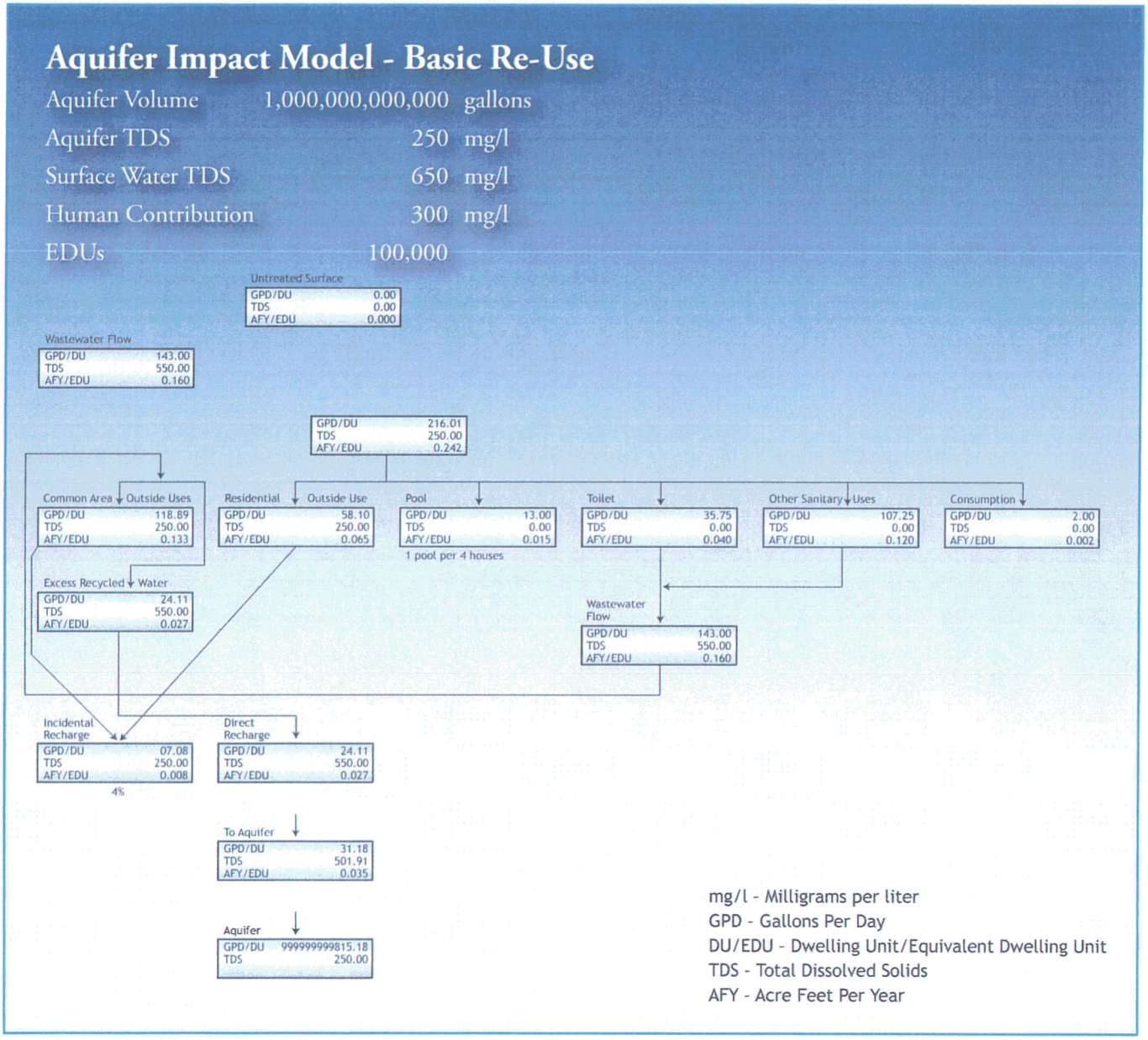

Aquifer Impact Model - Basic Re-Use
Aquifer Volume 1,000,000,000,000 gallons
Aquifer TDS 250 mg/l
Surface Water TDS 650 mg/l
Human Contribution 300 mg/l
EDUs 100,000
Untreated Surface
GPD/DU 0.00
TDS 0.00
AFY/EDU 0.000
Wastewater Flow
GPD/DU 143.00
TDS 550.00
AFY/EDU 0.160
GPD/DU 216.01
TDS 250.00
AFY/EDU 0.242
Common Area Outside Uses
GPD/DU 118.89
TDS 250.00
AFY/EDU 0.133
Residential Outside Use
GPD/DU 58.10
TDS 250.00
AFY/EDU 0.065
Pool
GPD/DU 13.00
TDS 0.00
AFY/EDU 0.015
1 pool per 4 houses
Toilet
GPD/DU 35.75
TDS 0.00
AFY/EDU 0.040
Other Sanitary Uses
GPD/DU 107.25
TDS 0.00
AFY/EDU 0.120
Consumption
GPD/DU 2.00
TDS 0.00
AFY/EDU 0.002
Excess Recycled Water
GPD/DU 24.11
TDS 550.00
AFY/EDU 0.027
Wastewater Flow
GPD/DU 143.00
TDS 550.00
AFY/EDU 0.160
Incidental Recharge
GPD/DU 07.08
TDS 250.00
AFY/EDU 0.008
4%
Direct Recharge
GPD/DU 24.11
TDS 550.00
AFY/EDU 0.027
To Aquifer
GPD/DU 31.18
TDS 501.91
AFY/EDU 0.035
Aquifer
GPD/DU 999999999815.18
TDS 250.00
mg/l - Milligrams per liter
GPD - Gallons Per Day
DU/EDU - Dwelling Unit/Equivalent Dwelling Unit
TDS - Total Dissolved Solids
AFY - Acre Feet Per Year

Table 6

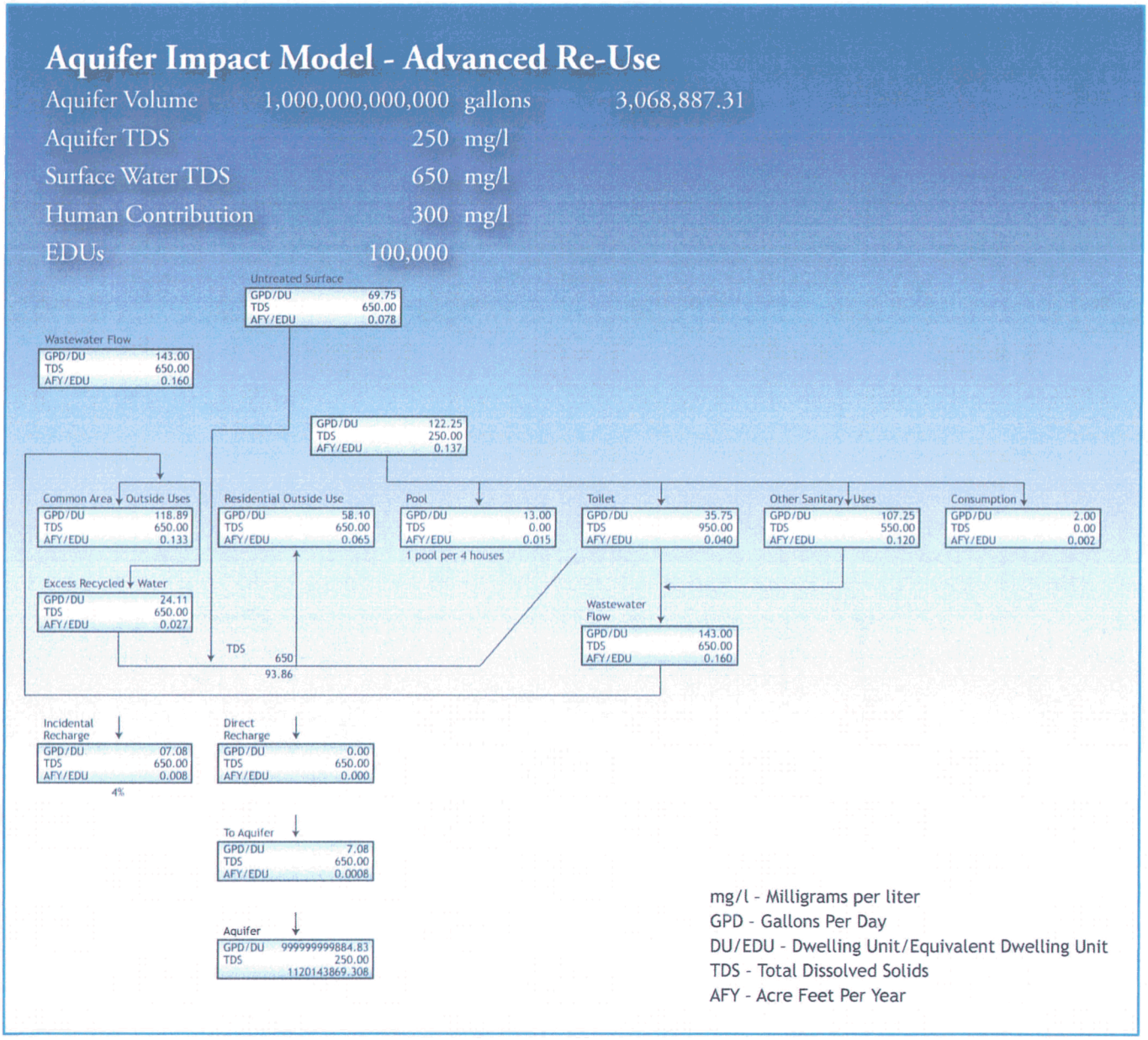

Aquifer Impact Model - Advanced Re-Use
Aquifer Volume 1,000,000,000,000 gallons 3,068,887.31
Aquifer TDS 250 mg/l
Surface Water TDS 650 mg/l
Human Contribution 300 mg/l
EDUs 100,000
Untreated Surface
GPD/DU 69.75
TDS 650.00
AFY/EDU 0.078
Wastewater Flow
GPD/DU 143.00
TDS 650.00
AFY/EDU 0.160
GPD/DU 122.25
TDS 250.00
AFY/EDU 0.137
Common Area
Outside Uses
GPD/DU 118.89
TDS 650.00
AFY/EDU 0.133
Residential Outside Use
GPD/DU 58.10
TDS 650.00
AFY/EDU 0.065
Pool
GPD/DU 13.00
TDS 0.00
AFY/EDU 0.015
1 pool per 4 houses
Toilet
GPD/DU 35.75
TDS 950.00
AFY/EDU 0.040
Other Sanitary Uses
GPD/DU 107.25
TDS 550.00
AFY/EDU 0.120
Consumption
GPD/DU 2.00
TDS 0.00
AFY/EDU 0.002
Excess Recycled Water
GPD/DU 24.11
TDS 650.00
AFY/EDU 0.027
Wastewater Flow
GPD/DU 143.00
TDS 650.00
AFY/EDU 0.160
TDS
650
93.86
Incidental Recharge
GPD/DU 07.08
TDS 650.00
AFY/EDU 0.008
4%
Direct Recharge
GPD/DU 0.00
TDS 650.00
AFY/EDU 0.000
To Aquifer
GPD/DU 7.08
TDS 650.00
AFY/EDU 0.0008
Aquifer
GPD/DU 999999999884.83
TDS 250.00
1120143869.308
mg/l - Milligrams per liter
GPD - Gallons Per Day
DU/EDU - Dwelling Unit/Equivalent Dwelling Unit
TDS - Total Dissolved Solids
AFY - Acre Feet Per Year

Table 7

APPENDIX C – CONTAMINANTS OF EMERGING CONCERN

There is a significant volume of work focused on contaminants of emerging concern (CEC), including endocrine disrupting compounds (EDC) and pharmaceuticals and personal care products (PPCP) in municipal effluents and recycled water. While the direct health effects of these constituents remains uncertain, there is no doubt that they exist in wastewater, see Table 8.

Environmental EDCs have varying routes of exposure depending on their inherent physicochemical properties, as well as external conditions such as their specific use, and environmental conditions such as temperature, UV-radiation, and microbial content.[1]

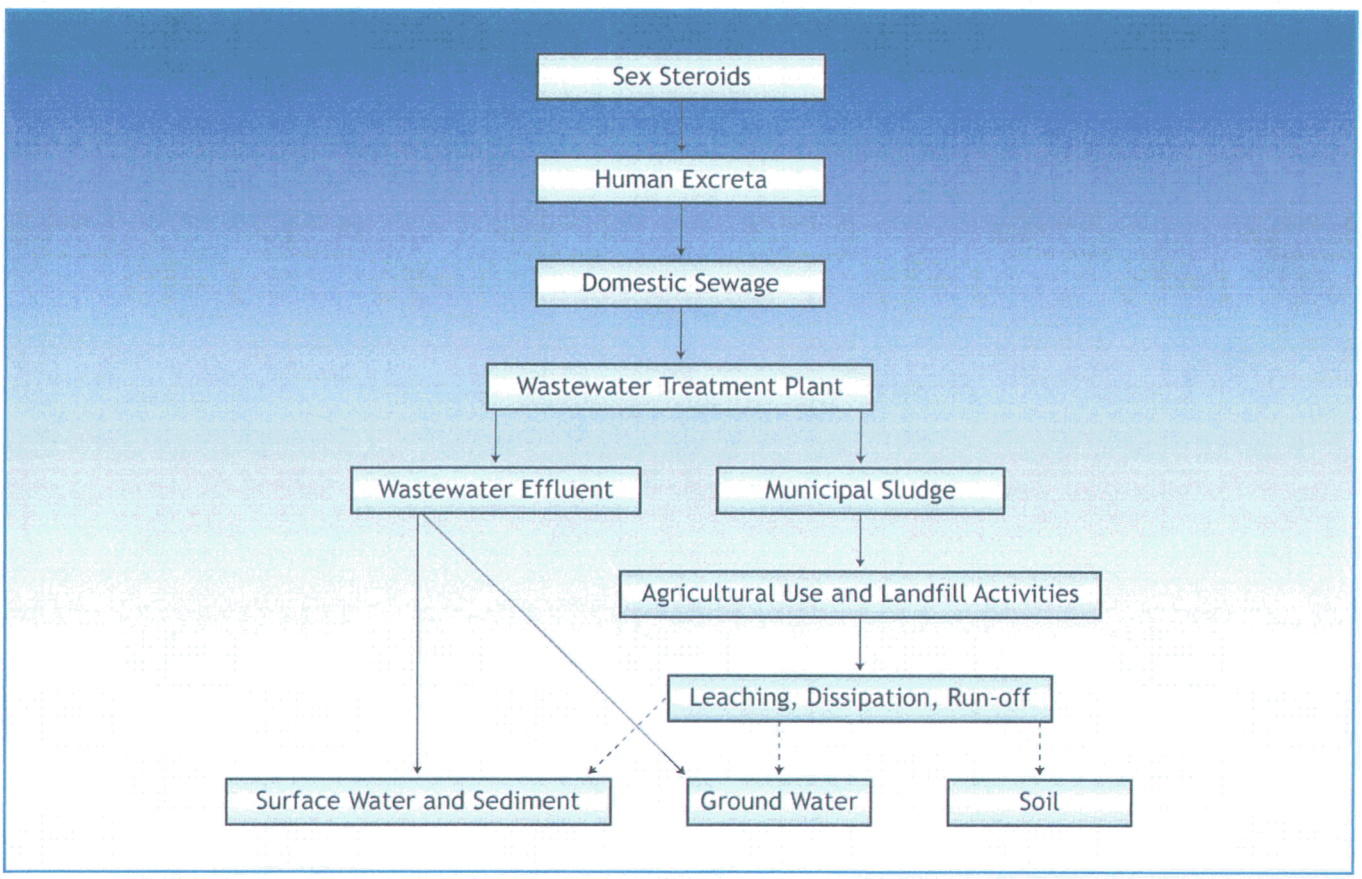


Table 8

EDC & PPCP REDUCTION STRATEGIES

Water reclamation facilities can be effective at achieving some removal of these CECs, but without specific targeted treatment will likely not be capable of removing 100%. There is some evidence that these compounds may be deactivated under normal irrigation uses through a combination of solar UV and upper soil layer metabolic effects.

Biological Treatment Processes

The extent of removal of EDCs in activated sludge sewage treatment has been reviewed studied extensively with emphasis given to the fate of alkylphenol polyethoxylates (APEs) and steroid estrogens. While APEs such as nonylphenol polyethoxylates (NPEs) could represent a significant fraction (up to 10%) of the DOC (dissolved organic carbon) entering sewage treatment plants, these compounds are successfully eliminated in an activated sludge environment by biodegradation.[2]

Soil-Aquifer Treatment

In a study at Lawrence Livermore National Laboratories, the impact of the vadose zone and saturated zone on attenuating EDCs was significant[3]:

> NP[4] [4-nonylphenol] was not detected in LPGC [Las Positas Golf Course] groundwater (detection limit, 11 ng/L) despite average concentrations of 3000 ng/L in the irrigation water (i.e., LWRP [Livermore Water Reclamation Plant] tertiary-treated effluent)...

[1] ENDOCRINE DISRUPTORS IN THE ENVIRONMENT (IUPAC Technical Report) Prepared for publication by J. LINTELMANN, A. KATAYAMA, N. KURIHARA, L. SHORE, AND A. WENZEL.
[2] Endocrine Disrupting Chemicals (EDCs) and Pharmaceuticals and Personal Care Products (PPCPs) in Reclaimed Water in Australia. Guang-Guo Ying, Rai Kookana1 and TD Waite.
[3] Environmental transport and fate of endocrine disruptors from non-potable reuse of municipal wastewater B. Hudson, H. Beller, C. M. Bartel, S. Kane, C.Campbell, A. Grayson, N. Liu, S. Burastero, November 16, 2005.
[4] The hormonal and toxicological properties of NP have resulted in the banning of NPEOs for domestic and industrial use in many parts of Europe. Ibid.

> Maximum concentrations of the APEO[5] [Alkylphenol ethoxylates] metabolites AP1EC and AP2EC in LPGC groundwater were from 130- to 360-fold lower than in irrigation water. Since hydrological modeling indicates that irrigation water was diluted only 33 to 73% with local precipitation in the aquifer, attenuation of these compounds during transport through the vadose zone and saturated zone (e.g., by sorption of the APEO metabolites) must have been very substantial. High sorptive attenuation of NP is consistent with laboratory column studies and modeling conducted for this project.

As similar study performed in Germany found when soils were loaded with double deionised water, digested sludge, EDC spiked digested sludge, or solely a mixed EDC solution containing 4-nonylphenol, 4-tert-octylphenol (OP), bisphenol A, 17â-estradiol, and 17á-ethynylestradiol, in most cases, EDC concentrations decreased with increasing soil depths.

It was concluded that "adsorption to the soil matrix and/or biodegradation prevented a direct EDC transport to groundwater."[6]

Direct Photolysis

Direct exposure to sunlight has been found to be effective in EDC degradation in some instances with almost complete degradation within 100 hours.[7]

[5] Alkylphenol ethoxylates (APEOs), a class of nonionic surfactants, and their metabolites are the most prominent group of EDCs identified in wastewater and treated wastewater. In particular, nonylphenol ethoxylates (NPEOs) constitute the largest subgroup of the APEOs (encompassing more than 80% of the world market). Municipal wastewater treatment (including biological treatment) tends to result in efficient elimination of the parent APEOs but formation of biologically refractory metabolites including the following: alkylphenol mono- and diethoxylates, alkylphenol carboxylic acids (e.g., NP1EC and NP2EC; Figure 1), and 4-nonylphenol (NP). NP is a metabolite and representative of the APEO (and specifically, NPEO) class of endocrine disruptors that has recently been reported to have a wide distribution in surface waters and is well documented to be present in effluents of wastewater treatment plants (WWTP) at mg/L concentrations. Ibid.

[6] Mobility and fate of endocrine disrupting compounds (EDCS) in soil after application of sewage sludge to agricultural land. Dipl.-Ing. Dirk Vogel, Dr.-Ing. Martin Gehring, Dr.-Ing. Lars Tennhardt, Dr.-Ing. Diethelm Weltin, Prof. Dr.-Ing. habil. Bernd Bilitewski.

[7] Endocrine Disrupting Chemicals (EDCs) and Pharmaceuticals and Personal Care Products (PPCPs) in Reclaimed Water in Australia. Guang-Guo Ying, Rai Kookana1 and TD Waite.

SUMMARY

The beneficial reduction of EDCs in the soil matrix means that fewer EDCs and PPCPs reach the aquifer under direct re-use than would be found under direct recharge. Accordingly, it is a better management strategy to keep CECs from the aquifer by encouraging the use of recycled water as a continuous loop of non-potable water, or as an irrigation source.

APPENDIX D – BASELINE PARAMETERS

Underlying Regional Conditions

Analysis was based on the regional planning developed and currently being implemented by Global Water and its utilities within the Maricopa/Casa Grande Region (MCGR) in Pinal County, Arizona. The planning area represented by the region is roughly 300 square miles and will be serviced by multiple facilities. A far reaching network of collection and distribution pipelines will extend throughout. The region is on the fringes of the Phoenix metropolitan area so development, for the most part, is new. Installation of infrastructure has and will continue to be completed without the impediments traditionally encountered in built-up urban areas.

Global Water has constructed, or has plans to construct, standardized facilities within the region. Each well site, water distribution center, treatment plant, etc. is similar in design and functionality and is modified only to accommodate conditions related to a particular location. All planning is regional so pipelines are sized to service the area at full build out.

Population Density

A population density of **3.5 Equivalent Development Units (EDU) per acre** was used. That factor applied to a section of land (640 acres) results in 2,240 EDU to be constructed and serviced.

Consumptive Demands

Consumptive data from Santa Cruz Water Company provided an indication of total water resource demand within the service area and its distribution, see Table 9. The following parameters were been developed based on four years of operation within the Maricopa/Casa Grande Region (MCGR):

Description	Consumption (Gal/Day/EDU)
Residential/Commercial Potable Water Demand	216
Wastewater Production (Equates to Inside Uses of Potable Water)	143
Outside Uses of Potable Water	73 (34% of Potable Water Demand)
Common Area Irrigation Requirements	118

EDU - Equivalent Dwelling Unit

Table 9

It should be noted that the original development for Rancho El Dorado did not contemplate the provision of recycled water for some of the developments – as a result, some of the developments in the test area use potable water for irrigation. Since 2004, Global has required all new development common areas to be irrigated by recycled water exclusively.

Overall, Santa Cruz Water Company exhibits one of the lowest per unit water consumptions in the state. The Potable Water Portion of the Common Area Irrigation decreases as a function of EDU's over time because this mode of operation is no longer supported in the MCGR.

Availability of Recycled Water

Empirical data derived from treatment operations in the Maricopa/Casa Grande Region (from Palo Verde Utilities Company) indicates wastewater flow averages **143 gallons per EDU per day**. This quantity converts to 0.160 ac-ft/EDU/year and, once treated, can be distributed as A+ Reclaimed Water throughout the region.

Capital Expenditures & AIAC

Unit costs for capital expenditure items were derived from standard industry norms and from actual project costs. Costs are based on a Global-typical facility or installation similar to infrastructure

designed and constructed within the Maricopa/Casa Grande Region, see Table 10. The following cost categories have been included:

- Permitting Costs – Front end permitting activities such as 208, CC&N, APP, AZPDES, USF, AWS, and IUP. It includes costs for hydrologic studies, well testing, etc. For purposes of this analysis it is anticipated that roughly $1,000,000 of cost will be expended in developing and obtaining the necessary permits for a region. The size of the region will vary but, in this analysis, the region is set at ten sections. Roughly 20,000 EDU's will be developed in the ten sections. $1,000,000/20,000 EDU's calculates to **$50 per EDU**.

- Groundwater Rights Acquisition – Acquirement of water rights from the market to support a perpetual supply. Global Water currently works with developers to obtain associated groundwater rights at no expense to the Utility. For purposes of this analysis, acquisition costs are set at **$0 per EDU**.

- Well Sites – Conversion of existing agricultural wells to domestic use facilities including new casings, seals, equipment, and electrical upgrades. Includes raw water pipelines to deliver well water to water distribution centers. Unit cost is based on costs associated with a standard well conversion in MCGR, along with an estimate for pipeline installation (one mile for purposes of this analysis) to convey well water from the Well Site to a Water Distribution Center (WDC).

	Capitol Cost	Well Capacity	Average Daily Flow	Average Daily Flow	Cost per Gallon
Standard Well Site	$500,000	2,000	1,000	1.440	$0.35
Pipeline	$250,000				
Total	$750,000				$0.52
Use					$0.55
					GPM - Gallons Per Minutes • MGD - Million Gallons/Day

Table 10

• Surface Water Rights Acquisition – Acquisition of water rights from the market to support a perpetual supply. From the Water Strategist, January 2007, a snapshot of recent surface water transactions in the southwestern United States revealed the following Table 11:

System	Location	Cost of Water Right / ac-ft 2006	Cost of Water Right / ac-ft 2001	5 Year Increase
Colorado-Big Thompson	Northern Colorado	$10,554	$5,000	190%
Truckee River	Reno, Nevada	$27,867	$3,500	696%
Middle Rio Grande	Albuquerque, New Mexico	$7,500	$4,000	88%

ac-ft - Acre Foot

Table 11

It must be noted that water markets are still in their infancy and lack any centralized exchange. The value of water is dependent on a number of factors including reliability of the underlying water right, quantity, quality, uses, and availability of competing sources of supply. With the future water market in Arizona filled with uncertainty, an acquisition price was set at **$11,000 per acre-foot** for purposes of this analysis.

• Surface Water Treatment – Design, permitting, and construction of surface water treatment facilities including all civil, structural, mechanical, process equipment, and electrical components. Santa Cruz Water Company has designed and permitted a surface water treatment facility in MCGR, see Table 12.

Facility	Capitol Cost	Treatment Capacity (MGD)	Cost per Gallon
Maricopa Groves WTF	$15,000,000 (budget)	2.5	$6.00
Use			$6.00

WTF - Water Treatment Facility • MGD - Million Gallons/Day

Table 12

- Arsenic Treatment – Design, permitting, and construction of facilities to remove arsenic. Includes all civil, structural, mechanical, process equipment, and electrical components. Valencia Water Company (a Global Water company located in Buckeye, Arizona) is constructing a regional arsenic treatment facility and unit costs are based on budget for that project divided by average daily treatment capacity permitted at the facility. In this case treatment capacity is equal to the facility's designated peak hour flow (to accommodate fire flow).

Facility	Capitol Cost	Treatment Capacity (GPM)	Calculated Average Daily Flow (GPM)	Calculated Average Daily Flow (MGD)	Cost per Gallon
Sonoran Vista WDC	$2,000,000 (Budget)	3,500	1,029	1.482	$1.35
Use					**$1.35**

GPM - Gallons Per Minute • MGD - Million Gallons/Day

Table 13

- Water Distribution (Storage & Pumping) – Design, permitting, and construction of treated water storage reservoirs and distribution pumping stations. Includes all civil, structural, mechanical, and electrical components. Unit cost is based on the current budget to design, permit, and construct two Water Distribution Centers (WDC's) currently being completed in the MCGR divide by the WDC's average daily flow, see Table 13 & 14. In this case daily capacity is equal to the facilities' designated peak hour flow (to accommodate fire flow).

Facility	Capitol Cost	Booster Capacity (GPM)	Calculated Average Daily Flow (GPM)	Calculated Average Daily Flow (MGD)	Cost per Gallon
Rancho Mirage WDC	$5,800,000 (Budget)	6,500	1,912	2.753	$2.11
Terrazo WDC	$6,000,000 (Budget)	8,000	2,358	3.388	$1.77
Use					**$2.00**

GPM - Gallons Per Minute • MGD - Million Gallons/Day

Table 14

- Water Backbone Pipeline – Water transmission mains typically 12" to 16" in diameter installed between the water distribution center and the development. Within the MCGR, backbone pipelines are installed along section lines. At build-out, two miles of pipeline will be installed to service each section of land. In determining an appropriate value, $100 per linear foot was used for water backbone. $100 per linear foot x 5,280 feet per mile x 2 miles of pipeline per section totals $1,056,000 per section of land. Assuming 2,240 EDU's per section, cost calculates to $471 per EDU. This value was modified to **$500 per EDU**.

- Onsite Water Pipelines – Water transmission pipelines installed from the point of connection with the Water Backbone Pipeline to the EDU's and includes the cost of a meter. Typically installed by the developer. Cost of construction escalated quickly during the period extending over 2003 to 2006 but, beginning in 2006, prices began to flatten and even decreased in some instances. The following Table 15 illustrates in-parcel water infrastructure cost for developments in the MCGR.

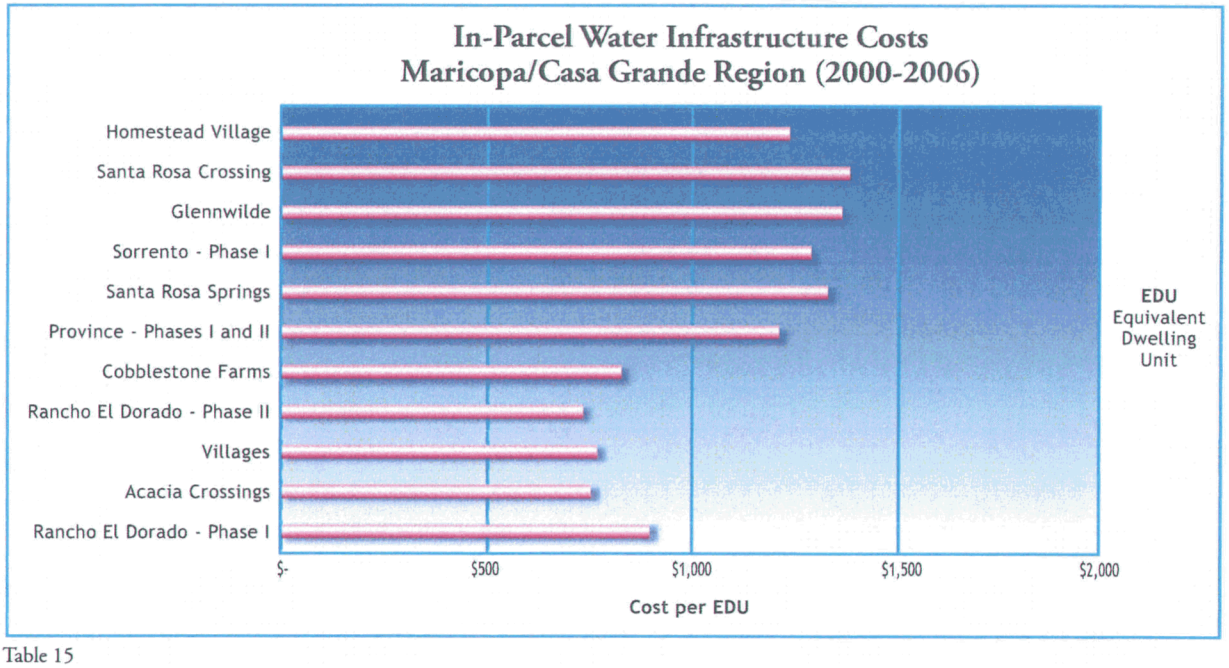


Table 15

A value of $1,400 per EDU was used for pipelines, valves and services. An additional $400 per EDU was added to account for the cost of a meter. Total calculates to **$1,800 per EDU**.

- Onsite Wastewater Pipeline – Wastewater collection pipelines installed from the EDU's to the point of connection with the Wastewater Backbone Pipeline. Typically installed by the developer. Cost of construction escalated quickly during the period extending over 2003 to 2006 but, beginning in 2006, prices began to flatten and even decreased in some instances. The following Table 16 illustrates in-parcel wastewater infrastructure cost for developments in the MCGR.

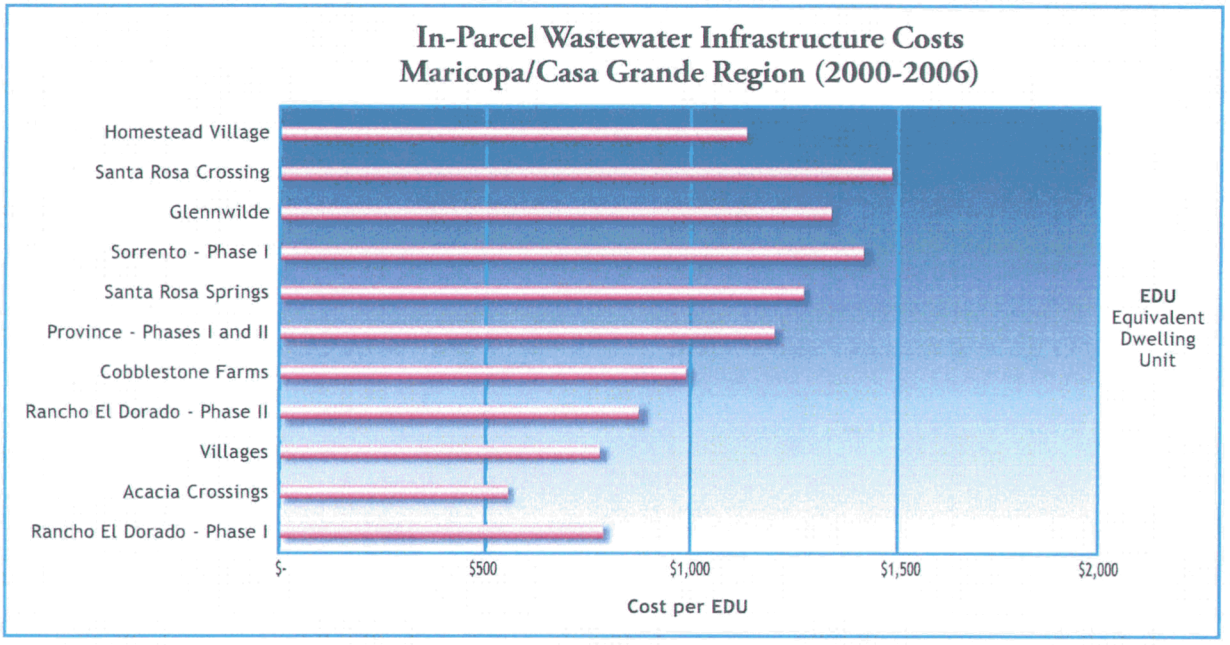


Table 16

For purposes of analysis, a value of **$1,400 per EDU** was used for in- parcel wastewater infrastructure.

- Wastewater Backbone Pipeline – Wastewater collection pipelines typically 18" to 48" in diameter installed between the development and the water reclamation center. Within the MCGR, backbone pipelines are installed along section lines. At build-out, two miles of pipeline will be installed to service each section of land. In determining an appropriate value, $150 per linear foot was used for wastewater backbone. $150 per linear foot x 5,280 feet per mile x 2 miles of pipeline per section totals $1,584,000 per section of land. Assuming 2,240 EDU's per section, cost calculates to $707 per EDU.

This value was modified to **$750 per EDU**.

- Water Reclamation – Treatment – Design, permitting, and construction of water reclamation facilities including all civil, structural, mechanical, process equipment, and electrical components. Includes influent pump station and post treatment storage and pumping (to discharge, reuse, etc.). Unit cost for analysis was developed using actual and estimated costs of current treatment infrastructure in MCGR adjusted to reflect a 3 MGD facility, see Table 17.

Project	Capacity (MGD)	Capitol Cost Total	Capitol Cost Adjusted to 3 MGD	Cost per Gallon
Campus No. 2 - Phase 1 (Excluding Headworks)	1	$10,318,945 (Budget)	$10,318,945	
Campus No. 1 - Phase 2 Expansion	+2	$11,303,675	$11,303,675	
Campus No. 2 - Headworks	6	$1,587,000 (Budget)	$1,126,070	
Campus No. 1 - Influent Pump Station	12	$2,007,000	$1,229,000	
Total	3		$23,978,440	$7.99
Use				**$8.00**

MGD - Million Gallons/Day

Table 17

- Recycled Water Backbone Pipelines – Pipelines typically 12" to 24" in diameter installed between the water reclamation center and recycled water retention structures (lakes) within the development. These pipelines run parallel with wastewater lines in MCGR. At build-out, two miles of pipeline will be installed to service each section of land. In determining an appropriate value, $100 per linear foot was used for recycled water backbone. $100 per linear foot x 5,280 feet per mile x 2 miles of pipeline per section totals $1,056,000 per section of land. Assuming 2,240 EDU's per section, cost calculates to $471 per EDU. This value was modified to **$500 per EDU**.

- Reclaimed Water Storage & Pressurization – Design, permitting, and construction of recycled water storage reservoirs and distribution pumping stations. Includes all civil, structural, mechanical, and electrical components. Although not identical to potable Water Distribution Center (WDC), unit cost is based on the current budget to design, permit, and construct two WDC's currently being completed in the MCGR divided by the WDC's average daily flow. In this case, because the reclaimed water distribution center will not accommodate fire flow, daily capacity is equal to the facilities' designated maximum daily flow, see Table 18.

Facility	Capitol Cost	Booster Capacity (GPM)	Calculated Average Day (GPM)	Calculated Average Day (MGD)	Cost per Gallon
Rancho Mirage WDC	$5,800,000 (Budget)	6,500	3,250	4.680	$1.24
Terrazo WDC	$6,000,000 (Budget)	8,000	4,000	5.760	$1.04
Use					**$1.15**

WDC - Water Distribution Center • GPM - Gallons Per Minute • MGD - Million Gallons/Day

Table 18

- Onsite Recycled Water Pipelines – Pressurized recycled water transmission pipelines installed from the reclaimed water storage & pressurization facilities to the EDU's. Installed by the developer during construction of onsite infrastructure. For purpose of this analysis, installation of onsite recycled pipelines is anticipated to make use of a trench common to the wastewater pipeline. It is estimated that 80% of the cost covers materials and miscellaneous labor to install while the remaining 20% covers trenching. Because recycled water piping is similar to potable water piping, $1,400 per EDU is used as a base (determined above for onsite potable pipelines) and is multiplied by 80%, equaling $1,120 per EDU. Because the recycled water pipelines will distribute less capacity than the potable pipelines, they will be of a smaller diameter and the value has been decreased slightly to $1,100 per EDU. An additional $400 per EDU was added to account for the cost of a meter. The total calculates to **$1,500 per EDU**.

Operations & Maintenance

Unit costs for operations & maintenance were derived from industry norms or are based on values calculated from the Santa Cruz Water Company and Palo Verde Utilities Company financial statements. The following categories have been included:

- Well Sites – All rents, utility payments (power), labor, supplies, taxes, and miscellaneous expenses. Includes monitoring and compliance (sampling, testing, & lab work), Table 19.

2006 O&M Expenses Apportioned to Category	Quantity Pumped (x 1,000 Gallons)	Cost per 1,000 Gallons
$413,453	1,690,346	$0.24
Use		**$0.25**

Table 19

- Surface Water Treatment – All rents, utility payments (power), taxes, and miscellaneous expenses. Labor and supplies for oil changes, lubrications, and replacement of consumable components (belts, air filters, media, etc). Includes mechanical and electrical repairs, outside rentals (cranes, pumps, etc) and procurement of chemicals. Also includes monitoring and compliance (sampling, testing, and laboratory work). Budget O&M cost were developed for the Maricopa Groves 2.5 MGD Facility, see Table 20.

Category	Estimated Annual O&M Cost	Cost per 1,000 Gallons
Power Consumption	$64,987	$0.07
Chemical Cost	$290,776	$0.32
Other Cost (Disposal, Module Replacement, Etc.)	$60,311	$0.07
Labor, Maintenance Materials, Testing	$100,000	$0.11
MSIDD Wheeling Charge		$0.13
Total		$0.70
Use		**$0.70**

MSIDD - Maricopa-Stanfield Irrigation and Drainage District

Table 20

- Arsenic Treatment – All rents, utility payments (power), labor, supplies, taxes, and miscellaneous expenses. Includes monitoring and compliance (sampling, testing, and laboratory work). Depending on size and technology, O&M cost associated with Arsenic treatment within a regional system range from $0.50 to $2.00 per 1,000 gallons of treated water. For this analysis a value of **$1.50 per 1,000 Gallons** was used.

- Water Distribution (Storage & Pumping) – All rents, utility payments (power), labor, supplies, taxes, and miscellaneous expenses. Includes monitoring and compliance (sampling, testing, and laboratory work), see Table 21.

2006 O&M Expenses Apportioned to Category	Quantity Pumped (x 1,000 Gallons)	Cost per 1,000 Gallons
$1,229,387	1,286,414	$0.96
Use		**$1.00**

Table 21

- Water Backbone Pipeline – Valve and hydrant programs. Maintenance of PRV's. System flushing as required, see Table 22.

2006 O&M Expenses Apportioned to Category	Quantity Pumped (x 1,000 Gallons)	Cost per 1,000 Gallons
$122,117	1,286,414	$0.09
Use		**$0.10**

Table 22

- Onsite Water Pipelines – Valve and hydrant programs. Maintenance of PRV's. System flushing as required, see Table 23.

2006 O&M Expenses Apportioned to Category	Quantity Pumped (x 1,000 Gallons)	Cost per 1,000 Gallons
$122,117	1,286,414	$0.09
Use		**$0.10**

Table 23

- Onsite Wastewater Pipeline – Flushing and cleaning of collection system, see Table 24.

2006 O&M Expenses Apportioned to Category	Quantity Pumped (x 1,000 Gallons)	Cost per 1,000 Gallons
$38,096	447,979	$0.09
Use		**$0.10**

Table 24

- Wastewater Backbone Pipeline – Flushing and cleaning of collection system, see Table 25.

2006 O&M Expenses Apportioned to Category	Quantity Pumped (x 1,000 Gallons)	Cost per 1,000 Gallons
$38,096	447,979	$0.09
Use		**$0.10**

Table 25

- Water Reclamation (Treatment) – All rents, utility payments (water and power), taxes, and miscellaneous expenses. All labor and supplies for cleanings, oil changes, lubrications, replacement of consumable components (belts, air filters, media, etc). Includes mechanical and electrical repairs, outside rentals (cranes, pumps, etc), sludge hauling, and procurement of chemicals. Also includes monitoring and compliance (sampling, testing, & lab work) Table 26.

2006 O&M Expenses Apportioned to Category	Quantity Pumped (x 1,000 Gallons)	Cost per 1,000 Gallons
$1,949,554	447,979	$4.35
Use		**$4.35**

Table 26

- Recycled Water Backbone Pipelines – Valve program. Maintenance of PRV's. Since the recycled pipelines are similar to the potable water pipelines, a similar O&M unit cost of **$0.10 per 1,000 Gallons** is used.

- Reclaimed Water Storage & Pressurization – All rents, utility payments (power), labor, supplies, taxes, and miscellaneous expenses. Includes monitoring and compliance

(sampling, testing, and laboratory work). For purpose of this analysis it is anticipated that an economics of scale will be recognized within the labor component of O&M expenses. With a support structure in place to operate and maintain water and wastewater systems, the addition of a third, recycled water, system can be facilitated by expanding the labor force incrementally. The incremental labor component of recycled water O&M is estimated at 33% of the value calculated for potable water, see Table 27.

Category	Potable O&M Cost	Adjusted Recycled O&M Cost	Quantity Pumped (x 1,000 Gallons)	Cost per 1,000 Gallons
Utilities	$90,952	$90,952		
Supplies	$93,328	$93,328		
Labor	$915,877	**$302,239**		
Other	$129,230	$129,230		
Total	$1,229,387	$615,749	1,286,414	$0.48
Use				**$0.50**

Table 27

- Onsite Recycled Water Pipelines – Valve program. Maintenance of PRV's. Since the recycled pipelines are similar to the potable water pipelines, a similar O&M unit cost of **$0.10 per 1,000 Gallons** is used.

Financial Parameters

Relevant financial parameters were assigned for purposes of this analysis (capital structure, profit & loss expectations, etc).

Table of Values

The following Table 28 indicates the parameter values entered into the model for analysis.

Table of Values		Input
Consumption Information	Water to Residential Customers (Total)	0.242 ac-ft/EDU/year
	Water to Commercial Customers (Total)	- ac-ft/EDU/year
	Water to Res & Comm Customers for Irrigation	34% as a % of Total ac-ft/EDU/year
	Water to HOA's for Irrigation	0.132 ac-ft/EDU/year
	Water to Miscellaneous Irrigation	- ac-ft/EDU/year
Wastewater Available for Treatment		0.160 ac-ft/EDU/year
Population Density		3.50 per Acre
Rate Base Information (Capital Expenditures)	Permitting Costs	$ 50.00 per EDU
	Groundwater Rights Acquisition	$ - per Ac-Ft
	Well Sites	$ 0.55 per Gallon
	Surface Water Rights Acquisition	$ 11,000 per Ac-Ft
	Surface Water Treatment	$ 6.00 per Gallon
	Arsenic Treatment	$ 1.35 per Gallon
	Water Distribution (Storage & Pumping)	$ 2.00 per Gallon
	Water Backbone Pipelines	$ 500.00 per EDU
	Wastewater Backbone Pipelines	$ 750.00 per EDU
	Water Reclamation - Treatment	$ 8.00 per Gallon
	Recycled Water Backbone Pipelines	$ 500.00 per EDU
	Reclaimed Water Storage & Pressurization	$ 1.15 per Gallon
AIAC Components	Onsite Water Pipelines	$ 1,800.00 per EDU
	Onsite Wastewater Pipelines	$ 1,400.00 per EDU
	Onsite Recycled Water Pipelines	$ 1,500.00 per EDU
Operational Expenses	Well Sites	$ 0.25 per 1000 Gallons
	Surface Water Treatment	$ 0.70 per 1000 Gallons
	Arsenic Treatment	$ 1.50 per 1000 Gallons
	Water Distribution (Storage & Pumping)	$ 1.00 per 1000 Gallons
	Water Backbone Pipelines	$ 0.10 per 1000 Gallons
	Wastewater Backbone Pipelines	$ 0.10 per 1000 Gallons
	Water Reclamation - Treatment	$ 4.35 per 1000 Gallons
	Recycled Water Backbone Pipelines	$ 0.10 per 1000 Gallons
	Reclaimed Water Storage & Pressurization	$ 0.50 per 1000 Gallons
	Onsite Water Pipelines	$ 0.10 per 1000 Gallons
	Onsite Wastewater Pipelines	$ 0.10 per 1000 Gallons
	Onsite Recycled Water Pipelines	$ 0.10 per 1000 Gallons
Rate Base Breakdown	Equity	50.00%
	Debt	50.00%
Monthly Wastewater Rate		$ 35.00 per Month
Cost of Recycled Water (as a % of Potable)		85.00%
Depreciation		2.50%
Interest		7.00%
Tax Rate		42.00%
Return on Equity		11.00%

EDU - Equivalent Dwelling Unit • Ac-Ft - Acre Foot • HOA - Home Owners Association • AIAC - Advances In Aid of Construction

Table 28

APPENDIX E – CALCULATION SHEETS

THE ECONOMICS OF RECLAMATION

SCENARIO	Groundwater	Yes	Surface	No	Arsenic	No
LEVEL OF RECLAMATION	Basic	No	+ Advanced	No		

Consumption

Water to Residential Customers	216	Gallons/day	0.242	ac-ft/EDU/year
Water to Commercial Customers	-	Gallons/day	-	ac-ft/EDU/year
SUBTOTAL - HOMES	216	Gallons/day	0.242	ac-ft/EDU/year
Water to HOA's for Irrigation	118	Gallons/day	0.132	ac-ft/EDU/year
Water to Miscellaneous Irrigation	-	Gallons/day	-	ac-ft/EDU/year
SUBTOTAL - COMMON AREAS	118	Gallons/day	0.132	ac-ft/EDU/year
TOTAL	334	Gallons/day	0.374	ac-ft/EDU/year

Recycled Water

Wastewater Available for Treatment	143	Gallons/day	0.160	ac-ft/EDU/year

Population Density	3.5	per Acre	2,240 EDU/Section

Supply (factoring in utilization of recycled water)

Water to Customers (Inside)	143	Gallons/day	0.160	ac-ft/EDU/year
34% Water to Customers (Outside)	73	Gallons/day	0.082	ac-ft/EDU/year
Total Water to Customers	216	Gallons/day	0.242	ac-ft/EDU/year
Water to Common Areas	118	Gallons/day	0.132	ac-ft/EDU/year
Total Water Use	334	Gallons/day	0.374	ac-ft/EDU/year
Recycled Water to Common Areas	-	Gallons/day	-	ac-ft/EDU/year
Recycled Water to Customers	-	Gallons/day	-	ac-ft/EDU/year
Rt. Water To Discharge/Recharge	143	Gallons/day	0.160	ac-ft/EDU/year

	Unit Cost ($ per Gal)	Unit Cost ($ per Ac-ft)	Unit Cost ($ per EDU)	Total per Section ($)
Rate Base				
Permitting Costs			$ 50.00	$ 112,000
Groundwater Rights Acquisition		$ -	$ -	$ -
Well Sites	$ 0.55		$ 183.64	$ 411,347
Surface Water Rights Acquisition		$ 11,000.00	$ -	$ -
Surface Water Treatment	$ 6.00		$ -	$ -
Arsenic Treatment	$ 1.35		$ -	$ -
Water Distribution (Storage & Pumping)	$ 2.00		$ 668	$ 1,496,808
Water Backbone Pipelines			$ 500.00	$ 1,120,000
Wastewater Backbone Pipelines			$ 750.00	$ 1,680,000
Water Reclamation - Treatment	$ 0.00		$ 1,143	$ 2,559,671
Recycled Water Backbone Pipelines			$ 500.00	$ -
Reclaimed Water Storage & Pressurization	$ 1.15		$ -	$ -
AIAC				
Onsite Water Pipelines			$ 1,800.00	$ 4,032,000
Onsite Wastewater Pipelines			$ 1,400.00	$ 3,136,000
Onsite Recycled Water Pipelines			$ 1,500.00	$ -
TOTAL			$ 6,494	$ 14,546,826

	Total Operating Costs (Water) ($/1000)	Total Operating Costs (WW) ($/1000)	Total Operating Costs (Recycled) ($/1000)
Operational Expenses			
Well Sites	$ 0.25		
Surface Water Treatment	$ -		
Arsenic Treatment	$ -		
Water Distribution (Storage & Pumping)	$ 1.00		
Water Backbone Pipelines	$ 0.10		
Wastewater Backbone Pipelines		$ 0.10	
Water Reclamation - Treatment		$ 4.35	
Recycled Water Backbone Pipelines			$ -
Reclaimed Water Storage & Pressurization			$ -
Onsite Water Pipelines	$ 0.10		
Onsite Wastewater Pipelins		$ 0.10	
Onsite Recycled Water Pipelines			$ -
	$ 1.45	$ 4.55	$ -

Breakdown of Capital Costs	Water	Wastewater	Recycled	Total
Costs per Section	$ 7,171,155	$ 7,375,671	$ -	$ 14,546,826
Costs per EDU	$ 3,201	$ 3,293	$ -	$ 6,494
	49.30%	50.70%	0.00%	100.00%

Breakdown of Operational Expenses	Water	Wastewater	Recycled	Total
Average Monthly quantities per EDU	10,017	4,285	-	
Monthly Ops Expense per EDU	$ 14.52	$ 19.50	$ -	$ 34.02

Capital Structure	Rate Base	AIAC	Total
Costs per Section	$ 7,378,826	$ 7,168,000	$ 14,546,826
Costs per EDU	$ 3,294	3,200	$ 6,494
	50.72%	49.28%	100.00%

Annual Volumes	Water	Wastewater	Recycled
Per Section	272,984,934	116,784,998	-
	100.00%		0.00%
Equivalent Swimming Pools	10,919 of Potable Water Use Each Year		

Rate Base Breakdown	Total	
Equity	$ 3,689,413	50.00%
Debt	$ 3,689,413	50.00%

Hypothetical Profit & Loss		
Total Revenue	$ 2,236,144	
Expenses	$ (914,499)	
EBITDA	$ 1,321,646	
Depreciation	$ (363,671)	2.50%
Interest	$ (258,259)	7.00%
Taxable Income	$ 699,716	
Tax	$ (293,881)	42.00%
Net Income	$ 405,835	
Return on Equity	11.00%	

	Annual Volume		$/1000 Gallons	Annual Total	$/EDU/Month
Water to Homes	116,580,625		$ 6.08	$ 709,218	$ 26.38
Wastewater	116,784,998		Monthly Rate $	940,800	$ 35.00
Water to HOA and Com Areas	96,347,624	RATE @	$ 6.08	$ 586,129	$ 21.81
Recycled Water to Com Areas	-	85.00%	$ 5.17	$ -	$ -
Recycled Water to Homes	-		$ 5.17	$ -	$ -
Total Revenue				$ 2,236,144	$ 83.19
Revenue from Water Sales		57.93%		$ 1,295,344	
Revenue from Wastewater Sales		42.07%		$ 940,800	
Rev from Recycled Water Sales		0.00%		$ -	

GLOBAL WATER
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Table 29

THE ECONOMICS OF RECLAMATION

SCENARIO	Groundwater	**Yes**	Surface	**No**	Arsenic	**No**
LEVEL OF RECLAMATION	Basic	**Yes**	+ Advanced	**No**		

Consumption

Water to Residential Customers	216	Gallons/day	0.242	ac-ft/EDU/year
Water to Commercial Customers	-	Gallons/day	-	ac-ft/EDU/year
SUBTOTAL - HOMES	216	Gallons/day	0.242	ac-ft/EDU/year
Water to HOA's for Irrigation	118	Gallons/day	0.132	ac-ft/EDU/year
Water to Miscellaneous Irrigation	-	Gallons/day	-	ac-ft/EDU/year
SUBTOTAL - COMMON AREAS	118	Gallons/day	0.132	ac-ft/EDU/year
TOTAL	334	Gallons/day	0.374	ac-ft/EDU/year

Recycled Water

Wastewater Available for Treatment	143	Gallons/day	0.160	ac-ft/EDU/year

Population Density	3.5	per Acre	2,240	EDU/Section

Supply (factoring in utilization of recycled water)

	Water to Customers (Inside)	143	Gallons/day	0.160	ac-ft/EDU/year
34%	Water to Customers (Outside)	73	Gallons/day	0.082	ac-ft/EDU/year
	Total Water to Customers	216	Gallons/day	0.242	ac-ft/EDU/year
	Water to Common Areas	-	Gallons/day	-	ac-ft/EDU/year
	Total Water Use	216	Gallons/day	0.242	ac-ft/EDU/year
	Recycled Water to Common Areas	118	Gallons/day	0.132	ac-ft/EDU/year
	Recycled Water to Customers	-	Gallons/day	-	ac-ft/EDU/year
	Re. Water To Discharge/Recharge	25	Gallons/day	0.028	ac-ft/EDU/year

	Unit Cost ($ per Gal)	Unit Cost ($ per Ac-ft)	Unit Cost ($ per EDU)	Total per Section ($)
Rate Base				
Permitting Costs			$ 50.00	$ 112,000
Groundwater Rights Acquisition		$ -	$ -	$ -
Well Sites	$ 0.55		$ 118.82	$ 266,166
Surface Water Rights Acquisition		$ 11,000.00	$ -	$ -
Surface Water Treatment	$ 6.00		$ -	$ -
Arsenic Treatment	$ 1.35		$ -	$ -
Water Distribution (Storage & Pumping)	$ 2.00		$ 432	$ 967,876
Water Backbone Pipelines			$ 500.00	$ 1,120,000
Wastewater Backbone Pipelines			$ 750.00	$ 1,680,000
Water Reclamation - Treatment	$ 8.00		$ 1,143	$ 2,559,671
Recycled Water Backbone Pipelines			$ 500.00	$ 1,120,000
Reclaimed Water Storage & Pressurization	$ 1.15		$ -	$ -
AIAC				
Onsite Water Pipelines			$ 1,800.00	$ 4,032,000
Onsite Wastewater Pipelines			$ 1,400.00	$ 3,136,000
Onsite Recycled Water Pipelines			$ 1,500.00	$ -
TOTAL			$ 6,694	$ 14,993,713

	Total Operating Costs (Water) ($/1000)	Total Operating Costs (WW) ($/1000)	Total Operating Costs (Recycled) ($/1000)
Operational Expenses			
Well Sites	$ 0.25		
Surface Water Treatment	$ -		
Arsenic Treatment	$ -		
Water Distribution (Storage & Pumping)	$ 1.00		
Water Backbone Pipelines	$ 0.10		
Wastewater Backbone Pipelines		$ 0.10	
Water Reclamation - Treatment		$ 4.35	
Recycled Water Backbone Pipelines			$ 0.10
Reclaimed Water Storage & Pressurization			$ -
Onsite Water Pipelines	$ 0.10		
Onsite Wastewater Pipelins		$ 0.10	
Onsite Recycled Water Pipelines			$ -
	$ 1.45	$ 4.55	$ 0.10

Breakdown of Capital Costs	**Water**	**Wastewater**	**Recycled**	**Total**
Costs per Section	$ 6,496,041	$ 7,375,671	$ 1,120,000	$ 14,993,713
Costs per EDU	$ 2,901	$ 3,293	$ 500.00	$ 6,694
	43.34%	49.19%	7.47%	100.00%

Breakdown of Operational Expenses	**Water**	**Wastewater**	**Recycled**	**Total**
Average Monthly quantities per EDU	6,481	4,285	3,535	
Monthly Ops Expense per EDU	$ 9.40	$ 19.50	$ 0.35	$ 29.25

Capital Structure	**Rate Base**	**AIAC**	**Total**
Costs per Section	$ 7,825,713	$ 7,168,000	$ 14,993,713
Costs per EDU	$ 3,494	3,200	$ 6,694
	52.19%	47.81%	100.00%

Annual Volumes	**Water**	**Wastewater**	**Recycled**
Per Section	176,637,310	116,784,998	96,347,624
	64.71%		35.29%
Equivalent Swimming Pools	**7,065**	**of Potable Water Use Each Year**	

Rate Base Breakdown	**Total**	
Equity	$ 3,912,856	50.00%
Debt	$ 3,912,856	50.00%

Annual Volume			**$/1000 Gallons**	**Annual Total**	**$/EDU/Month**
Water to Homes	116,580,625		$ 6.23	$ 726,145	$ 27.01
Wastewater	116,784,998		Monthly Rate	$ 940,800	$ 35.00
Water to HOA and Com Areas	-	RATE @	$ 6.23	$ -	$ -
Recycled Water to Com Areas	96,347,624	65.00%	$ 5.29	$ 510,102	$ 18.98
Recycled Water to Homes	-		$ 5.29	$ -	$ -
Total Revenue				$ 2,177,047	$ 80.99

Hypothetical Profit & Loss		
Total Revenue	$ 2,177,047	
Expenses	$ (786,211)	
EBITDA	$ 1,390,836	
Depreciation	$ (374,843)	2.50%
Interest	$ (273,900)	7.00%
Taxable Income	$ 742,093	
Tax	$ (311,675)	42.00%
Net Income	$ 430,414	
Return on Equity	11.00%	

Revenue from Water Sales	33.35%	$ 726,145
Revenue from Wastewater Sales	43.21%	$ 940,800
Rev from Recycled Water Sales	23.43%	$ 510,102

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Table 30

THE ECONOMICS OF RECLAMATION

SCENARIO	Groundwater	**Yes**	Surface	**No**	Arsenic	**No**
LEVEL OF RECLAMATION	Basic	**Yes**	+ Advanced	**Yes**		

Consumption

Water to Residential Customers	216	Gallons/day	0.242	ac-ft/EDU/year
Water to Commercial Customers	-	Gallons/day	-	ac-ft/EDU/year
SUBTOTAL - HOMES	216	Gallons/day	0.242	ac-ft/EDU/year
Water to HOA's for Irrigation	118	Gallons/day	0.132	ac-ft/EDU/year
Water to Miscellaneous Irrigation	-	Gallons/day	-	ac-ft/EDU/year
SUBTOTAL - COMMON AREAS	118	Gallons/day	0.132	ac-ft/EDU/year
TOTAL	334	Gallons/day	0.374	ac-ft/EDU/year

Recycled Water

Wastewater Available for Treatment	143	Gallons/day	0.160	ac-ft/EDU/year

Population Density	3.5	per Acre	2,240	EDU/Section

Supply (factoring in utilization of recycled water)

	Water to Customers (Inside)	143	Gallons/day	0.160	ac-ft/EDU/year
34%	Water to Customers (Outside)	-	Gallons/day	-	ac-ft/EDU/year
	Total Water to Customers	143	Gallons/day	0.160	ac-ft/EDU/year
	Water to Common Areas	48	Gallons/day	0.054	ac-ft/EDU/year
	Total Water Use	191	Gallons/day	0.214	ac-ft/EDU/year
	Recycled Water to Common Areas	69	Gallons/day	0.078	ac-ft/EDU/year
	Recycled Water to Customers	73	Gallons/day	0.082	ac-ft/EDU/year
	Re: Water To Discharge/Recharge	-	Gallons/day	-	ac-ft/EDU/year

	Unit Cost ($ per Gal)	Unit Cost ($ per Ac-ft)	Unit Cost ($ per EDU)	Total per Section ($)
Rate Base				
Permitting Costs			$ 50.00	$ 112,000
Groundwater Rights Acquisition		$ -	$ -	$ -
Well Sites	$ 0.55		$ 105.06	$ 235,370
Surface Water Rights Acquisition		$ 11,000.00	$ -	$ -
Surface Water Treatment	$ 6.00		$ -	$ -
Arsenic Treatment	$ 1.35		$ -	$ -
Water Distribution (Storage & Pumping)	$ 2.00		$ 382	$ 855,899
Water Backbone Pipelines			$ 500.00	$ 1,120,000
Wastewater Backbone Pipelines			$ 750.00	$ 1,680,000
Water Reclamation - Treatment	$ 5.00		$ 1,143	$ 2,559,671
Recycled Water Backbone Pipelines			$ 500.00	$ 1,120,000
Reclaimed Water Storage & Pressurization	$ 1.15		$ 84.47	$ 189,220
AIAC				
Onsite Water Pipelines			$ 1,800.00	$ 4,032,000
Onsite Wastewater Pipelines			$ 1,400.00	$ 3,136,000
Onsite Recycled Water Pipelines			$ 1,500.00	$ 3,360,000
TOTAL			$ 8,214	$ 18,400,151

	Total Operating Costs (Water) ($/1000)	Total Operating Costs (WW) ($/1000)	Total Operating Costs (Recycled) ($/1000)
Operational Expenses			
Well Sites	$ 0.25		
Surface Water Treatment	$ -		
Arsenic Treatment	$ -		
Water Distribution (Storage & Pumping)	$ 1.00		
Water Backbone Pipelines	$ 0.10		
Wastewater Backbone Pipelines		$ 0.10	
Water Reclamation - Treatment		$ 4.35	
Recycled Water Backbone Pipelines			$ 0.10
Reclaimed Water Storage & Pressurization			$ 0.50
Onsite Water Pipelines	$ 0.10		
Onsite Wastewater Pipelins		$ 0.10	
Onsite Recycled Water Pipelines			$ 0.10
	$ 1.45	$ 4.55	$ 0.70

Breakdown of Capital Costs	**Water**	**Wastewater**	**Recycled**	**Total**
Costs per Section	$ 6,355,260	$ 7,375,671	$ 4,669,220	$ 18,400,151
Costs per EDU	$ 2,837	$ 3,293	$ 2,084.47	$ 8,214
	34.54%	40.08%	25.38%	100.00%

Breakdown of Operational Expenses	**Water**	**Wastewater**	**Recycled**	**Total**
Average Monthly quantities per EDU	5,731	4,285	4,285	
Monthly Ops Expense per EDU	$ 8.31	$ 19.50	$ 3.00	$ 30.81

Capital Structure	**Rate Base**	**AIAC**	**Total**
Costs per Section	$ 7,872,151	$ 10,528,000	$ 18,400,151
Costs per EDU	$ 3,514	4,700	$ 8,214
	42.78%	57.22%	100.00%

Annual Volumes	**Water**	**Wastewater**	**Recycled**
Per Section	156,199,935	116,784,998	116,784,998
	57.22%		42.78%
Equivalent Swimming Pools	**6,248**	**of Potable Water Use Each Year**	

Rate Base Breakdown	**Total**	
Equity	$ 3,936,075	50.00%
Debt	$ 3,936,075	50.00%

Hypothetical Profit & Loss		
Total Revenue	$ 2,310,136	
Expenses	$ (828,110)	
EBITDA	$ 1,482,026	
Depreciation	$ (460,004)	2.50%
Interest	$ (275,525)	7.00%
Taxable Income	$ 746,497	
Tax	$ (313,529)	42.00%
Net Income	$ 432,968	
Return on Equity	11.00%	

	Annual Volume		**$/1000 Gallons**	**Annual Total**	**$/EDU/Month**
Water to Homes	116,580,625		$ 5.36	$ 624,887	$ 23.25
Wastewater	116,784,998		Monthly Rate	$ 940,800	$ 35.00
Water to HOA and Com Areas	39,619,311	RATE @	$ 5.36	$ 212,364	$ 7.90
Recycled Water to Com Areas	56,728,313	85.00%	$ 4.56	$ 258,460	$ 9.62
Recycled Water to Homes	60,056,685		$ 4.56	$ 273,625	$ 10.18
Total Revenue				$ 2,310,136	$ 85.94
Revenue from Water Sales		36.24%		$ 837,251	
Revenue from Wastewater Sales		40.72%		$ 940,800	
Rev from Recycled Water Sales		23.03%		$ 532,085	

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Table 31

THE ECONOMICS OF RECLAMATION

SCENARIO	Groundwater	No	Surface	Yes	Arsenic	No
LEVEL OF RECLAMATION	Basic	No	+ Advanced	No		

Consumption					Supply (factoring in utilization of recycled water)					
Water to Residential Customers	216	Gallons/day	0.242	ac-ft/EDU/year						
Water to Commercial Customers	-	Gallons/day	-	ac-ft/EDU/year						
SUBTOTAL - HOMES	216	Gallons/day	0.242	ac-ft/EDU/year						
Water to HOA's for Irrigation	118	Gallons/day	0.132	ac-ft/EDU/year	34%	Water to Customers (Inside)	143	Gallons/day	0.160	ac-ft/EDU/year
Water to Miscellaneous Irrigation	-	Gallons/day	-	ac-ft/EDU/year		Water to Customers (Outside)	73	Gallons/day	0.082	ac-ft/EDU/year
SUBTOTAL - COMMON AREAS	118	Gallons/day	0.132	ac-ft/EDU/year		Total Water to Customers	216	Gallons/day	0.242	ac-ft/EDU/year
TOTAL	334	Gallons/day	0.374	ac-ft/EDU/year		Water to Common Areas	118	Gallons/day	0.132	ac-ft/EDU/year
						Total Water Use	334	Gallons/day	0.374	ac-ft/EDU/year
Recycled Water										
Wastewater Available for Treatment	143	Gallons/day	0.160	ac-ft/EDU/year						
						Recycled Water to Common Areas	-	Gallons/day	-	ac-ft/EDU/year
						Recycled Water to Customers	-	Gallons/day	-	ac-ft/EDU/year
						Ra. Water To Discharge/Recharge	143	Gallons/day	0.160	ac-ft/EDU/year
Population Density	3.5	per Acre	2,240	EDU/Section						

	Unit Cost ($ per Gal)	Unit Cost ($ per Ac-ft)	Unit Cost ($ per EDU)	Total per Section ($)
Rate Base				
Permitting Costs			$ 50.00	$ 112,000
Groundwater Rights Acquisition		$ -	$ -	$ -
Well Sites	$ 0.55		$ -	$ -
Surface Water Rights Acquisition		$ 11,000.00	$ 4,114.00	$ 9,215,360
Surface Water Treatment	$ 6.00		$ 2,003.31	$ 4,487,424
Arsenic Treatment	$ 1.35		$ -	$ -
Water Distribution (Storage & Pumping)	$ 2.00		$ 668	$ 1,495,808
Water Backbone Pipelines			$ 500.00	$ 1,120,000
Wastewater Backbone Pipelines			$ 750.00	$ 1,680,000
Water Reclamation - Treatment	$ 8.00		$ 1,143	$ 2,559,671
Recycled Water Backbone Pipelines			$ 500.00	$ -
Reclaimed Water Storage & Pressurization	$ 1.15		$ -	$ -
AIAC				
Onsite Water Pipelines			$ 1,800.00	$ 4,032,000
Onsite Wastewater Pipelines			$ 1,400.00	$ 3,136,000
Onsite Recycled Water Pipelines			$ 1,500.00	$ -
TOTAL			$ 12,428	$ 27,838,263

	Total Operating Costs (Water) ($/1000)	Total Operating Costs (WW) ($/1000)	Total Operating Costs (Recycled) ($/1000)
Operational Expenses			
Well Sites	$ -		
Surface Water Treatment	$ 0.70		
Arsenic Treatment	$ -		
Water Distribution (Storage & Pumping)	$ 1.00		
Water Backbone Pipelines	$ 0.10		
Wastewater Backbone Pipelines		$ 0.10	
Water Reclamation - Treatment		$ 4.35	
Recycled Water Backbone Pipelines			$ -
Reclaimed Water Storage & Pressurization			$ -
Onsite Water Pipelines	$ 0.10		
Onsite Wastewater Pipelins		$ 0.10	
Onsite Recycled Water Pipelines			$ -
	$ 1.90	$ 4.55	$ -

Breakdown of Capital Costs	Water	Wastewater	Recycled	Total
Costs per Section	$ 20,462,591	$ 7,375,671	$ -	$ 27,838,263
Costs per EDU	$ 9,135	$ 3,293	$ -	$ 12,428
	73.51%	26.49%	0.00%	100.00%

Breakdown of Operational Expenses	Water	Wastewater	Recycled	Total
Average Monthly quantities per EDU	10,017	4,285	-	
Monthly Ops Expense per EDU	$ 19.03	$ 19.50	$ -	$ 38.53

Capital Structure	Rate Base	AIAC	Total
Costs per Section	$ 20,670,263	$ 7,168,000	$ 27,838,263
Costs per EDU	$ 9,228	3,200	$ 12,428
	74.25%	25.75%	100.00%

Annual Volumes	Water	Wastewater	Recycled
Per Section	272,984,934	116,784,998	-
	100.00%		0.00%
Equivalent Swimming Pools	10,919	of Potable Water Use Each Year	

Rate Base Breakdown	Total	
Equity	$ 10,335,131	50.00%
Debt	$ 10,335,131	50.00%

Hypothetical Profit & Loss		
Total Revenue	$ 4,415,186	
Expenses	$ (1,035,659)	
EBITDA	$ 3,379,527	
Depreciation	$ (695,957)	2.50%
Interest	$ (723,456)	7.00%
Taxable Income	$ 1,960,111	
Tax	$ (823,247)	42.00%
Net Income	$ 1,136,864	
Return on Equity	11.00%	

	Annual Volume		$/1000 Gallons	Annual Total	$/EDU/Month
Water to Homes	116,580,825		$ 16.32	$ 1,902,266	$ 70.77
Wastewater	116,784,998		Monthly Rate	$ 940,800	$ 35.00
Water to HOA and Com Areas	96,347,824	RATE @	$ 16.32	$ 1,572,120	$ 58.49
Recycled Water to Com Areas	-	85.00%	$ 13.87	$ -	$ -
Recycled Water to Homes	-		$ 13.87	$ -	$ -
Total Revenue				$ 4,415,186	$ 164.26
Revenue from Water Sales		78.69%		$ 3,474,386	
Revenue from Wastewater Sales		21.31%		$ 940,800	
Rev from Recycled Water Sales		0.00%		$ -	

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Table 32

THE ECONOMICS OF RECLAMATION

SCENARIO	Groundwater	**No**	Surface	**Yes**	Arsenic	**No**
LEVEL OF RECLAMATION	Basic	**Yes**	+ Advanced	**No**		

Consumption

Water to Residential Customers	216	Gallons/day	0.242	ac-ft/EDU/year
Water to Commercial Customers	-	Gallons/day	-	ac-ft/EDU/year
SUBTOTAL - HOMES	216	Gallons/day	0.242	ac-ft/EDU/year
Water to HOA's for Irrigation	118	Gallons/day	0.132	ac-ft/EDU/year
Water to Miscellaneous Irrigation	-	Gallons/day	-	ac-ft/EDU/year
SUBTOTAL - COMMON AREAS	118	Gallons/day	0.132	ac-ft/EDU/year
TOTAL	334	Gallons/day	0.374	ac-ft/EDU/year

Recycled Water

Wastewater Available for Treatment	143	Gallons/day	0.160	ac-ft/EDU/year

Population Density	3.5	per Acre	2,240	EDU/Section

Supply (factoring in utilization of recycled water)

	Water to Customers (Inside)	143	Gallons/day	0.160	ac-ft/EDU/year
34%	Water to Customers (Outside)	73	Gallons/day	0.082	ac-ft/EDU/year
	Total Water to Customers	216	Gallons/day	0.242	ac-ft/EDU/year
	Water to Common Areas	-	Gallons/day	-	ac-ft/EDU/year
	Total Water Use	216	Gallons/day	0.242	ac-ft/EDU/year
	Recycled Water to Common Areas	118	Gallons/day	0.132	ac-ft/EDU/year
	Recycled Water to Customers	-	Gallons/day	-	ac-ft/EDU/year
	Rs. Water To Discharge/Recharge	25	Gallons/day	0.028	ac-ft/EDU/year

	Unit Cost ($ per Gal)	Unit Cost ($ per Ac-ft)	Unit Cost ($ per EDU)	Total per Section ($)
Rate Base				
Permitting Costs			$ 50.00	$ 112,000
Groundwater Rights Acquisition		$ -	$ -	$ -
Well Sites	$ 0.55		$ -	$ -
Surface Water Rights Acquisition		$ 11,000.00	$ 2,662.00	$ 5,962,880
Surface Water Treatment	$ 6.00		$ 1,296.26	$ 2,903,627
Arsenic Treatment	$ 1.35		$ -	$ -
Water Distribution (Storage & Pumping)	$ 2.00		$ 432	$ 967,876
Water Backbone Pipelines			$ 500.00	$ 1,120,000
Wastewater Backbone Pipelines			$ 750.00	$ 1,680,000
Water Reclamation - Treatment	$ 8.00		$ 1,143	$ 2,559,671
Recycled Water Backbone Pipelines			$ 500.00	$ 1,120,000
Reclaimed Water Storage & Pressurization	$ 1.15		$ -	$ -
AIAC				
Onsite Water Pipelines			$ 1,800.00	$ 4,032,000
Onsite Wastewater Pipelines			$ 1,400.00	$ 3,136,000
Onsite Recycled Water Pipelines			$ 1,500.00	$ -
TOTAL			$ 10,533	$ 23,594,054

	Total Operating Costs (Water) ($/1000)	Total Operating Costs (WW) ($/1000)	Total Operating Costs (Recycled) ($/1000)
Operational Expenses			
Well Sites	$ -		
Surface Water Treatment	$ 0.70		
Arsenic Treatment	$ -		
Water Distribution (Storage & Pumping)	$ 1.00		
Water Backbone Pipelines	$ 0.10		
Wastewater Backbone Pipelines		$ 0.10	
Water Reclamation - Treatment		$ 4.35	
Recycled Water Backbone Pipelines			$ 0.10
Reclaimed Water Storage & Pressurization			$ -
Onsite Water Pipelines	$ 0.10		
Onsite Wastewater Pipelins		$ 0.10	
Onsite Recycled Water Pipelines			$ -
	$ 1.90	$ 4.55	$ 0.10

Breakdown of Capital Costs	**Water**	**Wastewater**	**Recycled**	**Total**
Costs per Section	$ 15,098,383	$ 7,375,671	$ 1,120,000	$ 23,594,054
Costs per EDU	$ 6,740	$ 3,293	$ 500.00	$ 10,533
	63.99%	31.26%	4.75%	100.00%

Breakdown of Operational Expenses	**Water**	**Wastewater**	**Recycled**	**Total**
Average Monthly quantities per EDU	6,481	4,285	3,535	
Monthly Ops Expense per EDU	$ 12.31	$ 19.50	$ 0.35	$ 32.17

Capital Structure	**Rate Base**	**AIAC**	**Total**
Costs per Section	$ 16,426,054	$ 7,168,000	$ 23,594,054
Costs per EDU	$ 7,333	$ 3,200	$ 10,533
	69.62%	30.38%	100.00%

Annual Volumes	**Water**	**Wastewater**	**Recycled**
Per Section	176,637,310	116,784,998	96,347,624
	64.71%		35.29%
Equivalent Swimming Pools	**7,065**	**of Potable Water Use Each Year**	

Rate Base Breakdown	**Total**	
Equity	$ 8,213,027	50.00%
Debt	$ 8,213,027	50.00%

Hypothetical Profit & Loss		
Total Revenue	$ 3,587,015	
Expenses	$ (864,609)	
EBITDA	$ 2,722,406	
Depreciation	$ (589,851)	2.50%
Interest	$ (574,912)	7.00%
Taxable Income	$ 1,557,643	
Tax	$ (654,210)	42.00%
Net Income	$ 903,433	
Return on Equity	11.00%	

	Annual Volume		**$/1000 Gallons**	**Annual Total**	**$/EDU/Month**
Water to Homes	116,580,625		$ 13.33	$ 1,554,330	$ 57.82
Wastewater	116,784,998		Monthly Rate $	940,800	$ 35.00
Water to HOA and Com Areas	-	RATE @	$ 13.33	$ -	$ -
Recycled Water to Com Areas	96,347,624	85.00%	$ 11.33	$ 1,091,885	$ 40.62
Recycled Water to Homes	-		$ 11.33	$ -	$ -
Total Revenue				$ 3,587,015	$ 133.45
Revenue from Water Sales		43.33%		$ 1,554,330	
Revenue from Wastewater Sales		26.23%		$ 940,800	
Rev from Recycled Water Sales		30.44%		$ 1,091,885	

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Table 33

THE ECONOMICS OF RECLAMATION

SCENARIO	Groundwater	No	Surface	Yes	Arsenic	No
LEVEL OF RECLAMATION	Basic	Yes	+ Advanced	Yes		

Consumption

Water to Residential Customers	216	Gallons/day	0.242	ac-ft/EDU/year
Water to Commercial Customers	-	Gallons/day	-	ac-ft/EDU/year
SUBTOTAL - HOMES	216	Gallons/day	0.242	ac-ft/EDU/year
Water to HOA's for Irrigation	118	Gallons/day	0.132	ac-ft/EDU/year
Water to Miscellaneous Irrigation	-	Gallons/day	-	ac-ft/EDU/year
SUBTOTAL - COMMON AREAS	118	Gallons/day	0.132	ac-ft/EDU/year
TOTAL	334	Gallons/day	0.374	ac-ft/EDU/year

Recycled Water

Wastewater Available for Treatment	143	Gallons/day	0.160	ac-ft/EDU/year

Population Density	3.5	per Acre	2,240	EDU/Section

Supply (factoring in utilization of recycled water)

	Water to Customers (Inside)	143	Gallons/day	0.160	ac-ft/EDU/year
34%	Water to Customers (Outside)	-	Gallons/day	-	ac-ft/EDU/year
	Total Water to Customers	143	Gallons/day	0.160	ac-ft/EDU/year
	Water to Common Areas	48	Gallons/day	0.054	ac-ft/EDU/year
	Total Water Use	191	Gallons/day	0.214	ac-ft/EDU/year
	Recycled Water to Common Areas	69	Gallons/day	0.078	ac-ft/EDU/year
	Recycled Water to Customers	73	Gallons/day	0.082	ac-ft/EDU/year
	Rs. Water To Discharge/Recharge	-	Gallons/day	-	ac-ft/EDU/year

	Unit Cost ($ per Gal)	Unit Cost ($ per Ac-ft)	Unit Cost ($ per EDU)	Total per Section ($)
Rate Base				
Permitting Costs			$ 50.00	$ 112,000
Groundwater Rights Acquisition		$ -	$ -	$ -
Well Sites	$ 0.55		$ -	$ -
Surface Water Rights Acquisition		$ 11,000.00	$ 2,354.00	$ 5,272,960
Surface Water Treatment	$ 6.00		$ 1,146.28	$ 2,567,670
Arsenic Treatment	$ 1.35		$ -	$ -
Water Distribution (Storage & Pumping)	$ 2.00		$ 382	$ 855,890
Water Backbone Pipelines			$ 500.00	$ 1,120,000
Wastewater Backbone Pipelines			$ 750.00	$ 1,680,000
Water Reclamation Treatment	$ 8.00		$ 1,143	$ 2,559,671
Recycled Water Backbone Pipelines			$ 500.00	$ 1,120,000
Reclaimed Water Storage & Pressurization	$ 1.15		$ 84.47	$ 189,220
AIAC				
Onsite Water Pipelines			$ 1,800.00	$ 4,032,000
Onsite Wastewater Pipelines			$ 1,400.00	$ 3,136,000
Onsite Recycled Water Pipelines			$ 1,500.00	$ 3,360,000
TOTAL			$ 11,610	$ 26,005,411

	Total Operating Costs (Water) ($/1000)	Total Operating Costs (WW) ($/1000)	Total Operating Costs (Recycled) ($/1000)
Operational Expenses			
Well Sites	$ -		
Surface Water Treatment	$ 0.70		
Arsenic Treatment	$ -		
Water Distribution (Storage & Pumping)	$ 1.00		
Water Backbone Pipelines	$ 0.10		
Wastewater Backbone Pipelines		$ 0.10	
Water Reclamation - Treatment		$ 4.35	
Recycled Water Backbone Pipelines			$ 0.10
Reclaimed Water Storage & Pressurization			$ 0.50
Onsite Water Pipelines	$ 0.10		
Onsite Wastewater Pipelins		$ 0.10	
Onsite Recycled Water Pipelines			$ 0.10
	$ 1.90	$ 4.55	$ 0.70

Breakdown of Capital Costs	Water	Wastewater	Recycled	Total
Costs per Section	$ 13,960,520	$ 7,375,671	$ 4,669,220	$ 26,005,411
Costs per EDU	$ 6,232	$ 3,293	$ 2,084.47	$ 11,610
	53.68%	28.36%	17.95%	100.00%

Breakdown of Operational Expenses	Water	Wastewater	Recycled	Total
Average Monthly quantities per EDU	5,731	4,285	4,285	
Monthly Ops Expense per EDU	$ 10.89	$ 19.50	$ 3.00	$ 33.39

Capital Structure	Rate Base	AIAC	Total
Costs per Section	$ 15,477,411	$ 10,528,000	$ 26,005,411
Costs per EDU	$ 6,910	4,700	$ 11,610
	59.52%	40.48%	100.00%

Annual Volumes	Water	Wastewater	Recycled
Per Section	156,199,935	116,784,998	116,784,998
	57.22%		42.78%
Equivalent Swimming Pools	6,248	of Potable Water Use Each Year	

Rate Base Breakdown	Total	
Equity	$ 7,738,706	50.00%
Debt	$ 7,738,706	50.00%

Hypothetical Profit & Loss		
Total Revenue	$ 3,556,967	
Expenses	$ (897,437)	
EBITDA	$ 2,659,530	
Depreciation	$ (650,135)	2.50%
Interest	$ (541,709)	7.00%
Taxable Income	$ 1,467,686	
Tax	$ (616,428)	42.00%
Net Income	$ 851,258	
Return on Equity	11.00%	

	Annual Volume		$/1000 Gallons	Annual Total	$/EDU/Month
Water to Homes	116,580,625		$ 10.24	$ 1,193,869	$ 44.41
Wastewater	116,784,998		Monthly Rate	$ 940,800	$ 35.00
Water to HOA and Com Areas	39,619,311	RATE @	$ 10.24	$ 405,730	$ 15.09
Recycled Water to Com Areas	56,729,313	85.00%	$ 8.70	$ 493,798	$ 18.37
Recycled Water to Homes	60,056,685		$ 8.70	$ 522,770	$ 19.45
Total Revenue				$ 3,556,967	$ 132.33
Revenue from Water Sales		44.97%		$ 1,599,599	
Revenue from Wastewater Sales		26.45%		$ 940,800	
Rev from Recycled Water Sales		28.58%		$ 1,016,568	

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Table 34

THE ECONOMICS OF RECLAMATION

SCENARIO	Groundwater	**Yes**	Surface	**No**	Arsenic	**Yes**
LEVEL OF RECLAMATION	Basic	**No**	+ Advanced	**No**		

Consumption

Water to Residential Customers	216	Gallons/day	0.242	ac-ft/EDU/year
Water to Commercial Customers	-	Gallons/day	-	ac-ft/EDU/year
SUBTOTAL - HOMES	216	Gallons/day	0.242	ac-ft/EDU/year
Water to HOA's for Irrigation	118	Gallons/day	0.132	ac-ft/EDU/year
Water to Miscellaneous Irrigation	-	Gallons/day	-	ac-ft/EDU/year
SUBTOTAL - COMMON AREAS	118	Gallons/day	0.132	ac-ft/EDU/year
TOTAL	334	Gallons/day	0.374	ac-ft/EDU/year

Recycled Water

Wastewater Available for Treatment	143	Gallons/day	0.160	ac-ft/EDU/year

Population Density	3.5	per Acre	2,240	EDU/Section

Supply (factoring in utilization of recycled water)

	Water to Customers (Inside)	143	Gallons/day	0.160	ac-ft/EDU/year
34%	Water to Customers (Outside)	73	Gallons/day	0.082	ac-ft/EDU/year
	Total Water to Customers	216	Gallons/day	0.242	ac-ft/EDU/year
	Water to Common Areas	118	Gallons/day	0.132	ac-ft/EDU/year
	Total Water Use	334	Gallons/day	0.374	ac-ft/EDU/year
	Recycled Water to Common Areas	-	Gallons/day	-	ac-ft/EDU/year
	Recycled Water to Customers	-	Gallons/day	-	ac-ft/EDU/year
	Re. Water To Discharge/Recharge	143	Gallons/day	0.160	ac-ft/EDU/year

	Unit Cost ($ per Gal)	Unit Cost ($ per Ac-ft)	Unit Cost ($ per EDU)	Total per Section ($)
Rate Base				
Permitting Costs			$ 50.00	$ 112,000
Groundwater Rights Acquisition		$ -	$ -	$ -
Well Sites	$ 0.55		$ 183.64	$ 411,347
Surface Water Rights Acquisition		$ 11,000.00	$ -	$ -
Surface Water Treatment	$ 6.00		$ -	$ -
Arsenic Treatment	$ 1.35		$ 450.75	$ 1,009,670
Water Distribution (Storage & Pumping)	$ 2.00		$ 668	$ 1,495,808
Water Backbone Pipelines			$ 500.00	$ 1,120,000
Wastewater Backbone Pipelines			$ 750.00	$ 1,680,000
Water Reclamation - Treatment	$ 8.00		$ 1,143	$ 2,559,671
Recycled Water Backbone Pipelines			$ 500.00	$ -
Reclaimed Water Storage & Pressurization	$ 1.15		$ -	$ -
AIAC				
Onsite Water Pipelines			$ 1,800.00	$ 4,032,000
Onsite Wastewater Pipelines			$ 1,400.00	$ 3,136,000
Onsite Recycled Water Pipelines			$ 1,500.00	$ -
TOTAL			$ 6,945	$ 15,556,497

	Total Operating Costs (Water) ($/1000)	Total Operating Costs (WW) ($/1000)	Total Operating Costs (Recycled) ($/1000)
Operational Expenses			
Well Sites	$ 0.25		
Surface Water Treatment	$ -		
Arsenic Treatment	$ 1.50		
Water Distribution (Storage & Pumping)	$ 1.00		
Water Backbone Pipelines	$ 0.10		
Wastewater Backbone Pipelines		$ 0.10	
Water Reclamation - Treatment		$ 4.35	
Recycled Water Backbone Pipelines			$ -
Reclaimed Water Storage & Pressurization			$ -
Onsite Water Pipelines	$ 0.10		
Onsite Wastewater Pipelins		$ 0.10	
Onsite Recycled Water Pipelines			$ -
	$ 2.95	$ 4.55	$ -

Breakdown of Capital Costs	Water	Wastewater	Recycled	Total
Costs per Section	$ 8,180,825	$ 7,375,671	$ -	$ 15,556,497
Costs per EDU	$ 3,652	$ 3,293	$ -	$ 6,945
	52.59%	47.41%	0.00%	100.00%

Breakdown of Operational Expenses	Water	Wastewater	Recycled	Total
Average Monthly quantities per EDU	10,017	4,285	-	
Monthly Ops Expense per EDU	$ 29.55	$ 19.50	$ -	$ 49.05

Capital Structure	Rate Base	AIAC	Total
Costs per Section	$ 8,388,497	$ 7,168,000	$ 15,556,497
Costs per EDU	$ 3,746	3,200	$ 6,945
	53.92%	46.08%	100.00%

Annual Volumes	Water	Wastewater	Recycled
Per Section	272,984,934	116,784,998	-
	100.00%		0.00%
Equivalent Swimming Pools	**10,919**	**of Potable Water Use Each Year**	

Rate Base Breakdown	Total	
Equity	$ 4,194,248	50.00%
Debt	$ 4,194,248	50.00%

Hypothetical Profit & Loss		
Total Revenue	$ 2,796,337	
Expenses	$ (1,318,367)	
EBITDA	$ 1,477,971	
Depreciation	$ (388,912)	2.50%
Interest	$ (293,597)	7.00%
Taxable Income	$ 795,461	
Tax	$ (334,094)	42.00%
Net Income	$ 461,367	
Return on Equity	11.00%	

	Annual Volume		$/1000 Gallons	Annual Total	$/EDU/Month
Water to Homes	116,580,525		$ 8.71	$ 1,015,928	$ 37.79
Wastewater	116,784,998		Monthly Rate	$ 940,800	$ 35.00
Water to HOA and Com Areas	96,347,624	RATE @	$ 8.71	$ 839,610	$ 31.24
Recycled Water to Com Areas	-	85.00%	$ 7.41	$ -	$ -
Recycled Water to Homes	-		$ 7.41	$ -	$ -
Total Revenue				$ 2,796,337	$ 104.03
Revenue from Water Sales		66.36%		$ 1,855,537	
Revenue from Wastewater Sales		33.64%		$ 940,800	
Rev from Recycled Water Sales		0.00%		$ -	

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Table 35

THE ECONOMICS OF RECLAMATION

SCENARIO	Groundwater	Yes	Surface	No	Arsenic	Yes
LEVEL OF RECLAMATION	Basic	Yes	+ Advanced	No		

Consumption

Water to Residential Customers	216	Gallons/day	0.242	ac-ft/EDU/year
Water to Commercial Customers	-	Gallons/day	-	ac-ft/EDU/year
SUBTOTAL - HOMES	216	Gallons/day	0.242	ac-ft/EDU/year
Water to HOA's for Irrigation	118	Gallons/day	0.132	ac-ft/EDU/year
Water to Miscellaneous Irrigation	-	Gallons/day	-	ac-ft/EDU/year
SUBTOTAL - COMMON AREAS	118	Gallons/day	0.132	ac-ft/EDU/year
TOTAL	334	Gallons/day	0.374	ac-ft/EDU/year

Recycled Water

Wastewater Available for Treatment	143	Gallons/day	0.160	ac-ft/EDU/year

Population Density	3.5	per Acre	2,240	EDU/Section

Supply (factoring in utilization of recycled water)

34%	Water to Customers (Inside)	143	Gallons/day	0.160	ac-ft/EDU/year
	Water to Customers (Outside)	73	Gallons/day	0.082	ac-ft/EDU/year
	Total Water to Customers	216	Gallons/day	0.242	ac-ft/EDU/year
	Water to Common Areas	-	Gallons/day		ac-ft/EDU/year
	Total Water Use	216	Gallons/day	0.242	ac-ft/EDU/year
	Recycled Water to Common Areas	118	Gallons/day	0.132	ac-ft/EDU/year
	Recycled Water to Customers	-	Gallons/day	-	ac-ft/EDU/year
	Rs. Water To Discharge/Recharge	25	Gallons/day	0.028	ac-ft/EDU/year

	Unit Cost ($ per Gal)	Unit Cost ($ per Ac-ft)	Unit Cost ($ per EDU)	Total per Section ($)
Rate Base				
Permitting Costs			$ 50.00	$ 112,000
Groundwater Rights Acquisition		$ -	$ -	$ -
Well Sites	$ 0.55		$ 118.82	$ 266,166
Surface Water Rights Acquisition		$ 11,000.00	$ -	$ -
Surface Water Treatment	$ 6.00		$ -	$ -
Arsenic Treatment	$ 1.35		$ 291.66	$ 653,316
Water Distribution (Storage & Pumping)	$ 2.00		$ 432	$ 967,676
Water Backbone Pipelines			$ 500.00	$ 1,120,000
Wastewater Backbone Pipelines			$ 750.00	$ 1,680,000
Water Reclamation - Treatment	$ 8.00		$ 1,143	$ 2,559,671
Recycled Water Backbone Pipelines			$ 500.00	$ 1,120,000
Reclaimed Water Storage & Pressurization	$ 1.15		$ -	$ -
AIAC				
Onsite Water Pipelines			$ 1,800.00	$ 4,032,000
Onsite Wastewater Pipelines			$ 1,400.00	$ 3,136,000
Onsite Recycled Water Pipelines			$ 1,500.00	$ -
TOTAL			$ 6,985	$ 15,647,029

	Total Operating Costs (Water) ($/1000)	Total Operating Costs (WW) ($/1000)	Total Operating Costs (Recycled) ($/1000)
Operational Expenses			
Well Sites	$ 0.25		
Surface Water Treatment	$ -		
Arsenic Treatment	$ 1.50		
Water Distribution (Storage & Pumping)	$ 1.00		
Water Backbone Pipelines	$ 0.10		
Wastewater Backbone Pipelines		$ 0.10	
Water Reclamation - Treatment		$ 4.35	
Recycled Water Backbone Pipelines			$ 0.10
Reclaimed Water Storage & Pressurization			$ -
Onsite Water Pipelines	$ 0.10		
Onsite Wastewater Pipelins		$ 0.10	
Onsite Recycled Water Pipelines			$ -
	$ 2.95	$ 4.55	$ 0.10

Breakdown of Capital Costs	Water	Wastewater	Recycled	Total
Costs per Section	$ 7,151,358	$ 7,375,671	$ 1,120,000	$ 15,647,029
Costs per EDU	$ 3,193	$ 3,293	$ 500.00	$ 6,985
	45.70%	47.14%	7.16%	100.00%

Breakdown of Operational Expenses	Water	Wastewater	Recycled	Total
Average Monthly quantities per EDU	6,481	4,285	3,535	
Monthly Ops Expense per EDU	$ 19.12	$ 19.50	$ 0.35	$ 38.97

Capital Structure	Rate Base	AIAC	Total
Costs per Section	$ 8,479,029	$ 7,168,000	$ 15,647,029
Costs per EDU	$ 3,786	$ 3,200	$ 6,985
	54.19%	45.81%	100.00%

Annual Volumes	Water	Wastewater	Recycled
Per Section	176,637,310	116,784,996	96,347,624
	64.71%		35.29%
Equivalent Swimming Pools	7,065	of Potable Water Use Each Year	

Rate Base Breakdown	Total	
Equity	$ 4,239,514	50.00%
Debt	$ 4,239,514	50.00%

Hypothetical Profit & Loss		
Total Revenue	$ 2,539,525	
Expenses	$ (1,047,537)	
EBITDA	$ 1,491,988	
Depreciation	$ (391,178)	2.50%
Interest	$ (296,766)	7.00%
Taxable Income	$ 804,046	
Tax	$ (337,699)	42.00%
Net Income	$ 466,347	
Return on Equity	11.00%	

	Annual Volume		$/1000 Gallons	Annual Total	$/EDU/Month
Water to Homes	116,580,625		$ 8.06	$ 939,057	$ 34.94
Wastewater	116,784,996		Monthly Rate	$ 940,800	$ 35.00
Water to HOA and Com Areas	-	RATE @	$ 8.06	$ -	$ -
Recycled Water to Com Areas	96,347,624	85.00%	$ 6.85	$ 659,668	$ 24.54
Recycled Water to Homes	-		$ 6.85	$ -	$ -
Total Revenue				$ 2,539,525	$ 94.48
Revenue from Water Sales		36.98%		$ 939,057	
Revenue from Wastewater Sales		37.05%		$ 940,800	
Rev from Recycled Water Sales		25.98%		$ 659,668	

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Table 36

THE ECONOMICS OF RECLAMATION

SCENARIO	Groundwater	Yes	Surface	No	Arsenic	Yes
LEVEL OF RECLAMATION	Basic	Yes	+ Advanced	Yes		

Consumption

Water to Residential Customers	216	Gallons/day	0.242	ac-ft/EDU/year
Water to Commercial Customers	-	Gallons/day	-	ac-ft/EDU/year
SUBTOTAL - HOMES	216	Gallons/day	0.242	ac-ft/EDU/year
Water to HOA's for Irrigation	118	Gallons/day	0.132	ac-ft/EDU/year
Water to Miscellaneous Irrigation	-	Gallons/day	-	ac-ft/EDU/year
SUBTOTAL - COMMON AREAS	118	Gallons/day	0.132	ac-ft/EDU/year
TOTAL	334	Gallons/day	0.374	ac-ft/EDU/year

Recycled Water

Wastewater Available for Treatment	143	Gallons/day	0.160	ac-ft/EDU/year

Population Density	3.5	per Acre	2,240 EDU/Section

Supply (factoring in utilization of recycled water)

Water to Customers (Inside)	143	Gallons/day	0.160	ac-ft/EDU/year
34% Water to Customers (Outside)	-	Gallons/day	-	ac-ft/EDU/year
Total Water to Customers	143	Gallons/day	0.160	ac-ft/EDU/year
Water to Common Areas	48	Gallons/day	0.054	ac-ft/EDU/year
Total Water Use	191	Gallons/day	0.214	ac-ft/EDU/year
Recycled Water to Common Areas	69	Gallons/day	0.078	ac-ft/EDU/year
Recycled Water to Customers	73	Gallons/day	0.082	ac-ft/EDU/year
Re. Water To Discharge/Recharge	-	Gallons/day	-	ac-ft/EDU/year

	Unit Cost ($ per Gal)	Unit Cost ($ per Ac-ft)	Unit Cost ($ per EDU)	Total per Section ($)
Rate Base				
Permitting Costs			$ 50.00	$ 112,000
Groundwater Rights Acquisition		$ -	$ -	$ -
Well Sites	$ 0.55		$ 105.08	$ 235,370
Surface Water Rights Acquisition		$ 11,000.00	$ -	$ -
Surface Water Treatment	$ 5.00		$ -	$ -
Arsenic Treatment	$ 1.35		$ 257.91	$ 577,726
Water Distribution (Storage & Pumping)	$ 2.00		$ 382	$ 855,890
Water Backbone Pipelines			$ 500.00	$ 1,120,000
Wastewater Backbone Pipelines			$ 750.00	$ 1,680,000
Water Reclamation - Treatment	$ 8.00		$ 1,143	$ 2,559,671
Recycled Water Backbone Pipelines			$ 500.00	$ 1,120,000
Reclaimed Water Storage & Pressurization	$ 1.15		$ 84.47	$ 189,220
AIAC				
Onsite Water Pipelines			$ 1,800.00	$ 4,032,000
Onsite Wastewater Pipelines			$ 1,400.00	$ 3,136,000
Onsite Recycled Water Pipelines			$ 1,500.00	$ 3,360,000
TOTAL			$ 8,472	$ 18,977,877

	Total Operating Costs (Water) ($/1000)	Total Operating Costs (WW) ($/1000)	Total Operating Costs (Recycled) ($/1000)
Operational Expenses			
Well Sites	$ 0.25		
Surface Water Treatment	$ -		
Arsenic Treatment	$ 1.80		
Water Distribution (Storage & Pumping)	$ 1.80		
Water Backbone Pipelines	$ 0.10		
Wastewater Backbone Pipelines		$ 0.10	
Water Reclamation - Treatment		$ 4.55	
Recycled Water Backbone Pipelines			$ 0.10
Reclaimed Water Storage & Pressurization			$ 0.50
Onsite Water Pipelines	$ 0.10		
Onsite Wastewater Pipelins		$ 0.10	
Onsite Recycled Water Pipelines			$ 0.10
	$ 2.95	$ 4.55	$ 0.70

Breakdown of Capital Costs	Water	Wastewater	Recycled	Total
Costs per Section	$ 6,932,986	$ 7,375,671	$ 4,669,220	$ 18,977,877
Costs per EDU	$ 3,095	$ 3,293	$ 2,084.47	$ 8,472
	36.53%	38.86%	24.60%	100.00%

Breakdown of Operational Expenses	Water	Wastewater	Recycled	Total
Average Monthly quantities per EDU	5,731	4,285	4,285	
Monthly Ops Expense per EDU	$ 16.91	$ 19.50	$ 3.00	$ 39.40

Capital Structure	Rate Base	AIAC	Total
Costs per Section	$ 8,449,877	$ 10,528,000	$ 18,977,877
Costs per EDU	$ 3,772	4,700	$ 8,472
	44.52%	55.48%	100.00%

Annual Volumes	Water	Wastewater	Recycled
Per Section	156,199,935	116,784,998	116,784,998
	57.22%		42.78%
Equivalent Swimming Pools	6,248 of Potable Water Use Each Year		

Rate Base Breakdown	Total	
Equity	$ 4,224,938	50.00%
Debt	$ 4,224,938	50.00%

Hypothetical Profit & Loss		
Total Revenue	$ 2,636,674	
Expenses	$ (1,059,200)	
EBITDA	$ 1,571,474	
Depreciation	$ (474,447)	2.50%
Interest	$ (295,746)	7.00%
Taxable Income	$ 801,281	
Tax	$ (336,538)	42.00%
Net Income	$ 464,743	
Return on Equity	11.00%	

	Annual Volume		$/1000 Gallons	Annual Total	$/EDU/Month
Water to Homes	116,580,625		$ 6.61	$ 771,162	$ 28.69
Wastewater	116,784,998		Monthly Rate	$ 940,800	$ 35.00
Water to HOA and Com Areas	39,619,311	RATE @	$ 6.61	$ 262,075	$ 9.75
Recycled Water to Com Areas	56,728,313	85.00%	$ 5.62	$ 318,961	$ 11.87
Recycled Water to Homes	60,056,685		$ 5.62	$ 337,675	$ 12.56
Total Revenue				$ 2,630,674	97.87
Revenue from Water Sales		39.28%		$ 1,033,237	
Revenue from Wastewater Sales		35.76%		$ 940,800	
Rev from Recycled Water Sales		24.96%		$ 656,637	

GLOBAL WATER
RELIABLE. RENEWABLE. REUSABLE.

Table 37

GLOBAL WATER

RELIABLE · RENEWABLE · REUSABLE

EXHIBIT A-11

Subject	Due Date	Categories
Categories: Internal Meetings (9 items)		
Rate Case Update Meeting	Mon 3/2/2009	Internal Meetings
Rate Case Update Meeting	Wed 4/8/2009	Internal Meetings
Rate Case Update Meeting	Fri 5/1/2009	Internal Meetings
Rate Case Update Meeting	Tue 6/2/2009	Internal Meetings
Rate Case Update Meeting	Mon 8/3/2009	Internal Meetings
Rate Case Update Meeting	Thu 8/20/2009	Internal Meetings
Rate Case Update Meeting	Thu 9/3/2009	Internal Meetings
Rate Case Update Meeting	Thu 10/1/2009	Internal Meetings
Rate Case Update Meeting	Thu 11/5/2009	Internal Meetings
Categories: Mailing (24 items)		
WVWC Public Notice Mailing	Wed 7/22/2009	Mailing
SCPV Cycle 3 Public Notice Mailing	Fri 7/24/2009	Mailing
VWC Customer Notification Letter	Wed 7/29/2009	Mailing
SCPV Cycle 4,5,6 Public Notice Mailing	Fri 7/31/2009	Mailing
SCPV Cycle 4,5,6 Customer Notification Letter	Fri 7/31/2009	Mailing
WUGB Public Notice Mailing	Wed 8/5/2009	Mailing
WUGB Customer Notification Letter	Wed 8/5/2009	Mailing
SCPV Cycle 1 Public Notice Mailing	Fri 8/7/2009	Mailing
SCPV Cycle 1 Customer Notification Letter	Fri 8/7/2009	Mailing
WUGB Public Notice Email to eBill Customers	Fri 8/7/2009	Mailing
SCPV Cycle 4,5,6 Public Notice Email to eBill Customers	Fri 8/7/2009	Mailing
SCPV Cycle 1 Public Notice Email to eBill Customers	Tue 8/11/2009	Mailing
WUGT Public Notice Mailing	Wed 8/12/2009	Mailing
WUGT Customer Notification Letter	Wed 8/12/2009	Mailing
WUGT Public Notice Email to eBill Customers	Thu 8/13/2009	Mailing
SCPV Cycle 2 Customer Notification Letter	Fri 8/14/2009	Mailing
SCPV Cycle 2 Public Notice Mailing	Fri 8/14/2009	Mailing
SCPV Cycle 2 Public Notice Email to eBill Customers	Fri 8/14/2009	Mailing
WVWC Public Notice Email to eBill Customers	Tue 8/18/2009	Mailing
WVWC Customer Notification Letter	Wed 8/19/2009	Mailing
SCPV Cycle 3 Public Notice Email to eBill Customers	Thu 8/20/2009	Mailing
VWC Public Notice Mailing	Wed 8/26/2009	Mailing
SCPV Notice of Public Comment Meeting - emailed to HOA Managers	Thu 11/12/2009	Mailing
SCPV Notice of Public Comment Meeting - emailed to City Council & Manag...	Tue 11/17/2009	Mailing
Categories: Meetings (39 items)		
Meeting with City Manager Kevin Evans	Fri 1/30/2009	Meetings
Meeting with Mayor Tony Smith	Tue 2/3/2009	Meetings
Meeting with Vice Mayor Brent Murphree	Tue 2/3/2009	Meetings
Meeting with Water Resources Director Damon DeQuenne	Thu 2/12/2009	Meetings
Meeting with TVCC President Rick Moreau	Tue 2/17/2009	Meetings
Meeting with Councilmember Marquisha Griffin	Fri 3/20/2009	Meetings
Meeting with Doris Heisler	Thu 4/9/2009	Meetings
Meeting with Asst Town Manager Scott Rounds	Wed 4/15/2009	Meetings
Meeting with Councilmember Carl Diedrich	Wed 4/22/2009	Meetings
Meeting with Gina D'Abela	Tue 5/5/2009	Meetings
Meeting with County Supervisor David Snider	Tue 5/5/2009	Meetings
Meeting with all HOA Managers	Wed 5/6/2009	Meetings
Meeting with Chamber Exec Dir Terri Kingery	Wed 5/6/2009	Meetings
Meeting with Chamber President Bill Wasowicz	Wed 5/6/2009	Meetings
Meeting with AAM HOA Regional Mgr Pam Hilliard	Wed 5/6/2009	Meetings

Subject	Due Date	Categories
Meeting with Community Activist Joyce Hollis	Wed 5/6/2009	Meetings
Meeting with Chamber President Deanna Kupcik	Thu 5/7/2009	Meetings
Meeting with Community Activist Dr. James Hull	Mon 5/11/2009	Meetings
Meeting with Vice Mayor Elaine May	Mon 5/11/2009	Meetings
Meeting with Mayor Jackie Meck	Mon 5/11/2009	Meetings
Meeting with Chamber Board Member Keith Kirkman	Tue 5/12/2009	Meetings
Meeting with BESD Superintendent Mike Melton	Tue 5/12/2009	Meetings
Meeting with ED3 GM Bill Stacy	Fri 5/15/2009	Meetings
Meeting with Councilmember Marvin Brown	Mon 5/18/2009	Meetings
Meeting with MUSD Superintendent John Flores	Mon 5/18/2009	Meetings
Meeting with USDA Partner Jean McLain	Mon 5/18/2009	Meetings
Meeting with County Supervisor Max Wilson	Tue 5/19/2009	Meetings
Meeting with West Valley HOA Managers	Wed 5/20/2009	Meetings
Meeting with Councilmember Joe Estes	Thu 5/28/2009	Meetings
Meeting with Buckeye Fire Dept Chief Bob Costello	Thu 5/28/2009	Meetings
Meeting with Journalist Shelley Gillespie	Tue 6/2/2009	Meetings
Meeting with West Valley Multi-Family Complex Managers	Tue 6/2/2009	Meetings
Meeting with Fort Mohave Indian Tribe	Thu 6/4/2009	Meetings
Meeting with TVCC Councilmembers	Tue 6/16/2009	Meetings
Meeting with TUFF member John Teixeira	Tue 6/16/2009	Meetings
Meeting with Councilmember Brian McAchran	Wed 7/8/2009	Meetings
Meeting - Follow Up with Councilmember Edward Farrell	Tue 9/8/2009	Meetings
Meeting - Follow Up with Councilmember Carl Diedrich	Thu 9/24/2009	Meetings
Meeting - Follow Up with Buckeye Interim Town Manager	Wed 10/28/2009	Meetings
Categories: Public Meeting (16 items)		
Meeting - MCGR HOA Board Members	Thu 7/16/2009	Public Meeting
Meeting - Sorrento HOA	Tue 8/25/2009	Public Meeting
Meeting - Rancho Mirage HOA	Wed 8/26/2009	Public Meeting
Meeting - WUGT Information - hosted by Global	Mon 8/31/2009	Public Meeting
Meeting - Province HOA	Wed 9/9/2009	Public Meeting
Meeting - VWC Information - hosted by Global	Thu 9/10/2009	Public Meeting
Meeting - Senita HOA	Tue 9/15/2009	Public Meeting
Meeting - Desert Cedars HOA	Wed 9/16/2009	Public Meeting
WVWC Information Meeting - hosted by Global	Thu 9/17/2009	Public Meeting
Meeting - Watson Estates HOA	Tue 9/22/2009	Public Meeting
Meeting - GWC Tour/Information - hosted by Global	Thu 9/24/2009	Public Meeting
Meeting - Villages HOA	Tue 9/29/2009	Public Meeting
Meeting - GWC Tour/Information - hosted by Global	Thu 10/1/2009	Public Meeting
Meeting - WestPark HOA	Tue 10/6/2009	Public Meeting
Meeting - VWC Information - hosted by Global	Thu 10/8/2009	Public Meeting
Meeting - Cobblestone HOA	Fri 1/29/2010	Public Meeting
Categories: Rate Case Email Inquiries (22 items)		
Responded to Phil Mesarosh Request	Wed 7/22/2009	Rate Case Email Inquiries
Responded to Phil Mesarosh 2nd Request	Fri 7/24/2009	Rate Case Email Inquiries
Responded to Stacey Justice Request	Thu 8/6/2009	Rate Case Email Inquiries
Responded to Marianne Gonzales Request	Sat 8/8/2009	Rate Case Email Inquiries
Responded to Garrett Rud Request - No Response from Customer	Wed 8/12/2009	Rate Case Email Inquiries
Responded to Nathaniel Trent Request	Sun 8/16/2009	Rate Case Email Inquiries
Responded to Kay O'Neil Request	Sun 8/16/2009	Rate Case Email Inquiries
Responded to Joni Childs Request	Tue 8/18/2009	Rate Case Email Inquiries
Responded to Joni Childs 2nd Request	Tue 8/18/2009	Rate Case Email Inquiries

Subject	Due Date	Categories
Responded to Daniel Beech Request	Thu 8/20/2009	Rate Case Email Inquiries
Responded to Jeanie Burdi Request	Thu 8/27/2009	Rate Case Email Inquiries
Responded to LaNora Klatt Request	Thu 8/27/2009	Rate Case Email Inquiries
Responded to Shawn Ridnour Request	Thu 8/27/2009	Rate Case Email Inquiries
Responded to Terri Clark Request	Mon 8/31/2009	Rate Case Email Inquiries
Responded to Terri Clark 2nd Request	Tue 9/1/2009	Rate Case Email Inquiries
Responded to Steve Rice Email	Tue 9/1/2009	Rate Case Email Inquiries
Responded to Stephanie Palmer Request	Fri 9/4/2009	Rate Case Email Inquiries
Responded to Stephanie Palmer 2nd Inquiry	Tue 9/8/2009	Rate Case Email Inquiries
Responded to Melissa Mondie Inquiry	Thu 9/10/2009	Rate Case Email Inquiries
Responded to Colin Downie Inquiry	Fri 9/11/2009	Rate Case Email Inquiries
Responded to Matthew Searcy Inquiry (Santarra HOA)	Tue 11/10/2009	Rate Case Email Inquiries
Responded to Bill Miller Email Inquiry	Wed 11/25/2009	Rate Case Email Inquiries
Categories: Rate Case Phone Inquiries (11 items)		
Rate Case Calls (5) - W/E 7/24/09	Fri 7/24/2009	Rate Case Phone Inquiries
Rate Case Call (4) - W/E 8/21/09	Fri 8/21/2009	Rate Case Phone Inquiries
Rate Case Call	Mon 8/24/2009	Rate Case Phone Inquiries
Rate Case Call	Tue 8/25/2009	Rate Case Phone Inquiries
Rate Case Call - HOA Estimate	Tue 8/25/2009	Rate Case Phone Inquiries
Rate Case Call	Tue 8/25/2009	Rate Case Phone Inquiries
Rate Case Call	Wed 8/26/2009	Rate Case Phone Inquiries
Rate Case Call	Wed 8/26/2009	Rate Case Phone Inquiries
Rate Case Call	Fri 8/28/2009	Rate Case Phone Inquiries
Rate Case Call	Wed 9/16/2009	Rate Case Phone Inquiries
Rate Case Call	Tue 11/3/2009	Rate Case Phone Inquiries
Categories: SCPV (106 items)		
Meeting with City Manager Kevin Evans	Fri 1/30/2009	SCPV
Meeting with Mayor Tony Smith	Tue 2/3/2009	SCPV
Meeting with Vice Mayor Brent Murphree	Tue 2/3/2009	SCPV
Meeting with Councilmember Marquisha Griffin	Fri 3/20/2009	SCPV
Meeting with Councilmember Edward Farrell	Wed 3/25/2009	SCPV
Meeting with Councilmember Carl Diedrich	Wed 4/22/2009	SCPV
Sufficiency Issued	Fri 5/1/2009	SCPV
Meeting with Gina D'Abela	Tue 5/5/2009	SCPV
Meeting with County Supervisor David Snider	Tue 5/5/2009	SCPV
Meeting with all HOA Managers	Wed 5/6/2009	SCPV
Meeting with Chamber Exec Dir Terri Kingery	Wed 5/6/2009	SCPV
Meeting with Chamber President Bill Wasowicz	Wed 5/6/2009	SCPV
Meeting with AAM HOA Regional Mgr Pam Hilliard	Wed 5/6/2009	SCPV
Meeting with Community Activist Joyce Hollis	Wed 5/6/2009	SCPV
Meeting with Community Activist Dr. James Hull	Mon 5/11/2009	SCPV
Meeting with Chamber Board Member Keith Kirkman	Tue 5/12/2009	SCPV
EPA WaterSense Partner Agreement	Wed 5/13/2009	SCPV
Meeting with ED3 GM Bill Stacy	Fri 5/15/2009	SCPV
Meeting with Councilmember Marvin Brown	Mon 5/18/2009	SCPV
Meeting with MUSD Superintendent John Flores	Mon 5/18/2009	SCPV
Meeting with USDA Partner Jean McLain	Mon 5/18/2009	SCPV
Meeting with Councilmember Joe Estes	Thu 5/28/2009	SCPV
Procedural Order Issued	Fri 5/29/2009	SCPV
Landscape Watering Guides Arrive	Mon 6/1/2009	SCPV
Meeting with Journalist Shelley Gillespie	Tue 6/2/2009	SCPV

Subject	Due Date	Categories
Leak Tablets Arrive	Fri 6/5/2009	SCPV
HOA Analysis	Tue 6/23/2009	SCPV
FAQs Forwarded to Customer Service Teams	Tue 6/30/2009	SCPV
Press Release	Thu 7/2/2009	SCPV
Website Launched	Thu 7/2/2009	SCPV
Event - 4th of July Great American BBQ	Sat 7/4/2009	SCPV
Meeting - MCGR HOA Board Members	Thu 7/16/2009	SCPV
Shower Timers Arrive	Fri 7/17/2009	SCPV
Responded to Phil Mesarosh Request	Wed 7/22/2009	SCPV
Email Correspondence with Province HOA Mgr	Thu 7/23/2009	SCPV
SCPV Cycle 3 Public Notice Mailing	Fri 7/24/2009	SCPV
Rate Case Calls (5) - W/E 7/24/09	Fri 7/24/2009	SCPV
Responded to Phil Mesarosh 2nd Request	Fri 7/24/2009	SCPV
SCPV Cycle 4,5,6 Public Notice Mailing	Fri 7/31/2009	SCPV
SCPV Cycle 4,5,6 Customer Notification Letter	Fri 7/31/2009	SCPV
Public Notice in Media (various newspapers)	Mon 8/3/2009	SCPV
Responded to Stacey Justice Request	Thu 8/6/2009	SCPV
Email to City PIO with Talking Points as Requested	Thu 8/6/2009	SCPV
SCPV Cycle 1 Public Notice Mailing	Fri 8/7/2009	SCPV
SCPV Cycle 1 Customer Notification Letter	Fri 8/7/2009	SCPV
SCPV Cycle 4,5,6 Public Notice Email to eBill Customers	Fri 8/7/2009	SCPV
Responded to Marianne Gonzales Request	Sat 8/8/2009	SCPV
SCPV Cycle 1 Public Notice Email to eBill Customers	Tue 8/11/2009	SCPV
SCPV Cycle 2 Customer Notification Letter	Fri 8/14/2009	SCPV
SCPV Cycle 2 Public Notice Mailing	Fri 8/14/2009	SCPV
SCPV Cycle 2 Public Notice Email to eBill Customers	Fri 8/14/2009	SCPV
Responded to Nathaniel Trent Request	Sun 8/16/2009	SCPV
Responded to Kay O'Neil Request	Sun 8/16/2009	SCPV
Website - Updated with Public Notices & Customer Notification Letters	Mon 8/17/2009	SCPV
Responded to Joni Childs Request	Tue 8/18/2009	SCPV
Responded to Joni Childs 2nd Request	Tue 8/18/2009	SCPV
SCPV Cycle 3 Public Notice Email to eBill Customers	Thu 8/20/2009	SCPV
Mayor Smith's Television Q&A with Trevor	Fri 8/21/2009	SCPV
Email Invite - Presentation - Maricopa Meadows	Sun 8/23/2009	SCPV
Email Invite - Sorrento/Rancho Mirage - Presentation to your HOAs	Sun 8/23/2009	SCPV
Email Invite - Presentation - Glennwilde	Sun 8/23/2009	SCPV
Email Invite - Presentation - Desert Cedars	Sun 8/23/2009	SCPV
Email Invite - Presentation - Santa Rosa Springs	Sun 8/23/2009	SCPV
Email Invite - Presentation - Tortosa	Sun 8/23/2009	SCPV
Email Invite - Councilmember Farrell Follow Up Meeting	Sun 8/23/2009	SCPV
Email Invite - Presentation - Villages	Sun 8/23/2009	SCPV
Email Invite - Presentation - Desert Passage	Sun 8/23/2009	SCPV
Email Invite - Presentation - Alterra	Sun 8/23/2009	SCPV
Email Invite - Presentation - Senita	Sun 8/23/2009	SCPV
Email Invite - Presentation - RED	Sun 8/23/2009	SCPV
Email Invite - Councilmember Diedrich Follow Up Meeting	Sun 8/23/2009	SCPV
Rate Case Call - HOA Estimate	Tue 8/25/2009	SCPV
Meeting - Sorrento HOA	Tue 8/25/2009	SCPV
Meeting - Rancho Mirage HOA	Wed 8/26/2009	SCPV
Responded to Jeanie Burdi Request	Thu 8/27/2009	SCPV
Email Invite - Presentation - Acacia Crossings	Thu 8/27/2009	SCPV

Subject	Due Date	Categories
Responded to LaNora Klatt Request	Thu 8/27/2009	SCPV
Responded to Shawn Ridnour Request	Thu 8/27/2009	SCPV
Responded to Terri Clark Request	Mon 8/31/2009	SCPV
Responded to Terri Clark 2nd Request	Tue 9/1/2009	SCPV
Responded to Stephanie Palmer Request	Fri 9/4/2009	SCPV
Responded to Stephanie Palmer 2nd Inquiry	Tue 9/8/2009	SCPV
Meeting - Follow Up with Councilmember Edward Farrell	Tue 9/8/2009	SCPV
Meeting - Province HOA	Wed 9/9/2009	SCPV
Responded to Melissa Mondie Inquiry	Thu 9/10/2009	SCPV
Responded to Colin Downie Inquiry	Fri 9/11/2009	SCPV
Meeting - Senita HOA	Tue 9/15/2009	SCPV
Meeting - Desert Cedars HOA	Wed 9/16/2009	SCPV
Meeting - GWC Tour/Information - hosted by Global	Thu 9/24/2009	SCPV
Meeting - Follow Up with Councilmember Carl Diedrich	Thu 9/24/2009	SCPV
Event - Chamber Inaugural Golf Tournament	Fri 9/25/2009	SCPV
Meeting - Villages HOA	Tue 9/29/2009	SCPV
Meeting - GWC Tour/Information - hosted by Global	Thu 10/1/2009	SCPV
Website - Updated with Conservation and Communications Materials	Thu 10/1/2009	SCPV
Event - Founders Day	Sat 10/10/2009	SCPV
Last Day to File Motions to Intervene	Mon 10/12/2009	SCPV
Event - Farm Day	Sat 10/24/2009	SCPV
Website - Updated with SCPV Notice of Public Comment Meeting	Wed 11/11/2009	SCPV
Website - Updated with Staff & RUCO Testimony	Wed 11/11/2009	SCPV
Emailed ACC Notice of Public Comment Meeting to HOA Managers	Thu 11/12/2009	SCPV
SCPV Notice of Public Comment Meeting - emailed to HOA Managers	Thu 11/12/2009	SCPV
SCPV Notice of Public Comment Meeting - emailed to City Council & Manag...	Tue 11/17/2009	SCPV
Email to Mayor and Council after 11/17 work session presentation	Mon 11/23/2009	SCPV
Public Service Announcement to Media	Tue 11/24/2009	SCPV
Responded to Bill Miller Email Inquiry	Wed 11/25/2009	SCPV
Meeting - Cobblestone HOA	Fri 1/29/2010	SCPV
Categories: VWC (43 items)		
Meeting with Water Resources Director Damon DeQuenne	Thu 2/12/2009	VWC
Meeting with Asst Town Manager Scott Rounds	Wed 4/15/2009	VWC
Sufficiency Issued	Fri 5/1/2009	VWC
Meeting with Chamber President Deanna Kupcik	Thu 5/7/2009	VWC
Meeting with Vice Mayor Elaine May	Mon 5/11/2009	VWC
Meeting with Mayor Jackie Meck	Mon 5/11/2009	VWC
Meeting with BESD Superintendent Mike Melton	Tue 5/12/2009	VWC
EPA WaterSense Partner Agreement	Wed 5/13/2009	VWC
Meeting with West Valley HOA Managers	Wed 5/20/2009	VWC
Meeting with Buckeye Fire Dept Chief Bob Costello	Thu 5/28/2009	VWC
Procedural Order Issued	Fri 5/29/2009	VWC
Landscape Watering Guides Arrive	Mon 6/1/2009	VWC
Meeting with West Valley Multi-Family Complex Managers	Tue 6/2/2009	VWC
Leak Tablets Arrive	Fri 6/5/2009	VWC
HOA Analysis	Tue 6/23/2009	VWC
FAQs Forwarded to Customer Service Teams	Tue 6/30/2009	VWC
Email to HOA Managers re: Attending Board Meetings	Tue 6/30/2009	VWC
Press Release	Thu 7/2/2009	VWC
Website Launched	Thu 7/2/2009	VWC
Meeting with Councilmember Brian McAchran	Wed 7/8/2009	VWC

Subject	Due Date	Categories
Shower Timers Arrive	Fri 7/17/2009	VWC
Responded to Tom Morales Request	Wed 7/22/2009	VWC
Rate Case Calls (5) - W/E 7/24/09	Fri 7/24/2009	VWC
Responded to WestPark HOA Manager	Tue 7/28/2009	VWC
Responded to WestPark HOA & Meeting Acceptance	Tue 7/28/2009	VWC
VWC Customer Notification Letter	Wed 7/29/2009	VWC
Email Update Sent to Town Staff	Sun 8/2/2009	VWC
Public Notice in Media (various newspapers)	Mon 8/3/2009	VWC
Website - Updated with Public Notices & Customer Notification Letters	Mon 8/17/2009	VWC
Responded to Daniel Beech Request	Thu 8/20/2009	VWC
Responded to Watson Estates HOA Manager	Fri 8/21/2009	VWC
VWC Public Notice Mailing	Wed 8/26/2009	VWC
Responded to Steve Rice Email	Tue 9/1/2009	VWC
Meeting - VWC Information - hosted by Global	Thu 9/10/2009	VWC
Meeting - Watson Estates HOA	Tue 9/22/2009	VWC
Website - Updated with Conservation and Communications Materials	Thu 10/1/2009	VWC
Meeting - WestPark HOA	Tue 10/6/2009	VWC
Meeting - VWC Information - hosted by Global	Thu 10/8/2009	VWC
Last Day to File Motions to Intervene	Mon 10/12/2009	VWC
Meeting - Follow Up with Buckeye Interim Town Manager	Wed 10/28/2009	VWC
Responded to Matthew Searcy Inquiry (Santarra HOA)	Tue 11/10/2009	VWC
Website - Updated with Staff & RUCO Testimony	Wed 11/11/2009	VWC
Public Service Announcement to Media	Tue 11/24/2009	VWC
Categories: WUGB (41 items)		
Meeting with Water Resources Director Damon DeQuenne	Thu 2/12/2009	WUGB
Meeting with Asst Town Manager Scott Rounds	Wed 4/15/2009	WUGB
Sufficiency Issued	Fri 5/1/2009	WUGB
Meeting with Chamber President Deanna Kupcik	Thu 5/7/2009	WUGB
Meeting with Vice Mayor Elaine May	Mon 5/11/2009	WUGB
Meeting with Mayor Jackie Meck	Mon 5/11/2009	WUGB
Meeting with BESD Superintendent Mike Melton	Tue 5/12/2009	WUGB
EPA WaterSense Partner Agreement	Wed 5/13/2009	WUGB
Meeting with West Valley HOA Managers	Wed 5/20/2009	WUGB
Meeting with Buckeye Fire Dept Chief Bob Costello	Thu 5/28/2009	WUGB
Procedural Order Issued	Fri 5/29/2009	WUGB
Landscape Watering Guides Arrive	Mon 6/1/2009	WUGB
Meeting with West Valley Multi-Family Complex Managers	Tue 6/2/2009	WUGB
Leak Tablets Arrive	Fri 6/5/2009	WUGB
FAQs Forwarded to Customer Service Teams	Tue 6/30/2009	WUGB
Email to HOA Managers re: Attending Board Meetings	Tue 6/30/2009	WUGB
Press Release	Thu 7/2/2009	WUGB
Website Launched	Thu 7/2/2009	WUGB
Meeting with Councilmember Brian McAchran	Wed 7/8/2009	WUGB
Shower Timers Arrive	Fri 7/17/2009	WUGB
Responded to Tom Morales Request	Wed 7/22/2009	WUGB
Rate Case Calls (5) - W/E 7/24/09	Fri 7/24/2009	WUGB
Responded to WestPark HOA Manager	Tue 7/28/2009	WUGB
Responded to WestPark HOA & Meeting Acceptance	Tue 7/28/2009	WUGB
Email Update Sent to Town Staff	Sun 8/2/2009	WUGB
Public Notice in Media (various newspapers)	Mon 8/3/2009	WUGB
WUGB Public Notice Mailing	Wed 8/5/2009	WUGB

Subject	Due Date	Categories
WUGB Customer Notification Letter	Wed 8/5/2009	WUGB
WUGB Public Notice Email to eBill Customers	Fri 8/7/2009	WUGB
Website - Updated with Public Notices & Customer Notification Letters	Mon 8/17/2009	WUGB
Responded to Daniel Beech Request	Thu 8/20/2009	WUGB
Responded to Watson Estates HOA Manager	Fri 8/21/2009	WUGB
Meeting - VWC Information - hosted by Global	Thu 9/10/2009	WUGB
Website - Updated with Conservation and Communications Materials	Thu 10/1/2009	WUGB
Meeting - WestPark HOA	Tue 10/6/2009	WUGB
Meeting - VWC Information - hosted by Global	Thu 10/8/2009	WUGB
Last Day to File Motions to Intervene	Mon 10/12/2009	WUGB
Meeting - Follow Up with Buckeye Interim Town Manager	Wed 10/28/2009	WUGB
Responded to Matthew Searcy Inquiry (Santarra HOA)	Tue 11/10/2009	WUGB
Website - Updated with Staff & RUCO Testimony	Wed 11/11/2009	WUGB
Public Service Announcement to Media	Tue 11/24/2009	WUGB
Categories: WUGT (26 items)		
Meeting with TVCC President Rick Moreau	Tue 2/17/2009	WUGT
Meeting with Doris Heisler	Thu 4/9/2009	WUGT
Sufficiency Issued	Fri 5/1/2009	WUGT
EPA WaterSense Partner Agreement	Wed 5/13/2009	WUGT
Meeting with County Supervisor Max Wilson	Tue 5/19/2009	WUGT
Procedural Order Issued	Fri 5/29/2009	WUGT
Landscape Watering Guides Arrive	Mon 6/1/2009	WUGT
Leak Tablets Arrive	Fri 6/5/2009	WUGT
Meeting with TVCC Councilmembers	Tue 6/16/2009	WUGT
Meeting with TUFF member John Teixeira	Tue 6/16/2009	WUGT
FAQs Forwarded to Customer Service Teams	Tue 6/30/2009	WUGT
Press Release	Thu 7/2/2009	WUGT
Website Launched	Thu 7/2/2009	WUGT
Shower Timers Arrive	Fri 7/17/2009	WUGT
Rate Case Calls (5) - W/E 7/24/09	Fri 7/24/2009	WUGT
Public Notice in Media (various newspapers)	Mon 8/3/2009	WUGT
WUGT Public Notice Mailing	Wed 8/12/2009	WUGT
WUGT Customer Notification Letter	Wed 8/12/2009	WUGT
WUGT Public Notice Email to eBill Customers	Thu 8/13/2009	WUGT
Website - Updated with Public Notices & Customer Notification Letters	Mon 8/17/2009	WUGT
Email Update Sent to TVCC Leaders	Tue 8/18/2009	WUGT
Meeting - WUGT Information - hosted by Global	Mon 8/31/2009	WUGT
Website - Updated with Conservation and Communications Materials	Thu 10/1/2009	WUGT
Last Day to File Motions to Intervene	Mon 10/12/2009	WUGT
Website - Updated with Staff & RUCO Testimony	Wed 11/11/2009	WUGT
Public Service Announcement to Media	Tue 11/24/2009	WUGT
Categories: WVWC (21 items)		
Sufficiency Issued	Fri 5/1/2009	WVWC
EPA WaterSense Partner Agreement	Wed 5/13/2009	WVWC
Procedural Order Issued	Fri 5/29/2009	WVWC
Landscape Watering Guides Arrive	Mon 6/1/2009	WVWC
Meeting with Fort Mohave Indian Tribe	Thu 6/4/2009	WVWC
Leak Tablets Arrive	Fri 6/5/2009	WVWC
FAQs Forwarded to Customer Service Teams	Tue 6/30/2009	WVWC
Press Release	Thu 7/2/2009	WVWC
Website Launched	Thu 7/2/2009	WVWC

Subject	Due Date	Categories
Shower Timers Arrive	Fri 7/17/2009	WVWC
WVWC Public Notice Mailing	Wed 7/22/2009	WVWC
Rate Case Calls (5) - W/E 7/24/09	Fri 7/24/2009	WVWC
Public Notice in Media (various newspapers)	Mon 8/3/2009	WVWC
Website - Updated with Public Notices & Customer Notification Letters	Mon 8/17/2009	WVWC
WVWC Public Notice Email to eBill Customers	Tue 8/18/2009	WVWC
WVWC Customer Notification Letter	Wed 8/19/2009	WVWC
WVWC Information Meeting - hosted by Global	Thu 9/17/2009	WVWC
Website - Updated with Conservation and Communications Materials	Thu 10/1/2009	WVWC
Last Day to File Motions to Intervene	Mon 10/12/2009	WVWC
Website - Updated with Staff & RUCO Testimony	Wed 11/11/2009	WVWC
Public Service Announcement to Media	Tue 11/24/2009	WVWC