



**Adelanto Public Utilities Authority  
Notice of Proposed  
Water and Sewer Rate Adjustment**

**RECEIVED**  
MAY 19 2009

**LAFCO**  
San Bernardino County

April 27, 2009

The Adelanto Public Utility Authority (APUA) is proposing adjustments to the Monthly Rates for Water and Sewer services. At the regular meeting of the City Council/APUA Board on April 22, 2009 APUA Resolution 09-001 was passed, which set the public hearing for June 24, 2009, at 7:00PM.

1) Reasons for the Rate Adjustment

APUA utility customers have been paying the same rates since 2001. Since then the costs to operate the utilities have increased substantially. The APUA has utilized reserves and revenue from new service connections to pay for the increased costs. Reserves are now close to depletion and the new service connections have halted due to the downturn in the residential construction market.

Also, the APUA has incurred costs to construct a new wastewater treatment plant to accommodate the City for several years.

2) Standby Fees

In addition to the water and sewer rate adjustment, the APUA is also proposing an adjustment to the Water and Sewer Standby Fees. Standby Fees are only levied on vacant, underdeveloped property to pay for maintenance costs for the portion of the water and sewer system that has been built to accommodate future development and to purchase water rights as water demand increases. Without an increase to the Standby Fees the Water and Sewer rate increase would be substantially higher.

3) Proposed Base Monthly Water Service Rates

Base Rate by Meter Size	Proposed
1/2"	\$13.38
1"	\$22.34
1 1/2"	\$44.56
2"	\$71.32
3"	\$133.80
4"	\$223.04

[1] Residential Meters are 1/2".

4) Proposed Monthly Water Usage (Commodity) Rates

Tier	Rate per Unit
1) 1-20 Units	1.25
2) 21-35 Units	2.16
3) 36 Units and above	2.50

[1] 1 Unit of water is equal to 1 hundred cubic feet of water or 748 gallons.

5) Proposed Monthly Sewer Usage

Single Family Residential Flat Sewer Rate	\$47.82
Multi Family Residential Flat Sewer Rate	\$47.82 per unit
Commercial/Industrial Flat Sewer Rate <sup>[1]</sup>	\$47.82 per EDU

[1] EDU = Equivalent Dwelling Unit is a calculation that involves a rating based on the average number of employee per business type.

6) TOWN HALL MEETINGS – The City will be conducting two (2) Town Hall meetings on June 17 & 18, 2009 at 7:00PM. The meetings are offered to Utility customers and are intended to share the methodology used to derive the rates and answer any questions that may exist in advance of the Public Hearing. The Town Hall meetings will be held at:

**Desert Trails Elementary School**  
14350 Bellflower Street  
Adelanto, California 92301  
Wednesday, June 17, 2009  
Multi-Purpose Room  
7:00PM-9:00PM

**Adelanto Math and Science Academy**  
17931 Jonathon Street  
Adelanto, California 92301  
Thursday, June 18, 2009  
Multi-Purpose Room  
7:00PM-9:00PM

7) A PUBLIC HEARING ON THE PROPOSED WATER AND SEWER RATES WILL BE HELD ON JUNE 24, 2009, AT 7:00 PM IN CITY COUNCIL CHAMBERS, 11600 AIR EXPRESSWAY, ADELANTO, CA 92301.



**Aviso de la Autoridad de los Servicios Públicos**  
**Aviso sobre Propuesta**  
**Ajuste de tarifas del Agua y Drenaje**

Abril 27, 2009

La Autoridad Pública de Adelanto Utility (APUA) está proponiendo ajustes a las Tarifas Mensuales para los servicios del Agua y Drenaje. En la reunión regular el 22 de Abril de 2009 Miembros del Consejo/APUA la Resolución 009-001 fue pasada, que fijó la fecha para el público para el 24 de Junio de 2009, a las 7:00 P.M.

1) Razones por el ajuste de las tarifas

Los clientes para uso general de la Autoridad de los Servicios Públicos/APUA han estado pagando las mismas tarifas desde 2001. Desde entonces los costes para funcionar las utilidades han aumentado substancialmente. El APUA ha utilizado reservas y el rédito de nuevas conexiones del servicio para pagar los costos crecientes. Las reservas ahora están cerca de agotamiento y las nuevas conexiones del servicio han parado debido al descenso en el mercado de la construcción residencial.

También, el APUA ha incurrido costos para construir una nueva planta de drenaje/depuradora de aguas residuales para acomodar la ciudad por varios años.

2) Honorarios de espera

Además del ajuste de tarifa del agua y de drenaje, el APUA también está proponiendo un ajuste a los honorarios del recurso seguro del agua y de drenaje. Los honorarios de espera se imponen solamente en característica vacante, subdesarrollada para pagar los costes de mantenimiento para la porción del sistema del agua y drenaje que se ha construido para acomodar el futuro desarrollo y para comprar agua mientras que la demanda de agua aumenta. Sin un aumento a los honorarios de espera el aumento de la tarifa del agua y drenaje sería substancialmente más alto.

3) Propuesta de tarifas para el servicio mensual del agua

Tarifa por tamaño de medidor	Propuestas
¾" (1)	\$13.38
1"	\$22.34
1 ½"	\$44.56
2"	\$71.32
3"	\$133.80
4"	\$223.04

(1) Medidor for Residencia ¾"

4) Propuesta de tarifas para el servicio mensual para el uso de agua (materia)

Tier (1)	Tarifa for unidad
1) 1-20 Unidades	1.25
2) 21-35 Unidades	2.16
3) 36 Unidades en adelante	2.50

1 Unidad de agua es igual a cinco pies cubicos de agua por 748 galones

5) Propuesta de tarifas para uso mensual del drenaje

Tarifa plana por una Residencial de drenaje	\$47.82
Tarifa plana por varias Residenciales de drenaje	\$47.82 por unidad
Tarifa plana para commercial/Industrial de drenaje	\$47.82 per EDU

6) REUNIONES - La ciudad conducirá dos (2) reuniones el 17 y 18 de Junio, 2009 a las 7:00 P.M. Las reuniones se ofrecen a los clientes para uso general y se piensan para compartir la metodología usada para derivar las tarifas y para contestar cualquier pregunta que pueda existir antes de la vista pública. Las reuniones/juntas serán en:

**Desert Trails Elementary School**

14350 Bellflower Street  
Adelanto, California 92301  
Miercoles, Junio 17, 2009  
Multi-Purpose Room  
7:00PM-9:00PM

**Desert Trails Elementary School**

17931 Jonathon Street  
Adelanto, California 92301  
Jueves, Junio 18, 2009  
Multi-Purpose Room  
7:00PM-9:00PM

7) UNA REUNION PÚBLICA SOBRE LAS TARIFAS PROPUESTAS DEL AGUA Y DE DRENAJE SERÁ LLEVADA A CABO EL 24 DE JUNIO DEL 2009, A LAS 7:00 P.M. LOCALIZADO EN EL CITY COUNCIL CHAMBERS, 11600 AIR EXPRESSWAY, ADELANTO, CA 92301



# AGENDA REPORT

## City of Adelanto

Adelanto Governmental Center

11600 AIR EXPRESSWAY  
ADELANTO, CALIFORNIA 92301

Date: June 24, 2009  
 To: Honorable President and Authority Members  
 From: D. James Hart, City Manager  
 By: George Harris, Revenue Supervisor

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Subject: Approve APUA Resolution 09-03 rescinding APUA Resolution 09-01 and to set a Public Hearing for August 12, 2009 and Initiate the 45-day notice per Prop 218 rate setting requirements for Water and Sewer user rates.

### STAFF RECOMMENDATION:

Staff recommends that the City Council rescind APUA resolution 09-01 and cancel the Public Hearing for June 24<sup>th</sup>, 2009, set a new Public Hearing for August 12, 2009 and reinstate the 45-day notice period per Proposition 218 rate setting requirement to revise the rates charged to the Adelanto Public Utility Authority ("Authority") water and sewer customers.

### BACKGROUND:

Periodically it is the responsibility of the Authority Board to examine the financial stability of the Water and Sewer operations and make a determination as to the rates charged for service. The last time the rates were adjusted was in 2002. Since that time the Board has utilized connection fee revenue to stabilize the rates. However, now that the number of new houses being built has reduced to close to zero the connection fees have reduced concurrently and the Board must consider a rate adjustment to protect the Authority against insolvency.

Since 2002, the cost of conducting business in the authority has increased substantially which includes the cost of construction, maintenance and operation of the Authority's new wastewater treatment plant. Other reasons for the increase include labor, material, financing and fuel costs that have all had double-digit increases since 2002.

An analysis of the current rates and current operations was conducted. The current operations cost include the cost of debt service, which consists of the outstanding 2005 Series A and Series B bonds and the Authority's amortized obligation to the City of Adelanto General Fund, which amounts to \$5M in Fiscal Year 2009/2010. The end result for year one (1) is illustrated below:

Rate Category	Current Rates	Proposed <sup>(1)</sup>	Apple Valley Ranchos	Hesperia <sup>(2)</sup>	Victorville <sup>(3)</sup>
Water Base Rate	\$18.47	\$13.38	\$29.16	\$18.16	\$17.50
Water per CCF Rate	\$.95	\$1.25	\$2.03	\$1.43	\$1.47
Sewer	\$11.43	\$47.82	\$17.98	\$20.08	\$22.22
Total Monthly Average	\$39.40	\$86.20	\$87.74	\$66.83	\$69.12

(20 Units of Water)					
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- 1) The Proposed rates are in draft form and may or may not change by the time of the public hearing.
- 2) The City of Hesperia rates are effective September, 2009.
- 3) The City of Victorville rates are effective August, 2009.

Notices of the Public Hearing will be included in the local newspapers and will be included in the utility bill mailings during the month of June.

**FISCAL IMPACT:**

The rate increase will generate the revenues needed to operate the Water and Sewer systems, as well as provide the necessary coverage needed to meet the rate covenants for the outstanding debt service obligations.

**ATTACHMENTS:**

- Proposed Water Rate Study
- Proposed Sewer Rate Study
- APUA Resolution 09-03

*PRELIMINARY DRAFT ONLY –  
FOR DISCUSSION AND REVIEW SUBJECT TO CHANGE*

# **ADELANTO WATER AUTHORITY**

## **REVENUE REQUIREMENT REPORT AND WATER RATE CALCULATION**

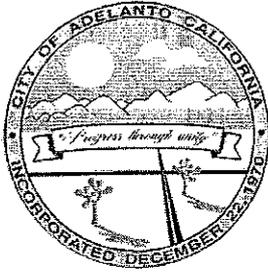
**FOR THE YEARS 2009-10 THROUGH 2012-13**

**JUNE 2009**

**Key Issues for Completion:**

1. Consider input from Townhall Meeting 6/17 & 6/18/2009.
2. Consider updating Debt Service as conditions change.

Prepared by:  
Christian L. Aldinger, CPA  
Peasley, Aldinger & O'Bymachow  
June 2009



# AGENDA REPORT

## City of Adelanto

Adelanto Governmental Center

11600 AIR EXPRESSWAY  
ADELANTO, CALIFORNIA 92301

Date: August 12, 2009  
To: Honorable President and Authority Members  
From: D. James Hart, City Manager  
By: George Harris, Interim Finance Director

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Subject: Conduct a Public Hearing and Approve APUA Resolution 09-05 to set the Water and Sewer user rates for Fiscal Years 2009/10, 2010/11, 2011/12 and 2012/13 and Approve the Senior and Low Income Exemption Programs

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### **STAFF RECOMMENDATION:**

Staff recommends that the Adelanto Public Utilities Authority ("Authority") Board of Directors: (1) conduct a Public Hearing to receive testimony related to the adjusted rates charged to Authority water and sewer customers; and (2) approve APUA Resolution 09-05 to set the revised water and sewer user rates and to revise the Senior Citizen and Disabled Exemption Program and establish the Low Income Exemption Program.

### **BACKGROUND:**

The Authority examines the financial stability of the water and sewer operations and makes a determination as to the rates charged for service. The analysis is based on the actual costs of providing water and sewer service to City residents.

The last time that the Authority adjusted rates was 2002. Since 2002, the cost of conducting business for the Authority has increased substantially, including the cost of construction, maintenance and operation of the Authority's new wastewater treatment plant. Other reasons for the increase include labor, material, financing and fuel costs that have all had double-digit increases since 2002. The current operations cost include the cost of debt service, which consists of the outstanding 2005 Series A and Series B bonds and the Authority's amortized obligation to the City of Adelanto General Fund, which amounts to \$5.4M in Fiscal Year 2009/2010.

The Authority has sent notices to property owners for this public hearing in accordance with applicable law. Furthermore, the Authority held two public workshops to allow residents additional opportunities to express their viewpoints to the Authority.

Staff conducted an analysis of current rates and operations and the need for increased rates to meet the actual costs of providing water and sewer service to the City. Furthermore, staff surveyed water rates in other local jurisdictions. The end result for year one (1) is illustrated below:

Rate Category	Current Rates	Proposed <sup>(1)</sup>	Apple Valley Ranchos	GSA 42	Hesperia <sup>(2)</sup>	Victorville <sup>(3)</sup>
Water Base Rate	\$18.47	\$13.38	\$29.16	\$52.33	\$18.16	\$17.50
Water per CCF Rate	\$.95	\$1.25	\$2.03	\$1.68	\$1.43	\$1.47
Sewer	\$11.43	\$47.82	\$17.98	\$44.95	\$20.08	\$22.22
Total Monthly Average (20 Units of Water)	\$39.40	\$86.20	\$87.74	\$130.88	\$66.83	\$69.12

- 1) The Proposed rates are in draft form and may or may not change by the time of the public hearing.  
2) The City of Hesperia rates are effective September, 2009.  
3) The City of Victorville rates are effective August, 2009.

The following table summarizes the currently proposed monthly base water rates by year for each water meter size.

Base Rate by Meter Size	Effective September 1, 2009	Effective July 1, 2010	Effective July 1, 2011	Effective July 1, 2012
¾"(1)	\$13.38	\$18.90	\$18.98	\$26.50
1"	\$22.34	\$31.56	\$31.70	\$44.26
1 ½"	\$44.56	\$62.94	\$63.20	\$88.25
2"	\$71.32	\$100.74	\$101.16	\$141.25
3"	\$133.80	\$189.00	\$189.80	\$265.00
4"	\$223.04	\$315.06	\$316.40	\$441.76

The following table summarizes the currently proposed new tiered commodity rates for water that are explained in the attached studies.

Tier(1)(2)(3)	Effective Sept. 1, 2009		Effective July 1, 2010		Effective July 1, 2011		Effective July 1, 2012	
1	1-20	1.25	1-15	2.40	1-15	2.40	1-15	2.40
2	21-35	2.16	16-25	3.40	16-25	3.40	16-25	3.40
3	36 and up	2.50	26 and up	4.40	26 and up	4.40	26 and up	4.40

The following table summarizes the currently proposed monthly sewer base rate per EDU by year.

Property Type	Effective Sept. 1, 2009	Effective July 1, 2010	Effective July 1, 2011	Effective July 1, 2012
Single Family Residential Flat Sewer Rate	\$47.82	\$50.79	\$55.36	\$61.06
Multi Family Residential Flat Sewer Rate(1)	\$23.91 per unit	\$25.40 per unit	\$27.68 per unit	\$30.53 per unit
Commercial/Industrial Flat Sewer Rate(2)	\$47.82 per EDU	\$50.79 per EDU	\$55.36 per EDU	\$61.06 per EDU

Staff is also recommending the adoption of the revised Senior and Disabled Exemption program and the new Low Income Exemption programs. The Senior and Disabled program provides for a 50% discount of the proposed sewer rate if certain income requirements are met and the Low Income program provides for a 35% discount if certain income requirements are met. Applications for each program will be available at City Hall and on the City's website ([www.ci.adelanto.ca.us](http://www.ci.adelanto.ca.us)).

**FISCAL IMPACT:**

The increase in water and sewer rates will increase the revenues of the Authority, but such increase is intended to generate the revenues needed to meet the costs of providing water and sewer service to the City.

**ATTACHMENTS:**

- APUA Resolution 09-05
- Revenue Requirement Report and Water Rate Calculation
- Revenue Requirement Report and Sewer Rate Calculation
- Senior Exemption Program
- Low Income Exemption Program

APUA RESOLUTION NO. 09-05

**A RESOLUTION OF THE ADELANTO PUBLIC UTILITIES AUTHORITY, SAN BERNARDINO COUNTY, CALIFORNIA, TO ADOPT REVISED WATER AND SEWER USER RATE INCREASES AND APPROVE THE SENIOR AND LOW-INCOME EXEMPTION PROGRAMS**

**WHEREAS**, the Adelanto Public Utilities Authority (“Authority”) provides potable water and sewage services to its citizens; and

**WHEREAS**, the costs of operating the Authority’s water and sewage collection and treatment systems have increased in recent years; and

**WHEREAS**, the Authority desires to ensure that the costs associated with the operation of the Authority’s potable water system and sewage collection and treatment systems are recovered through the fees charged for the provision of those services; and

**WHEREAS**, any increase in fees and charges for property-related water and sewer service must comply with the procedural and substantive requirements of Article XIID, section 6, of the California Constitution, which was enacted by the California Voters in 1996 as part of Proposition 218; and

**WHEREAS**, the Authority has sent the proper notices as required by law; and

**WHEREAS**, the Authority conducted two (2) public workshops intended to provide detailed information regarding the proposed increases;

**WHEREAS**, the Authority held a Public Hearing on the 12<sup>th</sup> day of August, 2009 to receive written and oral testimony in regards to the proposed water and sewer rate increase; and

**WHEREAS**, the Authority hereby finds that the revised fees and rates set forth herein do not exceed the estimated reasonable cost of providing services or facilities for which such fees and rates are imposed.

**NOW THEREFORE**, the Board of the Adelanto Public Utility Authority hereby resolves as follows:

1. The Authority adopts the Revenue Requirement Report and Water Rate Calculation Report to utilize and adopt the rates established as “Alternate A” of the report, set forth in Exhibit A attached hereto;

2. The Authority adopts the Revenue Requirement Report and Sewer Rate Calculation Report, and adopts the Sewer rates proposed therein set forth in Exhibit B attached hereto;

3. The Authority adopts the Senior Exemption Program, set forth in Exhibit C attached hereto;

4. The Authority adopts the Low Income Exemption Program, set forth in Exhibit D attached hereto.

**PASSED, APPROVED AND ADOPTED** at a regular meeting of the Board of the Adelanto Public Utilities Authority, held on the 12th day of August, 2009.

By \_\_\_\_\_  
Charley B. Gasper, President

\_\_\_\_\_  
Cindy M. Herrera, City Clerk, CMC

RESOLUTION NO. 09-05  
PAGE 3

I, Cindy M. Herrera, City Clerk of the City of Adelanto, California, do hereby certify that the foregoing Resolution No. 09-05 was duly and regularly adopted at a regular meeting of the Board of the Adelanto Public Utilities Authority on this 12th day of August, 2009, by the following vote, to wit:

**AYES:**

**NOES:**

**ABSENT:**

**ABSTAIN:**

**IN WITNESS THEREOF**, I hereunto set me hand and affix the official seal of the City of Adelanto, on the 12th day of August, 2009.

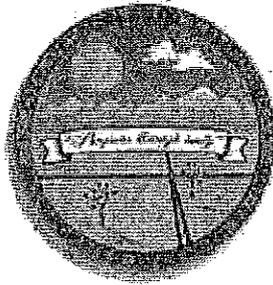
\_\_\_\_\_  
Cindy M. Herrera, City Clerk

# ADELANTO WATER AUTHORITY

## REVENUE REQUIREMENT REPORT AND WATER RATE CALCULATION

FOR THE YEARS 2009-10 THROUGH 2012-13

JUNE 2009



City of  
**ADELANTO**  
*"Progress through unity"*

Prepared by:  
Christian L. Aldinger, CPA  
Peasley, Aldinger & O'Bymachow  
June 2009

ADELANTO WATER AUTHORITY  
REPORT ON REVENUE REQUIREMENTS  
AND WATER RATES  
JUNE 2009

ADELANTO WATER AUTHORITY  
REPORT ON REVENUE REQUIREMENTS AND WATER RATES

JUNE 2009

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ADELANTO WATER AUTHORITY  
 REPORT ON REVENUE REQUIREMENTS AND WATER RATES

JUNE 2009

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PEASLEY, ALDINGER & O'BYMACHOW  
AN ACCOUNTANCY CORPORATION

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2120 MAIN STREET, SUITE 265  
HUNTINGTON BEACH, CALIFORNIA 92648

(714) 536-4418  
FAX (714) 536-2039

June 29, 2009

Mr. Bill Aylward  
Finance Director  
Adelanto Water Authority  
11600 Air Base Road  
Adelanto, California 92301

Re: Report on Revenue Requirements and Water Rates

Dear Mr. Aylward:

At your request and from information provided by Adelanto Water Authority, we have prepared this report entitled "Report on Revenue Requirements and Water Rates". The report includes a forecast of future operating expenses, debt service, capital costs and reserves (the components of revenue requirements), and the revenues necessary to cover those components for the years ending June 30, 2010, through June 30, 2013. The report includes historical operating data and projections of future operations used in estimating the components of revenue requirements, and a summary of significant assumptions as well as our recommendations for modifications which should be made to rates as a result of our study.

This financial forecast presents, to the best of management's knowledge and belief, the Water Authority water department's expected results of operations at present and proposed rates for the forecast period. These forecasts are based on management's assumptions, reflecting conditions management expects to exist and the course of action management expects to take during the forecast period. There will usually be differences between forecasted and actual results because events and circumstances frequently do not occur as expected, and those differences may be material. Management and Water Authority staffs are responsible for representations about its plans and expectations and for disclosure of significant information that might affect the ultimate realization of the forecasted results.

Because the procedures we performed during this engagement do not constitute an examination of a presentation of forecasted information in accordance with standards established by the American Institute of Certified Public Accountants, we do not express an opinion on whether the Revenue Requirements Study is presented in conformity with AICPA presentation guidelines or on whether the underlying assumptions provide a reasonable basis for the presentation. Additionally, the procedures that we performed did not constitute an audit or review of this information or of the financial statements of Adelanto Water Authority. Consequently, we do not express an opinion or any other form of assurance on those financial statements, the achievability of the forecast or the reasonableness of the underlying assumptions. We have no responsibility to update our report for events and circumstances occurring after the date of this report. Our engagement cannot be relied upon to disclose errors, irregularities, or illegal acts, including fraud or defalcations that may exist.

Mr. Bill Aytward  
Adelanto Water Authority  
June 29, 2009

Re: Report on Revenue Requirements and Water Rates

It is our understanding this report is for the use of the Water Authority's Board of Directors and Water Authority Staff to assist them in determining proper water use rates and, consequently, is intended for internal use only. In accordance with standards established by the American Institute of Certified Public Accountants, the terms of our agreement with the Water Authority specify that if management intends to reproduce and publish the forecast and our report thereon, it must be reproduced in its entirety. You have agreed to allow us to approve both the first and subsequent corrected drafts of the document containing the forecast and any accompanying material prior to publication.

We appreciate the opportunity to be of service to the Water Authority and would like to thank the Water Authority Staff for their assistance and cooperation.

Sincerely,

PEASLEY, ALDINGER & O'BYMACHOW  
An Accountancy Corporation



Christian L. Aldinger  
Certified Public Accountant

## EXECUTIVE SUMMARY

The purpose of this report is to determine water rates needed to generate revenues adequate to meet revenue requirements using equitable design criteria with an emphasis on encouraging water conservation and a reduction in overall per customer usage.

Estimated revenue requirements (Section 4) for the years 2009-10 through 2012-13 exceed estimated revenues at present rates (Section 6). This results in a need to increase overall revenues by approximately 29% for the 2010-11 year with additional increases in future years (Section 9). The increase needed by the 2012-13 year is an increase of 229% over present rates. To preserve the Water Authority's financial condition to the extent possible, the Water Authority should not delay the implementation of the rate increase. There are several compelling reasons to implement an increase immediately (Section 13). Proposed rates as presented in Section 9 have been designed using sound rate design philosophy (Section 7) to generate adequate revenues (Section 10) to meet estimated revenue requirements (Section 4). An alternate solution is presented in Section 12 and this alternate would result in a deferral of debt repayment so that user rates can be held at a lower level. Proposed rates modify the existing rate structure and charges for all water used rather than allowing usage in the minimum charge.

As a result of this study, rates have been designed to generate increased total revenues. However, the recommended rates impact different customers differently. Section 11 presents a comparison of bills for various customers.

The Water Authority completed its Master Plan in 2007 and the Master Plan identifies the need for approximately \$449,000,000 of capital improvements over the next 20 years to serve the City at build out. Due to the extent of the proposed increase, this rate study does not provide for the accumulation of reserves intended to allow the Water Authority to pursue the projects identified in the Master Plan.

The overall 229% increase over present rates is partially attributable to total water usage exceeding the Water Authority's production allowance in its ground water basin. At present rates, the 2009-10 year total estimated revenues are approximately \$930,000 short of operating expenses (see Table 19). Please note this shortfall is after utilization of the rate stabilization reserve (see Table 11). Any delay in a rate increase or an increase of a lesser amount may result in a delay in the capital program or in a usage of reserves for which no plan exists for replacement of existing reserves.

## SECTION 1

### PURPOSE AND SCOPE OF REPORT

#### 1.1 Purpose of Study

This report has been prepared to provide information regarding the Adelanto Water Authority's estimated revenue requirements for years ending June 30, 2010, through June 30, 2013, and the user charges available to cover those requirements. Results of operations under present and proposed rates are presented in this report to provide the City Council members, water users, and other interested parties with data used to support proposed changes in rates.

The purpose of this revenue requirement study is three-fold; to:

- Establish water service rates designed to recover costs of service, to generate funds for capital purposes (capital improvements and replacements), debt service, and to fund reserves.
- Use rate design criteria to equitably apportion the revenue requirements over the various classifications of users in relationship to their contribution to cost of service.
- Recommend rates that will promote conservation and wise water use.

Revenue requirements have been based primarily on budget estimates provided by the Water Authority for the year ending June 30, 2010 and as forecasted for the years ending June 30, 2011, 2012, and 2013. Revenue requirements are estimated on a normal year basis, excluding unusual revenues and unusual costs, and including revenues and costs that would normally occur but for some reason were not reported in the latest recorded year or included in the most recent budget. A test of adequacy of the rates is shown in Section 10, the results of operations at proposed rates.

#### 1.2 Scope of Report

This report contains information provided by the Water Authority's staff about the water system operations and estimated results of operations for the years ending June 30, 2010 through June 30, 2013.

## SECTION 2

### BACKGROUND INFORMATION

#### 2.1 History of Operations

The Authority is a joint exercise of powers authority organized and existing under and by virtue of the Joint Powers Agreement between the City and the Agency. The Authority was formed for the purpose of owning, operating, and maintaining the Utility System. The Utility System currently consists of the Wastewater Enterprise and the Water Enterprise serving the City. The Joint Powers Act provides for the issuance of revenue bonds of joint exercise of powers authorities, such as the Authority, to be repaid from certain revenues. The Authority has no ad valorem taxing power. Pursuant to the Joint Powers Act, the Authority is authorized to issue its revenue bonds for the purpose of financing, among other things, public capital improvement projects of the Utility System.

The Authority contracts with the City for operating the Wastewater Enterprise and the Water Enterprise.

The Water Authority acquired the Water Enterprise from the City pursuant to a Purchase Agreement, dated January, 1996. The Water Authority used the proceeds of the 1996 Water Bonds to pay the acquisition price. Prior to the sale of the Water Authority, the City owned and operated the water supply and distribution system.

The Water Enterprise, identified as No. 36-0001 with the State of California Office of Drinking Water, was issued Water Permit No. 03-93-037 in January, 1993. The Water Enterprise consists of 15 operating wells, one iron and manganese treatment plant, a pipeline distribution system, and five storage reservoirs, which serve the residents of three separate pressure zones.

The Water Enterprise provides water service within City limits. The Water Enterprise serves a permanent population of approximately 22,500. Currently there are 7,746 service connections on the distribution system, of which 7,168 are ¾" residential connections. All service connections are metered.

SECTION 2

BACKGROUND INFORMATION  
(continued)

2.2 Organization

The Authority is governed by a five-member commission which consists of all the members of the City Council. The Mayor of the City is appointed as the President of the Authority. The Authority has no taxing power.

The Authority's members and term expiration dates are:

<u>Commission Member</u>	<u>Term Expires</u>
Charley B. Glasper, President	November 2010
Trinidad Perez, Vice President	November 2010
Ed Camargo	November 2012
Gene Plehe	November 2010
Carl Thomas	November 2012

The City Manager is responsible for coordination of all departments and daily operations of City business, including operation of the Wastewater Enterprise, the Water Enterprise and acts as the Executive Director of the Authority. Current City Staff assigned to administer the Authority are:

D. James Hart, City Manager and Authority Executive Director  
Cindy Herrera, City Clerk and Authority Secretary

SECTION 2  
 BACKGROUND INFORMATION  
 (continued)

2.3 Source of Supply

The Water Authority's present water supply is obtained from ground water wells and from river underflow.

1. Wells

TABLE 1  
 LIST OF WELLS

<u>Well Number</u>	<u>Capacity (GPM)</u>	<u>Source</u>
Well No. 1G	181	River underflow
Well No. 2G	783	River underflow
Well No. 3G2	287	River underflow
Well No. 4G	1,074	River underflow
Well No. 5G	-	River underflow
Well No. 6G	227	River underflow
Well No. 8G2	754	River underflow
Well No. 2	212	River underflow
Well No. 4	684	Ground water
Well No. 5A	325	Ground water
Well No. 6	274	Ground water
Well No. 7	300	Ground water
Well No. 8A	518	Ground water
Well No. 14	250	River underflow
Well No. 14A	649	River underflow
Total Capacity	6,718	= 9.7 MGD = 10,866 ac-ft./yr.

GPM = Gallons Per Minute

**Sources of Supply.** The Water Enterprises' current water supply consists of certain rights in the Mojave River Basin pursuant to the Mojave Adjudication Case. In addition, the City has purchased certain water rights from an individual in the Adjudication Area and it is anticipated the Authority may purchase water from other sources in the future.

Water pumped in excess of the Free Production Allowance is subject to a charge by the Watermaster at the rate of \$399 per acre foot for the 2008-09 year.

## SECTION 2

### BACKGROUND INFORMATION (continued)

#### 2.3 Source of Supply (continued)

Under the current decision and judgment in the Water Adjudication Case (defined herein), the Authority estimates that it has water rights in what is categorized as "Free Production Allowance" available to it at an 60% ramp down level of approximately 4,268 acre-feet per year. This is the aggregate of the following: (i) Under the Judgment, the Initial Free Production Allowance established for the City was 3,679 acre-feet. With the 60% ramp down, that amount has been ramped down to 2,208 acre-feet per year. (ii) During recent years, the City has been entitled to the Free Production Allowance relating to George Air Force Base. The City and the United States government litigated their respective entitlement to the water rights with respect to the deactivated George Air Force Base and the City, the City of Victorville and the Southern California International Airport Authority have negotiated an agreement as to the allocation of the water rights from George Air Force Base. Pursuant to the decision in that litigation and the agreements with the City of Victorville and the Southern California International Airport Authority, in the future, the City will only be entitled to approximately 3,433 acre-feet of Free Production Allowance relating to the deactivated George Air Force Base. The Authority will acquire this right from the City once the right is acquired by the City. At a 60% ramp down, the Authority will be entitled to approximately 2,060 acre-feet of Free Production Allowance. At a 60% ramp down, this is approximately 4,268 acre-feet per year of Free Production Allowance.

In the event the Authority requires water in excess of the available Free Production Allowance, the Authority may pump additional water and either acquire Free Production Allowance from another producer for the applicable production year or pay a replacement assessment to the Mojave Water Agency for the water pumped in excess of the available Free Production Allowance. Under the rules and regulations of the Watermaster, any unused Free Production Allowance may be carried over and accumulated for one year and the first water produced in the succeeding year is deemed produced from the carryover water.

In accordance with the Judgment, each year the Watermaster may prepare a report that includes a recommendation for an adjustment of the Free Production Allowance. Further ramp down of the Free Production Allowance would increase the replacement assessments due to the Watermaster.

SECTION 2  
BACKGROUND INFORMATION  
(continued)

2.4 Storage

TABLE 2  
LIST OF RESERVOIRS

The following is a list of reservoirs used by the Water Authority to store water supplies:

<u>Name</u>	<u>Reservoir Number</u>	<u>Capacity (gallons)</u>	<u>Date Constructed</u>
.75 MG	#1	750,000	1958
East 3 MG	#2	3,000,000	1983
West 3 MG	#3	3,000,000	1988
East 5 MG	#4	5,000,000	1992
West 5 MG	#5	5,000,000	1991

Storage is provided by five (5) reservoirs with a total capacity of 16,750,000 gallons (16.75 MG).

**Water Storage Reservoirs and Pumping Facilities.** The Authority currently owns and maintains five storage reservoirs for a combined storage capacity of 16.75 million gallons. All are coated steel tanks at ground level, with pumps and apparatuses adjacent to supply water to the Water Enterprise. The Water Enterprise is divided into three pressure zones, south (Zone 1), central (Zone 2), and north (Zone 3).

The 0.75 MG tank receives water from Wells No. 2, 4 and 14 and is equipped with a top inlet and two bottom outlets. The outlets feed Booster Station #2, adjacent to the 0.75 MG tank. The concrete block structure houses three 75 HP pumps capable of pumping 800 GPM and three 150 HP pumps capable of pumping 1,500 GPM. Booster Station #2 pumps water up to the two 3 MG tanks.

The two 3 MG tanks receive water from Wells No. 6, 7, 8 and 8A and Booster Station #2. Water outflow serves pressure Zone 2 and pressure Zone 3 through five reducing valve stations, and Booster Station #3, which is adjacent to the two 3 MG tanks. Booster Station #3 is a concrete block structure containing three 150 HP pumps with a capacity of 2,000 GPM each.

Booster Station #3 pumps water up to the two 5 MG tanks. Discharge from these tanks serves Zone 1. A manual bypass at Booster Station #3 with a pressure reducing valve allows water to flow from the two 5 MG tanks back to the two 3 MG tanks in emergency situations.

## SECTION 2

### BACKGROUND INFORMATION (continued)

#### 2.5 Distribution System

The water system has pipeline ranging in size from 1 inch to 24 inches. There are approximately 182,408 lineal feet of transmission and distribution mains. The Water Authority maintains approximately 1,000 fire hydrants within its system. The 2007 Master Plan contains further details as to the Water Authority's distribution systems.

The three pressure zones, from highest to lowest, correspond roughly to the southern, central, and northern parts of the City. The southern part, Zone 1, extends from Holly Road south to Palmdale Road and includes the City's Industrial Park III. The central part, Zone 2, extends from Air Base Road south to Holly Road. The northern part, Zone 3, extends north of Air Base Road. Zone 1 has elevations ranging from 3,200 to 3,030 feet, Zone 2 has elevations ranging from 3,030 to 2,910 feet, and Zone 3 has elevations ranging from 2,910 to 2,800 feet. Pressure within Zone 1 and Zone 3 is 60-125 pounds per square inch (psi) while pressure in Zone 2 is 50-125 psi.

The upper pressure zone, Zone 1, is fed by two 5 MG tanks. Approximately 4,131 service connections are served by pressure Zone 1. The middle pressure zone, Zone 2, is fed by the two MG tanks and Wells Nos. 6, 7, and 8A, and Booster Station #2. Approximately 183 service connections are directly served by Pressure Zone 2. The lower pressure zone, Zone 3, is fed by the two 3 MG tanks through five pressure reducing stations. The locations of these stations are Airbase and Raccoon, Verbena and Airbase, Bellflower and Airbase, Booster Station #2, and Adelanto Road and Airbase Road. Approximately 1,913 service connections are served by Pressure Zone 3.

The distribution system has polyvinyl chloride (PVC) (72%), ductile iron (6%), asbestos cement (4%), and cement lined steel pipes (18%). Repairs are made with PVC.

SECTION 3  
STATISTICAL INFORMATION

This section contains statistical information, as recorded and as estimated for future years. Accurate projections are critical in order that proper and appropriate results are obtained. The following subsections show the current statistical information and estimated changes for future years. Projections have been made by the City. Presently, the Water Authority's water revenues are generated through a combination of two charges.

- Service charges - based on meter size
- Water charge - based on usage

3.1 Number of Customers Meter Size

The Water Authority's water customers are tracked by meter size.

Table 3 shows total active meters by size, as of January 2009.

TABLE 3  
TOTAL METERS BY SIZE

<u>Meter Size</u>	<u>Total</u>
3/4"	7,368
1"	343
1 1/2"	9
2"	24
3"	1
4"	1
	<u>7,746</u>

SECTION 3

STATISTICAL INFORMATION  
 (continued)

3.2 Growth of Metered Customers

Table 4 shows total customers by meter size as of January 2009 and estimated additions through 2013. Meter additions shown below have been estimated by management.

TABLE 4  
 TOTAL CUSTOMER ADDITIONS BY METER SIZE

Meter Size	3/4"	1"	1 1/2"	2"	3"	4"
As of January 2009	7,368	343	9	24	1	1
Added YE 6/30/09	-	-	-	-	-	-
Removed YE 6/30/09	-	-	-	-	-	-
June 30, 2009	7,368	343	9	24	1	1
Added YE 6/30/10	289	-	-	-	-	-
Removed YE 6/30/10	-	-	-	-	-	-
June 30, 2010	7,657	343	9	24	1	1
Added YE 6/30/11	-	-	-	-	-	-
Removed YE 6/30/11	-	-	-	-	-	-
June 30, 2011	7,657	343	9	24	1	1
Added YE 6/30/2012	-	-	-	-	-	-
Removed YE 6/30/12	-	-	-	-	-	-
June 30, 2012	7,657	343	9	24	1	1
Added YE 6/30/13	-	-	-	-	-	-
Removed YE 6/30/13	-	-	-	-	-	-
June 30, 2013	7,657	343	9	24	1	1

Source: City of Adelanto

SECTION 3

STATISTICAL INFORMATION  
 (continued)

3.3 Average Metered Customers by Size

The following Table 5 shows by meter size, average number of customers projected for the years ending June 30, 2009 through 2013.

TABLE 5  
 AVERAGE METERED CUSTOMERS BY SIZE

<u>Meter Size</u>	<u>3/4"</u>	<u>1"</u>	<u>1 1/2"</u>	<u>2"</u>	<u>3"</u>	<u>4"</u>
Average for the year ending June 30,						
2009	7,368	343	9	24	1	1
2010	7,513	343	9	24	1	1
2011	7,657	343	9	24	1	1
2012	7,657	343	9	24	1	1
2013	7,657	343	9	24	1	1

3.4 Metered Equivalents

The demand a user places on the water system is best measured by meter size. Each meter, depending on the size, has a maximum flow of water which can travel through the meter. Larger meters have greater flow and place a greater potential demand on the water system. The common method used to determine the greater demand is by using meter equivalencies. For example, the flow capacity of a 3/4" meter is 30 gallons per minute and a 2" meter has flow capacity of 160 gallons per minute. 160 divided by 30 is 5.333333. This means that a 2" meter has the potential demand of 5.333333 3/4" meters. Therefore, any charges made based on demand should consider a meter equivalent or meter ratio. The following is a table, which demonstrates the meter ratio calculation.

<u>Meter Size</u>	<u>Flow Capacity</u> (Gallons per Minute)	<u>Equivalent</u>
3/4"	30	1.00
1"	50	1.67
1-1/2"	100	3.33
2"	160	5.33
3"	300	10.00
4"	500	16.67

SECTION 3

STATISTICAL INFORMATION  
 (continued)

3.4 Metered Equivalents (continued)

Table 6 shows the result of multiplying the average customers (Table 5) by meter size by the 3/4" equivalent to determine the average 3/4" meter equivalents for each of the years ending June 30, 2009 through 2013.

TABLE 6  
 CALCULATION OF 3/4" METER EQUIVALENTS

Meter Size	3/4" Equivalent	For the year ending June 30.				
		2009	2010	2011	2012	2013
3/4"	1.00	7,368	7,513	7,657	7,657	7,657
1"	1.67	573	573	573	573	573
1 1/2"	3.33	30	30	30	30	30
2"	5.33	128	128	128	128	128
3"	10.00	10	10	10	10	10
4"	16.67	17	17	17	17	17
		<u>8,126</u>	<u>8,271</u>	<u>8,415</u>	<u>8,415</u>	<u>8,415</u>

SECTION 3

STATISTICAL INFORMATION  
 (continued)

3.5 Estimated Water Consumption by All Customers

Table 7 shows estimated water consumption for each of the years ending 2010 through 2013. The actual for year end June 30, 2008 was used to estimate total consumption by year. Note that because growth in the number of connections has only been projected to include the restoration of previously locked off services; the consumption is expected to increase only in the year 2010.

TABLE 7  
 ESTIMATED TOTAL ANNUAL WATER CONSUMPTION  
 BY METER SIZE

For the Year Ended June 30,	Recorded Annual Water Produced <sup>1</sup> (CCFs)	Consumption (In CCFs)	Estimated NonResidential Consumption (In CCFs <sup>2</sup> )	Estimated Total Water Consumption (In CCFs)
2005	2,691,535			
2006	3,084,626			
2007	2,364,947			
2008	2,095,852			
	<u># of 3/4" Customers<sup>4</sup></u>	(Est = 240 CCF annual) <sup>3</sup>		
2009	7,368	1,768,320	152,000	1,920,320
2010	7,513	1,803,120	152,000	1,955,120
2011	7,657	1,837,680	152,000	1,989,680
2012	7,657	1,837,680	152,000	1,989,680
2013	7,657	1,837,680	152,000	1,989,680

<sup>1</sup>Well production reports maintained by City of Adelanto

<sup>2</sup>Source: Water use calculation from City staff and assumes 3/4" meters are residential. (2003-2004 C1 rate code usage for commercial use = 213,242 ccf's)

<sup>3</sup>Based on available statistics it has been calculated that the typical 3/4" residential water customer uses 20 CCFs of water monthly (20 CCFs x 12 months = 240 CCFs annually). Note: 20 CCFs = 500 gallons per day.

<sup>4</sup>From Table 5

SECTION 4  
 REVENUE REQUIREMENTS

In order to determine the adequacy of present rates, in light of current and future estimated costs of operation and to assess the Water Authority's ability to meet its responsibilities now and into the future, the first step is to determine the revenue requirements and then determine if revenue sources are adequate to meet the revenue requirements.

Revenue requirements are as follows:			<u>Section Reference</u>
	Operating expenses	(operate and maintain the utility on an ongoing basis)	4.1
+	Capital costs	(additional and replacements to existing utility plant)	4.2
+	Debt service	(principal and interest on debt)	4.3
+	<u>Funding of reserves</u>	(additions to reserve funds)	4.4
=	<u>Revenue requirements</u>		

4.1 Operating Expenses

The first component of revenue requirements is operating expenses. Table 8 shows water system operating expenses as estimated for the years ending June 30, 2010 through 2013. For the estimated years, the amounts have generally been increased by an inflation factor of 3% per annum.

Appendix B includes a detail schedule of budgeted operating expenses for each of the years ended June 30, 2009 and 2010. The 2009-10 budget represents the Water Authority's expected course of action and operational plan for the next and future years. In most cases the budget provides the best information to estimate future revenue requirements. Adjustments were made to budget amounts as appropriate from the most recently available information. Appendix C includes certain workpapers and calculations showing how budget amounts were adjusted and how significant operating expense amounts were calculated.

SECTION 4  
 REVENUE REQUIREMENTS  
 (continued)

4.1 Operating Expenses (continued)

Table 8 shows the summary of operating expenses for the water system. Adjustments have been made to the budget amounts to reclassify costs to the appropriate expense category. See Appendix B and C for details.

TABLE 8  
 SUMMARY OF WATER SYSTEM OPERATING EXPENSES

<u>Description</u>	Estimated (in dollars) For year ending June 30,			
	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Source of supply	\$ 1,160,592	\$ 1,303,360	\$ 1,413,580	\$ 1,534,822
Water treatment	70,000	72,100	74,263	76,491
Transmission and distribution	1,857,550	1,913,276	1,970,675	2,029,794
Customer accounts	100,000	103,000	106,090	109,273
Other operating expenses	832,530	857,506	893,232	909,729
General and administrative	<u>173,500</u>	<u>178,705</u>	<u>184,067</u>	<u>189,591</u>
	<u>\$ 4,194,172</u>	<u>\$ 4,427,947</u>	<u>\$ 4,631,907</u>	<u>\$ 4,849,700</u>

SECTION 4  
 REVENUE REQUIREMENTS  
 (continued)

4.2 Capital Costs

The second component of revenue requirements is capital costs. Capital costs include additions to and replacement of existing utility plant. Refer to Appendix D for details of capital items for future years. Also included in Appendix D is a portion of the 2007 Water Mater Plan describing facilities needed in the future. Due to the anticipated magnitude of the upcoming water rate increases, no capital additions have been considered for the next four years (through year ending June 2013).

TABLE 9  
 CAPITAL ADDITIONS AND REPLACEMENTS

Description	Estimated (in dollars) For year ending June 30,				
	2009	2010	2011	2012	2013
Capital projects:					
Project 1	\$ -	\$ -	\$ -	\$ -	\$ -
Project 2	-	-	-	-	-
Other	-	-	-	-	-
	\$ -	\$ -	\$ -	\$ -	\$ -
Less: funded with new debt issue	-	-	-	-	-
Net capital	\$ -	\$ -	\$ -	\$ -	\$ -

SECTION 4

REVENUE REQUIREMENTS  
 (continued)

4.3 Debt Service Cost

The third component of revenue requirements is debt service. The Water Authority has debt obligations identified as 1996 Purchase Agreement Payments as well as Refunding Revenue Bonds 2007, Series A and Refunding Revenue Bonds 2007, Series B issued in December 2007. The Water Authority plans to refinance the 2007 Issue in 2009. Appendix G contains the proposed debt service schedule as well as the 1996 Purchase Agreement payment schedules. Note: The 1996 Purchase Agreement Amortization Schedule has been calculated to allow the Water Authority to complete the repayment of the 1996 Agreement in a 20 year time span (i.e., payoff in approximately 2016).

TABLE 10  
 DEBT SERVICE

<u>Description</u>	<u>Estimated (in dollars)</u> <u>For year ending June 30,</u>			
	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
1996 Purchase Agmt (Minimum) <sup>1</sup>	\$ 1,092,070	\$ 938,090	\$ 776,412	\$ 606,649
1996 Purchase Agmt (Optional) <sup>2,3</sup>	3,079,590	3,233,570	3,395,248	3,565,011
2009 Issue	<u>1,571,819</u>	<u>3,008,941</u>	<u>3,008,941</u>	<u>3,659,416</u>
Total	<u>\$ 5,743,479</u>	<u>\$ 7,180,601</u>	<u>\$ 7,180,601</u>	<u>\$ 7,831,076</u>

<sup>1</sup>As amended 1/26/1998 and modified 2/1/2000 and further amended 9/1/2005. The balance due as of 6/30/2008 per the audited financial statements is \$21,841,391. Minimum annual payments are 5% of the outstanding balance.

<sup>2</sup>Optional payments are allowed to reduce the remaining balance due under the Agreement.

<sup>3</sup>This annual optional debt service amount shown is based on the principal portion included on the amortization schedule in Appendix G. It is the Water Authority's intent to use the interest earned on the Financing Authority Bonds to pay a portion of the optional portion of the 1996 Purchase Agreement. To the extent the interest earned varies, the optional portion of the payment can be modified accordingly.

SECTION 4  
 REVENUE REQUIREMENTS  
 (continued)

4.4 Reserves

The fourth component of revenue requirements is the funding and preservation of reserves. Reserves are typically used to construct facilities, infrastructure replacement, unforeseen contingencies, and to offset various liabilities. The major categories of reserves that have been established by the Water Authority are delineated below. Due to the anticipated magnitude of the water rate increase, no additions to reserves have been proposed in the revenue requirement study.

TABLE 11  
 REVENUE REQUIREMENT TO FUND RESERVES

<u>Description</u>	Estimated (in dollars) For year ending June 30,			
	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Rate Stabilization	\$ -	\$ -	\$ -	\$ -
General reserves	-	-	-	-
Total	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>

SECTION 4  
 REVENUE REQUIREMENTS  
 (continued)

4.4 Reserves (continued)

• General Reserves

At the present time, the Water Authority does not have a formally established mechanism to fund a general reserve. Normally, a general reserve has been recommended to be used for the specific purpose of accumulating funds for major infrastructure replacement. Without reserves on hand to react to emergencies and to take advantage of timing situations, the Water Authority could end up paying more either through the higher cost of construction or reduced services. With an adequate reserve, when existing infrastructure is in need of replacement, the funds will be available. Due to the amount of the proposed increase, no amount has been proposed as additions to general reserve and the reserve has been used to phase in the anticipated increases in rates.

Table 12 shows the status of reserves for the period June 30, 2009 through 2013. Interest earned is calculated at two percent (2%).

TABLE 12  
 RESERVES

<u>Description</u> <u>Balance June 30,</u>	<u>Estimated (in dollars)</u>		
	<u>Debt Service</u>	<u>Reserves</u>	<u>Stabilization</u>
2009	\$ 4,280,095	\$ 2,563,402	\$ 2,100,000
Added <sup>1</sup>	1,882,443	-	-
Interest earned	123,251	-	-
Used	(123,251)	(2,563,402)	(2,100,000)
2010	6,162,538	-	-
Added	-	-	-
Interest earned	123,251	-	-
Used	(123,251)	-	-
2011	6,162,538	-	-
Added	-	-	-
Interest earned	123,251	-	-
Used	(123,251)	-	-
2012	6,162,538	-	-
Added	-	-	-
Interest earned	123,251	-	-
Used	(123,251)	-	-
2013	\$ 6,162,538	\$ -	\$ -

<sup>1</sup> Added in refinance of 2007 bonds (estimated - actual will be based on market conditions at time of refinance)

SECTION 4  
 REVENUE REQUIREMENTS  
 (continued)

4.5 Summary of Revenue Requirements

All components of revenue requirements have been brought together below to summarize revenue requirements. Table 13 shows total estimated revenue requirements for the years 2009-10 through 2012-13.

TABLE 13  
 SUMMARY OF REVENUE REQUIREMENTS

<u>Description</u>	<u>Table No.</u>	<u>Estimated (in dollars)</u> <u>For year ending June 30,</u>			
		<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Operating expenses	8	\$ 4,194,172	\$ 4,427,947	\$ 4,631,907	\$ 4,849,700
Capital program	9	-	-	-	-
Debt service	10	5,743,479	7,180,601	7,180,601	7,831,076
Reserves	11	-	-	-	-
Total revenue requirement		<u>\$ 9,937,651</u>	<u>\$ 11,608,548</u>	<u>\$ 11,812,508</u>	<u>\$ 12,680,776</u>

## SECTION 5

### OTHER REVENUE SOURCES

After revenue requirements have been determined and prior to calculating revenues at present rates, other revenue sources must be identified and quantified.

#### 5.1 Interest Earned

For purposes of the water operation, the Water Authority owns \$17,854,078 of Adelanto Financing Authority Bonds which pay principal and interest annually. The 2009-10 budget estimates payments of \$1,250,000 annually. Due to the terms of the bonds, accurate projection of interest payments is not possible because the amounts paid are dependent upon multiple factors related to the redevelopment agency budget estimates that have been used. For rate study purposes, the interest of \$1,250,000 has been dedicated towards the optional portion of the 1996 Purchase Agreement (See Table 10). In addition, interest earned on reserves that are not restricted have been identified as interest earned available to offset revenue requirements (see Table 12).

#### 5.2 Capacity Charges

The Water Authority collects a "water acquisition fee" of \$1,350 for each new meter. These funds are restricted for acquisition of pumping rights to allow for the additional permanent supply of water above and beyond existing pumping rights. The water acquisition fees received by the City are dependent upon development activity and these fees have not been used to offset revenue requirements of the Water Authority.

#### 5.3 Connection Charges

Pursuant to Ordinance No. 3, the Water Authority charges \$4,450 per 3/4" meter newly connected to the system.

The City of Adelanto considers connection charges to be "impact" fees and, therefore, these fees are restricted for capital improvements and to repay debt service issued to construct projects to support future growth.

SECTION 5  
 OTHER REVENUE SOURCES  
 (continued)

5.3 Connection Charges (continued)

Based on the expected additions to total customers as shown in Table 4, the following connection fee revenue is expected:

TABLE 14  
 CONNECTION FEE INCOME

	Estimated (in dollars) For year ending June 30,			
	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Number of new connections (all 3/4") (Table 4) <sup>1</sup>	0	0	0	0
Connection fee	\$ 5,800	\$ 5,800	\$ 5,800	\$ 5,800
Annual connection fee	\$ -	\$ -	\$ -	\$ -

<sup>1</sup>The customer additions shown in Table 4 are not included above as those customer additions are, in fact, reconnects.

5.4 Water Availability Charges

Currently, the Water Authority charges a standby fee (a water availability charge) that is unrestricted and can be used to offset revenue requirements. The fee is based on acreage and is intended to recover costs associated with maintaining surplus capacity in the water system which is intended to be available when vacant property is developed. The 2009-10 budget estimates the water availability charges to be \$500,000.

As land is developed, the standby fee acreage will diminish and in turn the standby fee revenue will decrease. Water Authority management has estimated the annual revenue from standby fees will not decrease over the next five years.

SECTION 5  
 OTHER REVENUE SOURCES  
 (continued)

5.5 Summary of Other Revenue Sources

Other than the items listed in 5.1 through 5.4, there are no other revenue sources identified and used in this rate study. The following is a summary of other revenue sources:

TABLE 15  
 SUMMARY OF OTHER REVENUE SOURCES

Description	Section No.	Estimated (in dollars) For year ending June 30,			
		2010	2011	2012	2013
Interest earned	5.1	\$ 1,373,251	\$ 1,373,251	\$ 1,373,251	\$ 1,373,251
Capacity charges	5.2	-	-	-	-
Connection fees	5.3	-	-	-	-
Water availability charge	5.4	<u>500,000</u>	<u>500,000</u>	<u>500,000</u>	<u>500,000</u>
Total other revenue sources		<u>\$ 1,873,251</u>	<u>\$ 1,873,251</u>	<u>\$ 1,873,251</u>	<u>\$ 1,873,251</u>

SECTION 6

SUMMARY - RESULTS OF OPERATIONS AT PRESENT RATES

6.1 Estimated Service Charge Revenues at Present Rates

Revenues at present rates have been developed by multiplying the estimated number of customers by meter size by the current service charge (Table 16) and adding the estimated consumption times the commodity rate (Table 17).

The following table shows estimated service charge revenues at present rates. These amounts have been determined by multiplying the number of customers from Table 5, Section 3.3, by present rates.

TABLE 16  
 TOTAL SERVICE FEE REVENUE AT PRESENT RATES

Year End	Meter Size	3/4"	1"	1 1/2"	2"	3"	4"	Total
2009	Monthly Svc Chg	\$18.47	\$27.72	\$27.72	\$27.72	\$27.72	\$27.72	
	Avg Customers YE 6/30/09	7,355	343	9	24	1	1	
	Annual service charge revenue	\$1,633,044	\$114,096	\$2,994	\$7,983	\$333	\$333	\$1,758,783
2010	Avg Customers YE 6/30/10	7,513	343	9	24	1	1	
	Annual service charge revenue	\$1,665,181	\$114,096	\$2,994	\$7,983	\$333	\$333	\$1,790,920
2011	Avg Customers YE 6/30/11	7,657	343	9	24	1	1	
	Annual service charge revenue	\$1,697,097	\$114,096	\$2,994	\$7,983	\$333	\$333	\$1,822,836
2012	Avg Customers YE 6/30/12	7,657	343	9	24	1	1	
	Annual service charge revenue	\$1,697,097	\$114,096	\$2,994	\$7,983	\$333	\$333	\$1,822,836
2013	Avg Customers YE 6/30/13	7,657	343	9	24	1	1	
	Annual service charge revenue	\$1,697,097	\$114,096	\$2,994	\$7,983	\$333	\$333	\$1,822,836

Appendix H shows the Water Authority's present rate schedule.

SECTION 6

SUMMARY - RESULTS OF OPERATIONS AT PRESENT RATES  
 (continued)

6.2 Estimated Commodity Revenue at Present Rates

Table 7 in Section 3.5 shows the estimated water sales in total CCFs. The estimated water sales were multiplied by present commodity rates and the following table shows the results. See Appendix A for additional information used to project water sales.

TABLE 17  
 ESTIMATED COMMODITY RATE REVENUE

Year Ended June 30,	Estimated Total Water Consumption (in CCFs) <sup>1</sup>	CCFs Included in Service Charge <sup>2</sup>	Water in CCFs in Excess of Service Charge	Present Rate per CCF	Total Commodity Revenues
2009	1,920,320	(450,000)	1,470,320	\$0.95	\$1,396,804
2010	1,955,120	(450,000)	1,505,120	\$0.95	\$1,429,864
2011	1,989,680	(450,000)	1,539,680	\$0.95	\$1,462,696
2012	1,989,680	(450,000)	1,539,680	\$0.95	\$1,462,696
2013	1,989,680	(450,000)	1,539,680	\$0.95	\$1,462,696

<sup>1</sup>See Table 7

<sup>2</sup>Rough estimate: 7,500 customers x 5 CCFs x 12 months = 450,000 CCFs (Present rates do not apply a commodity charge until the 11th unit of water use.)

6.3 Annual Water Revenues at Present Rates

Table 18 brings together the estimated water revenues at present rates.

TABLE 18  
 TOTAL WATER REVENUES AT PRESENT RATES

Description	Table No.	Estimated (in dollars) For year ending June 30,			
		2010	2011	2012	2013
Service charge revenues	16	\$ 1,790,920	\$ 1,822,836	\$ 1,822,836	\$ 1,822,836
Commodity revenues	17	<u>1,429,864</u>	<u>1,462,696</u>	<u>1,462,696</u>	<u>1,462,696</u>
Total operating revenue		\$ 3,220,784	\$ 3,285,532	\$ 3,285,532	\$ 3,285,532

SECTION 6

SUMMARY - RESULTS OF OPERATIONS AT PRESENT RATES  
 (continued)

6.4 Estimated Results of Operations at Present Rates

Table 19 shows estimated results at present rates:

TABLE 19  
 ESTIMATED RESULTS OF OPERATIONS AT PRESENT RATES

<u>Description</u>	<u>Table No.</u>	<u>Estimated (in dollars)</u> <u>For year ending June 30,</u>			
		<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
<b>Sources</b>					
Service charge revenues	16	\$ 1,790,920	\$ 1,822,836	\$ 1,822,836	\$ 1,822,836
Commodity revenues	17	1,429,864	1,462,696	1,462,696	1,462,696
Other revenues	15	<u>1,873,251</u>	<u>1,873,251</u>	<u>1,873,251</u>	<u>1,873,251</u>
Total revenues		<u>\$ 5,094,035</u>	<u>\$ 5,158,783</u>	<u>\$ 5,158,783</u>	<u>\$ 5,158,783</u>
<b>Uses</b>					
Operating expenses	8	4,194,172	4,427,947	4,631,907	4,849,700
Capital program	9	-	-	-	-
Debt service	10	5,743,479	7,180,601	7,180,601	7,831,076
Reserves	11	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Total revenue requirements		<u>\$ 9,937,651</u>	<u>\$11,608,548</u>	<u>\$11,812,508</u>	<u>\$12,680,776</u>
Use of reserves - RSF		(1,350,000)	-	-	-
Use of reserves - general		<u>(2,563,402)</u>	<u>-</u>	<u>-</u>	<u>-</u>
Net revenue requirements		<u>6,024,249</u>	<u>11,608,548</u>	<u>11,812,508</u>	<u>12,680,776</u>
Surplus (Deficit)		<u>\$ (930,214)</u>	<u>\$ (6,449,765)</u>	<u>\$ (6,653,725)</u>	<u>\$ (7,521,993)</u>

## SECTION 7

### RATE DESIGN PHILOSOPHY

#### 7.1 Rate Design Philosophy

Following is a general discussion of the various water rate structures, which have been commonly used by water utilities, and focuses on the rate structure we feel would be best for the Adelanto Water Authority.

In considering the alternatives available as a basis for the design of water use rates, it should be noted that government-owned water utilities have a high degree of flexibility in designing rate structures, because the rate setting process is strictly a local governmental agency issue. In the case of Adelanto Water Authority, the City Council establishes the revenue requirements and resulting rates. In setting user rates, the Council should keep in mind fairness among customer groups, otherwise known as rate equity.

Before any rate structure can be evaluated for equity, one must consider the factors that can impact and determine rate equity. Comparing rates among communities can often result in surprising and vastly differing data. Many factors affect the rates charged by utilities. Common factors that can have effects on water rates are:

##### Type of Water Supply

- Imported
- Pumped
- Reclaimed

##### Availability of Water Supply

- Storage Management
- Pumping Restrictions

##### Quality of Water Source

- Level of Treatment
- Blending Considerations

##### System Design

- Geography
- Age
- Production, Distribution, and Operational Efficiency

##### Demand

- Type of Customer Base
- Future Growth Considerations
- Peak Use by Customers

##### Legal, Political & Regulatory Consideration

- Investor-owned Utility
- Government-owned Utility
- Subsidies
- Goals and Policies of Governing Unit

## SECTION 7

### RATE DESIGN PHILOSOPHY (continued)

#### 7.1 Rate Design Philosophy (continued)

Each of the major factors presented above impact the resulting rate structure of each individual utility. These factors identified above are interrelated to one another and any emphasis on one area can directly impact or may inversely impact the ultimate rate structure of a utility.

In considering the equity of a rate structure one must remember that what is equitable depends on the circumstances at a point in time. Often, a rate structure is the result of a consensus of the many factors involved.

Many times, policy decisions are made to achieve a particular result. The argument can be made that a rate structure established to achieve a particular priority would be considered equitable. Because of the potential impact of policy decisions on rate structure, extreme care must be taken in drawing any conclusions when comparing rates between entities or assessing equity without first exploring and understanding those policies.

#### 7.2 Fundamental Rate Design Principles

To design rates, which are considered fair and equitable, rates should be designed using predetermined fundamental rate design principles. The following are fundamental areas, which should be considered and prioritized prior to designing a rate structure:

Adequacy	Rates should be established to meet the full revenue requirements of the utility.
Justifiability	Rates should be cost based and fairly apportion costs over the users. (The cost to provide service should be equitably spread over all customers.)
Simplicity	Rates should be easy to explain, understand, and administer. Simple rates have the perception of being more fair and non-discriminatory. Complex rates require additional administration.
Predictability	Rates should result in total revenues and customer bills which are predictable and stable.
Conservation	Rates should encourage users to make efficient use of resources (use water in a non-wasteful manner).
Continuity	Rates should be established in a manner which recognizes the obligation of the utility to provide a certain level of service into perpetuity.

## SECTION 7

### RATE DESIGN PHILOSOPHY (continued)

#### 7.3 Rate Philosophy

The fundamental rate design principles identified in section 7.2 will be considered and will collectively form the utility's rate philosophy. A utility's primary method of communication with its customers is through utility bills. Through these communications the utility has the opportunity to impart its underlying philosophy to its customers. A utility's rate structure should send the proper "price signal" to its customers. If water is properly priced, then customers can make informed and proper decisions regarding the use of water. A utility's basic philosophy will ultimately impact the final rate structure, as will consideration of the following items:

#### **Demand**

To be cost based and justifiable, rate design must consider the potential demand a customer may place on the system. The price of water will be greatly affected by the demand rate at which the water is used and conversely, the demand for water may be affected by its cost. The demand for water will vary seasonally as well as hourly; this is referred to as peak demand. The major concern associated with peak demands is the proper sizing of the various water facilities to meet these demands. The rate structure should develop sufficient revenue to provide for the operations, maintenance, and capital cost repayment (debt service) and at the same time; attempt to distribute the cost equitably to all customers in relation to the benefits derived or the expenses incurred. This means that a water user who creates a high peak demand should be charged for the cost of the facilities required to meet and serve that demand. To recognize the concept of demand, equitable rates can be achieved by dividing the water system costs into three categories: (1) the cost which varies with the number of customers, (2) the cost which varies directly with the amount of water produced, and (3) the cost which varies with the rate at which the water is consumed.

#### **Value**

Simply put, it can be said that most customers only care about three things:

- Is supply available – is the water running?
- Is quality acceptable – taste and cleanliness?
- Is price agreeable – how much does it cost?

Both the customers and the utility are concerned with the level of service reliability and the cost of service. However, the utility and the customer view these items from different perspectives. The utility is concerned with the level of service provided and the cost to provide that level of service. The customers are concerned with the level of service received and the cost of service received. The customer is concerned mostly about today and less about tomorrow. Whereas the concept of providing service must be concerned with today and also with the future, meaning that the manner of today's operations must consider the continuity of quality service into tomorrow and beyond, and at the same time must consider the value to the customer.

## SECTION 7

### RATE DESIGN PHILOSOPHY (continued)

#### 7.3 Rate Philosophy (continued)

##### **Conservation**

Water pricing has been used by many utilities to provide an incentive to conserve water. Before the use of water meters, the water utilities would divide the total cost of supplying the water by the number of customers, without regard for the amount of water used. With the advent of water meters, the cost of water could be tied to the amount of water consumed. The installation of water meters has resulted in a significant reduction in the per capita consumption. Classic economic theory indicates that an increase in the price of water should result in a decrease in the amount of water consumed. This theory does not always hold true for residential water consumption. Experience has shown that a reasonable increase in water cost has not resulted in significant reductions in residential water consumption. The affluent family that has the greatest potential for reduction in water use spends only a small percentage of their income on water; therefore, a reasonable and justifiable price increase might not offer much incentive to those families to conserve water. Since the less affluent family may not be able to cut their water use and the more affluent may not be willing to reduce their consumption, the use of water pricing should not be considered the only means of reducing residential water consumption. However, an excessively high or punitive rate can be established which would penalize the use of water above a given amount. Depending upon the amount of water allowed at regular rates, a punitive rate schedule can result in a reduction in some water uses. The pricing of water to either encourage or discourage the use of water may result in an inequitable distribution of water supply costs, but the rate structure may be considered fair in light of a philosophy emphasizing conservation.

##### **Subsidies**

In certain cases communities have created rate structures with economic development in mind or rates which attempt to cure a social problem such as welfare rates or lifeline rates. Rates of these types are merely subsidies provided to specific user classes. Policy decision can override a theoretically sound technical calculation and result in a rate structure which allows interclass and intraclass subsidies. (Interclass = Between classes; Intraclass = Between users in a class). One must recognize that a rate structure providing interclass/intraclass subsidies can be considered fair and equitable given particular policy decisions.

##### **Rate Making is an Art, Not an Exact Science**

In a perfect model, each and every user would pay the exact cost of the service received - no more, no less. However, even in a perfect model the issue that exists is the perfect price paid by a user depends not only on the demands and use of that customer, but also on all other customers. For example, usage by user B may cause user A's bill to change even though user A's consumption stays level. To cure this problem, rates should be designed to yield reasonable results without creating an undue amount of work for unnecessary precision.

## SECTION 7

### RATE DESIGN PHILOSOPHY (continued)

#### 7.3 Rate Philosophy (continued)

##### **Equity**

Typically, a utility's rate structure is the result of a compromise of various forces which collectively develop the basic rate philosophy of a utility. On occasion, the forces which must be considered are contradictory to one another. It must be recognized that a customer's ideals may be counter to those of the utility, and the ideals of one particular class of customer may be in conflict with another. The optimal rate structure is one that will result in the maximum fairness given the priorities and philosophies of the utility.

#### 7.4 Types of Rates

Several different types of water rate structures have been used by water utilities to meet revenue requirements. These structures have ranged from a flat rate set price structure to the more sophisticated commodity-demand and base cost plus extra capacity method, which includes a number of factors including demand.

##### **Uniform Volume**

The simplest and easiest rate structure is the straight rate, single block rate or uniform volume rate. Water is sold at a constant price per unit of water. The cost to the customer increases in direct proportion to the amount of water consumed. The straight rate structure is equitable when the cost of supplying water is in direct proportion to the amount of water consumed.

##### **Decreasing Block**

In most instances, the actual water costs increase either at an increasing rate or a decreasing rate. For this reason the "block" rate structures have been used. The unit cost of supplying water may often decrease with increased amounts of water delivered. The consumer pays one price for a certain quantity of water and a lower price for any water used beyond that amount. Thus, the total cost to the consumer increases at a decreasing rate. This method of setting rates does not provide an incentive for large water consumers to conserve water.

##### **Increasing Block**

In order to promote conservation, the efficient use of resources, or in instances where the unit cost of supplying water increases with an increase in demand, the increasing block rate structure can be used. This design is similar to the decreasing block structure; however, it works in reverse. As the water consumption increases, the cost paid by the consumer increases at an increasing rate. The increasing block rate offers an incentive for large water users to conserve water and can also result in a reduced variation in seasonal water demands.

## SECTION 7

### RATE DESIGN PHILOSOPHY (continued)

#### 7.4 Types of Rates (continued)

##### **Lifeline**

This type of rate structure establishes a low fixed rate for a minimum amount of water. The basic purpose of this rate structure is to provide a low rate for minimum quantity of water to persons on a low income, but affluent persons with low water consumption would also benefit. Lifeline rates are a form of subsidy to low income groups, which can result in an inequitable distribution of costs. Water utilities point out that this type of subsidy is a social function which may be best performed by the proper government agency other than the water utility.

The types of rate structures listed above are usually applied to the various customer classes based on the calculated cost to serve each of those customer classes. Common methods of cost allocation are the "commodity-demand" and "base-extra capacity" methods.

##### **Commodity - Demand Method**

In the commodity-demand method costs of service are separated into three primary cost functions - demand costs, commodity costs, and customer costs. Demand costs are associated with providing facilities to meet the peak rates of use, or demands, placed on the system by the customers. Commodity costs are costs that tend to vary with the quantity of water produced and sold. Commodity costs usually include costs of power, chemicals, purchased water, and other incremental elements, which increase or decrease, with the amount of water supplied. Customer costs comprise those costs associated with serving customers irrespective of the amount of water or maximum demand. Customer costs include meter reading, billing, customer accounting and collecting expense, as well as maintenance and capital charges on meters and services.

##### **Base-Extra Capacity Method**

In the base-extra capacity method, all costs are separated into three components - base cost, extra capacity cost, and customer cost. In detailed studies these components may be subject to further breakdown into subcomponents. Base costs are costs that tend to vary with the quantity of water used, or commodity costs, plus those operating and capital costs associated with service to customers under average load conditions, without the elements necessary to meet water use variations and resulting peaks in demand. Base costs include operating costs of supply, treatment, pumping, and distribution facilities, as well as capital costs for water plant investment associated with serving customers to the extent required for a constant, or average, annual rate of use. Extra capacity costs are costs associated with meeting rate-of-use requirements in excess of average, and include capital and operating charges for additional plant and system capacity beyond that required for average rate of use. These costs may be subdivided into costs necessary to meet maximum-hour extra demand, maximum-day extra demand, or other extra-demand criteria appropriate for a particular demand, just as in the commodity-demand method.

SECTION 7

RATE DESIGN PHILOSOPHY  
 (continued)

7.4 Types of Rates (continued)

To properly prepare a rate structure based upon the commodity-demand method or the basic-extra capacity method, the utility must have sufficient historical data on water consumption and water costs. This data is necessary for the distribution of the annual water costs to the various cost components such as treatment, transmission, distribution, storage, fire prevention, etc. A statistical analysis of the historical water use data is also required to establish the proper peak use factors for the different categories of water users such as residential, commercial, industrial, and institutional. Without reliable historical data, the development of either of these rate structures may not be possible.

Fire protection may be an additional basic cost function under either method of allocating costs.

The typical rate structure types can be summarized with pros & cons as follows:

<u>Type</u>	<u>Pros</u>	<u>Cons</u>
Flat Rate	Revenue predictability / stability	Not conservation minded
Declining Block	Revenue stability	Not conservation minded
Increasing Block	Promotes conservation	Punitive and revenue instability
Seasonal	Promotes conservation	Revenue instability
Lifeline	Promotes conservation / politically favorable	Social subsidy
Uniform Volume	Perceived as most fair / easy to administer	In some cases can result in improper price signal

## SECTION 7

### RATE DESIGN PHILOSOPHY (continued)

#### 7.5 Trends in Rate Making

At the current time, there seems to be a trend in rate making toward the uniform volume rate with a monthly service charge. Presently, the California Public Utilities Commission recommends that private utilities allocate 50% of the fixed costs component of revenue requirements to the service charge with the remainder allocated, along with variable cost, to the water use (or commodity) charge. Best Management Practices (BMP's) as adopted by the California Urban Water Conservation Council, specifically in BMP 11, have established that "conservation pricing provides incentives to customers to reduce average or peak use, or both". Both uniform volume rates and increasing block rates qualify for use within BMP 11. Increasing block rates are also called "tiered rates". Many municipalities have adopted a tiered rate structure to discourage inefficient use of water by their customers.

#### 7.6 Selection of Rate Design Method

In the preceding sections we have discussed rate philosophies and different types of rate structures which may be developed. However, before the design of a rate structure is completed, the administrators and policy-making authorities must make certain decisions. Under any rate methodology, the total revenues generated by or allocated to the operation of the water system should equal the costs of operating the water system (revenue requirements). Water rates should be designed to produce sufficient revenues to provide for the cost of furnishing adequate water service, including maintaining the system, debt service, and provide adequate funds for normal replacements and to protect future water supply. These revenue requirements should take into consideration not only the current year's requirements, but should be projected over a period of several years, in an effort to smooth out year to year revenue requirement fluctuations. Rates should also be designed in a manner which will recover the costs of serving different classes of customers while maintaining reasonable equity between the customer classes.

Fundamentally, rates must be designed so that total revenues will equal revenue requirements, and optimally, the water rates should be designed so that all "fixed" costs would be recovered by service charge revenues and all "variable" costs would be recovered through the commodity rate revenues. The advantage of this type of rate design is that the Water Authority could continue to meet its fixed obligations, even if all consumers suddenly and drastically reduced consumption of water, since the service charge is billed regardless of the amount of water used. Because water utilities are high fixed cost type of operations, a semi "flat rate" design usually occurs if rates are designed using this method, and rates designed strictly in this manner can be counter-productive to conservation efforts because a consumer can drastically reduce water consumption while impacting their water cost very little.

## SECTION 7

### RATE DESIGN PHILOSOPHY (continued)

#### 7.6 Selection of Rate Design Method (continued)

In addition to the above considerations, the Water Authority also must factor in the water supply issues facing the Mojave Basin area. Water Authority statistics show the average customer (3/4" connection) uses about 500 gallons per day (GPD). Estimates by the City of Adelanto's engineer have shown that each dwelling unit (each home or 3/4" connection) places about 200 GPD into the sewer system. The difference between the 500 GPD coming into each house and the 200 GPD leaving each house is assumed to have been used "outside" the home. It is this "outside" use that provides the most likely area for improvement in efficient use of water.

#### 7.7 Rate Setting Process

In very simple terms, the overall rate setting process is as follows:

Revenue Requirements	=	"How big is the pie"
	-and-	
Rate Structure	=	"How to slice the pie"

Most of the factors listed above influence the "size of the pie", whereas policy decisions primarily drive how to "slice the pie".

Typically, the rate setting process is a three-step process:

##### 1. Revenue requirements are as follows:

Operating expenses	(operate and maintain the utility on an ongoing basis)
+ Capital costs	(additions and replacements to existing utility plant)
+ Debt service	(principal and interest on debt)
+ <u>Funding of reserves</u>	(additions to reserve funds)
= <u>Revenue requirements</u>	

##### 2. Determine the Cost of Service

Once revenue requirements have been determined, Step 2 is to allocate these requirements to the various classes of services.

##### 3. Determine Rate Structure most appropriate to the circumstances.

Step 3 is to design a rate structure which most equitably and fairly spreads the costs to the customers.

SECTION 7

RATE DESIGN PHILOSOPHY  
 (continued)

7.8 Proposed Method of Rate Design

We recommend that a variation of the uniform volume rate method with a tiered commodity rate be used to design rates for Adelanto Water Authority. This method would identify various component categories of the overall revenue requirements and assign each to be recovered through either the service charge or through the commodity rate.

<u>Identified Component Category</u>	<u>Includes</u>	<u>Basis for Allocation</u>	<u>Recovered From</u>
Customer accounts	Meter reading, billing, and meter repairs	Meter size	Service charge
Administrative and general	District overhead, payroll, office administration, and conservation efforts	Meter size	Service charge
Source of supply and pumping	Cost of getting water from point of purchase to consumer	Consumption	Commodity charge
Delivery charge (transmission, distribution, and depreciation)	Cost of raw water and pumping assessments	Consumption	Commodity charge
Capital costs, debt service, and reserves	Capital projects and additions to reserves	Meter size and consumption	Service charge and commodity charge
Water treatment	Costs of items such as water testing	Consumption	Commodity charge

If the Water Authority rates were designed in this manner, the rates would be made up of essentially two components: the service charge (fixed) allocated based on meter size and the commodity rate based on water used. However, the identified component style of rate design can allow the Water Authority to readily pass any increase in costs to customers with minimal calculations. For example, if the cost of purchased power were increased, the increase in the "source of supply and pumping costs" would be passed through to the customer based on their consumption as part of the commodity charge and can be specifically identified on the billing. Likewise, any decreases in costs could be easily passed through by adjusting the commodity charge.

See Summary of Significant Assumptions  
 And Accounting Policies and Accountant's Report

## SECTION 8

### DEVELOPMENT AND DESIGN OF RATE SCHEDULES

#### 8.1 Rate Determination

In order to determine what the user rates must be for water service provided, the costs of providing that water or the revenue requirements must be determined.

As shown in Section 6.4, for the 2009-10 year, without an increase in water revenues, the Water Authority would experience an estimated revenue deficiency. To correct this situation, the Water Authority has the following options to allow it to recover all revenue requirements:

1. Increase user rates.
2. Reduce revenue requirements. (Defer capital projects or forego maintenance.)
3. Borrow funds to cover shortfall. (Defer increase to future periods.)
4. Draw from reserves. Note: Reserves beyond the debt service reserve (restricted) and the Rate Stabilization Fund are extremely limited.

Assuming options 2, 3, and 4 are ruled out, as demonstrated in Section 6.4 revenues for 2009-10 at present rates would need to be increased approximately 29% to meet revenue requirements for the 2009-10 year. As demonstrated in Table 19, in order to generate adequate revenues to meet revenue requirements in the 2010-11 year, the present revenues would need to be increased by approximately 196%.

The following sections of this report show the methodology (explained in Section 7.8) used to design rates which will generate adequate revenues to meet revenue requirements (as shown in Section 4.5).

SECTION 8

DEVELOPMENT AND DESIGN OF RATE SCHEDULES  
 (continued)

8.2 Rate Design

Table 20 below shows the estimated 2009-10 revenue requirements with additional breakdown as well as how other revenues have been allocated to offset certain costs.

TABLE 20  
 ALLOCATION OF REVENUE REQUIREMENTS  
 For the year ending June 30, 2010

Description	Table No.	Total	Service Charge	Commodity Charge
Operating expenses				
Source of supply	8	\$ 1,160,592	\$ -	\$1,160,592
Water treatment	8	70,000	-	70,000
Transmission & distribution	8	1,857,550	-	1,857,550
Customer accounts	8	100,000	100,000	-
Other operating expense	8	832,530	-	832,530
General & admin	8	173,500	173,500	-
Capital projects	9	-	-	-
Debt service	10	5,743,479	2,927,819	2,815,660
Reserve funding	11	-	-	-
		<u>9,937,651</u>	<u>3,201,319</u>	<u>6,736,332</u>
Less:				
Use of Rate Stabilization Fund	19	(1,350,000)		(1,350,000)
Use of general reserves	19	(2,563,402)		(2,563,402)
Less other revenue sources available:				
Interest earned	15	(1,373,251)	(1,373,251)	-
Capacity charges		-	-	-
Connection fees	15	-	-	-
Availability charges	15	<u>(500,000)</u>	<u>(500,000)</u>	-
Subtotal use of reserves		<u>(5,786,653)</u>	<u>(1,873,251)</u>	<u>(3,913,402)</u>
Net revenue requirements		<u>\$ 4,150,998</u>	<u>\$ 1,328,068</u>	<u>\$ 2,822,930</u>

See Summary of Significant Assumptions  
 And Accounting Policies and Accountant's Report

SECTION 8

DEVELOPMENT AND DESIGN OF RATE SCHEDULES  
 (continued)

8.2 Rate Design (continued)

Table 21 shows the calculation that develops rates designed to meet estimated 2009-10 revenue requirements.

Increasing rates in the upper tiers increases the amount of revenue collected in the upper tier, therefore, rates in the lower tiers are decreased in order to produce the desired level of revenue requirements.

TABLE 21  
 DEVELOPMENT OF RATES

For year ending June 30, 2010	Total	Service Charge	Commodity Charge
Rate calculation:			
Net revenue requirements	\$4,150,998	\$1,328,068	\$2,822,930
Service charge - # of 3/4" meter equivalents		8,271	
Annual charge per 3/4" meter		\$160.57	
Calculated monthly charge per 3/4" meter		\$13.38	
	USE →	<b>\$13.38</b>	
Commodity charge -			
Estimated water to be sold in CCFs			1,955,120
Calculated charge per CCF			\$1.44

Tier Rate Structure:				
	Units Per Month	In CCF's	Rate	Revenue
Non-Residential	All	200,000	\$1.25	\$ 250,000
Residential:				
1st Tier	1 to 20	1,404,096	\$1.25	1,755,120
2nd Tier	21 to 35	175,512	\$2.16	379,106
3rd Tier	Over 35	175,512	\$2.50	438,780
		1,955,120		\$ 2,823,006

SECTION 9  
 PROPOSED RATES

9.1 Proposed Rates

The rates designed in Section 8.2 would be adequate to generate revenues of \$4,150,998. As discussed in Section 8.1, this would represent a 29% increase in overall water revenues.

As demonstrated in section 6.4, Table 19, the years 2010-11 through 2012-13 also show revenue requirements exceeding revenue sources. Shown here are the approximate percentage increases needed to allow revenue sources to equal revenue requirements.

<u>Year Ending June 30,</u>	<u>Needed Increase</u>	<u>Approximate Percentage</u>
2010	\$930,214	29%
2011	\$6,449,765	196%
2012	\$6,653,725	203%
2013	\$7,521,993	229%

The Adelanto Water Authority obtains its ground water supply from wells in the Mojave Basin and is bound by the adjudication which restricts water pumped from the Mojave Basin ground water area. The City of Adelanto has total base annual production allowance annually. Due to the condition of the ground water basin, the watermaster has determined that 60% of the base annual production should be allowed as "free production". The free production allowance for the 2008-09 year is 4,418 acre feet. The following table shows the projected water needs of the Water Authority versus the free production allowance.

<u>Year Ending June 30,</u>	<u>Projected Sales (acre feet)</u>	<u>Unaccounted For %</u>	<u>Water Needed (acre feet)</u>	<u>Free Production Allowance<sup>1</sup> (acre feet)</u>	<u>Free Production Allowance % of Needs</u>
2009	4,408	7%	4,717	4,418	94%
2010	4,488	7%	4,802	4,418	92%
2011	4,568	7%	4,888	4,418	90%
2012	4,568	7%	4,888	4,418	90%
2013	4,568	7%	4,888	4,418	90%

<sup>1</sup>60% of base annual allowance

The Water Authority can pump quantities of water in excess of its "free production allowance" (FPA) if the water is available. However, the Authority will incur a replacement obligation for the water exceeding the FPA. Contained in Appendix C is a calculation that shows the estimated additional revenue requirements caused by excess pumping. Water Authority management recognizes the need to get its

SECTION 9

PROPOSED RATES  
 (continued)

9.1 Proposed Rates (continued)

customers to use water more efficiently which will reduce the overall need for water and, in turn, will reduce overall operating costs. In addition to ongoing water awareness measures put forth by the Water Authority, the implementation of a tiered rate structure will help induce customers to reduce water usage. The target usage per customer in the 2012-13 year has been identified as 16 CCFs monthly which equals about 400 gallons per day.

Proposed rates have identified three tiers for the commodity rate in the year 2009-10:

TABLE 22  
 TIERS FOR COMMODITY RATE  
 2009-10

	<u>GPD<sup>1</sup></u>	<u>Monthly Use in CCFs</u>	<u>Base Rate per CCF</u>	<u>Makeup Water Rate<sup>2</sup></u>	<u>Reduction Incentive</u>	<u>Total Commodity Rate per CCF</u>
1 <sup>st</sup> Tier	0-500	0-20	\$1.25	\$0.00	\$0.00	\$1.25
2 <sup>nd</sup> Tier	501-872	21-35	\$1.25	\$0.91	\$0.00	\$2.16
3 <sup>rd</sup> Tier	Over 873	Over 35	\$1.25	\$0.91	\$0.34	\$2.50

<sup>1</sup>Gallons per day

<sup>2</sup>\$399 per acre foot = \$0.91 per CCF

At the present time the Water Authority does not have statistics available to pinpoint precisely how much water has historically been used in each of the proposed tiers. Based on statistics gathered at another water purveyor in the Southern California area, an estimate has been made to predict how much of the total residential water use will occur in each of the established tiers.

<u>Tier</u>	<u>CCFs</u>	<u>Use</u>
1st	0 - 20	80%
2nd	21 - 35	10%
3rd	Over 35	10%

SECTION 9

PROPOSED RATES  
 (continued)

9.1 Proposed Rates (continued)

The total residential water consumption has been allocated to the tiers as follows:  
 (Note: Appendix A shows the detail calculations used to determine the following  
 projections.)

TABLE 23  
 ESTIMATED WATER CONSUMED BY TIER

	Estimated (in CCFs) For year ending June 30,			
	2010	2011	2012	2013
1 <sup>st</sup> Tier	1,404,096	993,808	794,840	794,840
2 <sup>nd</sup> Tier	175,512	497,420	596,904	596,904
3 <sup>rd</sup> Tier	175,512	298,452	397,936	397,936
Non Residential	<u>200,000</u>	<u>200,000</u>	<u>200,000</u>	<u>200,000</u>
	<u>1,955,120</u>	<u>1,989,680</u>	<u>1,989,680</u>	<u>1,989,680</u>

The above amounts have assumed that 3/4" customers will not respond to conservation measures and reduce annual usage by zero (0) CCFs per year in each of the next five years.

Another factor to consider in calculating proposed rates is how each existing customer will be impacted by a change in rate structure. The intent in this instance is, with the exception of water wasters, to not over burden any particular type of customer with a disproportionate share of the increase. For example, the Water Authority, in its present rates, has a "lifeline" rate whereby a customer meeting certain criteria would be charged a preferential rate for water, about 20%-40% less than the non-qualifying rate. Although a "lifeline" rate will not be proposed, consideration has been given not to implement an increase to this class of customer that will be disproportionate to the overall revenue increase. To accomplish this, while at the same time doing away with any "free water" included in the service charge, the preliminary test calculations were performed to see how a customer with low usage will be impacted.

Customer Using	Present Rates	Increase	Preliminary Rate
10 CCF's or less	\$18.47		\$13.38
Adjustment for 5 CCFs <sup>1</sup>	\$0.00		<u>\$6.25</u>
Monthly Service Charge Portion		6.28%	<u>\$19.63</u>

<sup>1</sup>Adjustment to account for the "free water" included in the present service charge (based on Table 17).

The test calculation above shows that a monthly service charge of approximately \$13.38 per month (without any free water usage included) would result in an approximate increase of 6% for a customer using 5 CCFs per month.

See Summary of Significant Assumptions  
 And Accounting Policies and Accountant's Report

SECTION 9

PROPOSED RATES  
 (continued)

9.1 Proposed Rates (continued)

The following are proposed rates designed to allow the Water Authority to generate adequate revenues to meet revenue requirements as determined in Section 4. Appendix E contains individual worksheets for each of the years 2009-10 through 2012-13 used to arrive at the proposed rates.

TABLE 24  
 PROPOSED RATES (in Dollars)  
 FOR 2010-13 YEARS

Description	(In Dollars) Year Ending June 30,					
	Meter Size	Meter Equivalent	2010	2011	2012	2013
Service charge - monthly	3/4"	1.00	\$13.38	\$18.90	\$18.98	\$26.50
	1"	1.67	\$22.34	\$31.56	\$31.70	\$44.26
	1 1/2"	3.33	\$44.56	\$62.94	\$63.20	\$88.25
	2"	5.33	\$71.32	\$100.74	\$101.16	\$141.25
	3"	10.00	\$133.80	\$189.00	\$189.80	\$265.00
	4"	16.67	\$223.04	\$315.06	\$316.40	\$441.76
Commodity charge (per CCF)	Tier 1		\$1.25	\$3.40	\$3.40	\$3.40
	Tier 2		\$2.16	\$4.40	\$4.40	\$4.40
	Tier 3		\$2.50	\$5.40	\$5.40	\$5.40
Non residential use Tier 1 Rate			\$1.25	\$3.40	\$3.40	\$3.40

Proposed rates have been calculated to generate revenues for the 2009-10 year adequate to meet the 2009-10 revenue requirements.

As noted in Section 8.2, the 2009-10 revenue requirements have included the utilization of the remaining Rate Stabilization Fund (\$1,350,000), and has exhausted the Water Authority reserves (\$2,563,402). This has reduced the overall 2009-10 revenue requirements by \$3,913,402. The rationale behind this utilization of reserves was to give the customer base ample opportunity to adjust water use habits in anticipation of tiered water rates.

SECTION 9

PROPOSED RATES  
 (continued)

9.1 Proposed Rates (continued)

The rate increase proposed for the 2009-10 year is intended to be step 1 of a two-step increase with the largest portion of the increase coming in year 2 (effective 7-1-10).

Appendix E demonstrates the calculation of rates for each of the years 2009-10 through 2012-13.

To achieve desired revenues and to encourage continued conservation, the amount of water allowed in each tier has been adjusted gradually downward to give customers a chance to modify their water use habits should they desire.

The following shows the proposed tiers to be established:

**in CCFs**

	<u>2009-10</u>	<u>2010-11</u>	<u>2011-12</u>	<u>2012-13</u>
1st Tier	1 - 20	1 - 15	1 - 10	1 - 10
2nd Tier	21 - 35	16 - 25	11 - 20	11 - 20
3rd Tier	36 +	26 +	21 +	21 +

**Gallons Per Day**

	<u>2009-10</u>	<u>2010-11</u>	<u>2011-12</u>	<u>2012-13</u>
1st Tier	0 - 500	0 - 375	0 - 250	0 - 250
2nd Tier	501 - 873	376 - 625	251 - 500	251 - 500
3rd Tier	874 +	626 +	501 +	501 +

The proposed gradual downward allowable in each tier is intended to result in the "indoor" use being charged in the first tier at the lowest rate (see Section 7.6) and outdoor use charged at the higher rate. Outdoor use is where the customer is assumed to have the greatest opportunity to reduce inefficient use.

SECTION 10

SUMMARY - RESULTS OF OPERATIONS AT PROPOSED RATES

10.1 Estimated Service Charge Revenue at Proposed Rates

These amounts have been determined by multiplying the number of customers from Section 3.3 by the proposed rates in Section 9.1.

TABLE 25  
 ESTIMATED SERVICE CHARGE REVENUES  
 FOR 2010-13 YEARS

Year End	Meter Size	3/4"	1"	1 1/2"	2"	3"	4"	Total
2010	Monthly Svc Chg	\$13.38	\$22.34	\$44.56	\$71.32	\$133.60	\$223.04	
	Avg Customers YE 6/30/10	7,513	343	9	24	1	1	
	Annual service charge revenue	\$1,206,287	\$91,951	\$4,812	\$20,540	\$1,608	\$2,676	\$1,327,872
2011	Monthly Svc Chg	\$18.90	\$31.56	\$62.94	\$100.74	\$189.00	\$315.06	
	Avg Customers YE 6/30/11	7,657	343	9	24	1	1	
	Annual service charge revenue	\$1,736,608	\$129,901	\$6,798	\$29,013	\$2,268	\$3,781	\$1,906,369
2012	Monthly Svc Chg	\$18.98	\$31.70	\$63.20	\$101.16	\$189.80	\$316.40	
	Avg Customers YE 6/30/12	7,657	343	9	24	1	1	
	Annual service charge revenue	\$1,743,958	\$130,477	\$6,826	\$29,134	\$2,278	\$3,797	\$1,916,470
2013	Monthly Svc Chg	\$26.50	\$44.26	\$88.25	\$141.25	\$265.00	\$441.76	
	Avg Customers YE 6/30/13	7,657	343	9	24	1	1	
	Annual service charge revenue	\$2,434,926	\$182,174	\$9,531	\$40,680	\$3,180	\$5,301	\$2,675,792

See Summary of Significant Assumptions  
 And Accounting Policies and Accountant's Report

SECTION 10

SUMMARY - RESULTS OF OPERATIONS AT PROPOSED RATES

10.2 Estimated Commodity Revenue at Proposed Rates

Section 3.5 shows the estimated water sales. This information was multiplied by proposed rates in Section 9.1.

TABLE 26  
 ESTIMATED COMMODITY REVENUE AT PROPOSED RATES  
 FOR 2010-13 YEARS

Year ending June 30,		Non- Residential	Tier 1	Tier 2	Tier 3	Total
2010	Commodity rate <sup>1</sup>	\$1.25	\$1.25	\$2.16	\$2.50	
	Estimated Usage (CCFs) <sup>2</sup>	200,000	1,404,096	175,512	175,512	
	Annual commodity charge revenue	\$250,000	\$1,755,120	\$379,106	\$438,780	\$2,823,006
2011	Commodity rate <sup>1</sup>	\$3.40	\$3.40	\$4.40	\$5.40	
	Estimated Usage (CCFs) <sup>2</sup>	200,000	993,808	497,420	298,462	
	Annual commodity charge revenue	\$680,000	\$3,378,947	\$2,188,648	\$1,611,641	\$7,859,236
2012	Commodity rate <sup>1</sup>	\$3.40	\$3.40	\$4.40	\$5.40	
	Estimated Usage (CCFs) <sup>2</sup>	200,000	794,840	596,904	397,936	
	Annual commodity charge revenue	\$680,000	\$2,702,456	\$2,626,378	\$2,148,854	\$8,157,688
2013	Commodity rate <sup>1</sup>	\$3.40	\$3.40	\$4.40	\$5.40	
	Estimated Usage (CCFs) <sup>2</sup>	200,000	794,840	596,904	397,936	
	Annual commodity charge revenue	\$680,000	\$2,702,456	\$2,626,378	\$2,148,854	\$8,157,688

<sup>1</sup>From Table 24

<sup>2</sup>From Table 23

SECTION 10

SUMMARY - RESULTS OF OPERATIONS AT PROPOSED RATES  
 (continued)

10.3 Results of Operations at Proposed Rates

Table 27 presents results of operations at proposed rates.

TABLE 27  
 RESULTS OF OPERATIONS AT PROPOSED RATES  
 FOR 2010-13 YEARS

Description	Table No.	Estimated (in dollars) For year ending June 30.			
		2010	2011	2012	2013
Revenue Sources:					
Service charge revenues	25	\$1,327,872	\$1,908,369	\$1,916,470	\$2,675,792
Commodity revenues	26	2,823,006	7,859,236	8,157,688	8,157,688
Other revenues	15	<u>1,873,251</u>	<u>1,873,251</u>	<u>1,873,251</u>	<u>1,873,251</u>
Subtotal revenues		<u>6,024,129</u>	<u>11,640,856</u>	<u>11,947,409</u>	<u>12,706,731</u>
Less:					
Operating expenses	8	4,194,172	4,427,947	4,631,907	4,849,700
Capital program	9	0	0	0	0
Debt service	10	5,743,479	7,180,601	7,180,601	7,831,076
Reserves	11	-	-	-	-
Subtotal use of revenue		<u>9,937,651</u>	<u>11,608,548</u>	<u>11,812,508</u>	<u>12,680,776</u>
Less:					
Use of reserves	20	<u>(3,913,402)</u>	-	-	-
Total use of revenues		<u>6,024,249</u>	<u>11,608,548</u>	<u>11,812,508</u>	<u>12,680,776</u>
Surplus (Deficit)		<u>\$ (120)</u>	<u>\$ 32,308</u>	<u>\$ 134,901</u>	<u>\$ 25,955</u>
Percent		0%	0%	1%	0%

See Summary of Significant Assumptions  
 And Accounting Policies and Accountant's Report

## SECTION 11

### COMPARISON OF AVERAGE BILLS

#### 11.1 Bill Comparison

As discussed in Section 6, overall revenues need to be increased by approximately 196% so that revenues will meet revenue requirements. On average, the typical 3/4" customer consumes approximately 20 CCFs per month. The proposed rate structure introduces meter equivalents to recognize the demand the larger meter sizes place on the system. However, the transition from the current rate structure to the proposed rate structure will impact individual customers differently. For example, under present rates a 3/4" customer would receive a monthly service charge of \$18.47 and be allowed 10 CCFs of water without additional charge. Under the proposed rate structure the customer would be billed \$18.47 per month service charge and be charged for all water used. A 3/4" customer using 20 CCFs under current rates is billed \$27.97 per month; under proposed rates that customer would be billed \$38.38 per month for the 2009-10 year. If that customer reduced their use by a third (7 units) (which is what the Water Authority is trying to achieve), the bill on 13 units would be \$29.63 – a 6% increase.

In the 2010-11 year if that same typical customer continues to use 20 CCFs per month of water, their bill would be \$91.90; up from \$27.97 under current rates, a 228% increase. However, if that customer reduced their use by a third, the monthly bill would increase to \$63.10 – only a 125% increase from present rates.

SECTION 11

COMPARISON OF AVERAGE BILLS  
 (continued)

11.1 Bill Comparison (continued)

The following table shows how varying customers will be impacted under the new rate structure.

TABLE 28  
 BILL COMPARISON

2009-10 Year

	Existing	Proposed	Existing	Proposed
Meter size	¾"	¾"	¾"	¾"
Usage (CCFs)	5	5	10	10
Service charge <sup>1</sup>	\$18.47	\$13.38	\$18.47	\$13.38
Commodity charge - 1st Tier <sup>2</sup>	\$0.00	\$6.25	\$0.00	\$12.50
Commodity charge - 2nd Tier <sup>2</sup>	\$0.00	\$0.00	\$0.00	\$0.00
Commodity charge - 3rd Tier <sup>2</sup>	<u>\$0.00</u>	<u>\$0.00</u>	<u>\$0.00</u>	<u>\$0.00</u>
	<u>\$18.47</u>	<u>\$19.63</u>	<u>\$18.47</u>	<u>\$25.88</u>
Percentage increase (decrease)		6%		40%
Meter size	¾"	¾"	¾"	¾"
Usage (CCF's)	18	18	25	25
Service charge <sup>1</sup>	\$18.47	\$13.38	\$18.47	\$13.38
Commodity charge - 1st Tier <sup>2</sup>	\$7.60	\$22.50	\$14.25	\$25.00
Commodity charge - 2nd Tier <sup>2</sup>	\$0.00	\$0.00	\$0.00	\$10.80
Commodity charge - 3rd Tier <sup>2</sup>	<u>\$0.00</u>	<u>\$0.00</u>	<u>\$0.00</u>	<u>\$0.00</u>
	<u>\$26.07</u>	<u>\$35.88</u>	<u>\$32.72</u>	<u>\$49.18</u>
Percentage increase (decrease)		38%		50%
Meter size	¾"	¾"	¾"	¾"
Usage (CCF's)	50	50	100	100
Service charge <sup>1</sup>	\$18.47	\$13.38	\$18.47	\$13.38
Commodity charge - 1st Tier <sup>2</sup>	\$38.00	\$25.00	\$85.50	\$25.00
Commodity charge - 2nd Tier <sup>2</sup>	\$0.00	\$32.40	\$0.00	\$32.40
Commodity charge - 3rd Tier <sup>2</sup>	<u>\$0.00</u>	<u>\$37.50</u>	<u>\$0.00</u>	<u>\$162.50</u>
	<u>\$56.47</u>	<u>\$108.28</u>	<u>\$103.97</u>	<u>\$233.28</u>
Percentage Increase (decrease)		92%		124%

<sup>1</sup>From Table 21

<sup>2</sup>From Table 22

SECTION 11

COMPARISON OF AVERAGE BILLS  
 (continued)

11.2 Comparison with Surrounding Communities

The proposed rates presented in Section 9 are designed to allow the City of Adelanto to recover its annual revenue requirements. Table 29 below shows how the present and proposed rates compare to surrounding communities.

TABLE 29

COMPARISON WITH SURROUNDING WATER PURVEYORS

2009-10 Year

	Assuming a ¾" Customer with Monthly Consumption of:		
	10 CCFs	20 CCFs	50 CCFs
City of Adelanto (present rates)	\$18.47	\$27.97	\$56.47
City of Hesperia	\$25.15	\$38.25	\$54.25
Victorville Water District	\$29.40	\$42.80	\$99.00
City of Adelanto (proposed rates)	\$25.88	\$38.88	\$108.28
Apple Valley Ranchos Water Co.	\$49.39	\$70.30	\$136.73

2010-11 Year

	Assuming a ¾" Customer with Monthly Consumption of:		
	10 CCFs	20 CCFs	50 CCFs
City of Hesperia	\$25.15	\$38.25	\$54.25
Victorville Water District	\$35.00	\$51.00	\$118.00
City of Adelanto (proposed rates)	\$35.88	\$91.90	\$248.90
Apple Valley Ranchos Water Co.	\$49.39	\$70.30	\$136.73

SECTION 12  
 ALTERNATIVE SOLUTION

The rates proposed in Section 9.1 were designed to allow the Water Authority to generate adequate revenues to meet the Water Authority's revenue requirements for years 2009-10 through 2012-13, while at the same time encouraging conservation in water use. In June 2009, the Water Authority conducted two Town Hall meetings to solicit input and alternative ideas from the public and customers of the Water Authority. One of the concerns raised at the Town Hall meetings was the "squeezing" of tiers in years 2011-12 and 2012-2013. Another concern was the proposed first tier commodity rate was higher than the rate charged by surrounding purveyors.

12.1 Alternate A

Based on input received at the Town Hall meetings, an alternative rate calculation has been performed and has been identified as "Alternate A".

Alternate A begins with the revenue requirements identified in Section 4.5 and includes the following three modifications:

- amount of water allowed in each tier
- holds the commodity rate constant in years 2010-11 through 2012-13
- reduction in 1996 Agreement optional payment

Alternate A holds the amount of water allowed in the tiers at the "Step 2" level rather than continuing to "squeeze" their tiers. The Alternate A modifications to tiers is as follows:

<i>In CCFs</i>	PROPOSED				ALTERNATE A			
	<u>2009-10</u>	<u>2010-11</u>	<u>2011-12</u>	<u>2012-13</u>	<u>2009-10</u>	<u>2010-11</u>	<u>2011-12</u>	<u>2012-13</u>
1st Tier	1 - 20	1 - 15	1 - 10	1 - 10	1 - 20	1 - 15	1 - 15	1 - 15
2nd Tier	21 - 35	16 - 25	11 - 20	11 - 20	21 - 35	16 - 25	16 - 25	16 - 25
3rd Tier	36 +	26 +	21 +	21 +	36 +	26 +	26 +	26 +

SECTION 12  
 ALTERNATIVE SOLUTION  
 (continued)

12.1 Alternate A (continued)

In addition, Alternate A commodity rate has been held steady in the years 2010-11 through 2012-13. A comparison of Alternative A and proposed rates is presented below:

\$ per CCF	PROPOSED				ALTERNATE A			
	2009-10	2010-11	2011-12	2012-13	2009-10	2010-11	2011-12	2012-13
1st Tier	\$1.25	\$3.40	\$3.40	\$3.40	\$1.25	\$2.40	\$2.40	\$2.40
2nd Tier	\$2.16	\$4.40	\$4.40	\$4.40	\$2.16	\$3.40	\$3.40	\$3.40
3rd Tier	\$2.50	\$5.40	\$5.40	\$5.40	\$2.50	\$4.40	\$4.40	\$4.40

The ultimate impact to the Water Authority of implementing the Alternative A rates is less revenue. The reduced revenue results in less funding available to make payments on the optional portion of the 1996 Agreement resulting in a deferral of the final payoff date of the 1996 Agreement until 2027 and costs the Water Authority approximately an additional \$7,000,000 in interest over the deferral period.

The impact on the customers under implementation of Alternative A is each customer will likely pay less than under the proposed rates.

Appendix E, page E-6 presents rate development worksheets using Alternate A rates and tiers. Appendix G, page G-8, demonstrates amortization schedule modifications for the 1996 Agreement if Alternate A rates are adopted.

SECTION 12  
 ALTERNATIVE SOLUTIONS  
 (continued)

12.1 Alternate A (continued)

TABLE 30  
 COMPARISON WITH SURROUNDING WATER PURVEYORS  
 INCLUDING ALTERNATE A

2009-10 Year

	Assuming a 3/4" Customer with Monthly Consumption of:		
	10 CCFs	20 CCFs	50 CCFs
City of Adelanto (present rates)	\$18.47	\$27.97	\$56.47
City of Hesperia	\$25.15	\$38.25	\$54.25
Victorville Water District	\$29.40	\$42.80	\$99.00
City of Adelanto (proposed rates)	\$25.88	\$38.38	\$108.28
City of Adelanto (Alternate A)	\$25.88	\$38.38	\$108.28
Apple Valley Ranchos Water Co.	\$49.39	\$70.30	\$136.73

2010-11 Year

	Assuming a 3/4" Customer with Monthly Consumption of:		
	10 CCFs	20 CCFs	50 CCFs
City of Hesperia	\$25.15	\$38.25	\$54.25
Victorville Water District	\$35.00	\$51.00	\$118.00
City of Adelanto (proposed rates)	\$35.88	\$91.90	\$248.90
City of Adelanto (Alternate A)	\$35.88	\$76.90	\$198.90
Apple Valley Ranchos Water Co.	\$49.39	\$70.30	\$136.73

SECTION 13  
SUMMARY AND RECOMMENDATIONS

13.1 Summary

As demonstrated in Section 6.4, forecasted revenue sources at present rates will not be adequate to meet forecasted revenue requirements for the years ending June 30, 2010 through June 30, 2013. Because revenue requirements are, by definition, the necessary costs of operating and maintaining the water system, there remain two possible courses of action; 1) identify and implement alternate revenue sources or 2) increase current user charges.

To enable the Water Authority to generate sufficient revenue to meet the forecasted revenue requirements, the present water rates need to be increased by approximately 29% for the year 2009-10 year with increases of 130% in 2010-11; 2% in 2011-12; and in the year 2012-13 an increase of approximately 9% will be needed. This immediate increase is necessary to allow the Water Authority to cover its full cost of service and meet debt service coverage requirements. A delay in the implementation of an increase is not an option. This situation could cause a deterioration of the Water Authority's financial condition and would result in a drain of reserves of the City which are ever more difficult to accumulate and maintain.

The rate calculation in Table 21 shows that simple uniform volume rates with a service charge would need to be (for a 3/4" customer) a monthly service charge of \$13.38 and \$1.44 for all water used. Proposed rates have been designed using an increasing tier structure to encourage conservation of water with the ultimate goal of reducing citywide total consumption to a point that does not exceed the free production allowance set by the Mojave Basin Area Water Master. The proposed rates have reduced the service charge in consideration of customers using the target amount of monthly usage (20 units) so that those customers as well as the low quantity users would not have such a dramatic increase at this time. A customer using 5 units (125 gallons per day) will only have a 6% increase under proposed rates.

## SECTION 13

### SUMMARY AND RECOMMENDATIONS (continued)

#### 13.2 Recommendations

We recommend the Water Authority effect the proposed rates presented in Section 9, Table 24 as soon as practicable. Due to possible changes in the water Authority's debt service situation, reserves are not adequate to sustain present rates in the short term. The recommended course of action presented in this report is for an immediate increase in rates. The Water Authority's present rate structure allows for 10 CCFs of water included in the service charge. This means that a household using 2 CCFs (50 gallons per day) is paying the same as a household using 10 CCFs (250 gallons per day). Also, a person needing 50 gallons per day can waste 200 gallons per day without impacting their monthly bill. The Water Authority needs to move away from allowing any "free water" included in the monthly bill and charge for any and all water consumed by a customer. The move away from free water towards charging for water fits the criteria of Best Management Practices No. 11 as prescribed by the California Urban Water Conservation Council that states "...billing for water service based on metered water use...".

Perhaps the most compelling reason for an immediate increase is to properly price the water to be able to send an accurate price signal to the users so the users can make informed decisions as to water use habits.

#### 13.3 Alternatives and Considerations

As described in Section 8, rates have been developed on a component basis; service charge and commodity charge. The result of this design method has placed the bulk of the increase in the commodity charge. The only real "given" in this situation is the need for an increase in total revenues. This could also be accomplished by adjusting only the commodity rate or by an across the board increase in present rates. For the reasons stated earlier in this report, the recommended method is a combination of adjustment to the service charge and commodity rate.

SECTION 14

SIGNIFICANT ASSUMPTIONS USED IN THIS REPORT

14.1 Operational Assumptions

1. Water Authority will continue to pump 100% of its water supply.
2. City management will continue present operating policies throughout the forecast period (as included in the budget).
3. The cost of electricity will increase by inflation only over the forecast period.
4. There will be decreases and increases to the number of customers during the forecast period.
5. The City will successfully complete a refinance of the 2007 Bond Issue under terms no less favorable than those shown in Appendix G.

14.2 Accounting Assumptions

1. Inflation will be 3% for each of the years in the forecast period.
2. The Water Authority will be able to meet all water related debt obligations in a timely manner.
3. Capital improvements will be as shown in Section 4.2.

APPENDIX E  
RATE CALCULATION WORKSHEETS

Appendix E  
 Development of Proposed Rates

2010

Description	Table No.	Total	Service Charge	Commodity Charge
<b>Operating expenses</b>				
Source of supply	8	\$1,160,592	\$ -	\$1,160,592
Water treatment	8	570,000	-	70,000
Transmission & distribution	8	1,857,550	-	1,857,550
Customer accounts	8	100,000	100,000	-
Other operating expense	8	832,530	-	832,530
General & admin	8	173,500	173,500	-
<b>Capital projects</b>				
Capital projects	9	-	-	-
<b>Debt service</b>				
Debt service	10	5,743,479	2,927,819	2,815,660
<b>Reserve funding (use)</b>				
Reserve funding (use)	11	(3,913,402)	-	(3,913,402)
		\$ 6,024,249	\$ 3,201,319	\$ 2,822,930
<b>Less other revenue sources available:</b>				
Interest earned	15	\$ (1,373,251)	\$ (1,373,251)	\$ -
Capacity charges		-	-	-
Connection fees	15	-	-	-
Availability charges	15	(500,000)	(500,000)	-
Net revenue requirements		\$ 4,150,998	\$ 1,328,068	\$ 2,822,930

Development of Rates:			
For year ending June 30, 2010	Total	Service Charge	Commodity Charge
<b>Rate calculation:</b>			
Net revenue requirements	\$ 4,150,998	\$ 1,328,068	\$ 2,822,930
Service charge - # of 3/4" meter equivalent		8,271	
Annual charge per 3/4" meter		\$160.57	
Calculated monthly charge per 3/4" meter		\$13.38	
USE	→	\$13.38	
Commodity charge -			
Estimated water to be sold in CCFs			1,955,120
Calculated charge per CCF			\$1.44

Tier Rate Structure:				
	Units Per Month	In CCF's	Rate	Revenue
Non-Residential	All	200,000	\$1.25	\$ 250,000
Residential:				
1st Tier	1 to 20	1,404,096	\$1.25	1,755,120
2nd Tier	21 to 35	175,512	\$2.16	379,106
3rd Tier	Over 35	175,512	\$2.50	438,780
		1,955,120		\$ 2,823,006

Appendix E  
 Development of Proposed Rates

2011

Description	Table No.	Total	Service Charge	Commodity Charge
Operating expenses				
Source of supply	8	\$1,303,360	\$ -	\$1,303,360
Water treatment	8	\$72,100	-	72,100
Transmission & distribution	8	1,913,276	-	1,913,276
Customer accounts	8	103,000	103,000	-
Other operating	8	857,506	-	857,506
General & admin	8	178,705	178,705	-
Capital projects	9	-	-	-
Debt service	10	7,180,601	3,500,000	3,680,601
Reserve funding (use)	11	-	-	-
		\$ 11,608,548	\$ 3,781,705	\$ 7,826,843
Less other revenue sources available:				
Interest earned	15	\$ (1,373,251)	\$ (1,373,251)	\$ -
Capacity charges		-	-	-
Connection fees	15	-	-	-
Availability charges	15	(500,000)	(500,000)	-
Net revenue requirements		\$ 9,735,297	\$ 1,908,454	\$ 7,826,843

Development of Rates:			
For year ending June 30, 2011	Total	Service Charge	Commodity Charge
Rate calculation:			
Net revenue requirements	\$ 9,735,297	\$ 1,908,454	\$ 7,826,843
Service charge - # of 3/4" meter equivalents		8,415	
Annual charge per 3/4" meter		\$226.79	
Calculated monthly charge per 3/4" meter		\$18.90	
<b>USE</b>		<b>\$18.90</b>	
Commodity charge -			
Estimated water to be sold in CCFs			1,988,680
Calculated charge per CCF			\$3.93

Tier Rate Structure:				
	Units Per Month	In CCF's	Rate	Revenue
Non-Residential	All	200,000	\$3.40	\$ 680,000
Residential:				
1st Tier	1 to 15	898,608	\$3.40	3,078,947
2nd Tier	16 to 25	497,420	\$4.40	2,188,648
3rd Tier	Over 25	298,452	\$5.40	1,611,641
		1,989,680		\$ 7,859,236

Appendix E  
 Development of Proposed Rates

2012

Description	Table No.	Total	Service Charge	Commodity Charge
<b>Operating expenses</b>				
Source of supply	8	\$1,413,580	\$ -	\$1,413,580
Water treatment	8	574,263	-	74,263
Transmission & distribution	8	1,970,675	-	1,970,675
Customer accounts	8	106,090	106,090	-
Other operating expense	8	883,232	-	883,232
General & admin	8	184,067	184,067	-
<b>Capital projects</b>				
Capital projects	9	-	-	-
<b>Debt service</b>				
Debt service	10	7,180,601	3,500,000	3,680,601
<b>Reserve funding (use)</b>				
Reserve funding (use)	11	-	-	-
		\$ 11,812,508	\$ 3,790,157	\$ 8,022,351
<b>Less other revenue sources available:</b>				
Interest earned	15	\$ (1,373,251)	\$ (1,373,251)	\$ -
Capacity charges		-	-	-
Connection fees	15	-	-	-
Availability charges	15	(500,000)	(500,000)	-
<b>Net revenue requirements</b>		<b>\$ 9,939,257</b>	<b>\$ 1,916,906</b>	<b>\$ 8,022,351</b>

Development of Rates			
For year ending June 30, 2012	Total	Service Charge	Commodity Charge
<b>Rate calculation:</b>			
Net revenue requirements	\$ 9,939,257	\$ 1,916,906	\$ 8,022,351
Service charge - # of 3/4" meter equivalent		8,415	
Annual charge per 3/4" meter		\$227.80	
Calculated monthly charge per 3/4" meter		\$18.98	
<b>USE</b>	<b>→</b>	<b>\$18.98</b>	
<b>Commodity charge -</b>			
Estimated water to be sold in CCFs			1,989,680
Calculated charge per CCF			\$4.03

Tier Rate Structure:				
	Units Per Month	In CCF's	Rate	Revenue
Non-Residential	All	200,000	\$3.40	\$ 680,000
Residential				
1st Tier	1 to 10	794,840	\$3.40	2,702,456
2nd Tier	11 to 20	596,904	\$4.40	2,626,378
3rd Tier	Over 20	397,936	\$5.40	2,148,854
		1,989,680		\$ 8,157,688

Appendix E  
 Development of Proposed Rates

2013

Description	Table No.	Total	Service Charge	Commodity Charge
<b>Operating expenses</b>				
Source of supply	8	\$1,534,822	\$ -	\$1,534,822
Water treatment	8	\$76,491	-	76,491
Transmission & distribution	8	2,029,794	-	2,029,794
Customer accounts	8	109,273	109,273	-
Other operating	8	909,729	-	909,729
General & admin	8	189,591	189,591	-
Capital projects	9	-	-	-
Debt service	10	7,831,076	4,250,000	3,581,076
Reserve funding (use)	11	-	-	-
		\$ 12,680,776	\$ 4,548,864	\$ 8,131,912
<b>Less other revenue sources available:</b>				
Interest earned	15	\$ (1,373,251)	\$ (1,373,251)	\$ -
Capacity charges		-	-	-
Connection fees	15	-	-	-
Availability charges	15	(500,000)	(500,000)	-
<b>Net revenue requirements</b>		<b>\$ 10,807,525</b>	<b>\$ 2,675,613</b>	<b>\$ 8,131,912</b>

Development of Rates:			
For year ending June 30, 2013	Total	Service Charge	Commodity Charge
<b>Rate calculation:</b>			
Net revenue requirements	\$ 10,807,525	\$ 2,675,613	\$ 8,131,912
Service charge - # of 3/4" meter		8,415	
Annual charge per 3/4" meter		\$317.96	
Calculated monthly charge per 3/4" meter		\$26.50	
<b>USE</b>	→	<b>\$26.50</b>	
Commodity charge -			
Estimated water to be sold in CCFs			1,989,680
Calculated charge per CCF			\$4.09

Tier Rate Structure:				
	Units Per Month	In CCF's	Rate	Revenue
Non-Residential	All	200,000	\$3.40	\$ 680,000
Residential:				
1st Tier	1 to 10	794,840	\$3.40	2,702,456
2nd Tier	11 to 20	596,004	\$4.40	2,626,376
3rd Tier	Over 20	397,936	\$5.40	2,148,854
		1,989,680		\$ 8,157,686

City of Adelanto  
Simplified rate calculation

Description	Table No	Total	Service Charge	Commodity Charge
<b>Operating expenses</b>				
Source of supply		\$1,203,300	\$	\$1,303,300
Water treatment		72,100		72,100
Transmission & distribution		1,013,276		1,813,276
Customer accounts		103,000	103,000	
Other operating		657,508		867,508
General & admin		178,705	178,705	
<b>Capital projects</b>				
Debt service (100 agreements)		2,730,020		2,730,020
2000 debt ret (15% for water)		3,008,841	2,280,000	728,841
<b>Reserve funding</b>				
		\$ 10,107,317	\$ 2,331,705	\$ 7,015,612
<b>Local other revenue sources available</b>				
Interest earned		\$ 1,373,281	\$ 123,281	\$ 1,250,000
Use of Rate Stabilization reserve		516,128		516,128
Capacity charges				
Connection fees				
Availability charges		500,000	500,000	
<b>Net revenue requirements</b>				
		\$ 7,778,078	\$ 1,608,424	\$ 5,879,654

Divided by 365 meter equivalents	6.415	
Per 3/4" meter equivalent	226.79	
Divided by 12 months	12	
Service Charge per month	18.90	
Divided by CCF's of water sold		1,989,600
Charge per CCF		7.786,036

estimate of water sold in	rate	revenue
60% tier 1	2.40	2,663,139
25% tier 2	3.40	1,991,226
15% tier 3	4.40	1,313,659
		5,968,024

3/4" meter equivalents	8,415
x 12	100,980
	1,908,232
	7,786,036

City of Adelanto  
Simplified rate calculation

Description	Table No	Total	Service Charge	Commodity Charge
<b>Operating expenses</b>				
Source of supply		\$1,413,680	\$	\$1,413,680
Water treatment		74,263		74,263
Transmission & distribution		1,070,075		1,870,075
Customer accounts		100,000	100,000	
Other operating		683,232		883,232
General & admin		184,007	184,007	
<b>Capital projects</b>				
Debt service (100 agreements)		2,018,550		2,018,550
2000 debt ret (15% for water)		3,008,941	2,250,000	758,941
<b>Reserve funding</b>				
		\$ 9,059,407	\$ 2,549,157	\$ 7,119,250
<b>Local other revenue sources available</b>				
Interest earned		\$ 1,373,281	\$ 123,281	\$ 1,250,000
Use of Rate Stabilization reserve				
Capacity charges				
Connection fees				
Availability charges		500,000	500,000	
<b>Net revenue requirements</b>				
		\$ 7,986,156	\$ 1,916,986	\$ 5,869,250

Divided by 365 meter equivalents	8.415	
Per 3/4" meter equivalent	227.80	
Divided by 12 months	12	
Service Charge per month	18.98	
Divided by CCF's of water sold		1,989,600
Charge per CCF		7.786,156

estimate of water sold in	rate	revenue
60% tier 1	2.40	1,893,868
25% tier 2	3.40	1,691,278
15% tier 3	4.40	1,313,199
		4,898,345

3/4" meter equivalents	8,415
x 12	100,980
	1,916,900
	7,786,156

City of Adelanto  
Simplified rate calculation

Description	Table No	Total	Service Charge	Commodity Charge
<b>Operating expenses</b>				
Source of supply		\$1,534,822	\$	\$1,534,822
Water treatment		76,491		76,491
Transmission & distribution		2,028,794		2,828,794
Customer accounts		100,273	100,273	
Other operating		600,779		800,779
General & admin		188,591	188,591	
<b>Capital projects</b>				
Debt service (100 agreements)		1,908,001		1,908,001
2000 debt ret (15% for water)		3,008,418	3,000,000	808,418
<b>Reserve funding</b>				
		\$ 10,410,717	\$ 3,248,604	\$ 7,119,913
<b>Local other revenue sources available</b>				
Interest earned		\$ 1,373,281	\$ 123,281	\$ 1,250,000
Use of Rate Stabilization reserve				
Capacity charges				
Connection fees				
Availability charges		500,000	500,000	
<b>Net revenue requirements</b>				
		\$ 8,565,524	\$ 2,625,513	\$ 5,869,911

Divided by 365 meter equivalents	8.415	
Per 3/4" meter equivalent	317.96	
Divided by 12 months	12	
Service Charge per month	26.50	
Divided by CCF's of water sold		1,989,600
Charge per CCF		8,946,358

estimate of water sold in	rate	revenue
60% tier 1	2.40	1,193,808
25% tier 2	3.40	497,420
15% tier 3	4.40	298,452
		1,989,680

3/4" meter equivalents	8,415
x 12	100,980
	2,615,976
	8,946,358

APPENDIX F  
 BILL COMPARISONS

2009-10 Year Assumption: 3/4" Meters using 20 units per month

	Service	Commodity Charge				Total
	Charge	Tier 1	Tier 2	Tier 3	Tier 4	
Victorville (current)	\$16.00	\$26.80	-	-	-	\$42.80
Victorville (11/09)	\$17.50	\$29.40	-	-	-	\$46.90
Victorville (11/10)	\$19.00	\$32.00	-	-	-	\$51.00
Apple Valley Ranchos (current)	\$29.16	\$28.32	\$12.82	-	-	\$70.30
City of Hesperia (current)	\$17.45	\$7.70	\$13.10	-	-	\$38.25
Adelanto (current)	\$18.47	\$9.50	-	-	-	\$27.97
Adelanto (proposed 09-10)	\$13.38	\$25.00	-	-	-	\$38.38
Adelanto (proposed 10-11)	\$18.90	\$51.00	\$22.00	-	-	\$91.90
Adelanto (Alternate A 10-11)	\$18.90	\$36.00	\$17.00	-	-	\$71.90



**Adelanto Public Utilities Authority  
Notice of Proposed  
Water and Sewer Rate Adjustment**

April 27, 2009

The Adelanto Public Utility Authority (APUA) is proposing adjustments to the Monthly Rates for Water and Sewer services. At the regular meeting of the City Council/APUA Board on April 22, 2009 APUA Resolution 09-001 was passed, which set the public hearing for June 24, 2009, at 7:00PM.

1) **Reasons for the Rate Adjustment**

APUA utility customers have been paying the same rates since 2001. Since then the costs to operate the utilities have increased substantially. The APUA has utilized reserves and revenue from new service connections to pay for the increased costs. Reserves are now close to depletion and the new service connections have halted due to the downturn in the residential construction market.

Also, the APUA has incurred costs to construct a new wastewater treatment plant to accommodate the City for several years.

2) **Standby Fees**

In addition to the water and sewer rate adjustment, the APUA is also proposing an adjustment to the Water and Sewer Standby Fees. Standby Fees are only levied on vacant, underdeveloped property to pay for maintenance costs for the portion of the water and sewer system that has been built to accommodate future development and to purchase water rights as water demand increases. Without an increase to the Standby Fees the Water and Sewer rate increase would be substantially higher.

3) **Proposed Base Monthly Water Service Rates**

Base Rate by Meter Size	Proposed
3/4"	\$13.38
1"	\$22.34
1 1/2"	\$44.55
2"	\$71.32
3"	\$133.80
4"	\$229.04

[1] Residential Meters are 3/4"

4) **Proposed Monthly Water Usage (Commodity) Rates**

Tier	Rate per Unit
1) 1-20 Units	1.25
2) 21-35 Units	2.16
3) 36 Units and above	2.50

[1] 1 Unit of water is equal to 1 hundred cubic feet of water or 748 gallons

5) **Proposed Monthly Sewer Usage**

Single Family Residential Flat Sewer Rate	\$47.82
Multi Family Residential Flat Sewer Rate	\$47.82 per unit
Commercial/Industrial Flat Sewer Rates	\$47.82 per EDU

[1] EDU = Equivalent Dwelling Unit is a calculation that involves a rating based on the average number of employee per business type.

6) **TOWN HALL MEETINGS** – The City will be conducting two (2) Town Hall meetings on June 17 & 18, 2009 at 7:00PM. The meetings are offered to Utility customers and are intended to share the methodology used to derive the rates and answer any questions that may exist in advance of the Public Hearing. The Town Hall meetings will be held at:

Desert Trails Elementary School  
14350 Bellflower Street  
Adelanto, California 92301  
Wednesday, June 17, 2009  
Multi-Purpose Room  
7:00PM-9:00PM

Adelanto Math and Science Academy  
17931 Jonathon Street  
Adelanto, California 92301  
Thursday, June 18, 2009  
Multi-Purpose Room  
7:00PM-9:00PM

7) **A PUBLIC HEARING ON THE PROPOSED WATER AND SEWER RATES WILL BE HELD ON JUNE 24, 2009, AT 7:00 PM IN CITY COUNCIL CHAMBERS, 11600 AIR EXPRESSWAY, ADELANTO, CA 92301.**

NET DEBT SERVICE

Adelanto Public Utility Authority  
 Refunding Revenue Bonds, Series 2009

Period Ending	Total Debt Service	General Fund	Debt Service Reserve Fund	Net Debt Service	5 9/16 W	4 1/8 S
06/30/2010	3,414,099.72	750,000		2,664,099.72	1571,819	1,092,281
06/30/2011	5,099,900.00			5,099,900.00	3,008,941	2,090,959
06/30/2012	5,099,900.00			5,099,900.00	3,008,941	2,090,959
06/30/2013	6,202,400.00			6,202,400.00	3,659,416	2,542,984
06/30/2014	6,201,500.00			6,201,500.00		
06/30/2015	6,202,475.00			6,202,475.00		
06/30/2016	6,204,600.00			6,204,600.00		
06/30/2017	6,203,475.00			6,203,475.00		
06/30/2018	6,202,193.75			6,202,193.75		
06/30/2019	6,198,537.50			6,198,537.50		
06/30/2020	6,201,575.00			6,201,575.00		
06/30/2021	6,200,312.50			6,200,312.50		
06/30/2022	6,205,912.50			6,205,912.50		
06/30/2023	6,197,687.50			6,197,687.50		
06/30/2024	6,204,875.00			6,204,875.00		
06/30/2025	6,199,093.75			6,199,093.75		
06/30/2026	6,202,000.00			6,202,000.00		
06/30/2027	6,202,462.50			6,202,462.50		
06/30/2028	6,202,525.00			6,202,525.00		
06/30/2029	6,201,537.50			6,201,537.50		
06/30/2030	6,198,850.00			6,198,850.00		
06/30/2031	6,200,350.00			6,200,350.00		
06/30/2032	6,199,000.00			6,199,000.00		
06/30/2033	6,200,850.00			6,200,850.00		
06/30/2034	6,199,675.00			6,199,675.00		
06/30/2035	6,199,250.00			6,199,250.00		
06/30/2036	6,198,175.00			6,198,175.00		
06/30/2037	6,199,875.00			6,199,875.00		
06/30/2038	6,197,775.00			6,197,775.00		
06/30/2039	6,200,125.00			6,200,125.00		
06/30/2040	6,204,825.00		6,205,912.50	-1,087.50		
	187,245,812.22	750,000	6,205,912.50	180,289,899.72		

CITY OF ADELANTO  
ADELANTO PUBLIC UTILITY AUTHORITY  
GENERAL FUND OBLIGATION

ORIG AMT	21,841,391.00
INTEREST	5.00%
ANNUAL PMT	4,171,660.00
TERM	
ENDING BALANCE	

5.00%

DATE	PMT NO	TOTAL PMT	INT PORTION	PRIN PORTION	BALANCE
					21,841,391.00
2009-10	1	4,171,660.00	1,092,069.55	3,079,590.45	18,761,800.55
2010-11	2	4,171,660.00	938,090.03	3,233,569.97	15,528,230.58
2011-12	3	4,171,660.00	776,411.53	3,395,248.47	12,132,982.11
2012-13	4	4,171,660.00	606,649.11	3,565,010.89	8,567,971.22
2013-14	5	4,171,660.00	428,398.56	3,743,261.44	4,824,709.78
2014-15	6	4,171,660.00	241,235.49	3,930,424.51	894,285.27
2015-16	7	938,999.53	44,714.26	894,285.27	0.00
		25,968,959.53	4,127,568.53	21,841,391.00	

SOURCES AND USES OF FUNDS

Adelanto Public Utility Authority  
Refunding Revenue Bonds, Series 2009

Dated Date 08/31/2009  
Delivery Date 08/31/2009

Sources:	SERIESA	SERIESB	Total
<b>Bond Proceeds:</b>			
Par Amount	61,350,000.00	16,645,000.00	77,995,000.00
Net OID	-988,866.85	-268,298.90	-1,257,165.75
	<u>60,361,133.15</u>	<u>16,376,701.10</u>	<u>76,737,834.25</u>
<b>Other Sources of Funds:</b>			
Transfer for Prior Rate Stabilization Fund	592,331.19		592,331.19
Debt Service Reserve Fund	3,308,384.00	971,710.56	4,280,094.56
Transfer for Prior Rate Stabilization Fund		157,668.81	157,668.81
	<u>3,900,715.19</u>	<u>1,129,379.37</u>	<u>5,030,094.56</u>
	<u>64,261,848.34</u>	<u>17,506,080.47</u>	<u>81,767,928.81</u>
Uses:	SERIESA	SERIESB	Total
<b>Project Fund Deposits:</b>			
Swap Termination Payment	3,472,500.00	1,051,500.00	4,524,000.00
<b>Refunding Escrow Deposits:</b>			
Cash Deposit	54,395,000.00	14,720,000.00	69,115,000.00
<b>Other Fund Deposits:</b>			
Debt Service Reserve Fund	4,881,501.79	1,324,410.71	6,205,912.50
Capitalized Interest	589,941.66	160,058.34	750,000.00
	<u>5,471,443.45</u>	<u>1,484,469.05</u>	<u>6,955,912.50</u>
<b>Delivery Date Expenses:</b>			
Cost of Issuance	428,690.94	116,309.06	545,000.00
Underwriter's Discount	490,800.00	133,160.00	623,960.00
	<u>919,490.94</u>	<u>249,469.06</u>	<u>1,168,960.00</u>
<b>Other Uses of Funds:</b>			
Additional Proceeds	3,413.95	642.36	4,056.31
	<u>64,261,848.34</u>	<u>17,506,080.47</u>	<u>81,767,928.81</u>

Notes:

Assumes \$450,000 for Cost of Issuance  
Assumes Underwriter's Discount not to exceed \$7/bond

BOND PRICING

Adelanto Public Utility Authority  
 Refunding Revenue Bonds, Series 2009

Bond Component	Maturity Date	Amount	Rate	Yield	Price
Serial Bond:					
	11/01/2012	1,125,000	4.000%	3.870%	100.379
	11/01/2013	1,170,000	4.000%	4.300%	98.861
	11/01/2014	1,225,000	5.000%	4.760%	101.081
	11/01/2015	1,290,000	5.000%	5.010%	99.940
	11/01/2016	1,355,000	5.000%	5.310%	98.164
	11/01/2017	1,425,000	5.250%	5.540%	98.107
	11/01/2018	1,500,000	5.500%	5.740%	98.299
	11/01/2019	1,590,000	5.750%	5.900%	98.856
	11/01/2020	1,685,000	6.000%	6.070%	99.428
	11/01/2021	1,795,000	6.000%	6.180%	98.466
	11/01/2022	1,900,000	6.250%	6.300%	99.546
	11/01/2023	2,030,000	6.250%	6.400%	98.605
	11/01/2024	2,155,000	6.250%	6.480%	97.788
		<u>20,245,000</u>			
2029 Term Bond:					
	11/01/2029	13,150,000	6.500%	6.780%	96.934
2034 Term Bond:					
	11/01/2034	18,435,000	7.000%	7.070%	99.168
2039 Term Bond:					
	11/01/2039	26,165,000	7.000%	7.150%	98.140
		<u>77,995,000</u>			

Dated Date	08/31/2009	
Delivery Date	08/31/2009	
First Coupon	05/01/2010	
Par Amount	77,995,000.00	
Original Issue Discount	-1,257,165.75	
Production	76,737,834.25	98.388146%
Underwriter's Discount	-623,960.00	-0.800000%
Purchase Price	76,113,874.25	97.588146%
Accrued Interest		
Net Proceeds	76,113,874.25	

NET DEBT SERVICE

Adelanto Public Utility Authority  
 Refunding Revenue Bonds, Series 2009

Period Ending	Total Debt Service	General Fund	Debt Service Reserve Fund	Net Debt Service
06/30/2010	3,414,099.72	750,000		2,664,099.72
06/30/2011	5,099,900.00			5,099,900.00
06/30/2012	5,099,900.00			5,099,900.00
06/30/2013	6,202,400.00			6,202,400.00
06/30/2014	6,201,500.00			6,201,500.00
06/30/2015	6,202,475.00			6,202,475.00
06/30/2016	6,204,600.00			6,204,600.00
06/30/2017	6,203,475.00			6,203,475.00
06/30/2018	6,202,193.75			6,202,193.75
06/30/2019	6,198,537.50			6,198,537.50
06/30/2020	6,201,575.00			6,201,575.00
06/30/2021	6,200,312.50			6,200,312.50
06/30/2022	6,205,912.50			6,205,912.50
06/30/2023	6,197,687.50			6,197,687.50
06/30/2024	6,204,875.00			6,204,875.00
06/30/2025	6,199,093.75			6,199,093.75
06/30/2026	6,202,000.00			6,202,000.00
06/30/2027	6,202,462.50			6,202,462.50
06/30/2028	6,202,525.00			6,202,525.00
06/30/2029	6,201,537.50			6,201,537.50
06/30/2030	6,198,850.00			6,198,850.00
06/30/2031	6,200,350.00			6,200,350.00
06/30/2032	6,199,000.00			6,199,000.00
06/30/2033	6,200,850.00			6,200,850.00
06/30/2034	6,199,675.00			6,199,675.00
06/30/2035	6,199,250.00			6,199,250.00
06/30/2036	6,198,175.00			6,198,175.00
06/30/2037	6,199,875.00			6,199,875.00
06/30/2038	6,197,775.00			6,197,775.00
06/30/2039	6,200,125.00			6,200,125.00
06/30/2040	6,204,825.00		6,205,912.50	-1,087.50
	187,245,812.22	750,000	6,205,912.50	180,289,899.72

BOND DEBT SERVICE

Adelanto Public Utility Authority  
 Refunding Revenue Bonds, Series 2009

Period Ending	Principal	Coupon	Interest	Debt Service
06/30/2010			3,414,099.72	3,414,099.72
06/30/2011			5,099,900.00	5,099,900.00
06/30/2012			5,099,900.00	5,099,900.00
06/30/2013	1,125,000	4.000%	5,077,400.00	6,202,400.00
06/30/2014	1,170,000	4.000%	5,031,500.00	6,201,500.00
06/30/2015	1,225,000	5.000%	4,977,475.00	6,202,475.00
06/30/2016	1,290,000	5.000%	4,914,600.00	6,204,600.00
06/30/2017	1,355,000	5.000%	4,848,475.00	6,203,475.00
06/30/2018	1,425,000	5.250%	4,777,193.75	6,202,193.75
06/30/2019	1,500,000	5.500%	4,698,537.50	6,198,537.50
06/30/2020	1,590,000	5.750%	4,611,575.00	6,201,575.00
06/30/2021	1,685,000	6.000%	4,515,312.50	6,200,312.50
06/30/2022	1,795,000	6.000%	4,410,912.50	6,205,912.50
06/30/2023	1,900,000	6.250%	4,297,687.50	6,197,687.50
06/30/2024	2,030,000	6.250%	4,174,875.00	6,204,875.00
06/30/2025	2,155,000	6.250%	4,044,093.75	6,199,093.75
06/30/2026	2,300,000	6.500%	3,902,000.00	6,202,000.00
06/30/2027	2,455,000	6.500%	3,747,462.50	6,202,462.50
06/30/2028	2,620,000	6.500%	3,582,525.00	6,202,525.00
06/30/2029	2,795,000	6.500%	3,406,537.50	6,201,537.50
06/30/2030	2,980,000	6.500%	3,218,850.00	6,198,850.00
06/30/2031	3,190,000	7.000%	3,010,350.00	6,200,350.00
06/30/2032	3,420,000	7.000%	2,779,000.00	6,199,000.00
06/30/2033	3,670,000	7.000%	2,530,850.00	6,200,850.00
06/30/2034	3,935,000	7.000%	2,264,675.00	6,199,675.00
06/30/2035	4,220,000	7.000%	1,979,250.00	6,199,250.00
06/30/2036	4,525,000	7.000%	1,673,175.00	6,198,175.00
06/30/2037	4,855,000	7.000%	1,344,875.00	6,199,875.00
06/30/2038	5,205,000	7.000%	992,775.00	6,197,775.00
06/30/2039	5,585,000	7.000%	615,125.00	6,200,125.00
06/30/2040	5,995,000	7.000%	209,825.00	6,204,825.00
	77,995,000		109,250,812.22	187,245,812.22

CITY OF ADELANTO  
 ADELANTO PUBLIC UTILITY AUTHORITY  
 GENERAL FUND OBLIGATION

ASSUMED PAYMENTS UNDER ALT A

ORIG AMT	21,841,391.00
INTEREST	5.00%

5.00%

DATE	PMT NO	TOTAL PMT	INT PORTION	PRIN PORTION	BALANCE
					21,841,391.00
2009-10	1	1,092,069.55	1,092,069.55	0.00	21,841,391.00
2010-11	2	2,730,629.00	1,092,069.55	1,638,559.45	20,202,831.55
2011-12	3	2,018,559.00	1,010,141.58	1,008,417.42	19,194,414.13
2012-13	4	1,909,661.00	959,720.71	949,940.29	18,244,473.84
2013-14	5	1,909,661.00	912,223.69	997,437.31	17,247,036.53
2014-15	6	1,909,661.00	862,351.83	1,047,309.17	16,199,727.36
2015-16	7	1,909,661.00	809,986.37	1,099,674.63	15,100,052.73
2016-17	8	1,909,661.00	755,002.64	1,154,658.36	13,945,394.37
2017-18	9	1,909,661.00	697,269.72	1,212,391.28	12,733,003.09
2018-19	10	1,909,661.00	636,650.15	1,273,010.85	11,459,992.24
2019-20	11	1,909,661.00	572,999.61	1,336,661.39	10,123,330.85
2020-21	12	1,909,661.00	506,166.54	1,403,494.46	8,719,836.39
2021-22	13	1,909,661.00	435,991.82	1,473,669.18	7,246,167.21
2022-23	14	1,909,661.00	362,308.36	1,547,352.64	5,698,814.57
2023-24	15	1,909,661.00	284,940.73	1,624,720.27	4,074,094.30
2024-25	16	1,909,661.00	203,704.72	1,705,956.28	2,368,138.02
2025-26	17	1,909,661.00	118,406.90	1,791,254.10	576,883.92
2026-27	18	605,728.12	28,844.20	576,883.92	0.00
		33,182,239.67	11,340,848.67	21,841,391.00	

Appendix H  
 Residential Use Allowed in Each Tier

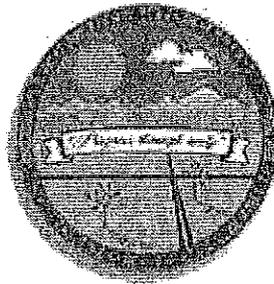
Meter Size	Meter Equivalency		2009-10	2010-11	2011-12	2012-13
3/4"	1.00	Tier 1	1 - 20	1 - 15	1 - 10	1 - 10
		Tier 2	21 - 35	16 - 25	11-20	11 - 20
		Tier 3	36 +	26 +	21 +	21 +
1"	1.67	Tier 1	1 - 33	1 - 25	1 - 17	1 - 17
		Tier 2	34 - 58	26 - 42	18 - 33	18 - 33
		Tier 3	58 +	42 +	33 +	33 +
1-1/2"	3.33	Tier 1	1 - 67	1 - 50	1 - 33	1 - 33
		Tier 2	68 - 117	51 - 83	34 - 67	34 - 67
		Tier 3	117 +	83 +	67 +	67 +
2"	5.33	Tier 1	1 - 107	1 - 80	1 - 53	1 - 53
		Tier 2	108 - 187	81 - 133	54 - 107	54 - 107
		Tier 3	187 +	133 +	107 +	107 +
3"	10.00	Tier 1	1 - 200	1 - 150	1 - 100	1 - 100
		Tier 2	201 - 350	151 - 250	101 - 200	101 - 200
		Tier 3	350 +	250 +	200 +	200 +
4"	16.67	Tier 1	1 - 335	1 - 250	1 - 167	1 - 167
		Tier 2	335 - 583	251 - 417	168 - 334	168 - 334
		Tier 3	583 +	417 +	334 +	334 +

# ADELANTO PUBLIC UTILITY AUTHORITY

## REVENUE REQUIREMENT REPORT AND SEWER RATE CALCULATION

FOR THE YEARS 2009-10 THROUGH 2012-13

JUNE 2009



*City of*  
**ADELANTO**  
*"Progress through unity"*

Prepared by:  
Christian L. Aldinger, CPA  
Peasley, Aldinger & O'Bymachow  
June 2009

ADELANTO PUBLIC UTILITY AUTHORITY  
REPORT ON REVENUE REQUIREMENTS  
AND SEWER RATES  
JUNE 2009

ADELANTO PUBLIC UTILITY AUTHORITY  
REPORT ON REVENUE REQUIREMENTS AND SEWER RATES

JUNE 2009

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ADELANTO PUBLIC UTILITY AUTHORITY  
REPORT ON REVENUE REQUIREMENTS AND SEWER RATES

JUNE 2009

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PEASLEY, ALDINGER & O'BYRNACIOW  
AN ACCOUNTANCY CORPORATION

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CHRISTIAN L. ALDINGER, CPA

2120 MAIN STREET, SUITE 265  
HUNTINGTON BEACH, CALIFORNIA 92648

(714) 536-4418  
FAX (714) 536-2039

June 29, 2009

Mr. Bill Aylward  
Finance Director  
Adelanto Public Utility Authority  
11600 Air Base Road  
Adelanto, California 92301

Re: Report on Revenue Requirements and Sewer Rates

Dear Mr. Aylward:

At your request and from information provided by Adelanto Public Utility Authority, we have prepared this report entitled "Report on Revenue Requirements and Sewer Rates". The report includes a forecast of future operating expenses, debt service, capital costs and reserves (the components of revenue requirements), and the revenues necessary to cover those components for the years ending June 30, 2010 through June 30, 2013. The report includes historical operating data and projections of future operations used in estimating the components of revenue requirements and a summary of significant assumptions as well as our recommendations for modifications which should be made to rates as a result of our study.

This financial forecast presents, to the best of management's knowledge and belief, the Public Utility Authority department's expected results of operations at present and proposed rates for the forecast period. These forecasts are based on management's assumptions, reflecting conditions management expects to exist and the course of action management expects to take during the forecast period. There will usually be differences between forecasted and actual results because events and circumstances frequently do not occur as expected, and those differences may be material. Management and Public Utility Authority staff are responsible for representations about its plans and expectations and for disclosure of significant information that might affect the ultimate realization of the forecasted results.

Because the procedures we performed during this engagement do not constitute an examination of a presentation of forecasted information in accordance with standards established by the American Institute of Certified Public Accountants, we do not express an opinion on whether the Revenue Requirements Study is presented in conformity with AICPA presentation guidelines or on whether the underlying assumptions provide a reasonable basis for the presentation. Additionally, the procedures that we performed did not constitute an audit or review of this information or of the financial statements of Adelanto Public Utility Authority. Consequently, we do not express an opinion or any other form of assurance on those financial statements, the achievability of the forecast or the

Mr. Bill Aylward  
Adelanto Public Utility Authority  
June 29, 2009

Re: Report on Revenue Requirements and Sewer Rates

reasonableness of the underlying assumptions. We have no responsibility to update our report for events and circumstances occurring after the date of this report. Our engagement cannot be relied upon to disclose errors, irregularities, or illegal acts, including fraud or defalcations that may exist.

It is our understanding this report is for the use of the Public Utility Authority's Board of Directors and Public Utility Authority Staff to assist them in determining proper sewer use rates and sewer connection fees and, consequently, is intended for internal use only. In accordance with standards established by the American Institute of Certified Public Accountants, the terms of our agreement with the Public Utility Authority specify that if management intends to reproduce and publish the forecast and our report thereon, it must be reproduced in its entirety. You have agreed to allow us to approve both the first and subsequent corrected drafts of the document containing the forecast and any accompanying material prior to publication.

We appreciate the opportunity to be of service to the Public Utility Authority and would like to thank the Public Utility Authority Staff for their assistance and cooperation.

Sincerely,

PEASLEY, ALDINGER & O'BYMACHOW  
An Accountancy Corporation



Christian L. Aldinger  
Certified Public Accountant

## EXECUTIVE SUMMARY

The purpose of this report is to determine sewer, connection, and availability charges needed to generate revenues adequate to meet revenue requirements using equitable design criteria with an emphasis on the construction and maintenance of a reliable sewage conveyance system over the next 5 to 20 years.

Estimated revenue requirements (Section 4) for the years 2009-10 through 2012-13 exceed estimated revenues at present rates (Section 6). This results in a need to increase overall revenues by approximately 294% for the 2009-10 year (Section 9). To preserve the Public Utility Authority's financial condition to the extent possible, the Public Utility Authority should not delay the implementation of the rate increase. There are several compelling reasons to implement an increase immediately (Section 12). Proposed rates as presented in Section 9 have been designed using sound rate design philosophy (Section 7) to generate adequate revenues (Section 10) to meet estimated revenue requirements (Section 4).

As a result of this study, rates have been designed to generate increased total revenues.

The Public Utility Authority completed its Master Plan in 2007 and this Master Plan identifies the need for approximately \$2,825,400 of capital improvements for the proposed relief sewer and future system improvements to the sewer and wastewater treatment facilities simply to serve currently connected parcels, approved tracts, and tentative tracts. Additionally, the Master Plan has identified sewer requirements for near build-out condition for the entire City. Without the Lewis Home development, the estimated cost of improvements needed for the near saturation condition is approximately \$97,025,000. Sewer and wastewater treatment provisions for the Lewis Home development are estimated to be an additional \$27,432,000.

At present rates, the 2009-10 year total estimated revenues are approximately \$3.12 million short of operating expenses (see Table 14). Any delay in a rate increase or an increase of a lesser amount may result in a delay in the capital program or in a usage of reserves for which no plan exists for replacement of existing reserves.

## SECTION 1

### PURPOSE AND SCOPE OF REPORT

#### 1.1 Purpose of Study

This report has been prepared to provide information regarding the Adelanto Public Utility Authority's estimated sewer revenue requirements for years ending June 30, 2010, through June 30, 2013, and the user charges available to cover those requirements. Results of operations under present and proposed rates are presented in this report to provide the City Council members, sewer users, and other interested parties with data used to support proposed changes in rates and connection fees.

The purpose of this revenue requirement study is three-fold; to:

- Establish sewer service rates designed to recover costs of service, to generate funds for capital purposes (capital improvements and replacements), debt service, and to fund reserves.
- Use rate design criteria to equitably apportion the revenue requirements over the various classifications of users in relationship to their contribution to cost of service.
- Recommend rates that address environmental and health concerns associated with sewer conveyance and wastewater treatment.

Revenue requirements have been based primarily on budget estimates provided by the Public Utility Authority for the years ending June 30, 2009 and 2010, and as forecasted for the years ending June 30, 2011, 2012, and 2013. Revenue requirements are estimated on a normal year basis, excluding unusual revenues and unusual costs, and including revenues and costs that would normally occur but for some reason were not reported in the latest recorded year or included in the most recent budget. A test of adequacy of the rates is shown in Section 10, the results of operations at proposed rates.

#### 1.2 Scope of Report

This report contains information provided by the Public Utility Authority's staff about the sewer system operations and estimated results of operations for the years ending June 30, 2009 through June 30, 2013.

## SECTION 2

### BACKGROUND INFORMATION

#### 2.1 History of Operations

The Authority is a joint exercise of powers authority organized and existing under and by virtue of the Joint Powers Agreement between the City and the Agency. The Authority was formed for the purpose of owning, operating, and maintaining the Utility System. The Utility System currently consists of the Wastewater Enterprise and the Water Enterprise serving the City. The Joint Powers Act provides for the issuance of revenue bonds of joint exercise of powers authorities, such as the Authority, to be repaid from certain revenues. The Authority has no ad valorem taxing power. Pursuant to the Joint Powers Act, the Authority is authorized to issue its revenue bonds for the purpose of financing, among other things, public capital improvement projects of the Utility System.

The Authority contracts with the City for operating the Wastewater Enterprise and the Water Enterprise.

The Authority currently owns and operates a sewer collection system that serves approximately 7,500 equivalent dwelling units (EDUs). EDU flow is described as the amount of wastewater that a typical family residential connection would produce per day. Currently, Public Utility Authority service includes 6,191 residential EDUs, 638 commercial/industrial EDUs, and 747 correctional facility EDUs.

SECTION 2

BACKGROUND INFORMATION  
(continued)

2.2 Organization

The Authority is governed by a five-member commission which consists of all the members of the City Council. The Mayor of the City is appointed as the President of the Authority. The Authority has no taxing power.

The Authority's members and term expiration dates are:

<u>Commission Member</u>	<u>Term Expires</u>
Charley B. Glasper, President	November 2010
Trinidad Perez, Vice President	November 2010
Ed Camargo	November 2012
Gene Plehe	November 2010
Cari Thomas	November 2012

The City Manager is responsible for coordination of all departments and daily operations of City business, including operation of the Wastewater Enterprise, the Water Enterprise and acts as the Executive Director of the Authority. Current City Staff assigned to administer the Authority are:

D. James Hart, City Manager and Authority Executive Director  
Cindy Herrera, City Clerk and Authority Secretary

SECTION 2

BACKGROUND INFORMATION  
 (continued)

2.3 Present Operations

The service area of the Wastewater Enterprise encompasses the entire City limits of Adelanto. The sewer collection system primarily consists of gravity collection sewers which tie into gravity trunk sewers. One portion of the service area located on the west side of the City north of Air Base Road is served by a sewer life station and force main.

Sewer service pipeline ranges from 8" to 21" for a combined total of more than 33 miles of existing trunk sewer pipeline as show below.

TABLE 1  
 EXISTING SEWER PIPELNE

Pipe Size	Total Length	
	Feet	Miles
8"	37,291.11	7.06
10"	27,669.51	5.24
12"	64,570.22	12.23
15"	37,869.03	7.17
18"	8,040.88	1.52
21"	1,331.52	0.25
Total	176,772.27	33.47

Source: Sewer Master Plan 2007

2.4 Sewer Charges and Fees

Currently, the Authority has three types of sewer charges:

- Sewer Service Charges
- Sewer Connection Fees
- Sewer Availability Charges

Monthly sewer service charges are billed to sewer customer connected to the sewer system. This charge pays for the cost of the Authority to operate, manage, and maintain the sewer system for existing developed properties in the service area. The current monthly service charge is \$11.43 per EDU.

SECTION 2

BACKGROUND INFORMATION  
(continued)

2.4 Sewer Charges and Fees (continued)

Sewer connection fees are for new land users and are collected at the time of connection to the sewer system. These connection fees are to pay for collection, treatment, and disposal facilities needed to accommodate new development. The current fee is \$86.68 per fixture.

Sewer availability charges are levied, by property tax assessments, on vacant undeveloped properties which benefit from the availability of sewer system capacity. The charges vary based on the undeveloped acreage's proximity to sewer services.

Parcels of land within Zone A require no substantial improvements in order to be connected to the sewer system.

Zone B acreage does have immediate sewer availability; however, a moderate capital improvement would be required to extend service to this area.

Since Zone C property is located more than 1,660 feet from existing facilities, the Authority does not presently levy availability charges on this acreage.

SEWER CHARGES AND FEES  
AT PRESENT RATES

<u>Type of Charge</u>		<u>Present Rates</u>
Service Charge	Per month per EDU	\$11.43
Availability Charges	Zone A	\$27.15
	Zone B	\$9.05
	Zone C	\$8.70
Connect Fee	Per fixture unit	\$86.68

SECTION 3

STATISTICAL INFORMATION

This section contains statistical information, as recorded and as estimated for future years. Accurate projections are critical in order that proper and appropriate results are obtained. The following subsections show the current statistical information and estimated changes for future years. Projections have been made by the City. Presently, the Public Utility Authority's sewer revenues are generated through a combination of two charges – monthly service fees and connection fees. The Public Authority does have the ability to impose "availability" fees on undeveloped land.

- Service charges – monthly service charged based on EDUs
- Connection fees – per fixture for new connections

3.1 Number of Customers by Land Use Category

The Public Utility Authority's sewer customers are categorized by land use category. Active customers as of June 2009 are shown below:

TABLE 2  
 CUSTOMERS BY LAND USE CATEGORY

<u>Description</u>	<u>EDUs</u>
Residential	
Single Family	5,318
Multi Family	873
Subtotal Residential	6,191
Non-Residential	
Commercial and Industrial	638
Correctional Facility	747
Schools	0
Subtotal Non-Residential	1,385
Total	7,576

SECTION 3

STATISTICAL INFORMATION  
 (continued)

3.2 Growth of Customers

Table 3 shows total EDUs as of June 2009 and estimated additions through 2013. Customer EDU additions shown below have been estimated by management. See Appendix A for detailed data of customer additions by land use type.

TABLE 3  
 TOTAL CUSTOMER ADDITIONS

	EDUs	Connections
June 30, 2009	7,576	-
Added YE 6/30/2010	289	-
Removed YE 6/30/10	-	-
As of June 30, 2010	7,865	-
Added YE 6/30/11	-	-
Removed YE 6/30/11	-	-
As of June 30, 2011	7,865	-
Added YE 6/30/2012	-	-
Removed YE 6/30/12	-	-
As of June 30, 2012	7,865	-
Added YE 6/30/2013	-	-
Removed YE 6/30/13	-	-
As of June 30, 2013	7,865	-

SECTION 3

STATISTICAL INFORMATION  
 (continued)

3.3 Equivalent Dwelling Units (EDUs)

The demand a user places on the sewer system is best measured by equivalent dwelling units. An "EDU" is described as being the amount of wastewater that a typical single family residential connection would produce per day. The amount of wastewater placed into the sewer system per EDU is 200 gallons per day.

3.4 Average Wastewater Flow - All Customers

Table 4 shows average wastewater flow for all customers for the years ended June 30, 1999 through June 30, 2005 based on the actual flow for the years.

TABLE 4  
 WASTEWATER FLOW

For the year ending June 30,	Total Connections	Total EDUs	Total Wastewater Flow (MG/year)	Average Wastewater Flow		
				Gallons per month	In EDUs	
					Gallons per day	Gallons per Day
1999	3,793	4,047	367	30,583,333	7,557	248
2000	3,797	4,051	292	24,366,176	6,015	198
2001	3,839	4,096	304	25,330,774	6,184	203
2002	4,016	4,275	318	26,536,694	6,207	204
2003	4,324	4,606	317	26,377,785	5,727	188
2004	5,153	5,440	370	30,833,333	5,668	186
2005	6,222	6,542	520	43,333,333	6,624	218

Source: Sewer Master Plan 2007

SECTION 4  
 REVENUE REQUIREMENTS

In order to determine the adequacy of present rates, in light of current and future estimated costs of operation and to assess the Public Utility Authority's ability to meet its responsibilities now and into the future, the first step is to determine the revenue requirements and then determine if revenue sources are adequate to meet the revenue requirements.

Revenue requirements are as follows:		<u>Section Reference</u>
Operating expenses	(operate and maintain the utility on an ongoing basis)	4.1
Capital costs	(additional and replacements to existing utility plant)	4.2
Debt service	(principal and interest on debt)	4.3
<u>Funding of reserves</u>	(additions to reserve funds)	4.4
<u>Revenue requirements</u>		

4.1 Operating Expenses

The first component of revenue requirements is operating expenses. Table 5 shows sewer system operating expenses as estimated for the years ending June 30, 2010 through 2013. For the estimated years, the amounts have generally been increased by an inflation factor of 3% per annum.

TABLE 5  
 ESTIMATED OPERATING EXPENSES

Description	Estimated (in dollars) For year ending June 30,			
	2010	2011	2012	2013
Facilities and maintenance	\$ 412,000	\$ 424,360	\$ 437,092	\$ 450,204
Purchased power	250,000	257,500	265,225	273,182
Consulting and outside services	886,000	912,580	939,958	968,157
Other operating expenses	83,000	85,490	88,056	90,699
General and administrative	<u>151,000</u>	<u>155,530</u>	<u>160,196</u>	<u>165,002</u>
	<u>\$1,782,000</u>	<u>\$1,835,460</u>	<u>\$1,890,527</u>	<u>\$1,947,244</u>

Appendix B includes a detail schedule of budgeted operating expenses for each of the years ended June 30, 2009 through 2010. The 2009-10 budget represents the Public Utility Authority's expected course of action and operational plan for the next and future years. In most cases the budget provides the best information to estimate future revenue requirements.

SECTION 4  
 REVENUE REQUIREMENTS  
 (continued)

4.2 Capital Costs

The second component of revenue requirements is capital costs. Capital costs include additions to and replacement of existing utility plant. Refer to Appendix C for details of capital items for the years 2009-10 through 2012-13. Also included in Appendix C is a list of planned maintenance projects as identified in the Master Plan. Due to the expected magnitude of the rate increase, no capital projects have been identified and included herein.

TABLE 6  
 CAPITAL ADDITIONS AND REPLACEMENTS

<u>Description</u>	Estimated (in dollars) For year ending June 30,			
	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Capital projects:				
Project 1	\$ -	\$ -	\$ -	\$ -
Project 2	-	-	-	-
Other	-	-	-	-
	\$ -	\$ -	\$ -	\$ -
Less: funded with new debt issue	-	-	-	-
Net capital	\$ -	\$ -	\$ -	\$ -

SECTION 4

REVENUE REQUIREMENTS  
 (continued)

4.3 Debt Service Cost

The third component of revenue requirements is debt service. The Public Utility Authority has debt obligations identified as 1996 Purchase Agreement Payments as well as Refunding Revenue Bonds 2007, Series A and Refunding Revenue Bonds 2005 Series B issued in December 2007. The Public Utility Authority plans to refinance the issue in 2009. Appendix F contains the proposed debt service schedule.

TABLE 7  
 DEBT SERVICE

<u>Description</u>	<u>Estimated (In dollars)</u> <u>For year ending June 30,</u>			
	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
1996 Purchase Agmt (Minimum) <sup>1</sup>	\$ 321,558	\$ 276,219	\$ 228,613	\$ 178,627
1996 Purchase Agmt (Optional) <sup>2</sup>	906,782	952,121	999,727	1,049,713
2009 Issue	<u>1,092,281</u>	<u>2,090,959</u>	<u>2,090,959</u>	<u>2,542,984</u>
<b>Total</b>	<b><u>\$ 2,320,621</u></b>	<b><u>\$ 3,319,299</u></b>	<b><u>\$ 3,319,299</u></b>	<b><u>\$ 3,771,324</u></b>

<sup>1</sup>As amended 1/26/1998 and modified 2/1/2000 and further amended 9/1/2005. The balance due as of 6/30/2008 per the audited financial statements is \$6,431,169. Minimum annual payments are 5% of the outstanding balance.

<sup>2</sup>Optional payments are allowed to reduce the remaining balance due under the Agreement.

SECTION 4  
 REVENUE REQUIREMENTS  
 (continued)

4.4 Reserves

The fourth component of revenue requirements is the funding and preservation of reserves. Reserves are typically used to construct facilities, infrastructure replacement, unforeseen contingencies, and to offset various liabilities. The major categories of reserves that have been established by the Public Utility Authority are delineated below:

TABLE 8  
 RESERVE FUNDING

<u>Description</u>	<u>Estimated (in dollars)</u> <u>For year ending June 30,</u>			
	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Rate stabilization	\$ 352,000	\$ -	\$ -	\$ -
General reserves	-	-	-	-
Total	<u>\$ 352,000</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>

SECTION 4

REVENUE REQUIREMENTS  
 (continued)

4.4 Reserves (continued)

• General Reserves

At the present time, the Public Utility Authority does not have a formally established mechanism to fund a general reserve. With this rate study, a general reserve has been recommended to be used for the specific purpose of accumulating funds for major infrastructure replacement. Without reserves on hand to react to emergencies and to take advantage of timing situations, the Public Utility Authority could end up paying more either through the higher cost of construction or reduced services. With an adequate reserve, when existing infrastructure is in need of replacement, the funds will be available. Due to the amount of the rate increase, no amount has been included in revenue requirements to fund reserves.

Table 9 shows the status of reserves for the period June 30, 2009 through 2013.

TABLE 9  
 RESERVES

<u>Balance June 30,</u>	<u>Estimated (In dollars)</u>		
	<u>Debt Service</u>	<u>Reserves</u>	<u>Stabilization</u>
2009	\$ -	\$ -	\$ -
Added	-	-	352,000
Interest earned	-	-	-
Used	-	-	-
2010	-	-	352,000
Added	-	-	-
Interest earned	-	-	-
Used	-	-	(352,000)
2011	-	-	-
Added	-	-	-
Interest earned	-	-	-
Used	-	-	-
2012	-	-	-
Added	-	-	-
Interest earned	-	-	-
Used	-	-	-
2013	\$ -	\$ -	\$ -

See Summary of Significant Assumptions  
 And Accounting Policies and Accountant's Report

SECTION 4  
 REVENUE REQUIREMENTS  
 (continued)

4.5 Summary of Revenue Requirements

All components of revenue requirements have been brought together below to summarize revenue requirements. Table 10 shows total estimated revenue requirements for the years 2009-10 through 2012-13.

TABLE 10  
 SUMMARY OF REVENUE REQUIREMENTS

<u>Description</u>	<u>Table No.</u>	<u>Estimated (in dollars)</u> <u>For year ending June 30,</u>			
		<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Operating expenses	5	\$ 1,782,000	\$ 1,835,460	\$ 1,890,527	\$ 1,947,244
Capital program	6	-	-	-	-
Debt service	7	2,320,821	3,319,299	3,319,299	3,771,324
Reserves	8	362,000	-	-	-
Total revenue requirement		<u>\$ 4,454,821</u>	<u>\$ 5,154,759</u>	<u>\$ 5,209,826</u>	<u>\$ 5,718,568</u>

SECTION 5

OTHER REVENUE SOURCES

After revenue requirements have been determined and prior to calculating revenues at present rates, other revenue sources must be identified and quantified.

5.1 Interest Earned

For purposes of the rate calculation, interest earned on investments has not been estimated. It is expected that the amount will not be significant.

5.2 Availability / Capacity Charges

Currently, the Utility Authority charges a standby fee (a sewer availability charge) that is unrestricted and can be used to offset revenue requirements. The fee is based on acreage and is intended to recover costs associated with maintaining surplus capacity in the sewer system which is intended to be available when vacant property is developed. The 2009-10 budget estimates the sewer availability charges to be \$275,000.

As land is developed, the standby fee acreage will diminish and in turn the standby fee revenue will decrease. Utility Authority management has estimated the annual revenue from standby fees will not decrease over the next five years.

5.3 Connection Charges

Pursuant to Ordinance No. 3, the Public Utility Authority charges \$86.68 per new "fixture connection" newly connected to the system.

The City of Adelanto considers connection charges to be impact fees and, therefore, these fees are restricted for capital improvements and to repay debt service issued to construct projects to support future growth.

Based on the expected additions to total customers as shown in Table 3, the following connection fee revenue is expected:

TABLE 11  
 CONNECTION FEE INCOME

	Estimated (in dollars) For year ending June 30,			
	2010	2011	2012	2013
Number of new connections	0	0	0	0
Connection fee				
Annual connection fee	\$ -	\$ -	\$ -	\$ -

See Summary of Significant Assumptions  
 And Accounting Policies and Accountant's Report

SECTION 5  
 OTHER REVENUE SOURCES  
 (continued)

5.4 Summary of Other Revenue Sources

Other than the items listed in 5.1 through 5.3, there are no other revenue sources identified and used in this rate study. The following is a summary of other revenue sources:

TABLE 12  
 SUMMARY OF OTHER REVENUE SOURCES

<u>Description</u>	<u>Section No.</u>	Estimated (in dollars) For year ending June 30,			
		<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Interest earned	5.1	\$ -	\$ -	\$ -	\$ -
Availability fee	5.2	275,000	275,000	275,000	275,000
Connection fees	5.3	-	-	-	-
Total other revenue sources		<u>\$ 275,000</u>	<u>\$ 275,000</u>	<u>\$ 275,000</u>	<u>\$ 275,000</u>

SECTION 6

SUMMARY - RESULTS OF OPERATIONS AT PRESENT RATES

6.1 Estimated Revenues at Present Rates

The following table shows estimated revenues at present rates. The revenues have been developed by multiplying the estimated number of EDUs (Appendix A) by the current service charge (Section 2.4).

TABLE 13  
 ESTIMATED REVENUES AT PRESENT RATES

<u>Description</u>	Estimated (in dollars) For year ending June 30,			
	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Average EDUs	7,720	7,865	7,865	7,865
Present charge per EDU	\$11.43	\$11.43	\$11.43	\$11.43
12 months	x 12	x 12	x 12	x 12
Total annual revenues	<u>\$ 1,058,875</u>	<u>\$ 1,078,763</u>	<u>\$ 1,078,763</u>	<u>\$ 1,078,763</u>

SECTION 6

SUMMARY - RESULTS OF OPERATIONS AT PRESENT RATES  
 (continued)

6.2 Estimated Results of Operations at Present Rates

Table 14 shows estimated results at present rates:

TABLE 14  
 ESTIMATED RESULTS OF OPERATIONS AT PRESENT RATES

Description	Table No.	Estimated For the year ending June 30,			
		2010	2011	2012	2013
<b>Sources</b>					
Service charge revenues	13	\$ 1,058,875	\$ 1,078,763	\$ 1,078,763	\$ 1,078,763
Other revenues	12	275,000	275,000	275,000	275,000
<b>Total revenues</b>		<b>\$ 1,333,875</b>	<b>\$ 1,353,763</b>	<b>\$ 1,353,763</b>	<b>\$ 1,353,763</b>
<b>Uses</b>					
Operating expenses	5	\$ 1,782,000	\$ 1,835,460	\$ 1,890,527	\$ 1,947,244
Capital program	6	-	-	-	-
Debt service	7	2,320,621	3,319,299	3,319,299	3,771,324
Reserves	8	352,000	-	-	-
<b>Total revenue requirements</b>		<b>\$ 4,454,621</b>	<b>\$ 5,154,759</b>	<b>\$ 5,209,826</b>	<b>\$ 5,718,568</b>
Use of reserves - RSF	9	-	(352,000)	-	-
Use of reserves - general	9	-	-	-	-
<b>Net revenue requirements</b>		<b>4,454,621</b>	<b>4,802,759</b>	<b>5,209,826</b>	<b>5,718,568</b>
<b>Surplus (Deficit)</b>		<b>\$ (3,120,746)</b>	<b>\$ (3,448,996)</b>	<b>\$ (3,856,063)</b>	<b>\$ (4,364,805)</b>

## SECTION 7

### RATE DESIGN PHILOSOPHY

#### 7.1 Rate Design Philosophy

Following is a general discussion of the various sewer rate structures, which have been commonly used by other providers and focuses on the rate structure we feel would be best for the Adelanto Public Utility Authority.

In considering the alternatives available as a basis for the design of sewer use rates, it should be noted that government-owned water utilities have a high degree of flexibility in designing rate structures, because the rate setting process is strictly a local governmental agency issue. The City Council establishes the revenue requirements and resulting rates. In setting user rates, the Council should keep in mind fairness among customer groups, otherwise known as rate equity.

Before any rate structure can be evaluated for equity, one must consider the factors that can impact and determine rate equity. Comparing rates among communities can often result in surprising and vastly differing data. Many factors affect the rates charged by utilities. Common factors that can have effects on sewer rates are:

#### System Design

- Geography
- Age
- Production, Distribution, and Operational Efficiency

#### Demand

- Type of Customer Base
- Future Growth Considerations
- Peak Use by Customers

#### Legal, Political & Regulatory Consideration

- Investor-owned Utility
- Government-owned Utility
- Subsidies
- Goals and Policies of Governing Unit

## SECTION 7

### RATE DESIGN PHILOSOPHY (continued)

#### 7.1 Rate Design Philosophy (continued)

Each of the major factors presented above impact the resulting rate structure of each individual utility. These factors identified above are interrelated to one another and any emphasis on one area can directly impact or may inversely impact the ultimate rate structure of a utility.

In considering the equity of a rate structure one must remember that what is equitable depends on the circumstances at a point in time. Often, a rate structure is the result of a consensus of the many factors involved.

Many times, policy decisions are made to achieve a particular result. The argument can be made that a rate structure established to achieve a particular priority would be considered equitable. Because of the potential impact of policy decisions on rate structure, extreme care must be taken in drawing any conclusions when comparing rates between entities or assessing equity without first exploring and understanding those policies.

#### 7.2 Fundamental Rate Design Principles

To design rates, which are considered fair and equitable, rates should be designed using predetermined fundamental rate design principles. The following are fundamental areas, which should be considered and prioritized prior to designing a rate structure:

Adequacy	Rates should be established to meet the full revenue requirements of the utility.
Justifiability	Rates should be cost based and fairly apportion costs over the users. (The cost to provide service should be equitably spread over all customers.)
Simplicity	Rates should be easy to explain, understand, and administer. Simple rates have the perception of being more fair and non-discriminatory. Complex rates require additional administration.
Predictability	Rates should result in total revenues and customer bills which are predictable and stable.
Conservation	Rates should encourage users to make efficient use of resources (health and safety concerns, possible water reclamation).
Continuity	Rates should be established in a manner which recognizes the obligation of the utility to provide a certain level of service into perpetuity.

## SECTION 7

### RATE DESIGN PHILOSOPHY (continued)

#### 7.3 Rate Philosophy

##### **Value**

Simply put, it can be said that most customers only care about two things when it comes to sewer services:

- Is capacity sufficient?
- Is price agreeable – how much does it cost?

Both the customers and the utility are concerned with the level of service reliability and the cost of service. However, the utility and the customer view these items from different perspectives. The utility is concerned with the level of service provided and the cost to provide that level of service. The customers are concerned with the level of service received and the cost of service received. The customer is concerned mostly about today and less about tomorrow. Whereas the concept of providing service must be concerned with today and also with the future, meaning that the manner of today's operations must consider the continuity of quality service into tomorrow and beyond, and at the same time must consider the value to the customer.

##### **Subsidies**

In certain cases communities have created rate structures with economic development in mind or rates which attempt to cure a social problem such as welfare rates or lifeline rates. Rates of these types are merely subsidies provided to specific user classes. Policy decision can override a theoretically sound technical calculation and result in a rate structure which allows interclass and intraclass subsidies. (Interclass = between classes; Intraclass = between users in a class). One must recognize that a rate structure providing interclass/intraclass subsidies can be considered fair and equitable given particular policy decisions.

##### **Rate Making is an Art, Not an Exact Science**

In a perfect model, each and every user would pay the exact cost of the service received - no more, no less. However, even in a perfect model the issue that exists is the perfect price paid by a user depends not only on the demands and use of that customer, but also on all other customers. For example, usage by user B may cause user A's bill to change even though user A's consumption stays level. To cure this problem, rates should be designed to yield reasonable results without creating an undue amount of work for unnecessary precision.

##### **Equity**

Typically, a utility's rate structure is the result of a compromise of various forces which collectively develop the basic rate philosophy of a utility. On occasion, the forces which must be considered are contradictory to one another. It must be recognized that a customer's ideals may be counter to those of the utility, and the ideals of one particular class of customer may be in conflict with another. The optimal rate structure is one that will result in the maximum fairness given the priorities and philosophies of the utility.

## SECTION 7

### RATE DESIGN PHILOSOPHY (continued)

#### 7.4 Selection of Rate Design Method

In the preceding sections we have discussed rate philosophies and different types of rate structures which may be developed. However, before the design of a rate structure is completed, the administrators and policy-making authorities must make certain decisions. Under any rate methodology, the total revenues generated by or allocated to the operation of the water system should equal the costs of operating the water system (revenue requirements). Water rates should be designed to produce sufficient revenues to provide for the cost of furnishing adequate water service, including maintaining the system, debt service, and provide adequate funds for normal replacements and to protect future water supply. These revenue requirements should take into consideration not only the current year's requirements, but should be projected over a period of several years, in an effort to smooth out year to year revenue requirement fluctuations. Rates should also be designed in a manner which will recover the costs of serving different classes of customers while maintaining reasonable equity between the customer classes.

Fundamentally, rates must be designed so that total revenues will equal revenue requirements, and optimally, the sewer rates should be designed so that all "fixed" costs would be recovered by service charge revenues and all "variable" costs would be recovered through the commodity rate revenues. The advantage of this type of rate design is that the Public Utility Authority could continue to meet its fixed obligations, even if all consumers suddenly and drastically reduced consumption of water, since the service charge is billed regardless of the amount of water used. Because water utilities are high fixed cost type of operations, a semi "flat rate" design usually occurs if rates are designed using this method, and rates designed strictly in this manner can be counter-productive to conservation efforts because a consumer can drastically reduce water consumption while impacting their water cost very little.

In addition to the above considerations, the Public Utility Authority also must factor in the water supply issues facing the Mojave Basin area. Public Utility Authority statistics show the average customer (3/4" connection) uses about 500 gallons per day (GPD). Estimates by the City of Adelanto's engineer have shown that each dwelling unit (each home or 3/4" connection) places about 200 GPD into the sewer system. The difference between the 500 GPD coming into each house and the 200 GPD leaving each house is assumed to have been used "outside" the home. It is this "outside" use that provides the most likely area for improvement in efficient use of water.

SECTION 7

RATE DESIGN PHILOSOPHY  
(continued)

7.5 Rate Setting Process

In very simple terms, the overall rate setting process is as follows:

Revenue Requirements	=	"How big is the pie"
	-and-	
Rate Structure	=	"How to slice the pie"

Most of the factors listed above influence the "size of the pie", whereas policy decisions primarily drive how to "slice the pie".

Typically, the rate setting process is a three-step process:

1. Revenue requirements are as follows:

Operating expenses	(operate and maintain the utility on an ongoing basis)
+ Capital costs	(additions and replacements to existing utility plant)
+ Debt service	(principal and interest on debt)
+ <u>Funding of reserves</u>	(additions to reserve funds)
=	<u>Revenue requirements</u>

2. Determine the Cost of Service

Once revenue requirements have been determined, Step 2 is to allocate these requirements to the various classes of services.

3. Determine Rate Structure most appropriate to the circumstances

Step 3 is to design a rate structure which most equitably and fairly spreads the costs to the customers.

## SECTION 8

### DEVELOPMENT AND DESIGN OF RATE SCHEDULES

#### 8.1 Rate Determination

In order to determine what the user rates must be for water service provided, the costs of providing that water or the revenue requirements must be determined.

As shown in Section 6.2, for the 2009-10 year, without an increase in water revenues, the Public Utility Authority would experience an estimated revenue deficiency of approximately \$3.1 million. To correct this situation, the Public Utility Authority has the following options to allow it to recover all revenue requirements:

1. Increase user rates.
2. Reduce revenue requirements. (Defer capital projects or forego maintenance.)
3. Borrow funds to cover shortfall. (Defer increase to future periods.)
4. Draw from reserves.

Assuming options 2, 3, and 4 are ruled out, as demonstrated in Section 6.2 revenues for 2009-10 at present rates would need to be increased approximately 294% to meet revenue requirements for the 2009-10 year.

The following sections of this report show the methodology (explained in Section 7) used to design rates which will generate adequate revenues to meet revenue requirements (as shown in Section 4.5).

SECTION 8  
 DEVELOPMENT AND DESIGN OF RATE SCHEDULES  
 (continued)

8.2 Rate Design

Table 15 below shows the estimated 2009-10 revenue requirements with additional breakdown as well as how other revenues have been allocated to offset certain costs.

TABLE 15  
 ALLOCATION OF REVENUE REQUIREMENTS  
 For the year ending June 30, 2010

Description	Table No.	Total
Operating expenses		
Facilities and maintenance	5	\$ 412,000
Purchased power	5	250,000
Consulting and outside services	5	886,000
Other operating expense	5	83,000
General and administrative	5	<u>151,000</u>
Subtotal operating expenses		1,782,000
Capital projects	6	-
Debt service	7	2,320,621
Reserve funding	8	<u>352,000</u>
Subtotal revenue requirements		\$ 4,454,621
Less other revenue sources available		
Interest earned	9	-
Sewer availability charges	12	(275,000)
Connection fees	11	<u>-</u>
Net revenue requirements		<u>\$ 4,179,621</u>

See Summary of Significant Assumptions  
 And Accounting Policies and Accountant's Report

SECTION 8

DEVELOPMENT AND DESIGN OF RATE SCHEDULES  
 (continued)

8.2 Rate Design (continued)

Table 16 shows the calculation that develops rates designed to meet estimated 2009-10 revenue requirements.

TABLE 16  
 DEVELOPMENT OF RATES

<u>For year ending June 30, 2010</u>	
Rate calculation:	
Net revenue requirements	<u>\$ 4,179,621</u>
Number of equivalent EDUs <sup>1</sup>	7,284
Annual charge per EDU	\$573.81
Calculated monthly charge per EDU	\$47.82
USE	\$47.82

<sup>1</sup>A factor of 0.5 EDUs has been applied to each apartment unit to allow for lesser flow per unit.

SECTION 9  
 PROPOSED RATES

9.1 Proposed Rates

The rates designed in Section 8.2 would be adequate to generate revenues of \$4,179,621. As discussed in Section 8.1, this would represent a 294% increase in overall water revenues.

As demonstrated in section 6.2, Table 14, the years 2009-10 through 2012-13 also show revenue requirements exceeding revenue sources. Shown here are the approximate percentage increases needed to allow revenue sources to equal revenue requirements.

TABLE 17  
 PROPOSED INCREASE DOLLARS AND PERCENTAGE

Year Ending June 30,	Service Fee	
	Needed Increase	Approximate Percentage
2010	\$ 3,120,746	294%
2011	\$ 3,448,996	319%
2012	\$ 3,856,063	357%
2013	\$ 4,364,805	404%

The following are proposed rates designed to allow the Public Utility Authority to generate adequate revenues to meet revenue requirements as determined in Section 4. Appendix D contains individual worksheets for each of the years 2009-13 used to arrive at the proposed rates.

TABLE 18  
 PROPOSED RATES (in Dollars)

	Proposed For the year ending June 30,			
	2010	2011	2012	2013
Per month per EDU	\$47.82	\$50.79	\$55.36	\$61.06

SECTION 10

SUMMARY - RESULTS OF OPERATIONS AT PROPOSED RATES

10.1 Estimated Revenue at Proposed Rates

These amounts have been determined by multiplying the number of customers from Section 3.2 by the proposed rates in Section 9.1.

TABLE 19  
 ESTIMATED REVENUES FOR 2010-2013

For year ending <u>June 30,</u>	Average Number <u>of Customers<sup>1</sup></u> <i>(in EDUs)</i>	Proposed <u>Monthly Rate</u>	Annual Service <u>Charge</u> <u>Revenue</u>
2010	7,284	\$47.82	\$ 4,179,851
2011	7,429	\$50.79	\$ 4,527,827
2012	7,429	\$55.36	\$ 4,935,233
2013	7,429	\$61.06	\$ 5,443,377

<sup>1</sup> After adjustment for apartment EDUs at .5 EDU

SECTION 10

SUMMARY - RESULTS OF OPERATIONS AT PROPOSED RATES  
 (continued)

10.2 Results of Operations at Proposed Rates

Table 20 presents results of operations at proposed rates.

TABLE 20  
 RESULTS OF OPERATIONS AT PROPOSED RATES

<u>Description</u>	<u>Table No.</u>	<u>Estimated (in dollars)</u> <u>For year ending June 30,</u>			
		<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
<b>Sources</b>					
Service charge revenues	19	\$ 4,179,851	\$ 4,527,827	\$ 4,935,233	\$ 5,443,377
Connection charges	11	-	-	-	-
Availability fee	12	<u>275,000</u>	<u>275,000</u>	<u>275,000</u>	<u>275,000</u>
Total revenues		<u>\$ 4,454,851</u>	<u>\$ 4,802,827</u>	<u>\$ 5,210,233</u>	<u>\$ 5,718,377</u>
<b>Uses</b>					
Operating expenses	5	\$ 1,782,000	\$ 1,835,460	\$ 1,890,527	\$ 1,947,244
Capital program	6	-	-	-	-
Debt service	7	2,320,621	3,319,299	3,319,299	3,771,324
Reserves	8	<u>352,000</u>	<u>(352,000)</u>	-	-
Total revenue requirements		<u>\$ 4,454,621</u>	<u>\$ 4,802,759</u>	<u>\$ 5,209,826</u>	<u>\$ 5,718,568</u>
Surplus (Deficit)		<u>\$ 230</u>	<u>\$ 68</u>	<u>\$ 407</u>	<u>\$ (191)</u>
Percent		0%	0%	0%	0%

SECTION 11

COMPARISON OF AVERAGE BILLS

11.1 Bill Comparison – Current vs Proposed Rates

As discussed in Section 6, overall revenues need to be increased by approximately 318% so that revenues will meet revenue requirements. The following table shows how varying customers will be impacted under the new rate structure.

TABLE 21  
 BILL COMPARISON

	<u>Existing</u>	<u>Proposed</u>
Service charge (per EDU)	\$11.43	\$47.82
Percentage increase		318%

11.2 Bill Comparison - Surrounding Communities

The proposed rates presented in Section 9 are designed to allow the City of Adelanto to recover its annual revenue requirements. Table 22 below shows how the present and proposed rates compare to surrounding communities.

TABLE 22  
 COMPARISON WITH SURROUNDING WASTEWATER PROVIDERS

Monthly Rate per EDU

<b>City of Adelanto (present rates)</b>	<b>\$11.43</b>
City of Hesperia	\$22.38
Victorville Water District	\$23.70
Apple Valley Service Area	\$23.58
<b>City of Adelanto (proposed rates)</b>	<b>\$47.82</b>

## SECTION 12

### SUMMARY AND RECOMMENDATIONS

#### 12.1 Summary

As demonstrated in Section 6.2, forecasted revenue sources at present rates will not be adequate to meet forecasted revenue requirements for the years ending June 30, 2010 through June 30, 2013. Because revenue requirements are, by definition, the necessary costs of operating and maintaining the sewer system, there remains two possible courses of action; 1) identify and implement alternate revenue sources or 2) increase current user charges.

To enable the Public Utility Authority to generate sufficient revenue to meet the forecasted revenue requirements, the present sewer rates need to be increased approximately 319% with increases in future years. This immediate increase is necessary to allow the Public Utility Authority to pursue the capital improvements and planned maintenance as recommended in the Master Plan and to maintain the level of reserves as shown in Section 4.4. A delay in the implementation of an increase is not an option. This situation could cause a deterioration of the Public Utility Authority's financial condition and would result in a drain of reserves which are ever more difficult to accumulate and maintain.

#### 12.2 Recommendations

We recommend that the Public Utility Authority effect the proposed rates presented in Section 9 as soon as practicable. Due to possible changes in the Public Utility Authority's debt service situation, reserves are not adequate to sustain present rates in the short term. The recommended course of action presented in this report is for an immediate increase in rates. The Public Utility Authority should consider imposing the availability fees as soon as practicable

Perhaps the most compelling reason for an immediate increase is to properly price the water to be able to send an accurate price signal to the users so the users can make informed decisions as to water use habits.

The proposed rates are also designed to allow the Public Utility Authority to begin funding a general reserve intended to accumulate funds to replace existing infrastructure when it wears out. This is desirable as it places the burden of paying for the infrastructure on the person using it. (Burden = Benefit) The accumulation of reserves is intended to avoid, to the greatest extent, any need for capital facilities surcharge or borrowings in the future.

SUMMARY AND RECOMMENDATIONS  
(continued)

12.3 Alternatives and Considerations

The only real "given" in this situation is the need for an increase in total revenues. The decision to be made is how to most fairly allocate the increases across all revenue streams and the amount with which to fund reserves.

SECTION 13

SIGNIFICANT ASSUMPTIONS USED IN THIS REPORT

13.1 Operational Assumptions

1. City management will continue present operating policies throughout the forecast period (as included in the budget).
2. The cost of electricity will increase by inflation only over the forecast period.
3. There will be decreases and increases to the number of customers during the forecast period.

13.2 Accounting Assumptions

1. Inflation will be 3% for each of the years in the forecast period.
2. The Public Utility Authority will be able to meet all wastewater related debt obligations in a timely manner.
3. Capital improvements will be as shown in Section 4.2.
4. Interest earned on reserves will not be available for operations and will be added back to reserves.

APPENDIX A  
SERVICE CONNECTION DATA

Appendix A  
 Service Connection Data

Category	June 30, 2008	Added 2008-09	June 30, 2009	Added 2009-10	June 30, 2010	Added 2010-11	June 30, 2011	Added 2011-12	June 30, 2012	Added 2012-13	June 30, 2013
Residential	5,607	(289)	5,318	289	5,607	0	5,607	0	5,607	0	5,607
Multi-Family	873		873		873		873		873		873
Industrial / commercial	638		638		638		638		638		638
Correction facilities	747		747		747		747		747		747
Schools	0		0		0		0		0		0
<b>Total EDUs</b>	<b>7,865</b>	<b>(289)</b>	<b>7,576</b>	<b>289</b>	<b>7,865</b>	<b>0</b>	<b>7,865</b>	<b>0</b>	<b>7,865</b>	<b>0</b>	<b>7,865</b>

A-2

Average Number of Customers:

	2008-09	2009-10	2010-11	2011-12	2012-13
Residential	5,462	5,462	5,607	5,607	5,607
Multi-Family	873	873	873	873	873
Industrial / commercial	638	638	638	638	638
Correction facilities	747	747	747	747	747
Schools	0	0	0	0	0
<b>Average EDUs</b>	<b>7,720</b>	<b>7,720</b>	<b>7,865</b>	<b>7,865</b>	<b>7,865</b>

Revenue Calculation:

	2009-10	2010-11	2011-12	2012-13
Annual Service Charge	\$ 4,429,515	\$ 4,793,400	\$ 5,224,446	\$ 5,763,045
Connection Fees	275,000	275,000	275,000	275,000
Availability Fees	\$ 4,704,515	\$ 5,068,488	\$ 5,499,446	\$ 6,038,045
<b>Total Revenue</b>	<b>9,409,030</b>	<b>10,136,888</b>	<b>10,998,892</b>	<b>12,076,090</b>

From Table 12

APPENDIX B  
SEWER OPERATING EXPENSES

Adelanto Public Utility Authority  
 Report of Revenue Requirements and Sewer Rates  
 June 2009

Expense Category	SEWER - Operating Expenses Summary					Estimated For the year ending June 30,		
	Budget	Budget	±3%	±3%	±3%	2011	2012	2013
	2009	2010	2010	2011	2012	2011	2012	2013
Facilities and maintenance	\$ 582,000	\$ 412,000	\$ 412,000	\$ 424,360	\$ 437,092	\$ 424,360	\$ 437,092	\$ 450,204
Purchased power	200,000	250,000	250,000	257,500	265,225	257,500	265,225	273,182
Consulting and outside services	886,000	886,000	886,000	912,580	939,958	912,580	939,958	968,157
Other operating expenses	108,000	83,000	83,000	85,490	88,056	85,490	88,056	90,699
General and administrative	151,000	151,000	151,000	155,530	160,196	155,530	160,196	165,002
<b>TOTAL</b>	<b>\$ 1,927,000</b>	<b>\$ 1,782,000</b>	<b>\$ 1,782,000</b>	<b>\$ 1,835,460</b>	<b>\$ 1,890,527</b>	<b>\$ 1,835,460</b>	<b>\$ 1,890,527</b>	<b>\$ 1,947,244</b>

Adelanto Public Utility Authority  
 Report of Revenue Requirements and Sewer Rates  
 June 2009

SEWER - Operating Expenses		Estimated For the year ending June 30,					
		Budget 2009	Budget 2010	+3% 2011	+3% 2012	+3% 2013	
A/C	Expense Category Description						
<b>Contractual Services</b>							
50219	Consulting and Outside Services	CO	\$ 850,000	\$ 850,000	\$ 875,500	\$ 901,765	\$ 928,818
50222	Laboratory Services	CO	35,000	35,000	36,050	37,132	38,246
	Category Subtotal		\$ 885,000	\$ 885,000	\$ 911,550	\$ 938,897	\$ 967,064
<b>Utilities &amp; Communications</b>							
50301	Communication Services	N/A	\$ -	\$ -	\$ -	\$ -	\$ -
50310	Electricity	PP	200,000	250,000	257,500	265,225	273,182
50330	Water	FM	5,000	5,000	5,150	5,305	5,464
50350	Trash & Dump	FM	10,000	10,000	10,300	10,609	10,927
	Category Subtotal		\$ 215,000	\$ 265,000	\$ 272,950	\$ 281,139	\$ 289,573
<b>Facilities/Grounds Maintenance</b>							
50402	Bldg/Structures/Whse	FM	2,000	2,000	2,060	2,122	2,186
50403	Chemicals	FM	45,000	45,000	46,350	47,741	49,173
50406	Field/Yards/Sewer Plant	FM	400,000	300,000	309,000	318,270	327,818
50407	Hauling (Bio-solids)	FM	120,000	50,000	51,500	53,045	54,636
50410	Property Tax	N/A	-	-	-	-	-
50419	Wells/Lines	N/A	-	-	-	-	-
	Category Subtotal		\$ 567,000	\$ 397,000	\$ 408,910	\$ 421,178	\$ 433,813
<b>Equipment Maintenance</b>							
50435	Department Equipment	OOE	4,000	2,000	2,060	2,122	2,186
	Category Subtotal		\$ 4,000	\$ 2,000	\$ 2,060	\$ 2,122	\$ 2,186
<b>Vehicle Maintenance</b>							
50441	Parts and Service	OOE	1,000	1,000	1,030	1,061	1,093
50445	Tires	OOE	1,000	1,000	1,030	1,061	1,093
50451	Diesel	OOE	90,000	70,000	72,100	74,263	76,491
50453	Oils and Fluids	OOE	1,000	1,000	1,030	1,061	1,093
	Category Subtotal		\$ 93,000	\$ 73,000	\$ 75,190	\$ 77,446	\$ 79,770

Adelanto Public Utility Authority  
 Report of Revenue Requirements and Sewer Rates  
 June 2009

SEWER - Operating Expenses		Estimated				
		For the year ending June 30,				
A/C	Expense Category Description	Budget 2009	Budget 2010	+3% 2011	+3% 2012	+3% 2013
<b>General Maintenance</b>						
50461	Uniforms and Safety Supplies	\$ -	\$ -	\$ -	\$ -	\$ -
50465	Printing and Office	1,000	1,000	1,030	1,061	1,093
50467	Shop and Janitorial	1,000	1,000	1,030	1,061	1,093
	Category Subtotal	\$ 2,000	\$ 2,000	\$ 2,060	\$ 2,122	\$ 2,186
<b>Insurance and Claims</b>						
50509	Claims and Settlements	\$ -	\$ -	\$ -	\$ -	\$ -
	Category Subtotal	\$ -	\$ -	\$ -	\$ -	\$ -
<b>General Administrative</b>						
50601	Service Fees	\$ 150,000	\$ 150,000	\$ 154,500	\$ 159,135	\$ 163,909
50621	Advertising and Publications	1,000	1,000	1,030	1,061	1,093
	Category Subtotal	\$ 151,000	\$ 151,000	\$ 155,530	\$ 160,196	\$ 165,002
<b>Permits/Licenses/Fees</b>						
50632	Other Fees	\$ 8,000	\$ 5,000	\$ 5,150	\$ 5,305	\$ 5,464
50637	Permits	2,000	2,000	2,060	2,122	2,186
	Category Subtotal	\$ 10,000	\$ 7,000	\$ 7,210	\$ 7,427	\$ 7,650
<b>Other Expenditures</b>						
50750	Debt Service Payments		\$ -	\$ -	\$ -	\$ -
50760	Re-Marketing Fees		\$ -	\$ -	\$ -	\$ -
	Category Subtotal	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Non-Operating Expenditures</b>						
70020	Transfers Out	\$ -	\$ -	\$ -	\$ -	\$ -
	Category Subtotal	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Operating, Grand Total</b>		\$ 1,927,000	\$ 1,782,000	\$ 1,835,460	\$ 1,890,527	\$ 1,947,244

## CHAPTER 4

### PROPOSED SEWER SYSTEM IMPROVEMENT

#### GENERAL

The existing sewer system was analyzed using the H2O Map Sewer model mentioned in Chapter 3. As wastewater flow downstream in each respective tract and drainage area, the "tributary lots" are included in the analysis. The wastewater flows were determined based on the total equivalent dwelling units (EDU's). The capacity for the existing pipeline is identified with the respective manholes (from upstream to downstream sewer reaches). Each of the respective flows was then used as input to the hydraulic model to locate segments of the sewer pipeline that were approaching design capacity as referenced in Table 3-3. The near build-out flow for each of the tributary sewer areas was estimated using 200 gallons per day per EDU. The model includes the following information:

- Upstream manhole number and invert elevation
- Downstream manhole number and invert elevation
- Pipe length in feet
- Pipe slope in percent
- Tributary area in equivalent dwelling units and peak flow (in MGD)
- Capacity of sewer pipe at 50% and 75% pipe depth in million gallons per day (MGD)
- Excess sewer capacity in million gallons per day (based on 50% and 75% flow depth)
- Capacity of sewer at full depth in million gallons per day (for assessing emergency capacity available).

#### CURRENT FLOW CONDITION:

Based on the computer model, the existing sewer system doesn't have adequate capacity to serve all current lots (principally within Assessment District 1-A due to change in development densities) including approved/tentative tracts (approximately 20,000 EDUs). Each of the respective flows from each tributary areas was used as input to the model to locate segments of the sewer pipeline that are approaching the 75% design capacity as criteria to begin with planning and design for any required "relief sewer" that would generally parallel the existing facilities. The hydraulic model indicated that the trunk sewer downstream (outside of AD # 1-A) would be surcharged. The proposed relief sewer and future system improvement requirements are identified in Figure 4-1. Table 4-1 presents the estimated project cost for the sewer system improvements to serve the current connected parcels plus the approved tracts and tentative tracts.

**TABLE 4-1: SEWER IMPROVEMENT COST ESTIMATE**  
 (Existing Condition With Approved Tracts and Tentative Tracts)

Item Description	Quantity		Engineering Estimate	
	Number	Unit	Unit Cost	Total
			(\$)	
<b>EXISTING CONDITION</b>				
Gravity Sewer Pipe Line = 9,369 L.F				
Gravity Sewer Pipeline (15")	9,098	L.F	\$74.00	\$673,252
Gravity Sewer Pipeline (18")	9,430	L.F	\$102.50	\$966,575
Allowance For Manhole @ 350 feet Spacing	53	E.A	\$3,000.00	\$158,811
Pavement Repair (Assume 100% of Alignment)				
Require AC-Repair	93,690	Sq. ft	\$4.00	\$374,760
<b>SUBTOTAL</b>				<b>\$2,173,398</b>
Allowance for Project Contingency (10%)				<b>\$217,340</b>
Allowance for Engineering, Project Administration, Financing & Legal (20%)				<b>\$434,680</b>
<b>ESTIMATED TOTAL COST</b>				<b>\$2,825,418</b>

**NEAR BUILD-OUT CONDITION:**

Referencing the computer model for near build-out development flows, the various segments of existing sewer system that require "relief capacity" were identified. In addition, proposed trunk sewers are identified at each half-mile grid for the entire City. The database was created using flows and slope as input and hence pipe sizing was determined. Based on the pipeline sizing, cost of the sewer system improvements (including pipeline/pump stations) was prepared which is presented in Table 4-2 below. The proposed trunk/relief sewer system recommended near saturation is presented in Figure 4-2 attached at the end of this Chapter.

**TABLE 4-2: SEWER IMPROVEMENT COST ESTIMATE  
(Near Saturation Condition)**

Item Description	Quantity		Engineering Estimate	
	Number	Unit	Unit Cost	Total
			(\$)	
<b>NEAR SATURATION CONDITION</b>				
<b>Without Lewis Homes</b>				
Gravity Sewer Pipe Line = 514,216 L.F				
Gravity Sewer Pipeline (8")	8,440	L.F	\$36.72	\$309,900
Gravity Sewer Pipeline (10")	8,055	L.F	\$57.28	\$461,400
Gravity Sewer Pipeline (12")	325,047	L.F	\$76.05	\$24,719,861
Gravity Sewer Pipeline (15")	116,247	L.F	\$103.70	\$12,054,806
Gravity Sewer Pipeline (18")	14,623	L.F	\$149.27	\$2,182,827
Gravity Sewer Pipeline (21")	10,882	L.F	\$213.29	\$2,321,077
Gravity Sewer Pipeline (27")	30,922	L.F	\$354.06	\$10,948,109
Force Main Pipe Line = 16,512 L.F				
Force Main Pipe Line (6")	5,200	L.F	\$44.50	\$231,400
Force Main Pipe Line (12")	11,312	L.F	\$81.61	\$923,172
Allowance For Manhole @ 350 feet Spacing	1,470	E.A	\$3,000.00	\$4,410,000
Require AC-Repair*	3,184,370	Sq. ft	\$5.00	\$15,921,850
Pump Installation	2	E.A	\$50,000.00	\$100,000
Allowance for Pump Station Upgrade (Piping, Installation etc)				\$50,000
<b>Sub-Total</b>				<b>\$74,634,401</b>
<b>Lewis Homes</b>				
Gravity Sewer Pipeline (12")	174,125	L.F	\$76.05	\$13,242,206
Gravity Sewer Pipeline (15")	15,282	L.F	\$103.70	\$1,584,743
Gravity Sewer Pipeline (21")	7,641	L.F	\$213.29	\$1,629,749
Allowance For Manhole @ 350 feet Spacing	563	E.A	\$3,000.00	\$1,689,000
Rock Removal or Require 50% AC-Repair*	591,144	Sq. ft	\$5.00	\$2,955,720
<b>Sub-Total</b>				<b>\$21,101,419</b>
<b>SUBTOTAL (Whole City of Adelanto)</b>				<b>\$95,735,820</b>
Allowance for Project Contingency (10%)				\$9,573,582
Allowance for Engineering, Project Administration, Legal, Financing (20%)				\$19,147,164
<b>ESTIMATED TOTAL COST</b>				<b>\$124,456,566</b>

\* Assume Pipe trench to be about 6ft. Wide

APPENDIX D  
RATE CALCULATION WORKSHEETS

Appendix D  
 Rate Calculations

For year ending June 30, 2010	
Rate calculation:	
Net revenue requirements	\$ 4,179,621
Total Adjusted EDUs <sup>1</sup>	7,284
Annual charge per EDU	\$573.81
Calculated monthly charge per EDU	\$47.82
USE	\$47.82

For year ending June 30, 2011	
Rate calculation:	
Net revenue requirements	\$ 4,527,759
Total Adjusted EDUs <sup>1</sup>	7,429
Annual charge per EDU	\$609.47
Calculated monthly charge per EDU	\$50.79
USE	\$50.79

For year ending June 30, 2012	
Rate calculation:	
Net revenue requirements	\$ 4,934,826
Total Adjusted EDUs <sup>1</sup>	7,429
Annual charge per EDU	\$664.27
Calculated monthly charge per EDU	\$55.36
USE	\$55.36

For year ending June 30, 2013	
Rate calculation:	
Net revenue requirements	\$ 5,443,568
Total Adjusted EDUs <sup>1</sup>	7,429
Annual charge per EDU	\$732.75
Calculated monthly charge per EDU	\$61.06
USE	\$61.06

<sup>1</sup>Adjusted EDUs has apartment use at .5 EDU per unit to account for lesser flow per unit.

APPENDIX E  
BILL COMPARISONS

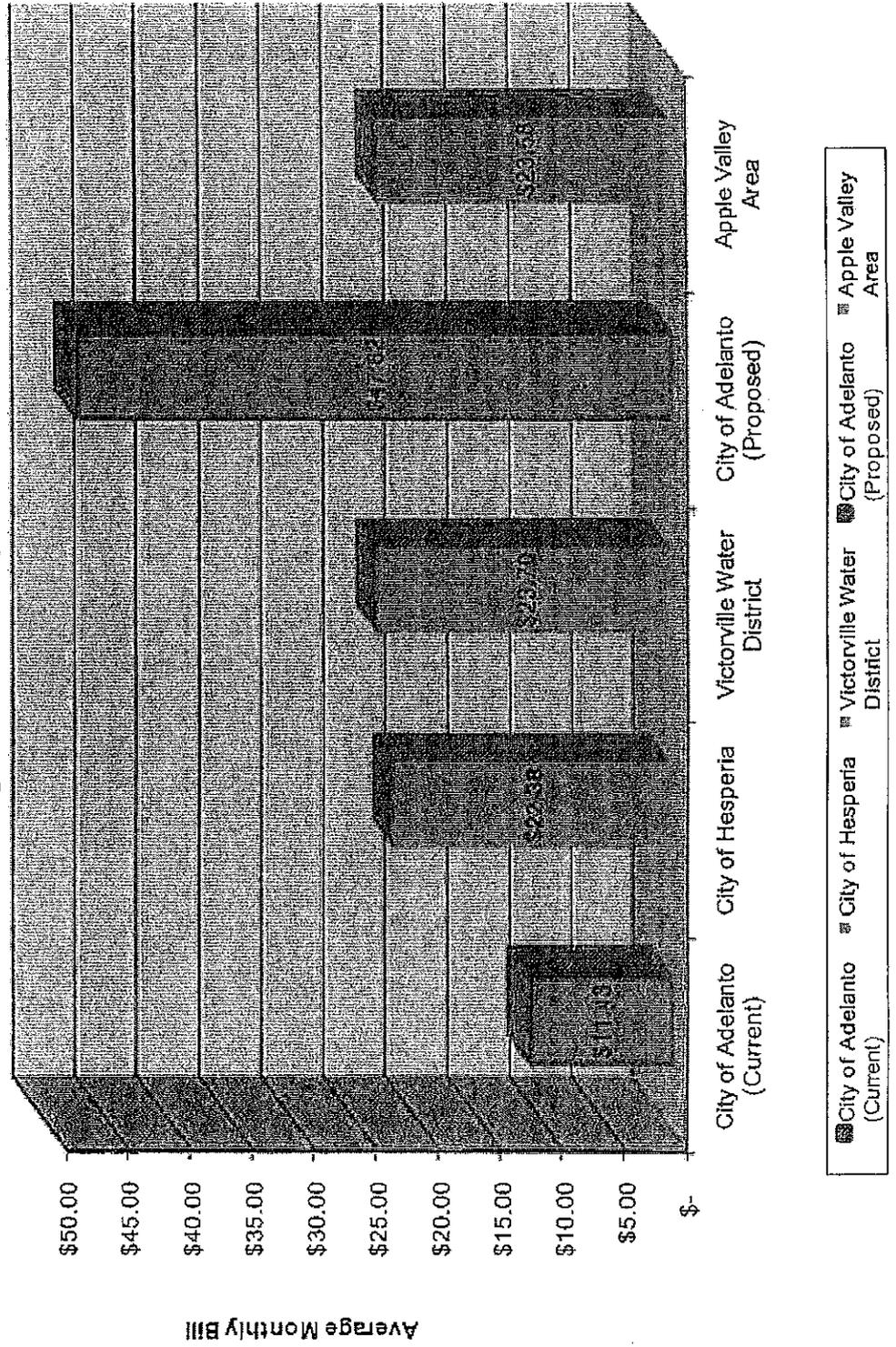


# Rate Comparison to Other Victor Valley Agencies

## Step 1

Rates in Effect 2009-10

### Average Sewer Bill Comparison



City of Adelanto (Current)  
 
 City of Hesperia  
 
 Victorville Water District  
 
 City of Adelanto (Proposed)  
 
 Apple Valley Area

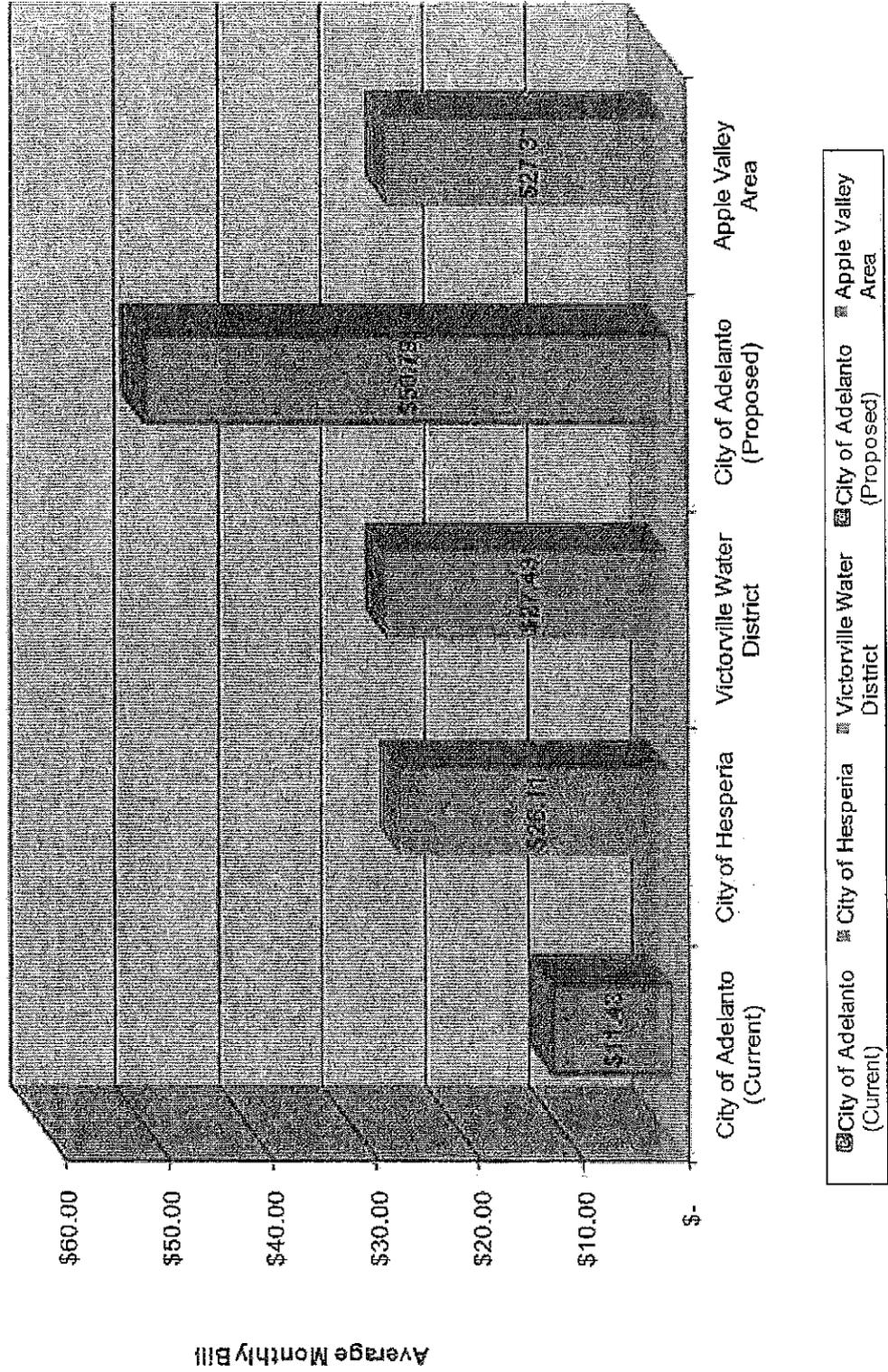


# Rate Comparison to Other Victor Valley Agencies

## Step 2

Rates in Effect 2010-11

### Average Sewer Bill Comparison



Adelanto Public Utility Authority  
Report on Revenue Requirements and Sewer Rates  
June 2009

APPENDIX F  
DEBT SERVICE

NET DEBT SERVICE

Adelanto Public Utility Authority  
 Refunding Revenue Bonds, Series 2009

Period Ending	Total Debt Service	General Fund	Debt Service Reserve Fund	Net Debt Service	5 1/2% W	4 1/2% S
06/30/2010	3,414,099.72	750,000		2,664,099.72	1571,819	1092,281
06/30/2011	5,099,900.00			5,099,900.00	3008,941	2090,959
06/30/2012	5,099,900.00			5,099,900.00	3,008,941	2,090,959
06/30/2013	6,202,400.00			6,202,400.00	3,659,416	2,542,984
06/30/2014	6,201,500.00			6,201,500.00		
06/30/2015	6,202,475.00			6,202,475.00		
06/30/2016	6,204,600.00			6,204,600.00		
06/30/2017	6,203,475.00			6,203,475.00		
06/30/2018	6,202,193.75			6,202,193.75		
06/30/2019	6,198,537.50			6,198,537.50		
06/30/2020	6,201,575.00			6,201,575.00		
06/30/2021	6,200,312.50			6,200,312.50		
06/30/2022	6,205,912.50			6,205,912.50		
06/30/2023	6,197,687.50			6,197,687.50		
06/30/2024	6,204,875.00			6,204,875.00		
06/30/2025	6,199,093.75			6,199,093.75		
06/30/2026	6,202,000.00			6,202,000.00		
06/30/2027	6,202,462.50			6,202,462.50		
06/30/2028	6,202,525.00			6,202,525.00		
06/30/2029	6,201,537.50			6,201,537.50		
06/30/2030	6,198,850.00			6,198,850.00		
06/30/2031	6,200,350.00			6,200,350.00		
06/30/2032	6,199,000.00			6,199,000.00		
06/30/2033	6,200,850.00			6,200,850.00		
06/30/2034	6,199,675.00			6,199,675.00		
06/30/2035	6,199,250.00			6,199,250.00		
06/30/2036	6,198,175.00			6,198,175.00		
06/30/2037	6,199,875.00			6,199,875.00		
06/30/2038	6,197,775.00			6,197,775.00		
06/30/2039	6,200,125.00			6,200,125.00		
06/30/2040	6,204,825.00		6,205,912.50	-1,087.50		
	187,245,812.22	750,000	6,205,912.50	180,289,899.72		

CITY OF ADELANTO  
ADELANTO PUBLIC UTILITY AUTHORITY  
GENERAL FUND OBLIGATION

ORIG AMT	6,431,169.00
INTEREST	5.00%
ANNUAL PMT	1,228,340.00
TERM	
ENDING BALANCE	

5.00%

DATE	PMT NO	TOTAL PMT	INT PORTION	PRIN PORTION	BALANCE
2009-10	1	1,228,340.00	321,558.45	906,781.55	6,431,169.00
2010-11	2	1,228,340.00	276,219.37	952,120.63	5,524,387.45
2011-12	3	1,228,340.00	228,613.34	999,726.66	4,572,266.82
2012-13	4	1,228,340.00	178,627.01	1,049,712.99	3,572,540.16
2013-14	5	1,228,340.00	126,141.36	1,102,198.64	2,522,827.17
2014-15	6	1,228,340.00	71,031.43	1,157,308.57	1,420,628.53
2015-16	7	276,485.96	13,166.00	263,319.96	263,319.96
		7,646,525.96	1,215,356.96	6,431,169.00	(0.00)

SOURCES AND USES OF FUNDS

Adelanto Public Utility Authority  
 Refunding Revenue Bonds, Series 2009

Dated Date 08/31/2009  
 Delivery Date 08/31/2009

Sources:	SERIESA	SERIESB	Total
<b>Bond Proceeds:</b>			
Par Amount	61,350,000.00	16,645,000.00	77,995,000.00
Net OID	-988,866.85	-268,298.90	-1,257,165.75
	<u>60,361,133.15</u>	<u>16,376,701.10</u>	<u>76,737,834.25</u>
<b>Other Sources of Funds:</b>			
Transfer for Prior Rate Stabilization Fund	592,331.19		592,331.19
Debt Service Reserve Fund	3,308,384.00	971,710.56	4,280,094.56
Transfer for Prior Rate Stabilization Fund		157,668.81	157,668.81
	<u>3,900,715.19</u>	<u>1,129,379.37</u>	<u>5,030,094.56</u>
	<u>64,261,848.34</u>	<u>17,506,080.47</u>	<u>81,767,928.81</u>
<b>Uses:</b>			
<b>Project Fund Deposits:</b>			
Swap Termination Payment	3,472,500.00	1,051,500.00	4,524,000.00
<b>Refunding Escrow Deposits:</b>			
Cash Deposit	54,395,000.00	14,720,000.00	69,115,000.00
<b>Other Fund Deposits:</b>			
Debt Service Reserve Fund	4,881,501.79	1,324,410.71	6,205,912.50
Capitalized Interest	589,941.66	160,058.34	750,000.00
	<u>5,471,443.45</u>	<u>1,484,469.05</u>	<u>6,955,912.50</u>
<b>Delivery Date Expenses:</b>			
Cost of Issuance	428,690.94	116,309.06	545,000.00
Underwriter's Discount	490,800.00	133,160.00	623,960.00
	<u>919,490.94</u>	<u>249,469.06</u>	<u>1,168,960.00</u>
<b>Other Uses of Funds:</b>			
Additional Proceeds	3,413.95	642.36	4,056.31
	<u>64,261,848.34</u>	<u>17,506,080.47</u>	<u>81,767,928.81</u>

Notes:

Assumes \$450,000 for Cost of Issuance  
 Assumes Underwriter's Discount not to exceed \$7/bond

BOND PRICING

Adelanto Public Utility Authority  
Refunding Revenue Bonds, Series 2009

Bond Component	Maturity Date	Amount	Rate	Yield	Price
Serial Bond:					
	11/01/2012	1,125,000	4.000%	3.870%	100.379
	11/01/2013	1,170,000	4.000%	4.300%	98.861
	11/01/2014	1,225,000	5.000%	4.760%	101.081
	11/01/2015	1,290,000	5.000%	5.010%	99.940
	11/01/2016	1,355,000	5.000%	5.310%	98.164
	11/01/2017	1,425,000	5.250%	5.540%	98.107
	11/01/2018	1,500,000	5.500%	5.740%	98.299
	11/01/2019	1,590,000	5.750%	5.900%	98.856
	11/01/2020	1,685,000	6.000%	6.070%	99.428
	11/01/2021	1,795,000	6.000%	6.180%	98.466
	11/01/2022	1,900,000	6.250%	6.300%	99.546
	11/01/2023	2,030,000	6.250%	6.400%	98.605
	11/01/2024	2,155,000	6.250%	6.480%	97.788
		<u>20,245,000</u>			
2029 Term Bond:					
	11/01/2029	13,150,000	6.500%	6.780%	96.934
2034 Term Bond:					
	11/01/2034	18,435,000	7.000%	7.070%	99.168
2039 Term Bond:					
	11/01/2039	26,165,000	7.000%	7.150%	98.140
		<u>77,995,000</u>			

Dated Date	08/31/2009	
Delivery Date	08/31/2009	
First Coupon	05/01/2010	
Par Amount	77,995,000.00	
Original Issue Discount	-1,257,165.75	
Production	76,737,834.25	98.388146%
Underwriter's Discount	-623,960.00	-0.800000%
Purchase Price	76,113,874.25	97.588146%
Accrued Interest		
Net Proceeds	76,113,874.25	

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BOND DEBT SERVICE

Adelanto Public Utility Authority  
Refunding Revenue Bonds, Series 2009

Period Ending	Principal	Coupon	Interest	Debt Service
06/30/2010			3,414,099.72	3,414,099.72
06/30/2011			5,099,900.00	5,099,900.00
06/30/2012			5,099,900.00	5,099,900.00
06/30/2013	1,125,000	4.000%	5,077,400.00	6,202,400.00
06/30/2014	1,170,000	4.000%	5,031,500.00	6,201,500.00
06/30/2015	1,225,000	5.000%	4,977,475.00	6,202,475.00
06/30/2016	1,290,000	5.000%	4,914,600.00	6,204,600.00
06/30/2017	1,355,000	5.000%	4,848,475.00	6,203,475.00
06/30/2018	1,425,000	5.250%	4,777,193.75	6,202,193.75
06/30/2019	1,500,000	5.500%	4,698,537.50	6,198,537.50
06/30/2020	1,590,000	5.750%	4,611,575.00	6,201,575.00
06/30/2021	1,685,000	6.000%	4,515,312.50	6,200,312.50
06/30/2022	1,795,000	6.000%	4,410,912.50	6,205,912.50
06/30/2023	1,900,000	6.250%	4,297,687.50	6,197,687.50
06/30/2024	2,030,000	6.250%	4,174,875.00	6,204,875.00
06/30/2025	2,155,000	6.250%	4,044,093.75	6,199,093.75
06/30/2026	2,300,000	6.500%	3,902,000.00	6,202,000.00
06/30/2027	2,455,000	6.500%	3,747,462.50	6,202,462.50
06/30/2028	2,620,000	6.500%	3,582,525.00	6,202,525.00
06/30/2029	2,795,000	6.500%	3,406,537.50	6,201,537.50
06/30/2030	2,980,000	6.500%	3,218,850.00	6,198,850.00
06/30/2031	3,190,000	7.000%	3,010,350.00	6,200,350.00
06/30/2032	3,420,000	7.000%	2,779,000.00	6,199,000.00
06/30/2033	3,670,000	7.000%	2,530,850.00	6,200,850.00
06/30/2034	3,935,000	7.000%	2,264,675.00	6,199,675.00
06/30/2035	4,220,000	7.000%	1,979,250.00	6,199,250.00
06/30/2036	4,525,000	7.000%	1,673,175.00	6,198,175.00
06/30/2037	4,855,000	7.000%	1,344,875.00	6,199,875.00
06/30/2038	5,205,000	7.000%	992,775.00	6,197,775.00
06/30/2039	5,585,000	7.000%	615,125.00	6,200,125.00
06/30/2040	5,995,000	7.000%	209,825.00	6,204,825.00
	77,995,000		109,250,812.22	187,245,812.22

NET DEBT SERVICE

Adelanto Public Utility Authority  
 Refunding Revenue Bonds, Series 2009

Period Ending	Total Debt Service	General Fund	Debt Service Reserve Fund	Net Debt Service
06/30/2010	3,414,099.72	750,000		2,664,099.72
06/30/2011	5,099,900.00			5,099,900.00
06/30/2012	5,099,900.00			5,099,900.00
06/30/2013	6,202,400.00			6,202,400.00
06/30/2014	6,201,500.00			6,201,500.00
06/30/2015	6,202,475.00			6,202,475.00
06/30/2016	6,204,600.00			6,204,600.00
06/30/2017	6,203,475.00			6,203,475.00
06/30/2018	6,202,193.75			6,202,193.75
06/30/2019	6,198,537.50			6,198,537.50
06/30/2020	6,201,575.00			6,201,575.00
06/30/2021	6,200,312.50			6,200,312.50
06/30/2022	6,205,912.50			6,205,912.50
06/30/2023	6,197,687.50			6,197,687.50
06/30/2024	6,204,875.00			6,204,875.00
06/30/2025	6,199,093.75			6,199,093.75
06/30/2026	6,202,000.00			6,202,000.00
06/30/2027	6,202,462.50			6,202,462.50
06/30/2028	6,202,525.00			6,202,525.00
06/30/2029	6,201,537.50			6,201,537.50
06/30/2030	6,198,850.00			6,198,850.00
06/30/2031	6,200,350.00			6,200,350.00
06/30/2032	6,199,000.00			6,199,000.00
06/30/2033	6,200,850.00			6,200,850.00
06/30/2034	6,199,675.00			6,199,675.00
06/30/2035	6,199,250.00			6,199,250.00
06/30/2036	6,198,175.00			6,198,175.00
06/30/2037	6,199,875.00			6,199,875.00
06/30/2038	6,197,775.00			6,197,775.00
06/30/2039	6,200,125.00			6,200,125.00
06/30/2040	6,204,825.00		6,205,912.50	-1,087.50
	187,245,812.22	750,000	6,205,912.50	180,289,899.72