


TO: BOARD OF DIRECTORS
FROM: BRUCE BUEL 
DATE: NOVEMBER 9, 2007

AGENDA ITEM
E-2
NOV. 14, 2007

ADOPT WATER CONSERVATION PROGRAM AND AUTHORIZE IMPLEMENTATION

ITEM

Provide policy direction on further future tiering rate structure for combined water system, adopt Water Conservation Program and authorize implementation [ADOPT RECOMMENDATION].

BACKGROUND

NCSD initiated development of a Water Conservation Program in 2006, your Honorable Board held initial hearings on a previous rough draft program, and created an Ad Hoc Water Conservation Committee (Mike Winn and Larry Vierheilig) to guide the process. The Ad Hoc Committee has met frequently with NCSD's new Water Conservation Coordinator Celeste Whitlow and with District Legal Counsel. Staff submitted the October 2007 Water Conservation Program to your Honorable Board along with the October 10, 2007 Board Packet. At the October 10, 2007 Meeting, your Honorable Board reached closure on six policy issues (see attached minutes) and directed staff to return with more information on the issue of restructuring future water rates to include a third tier. Specifically, the Board directed staff to research the results of Arroyo Grande's conversion to a multiple tier inclining rate block structure and to document the potential savings that could result from reducing the usage of large users.

Attached is a memo from Celeste Whitlow regarding the City of Arroyo Grande's water usage reductions resulting from the adoption of an inclining block rate structure and various retrofit offers. According to the City's cumulative use records, consumption has decreased by about 10% as a result of the City's actions.

Also attached are copies of e-mails from Bob Reed regarding the potential savings related to reduction in the usage of large customers. According to Mr. Reed's analysis, if NCSD customers using more than one standard deviation above the mean were to reduce their consumption to one standard deviation above the mean, total consumption would decrease by 13%.

RECOMMENDATION

Staff recommends that your Honorable Board discuss the research described above and then provide policy guidance on the following issue:

1. Should NCSD adopt a three-tier inclining block rate structure for all residential customers (single family and multiple-family) to encourage conservation?

STAFF RECOMMENDATION: Yes, staff believes that a multi-tier inclining block rate structure is essential to achieving a meaningful reduction in demand amongst larger users and it should be implemented when NCSD next adjusts its water rates. The research detailed in the Draft WCP and the Arroyo Grande Memo shows that rates are the most effective practice in reducing demand and that all other practices rely on the rates to motivate the consumer. Bob Reed has demonstrated that if the relatively small number of customers who use more water than one standard deviation above the median were to reduce their consumption to one standard

deviation, then total demand would drop by 13%. Staff further believes that applying the multi-tier inclining block rate structure to all residential classes will be more equitable than the current structure and that the program will have more credibility.

Should the Board agree to apply a three tier rate structure to future rate increases, then staff recommends that the Board adopt the draft Water Conservation Program and order implementation. Should the Board not agree to apply a three tier rate structure to future rate increases, then additional revisions to the Water Conservation Program should be referred back to the Water Conservation Committee.

ATTACHMENTS

- Minutes from October 10, 2007 Board Meeting
- Memo regarding water savings at Arroyo Grande
- E-Mails from Bob Reed regarding Savings related to reduction of large user usage

T:\BOARD MATTERS\BOARD MEETINGS\BOARD LETTER\BOARD LETTER 2007\WCP Adoption.DOC

NIPOMO COMMUNITY SERVICES DISTRICT

Celebrating 42 - Years of Service 1965 - 2007

MINUTES

OCTOBER 10, 2007 9:00 A. M.

BOARD ROOM 148 SOUTH WILSON STREET, NIPOMO, CA

BOARD of DIRECTORS

MICHAEL WINN, **PRESIDENT**
LARRY VIERHEILIG, **VICE PRESIDENT**
CLIFFORD TROTTER, **DIRECTOR**
ED EBY, **DIRECTOR**
JAMES HARRISON, **DIRECTOR**

PRINCIPAL STAFF

BRUCE BUEL, **GENERAL MANAGER**
LISA BOGNUDA, **ASSIST. GENERAL MANAGER**
DONNA JOHNSON, **BOARD SECRETARY**
JON SEITZ, **GENERAL COUNSEL**
DAN MIGLIAZZO, **UTILITY SUPERVISOR**

Mission Statement: The Nipomo Community Services District's mission is to provide the community with reliable, quality and cost-effective services.

Vision Statement: The Nipomo Community Services District's vision is to manage the resources and future growth of the community.

00:00:00

A. CALL TO ORDER AND FLAG SALUTE

President Winn called the meeting to order at 9:01 a.m. and led the flag salute.

00:00:48

B. ROLL CALL

At Roll Call, all Board members were present.

00:00:55

C. PRESENTATIONS AND PUBLIC COMMENT

C-1) NCSD WATER CONSERVATION COORDINATOR CELESTE WHITLOW

Celeste Whitlow gave an overview of the 2007 Nipomo Creek Clean-Up Event.

She stated that the event went very well, even beyond expectation. There were 12 adults and 38 minors who participated. Rick Motley, NCSD maintenance crew stepped up to help and was very good at problem solving. Some things were taken to the transfer station. About two weeks before the event, a great deal of irrigation tape had been picked up by a community member. There was still more in the creek that was picked up at the event.

C-2) BATTALION CHIEF FISHER OF CAL FIRE

Battalion Chief Bill Fisher presented information concerning the activities of CAL FIRE on the Nipomo Mesa. A copy of the activity report is available for viewing in the District office. He stated that there was a fatal fire Saturday, October 6th. There were no sprinklers or smoke detectors in the house. The regulations may soon be changed for requirements of overhead sprinklers from 5000 sq. ft. to 1000 sq. ft. This is Fire Prevention Week.

Alisa Ann Rausch Burn Foundation Run will occur on Thursday, October 11, 2007. This event helps raise money for burn survivors and for fire prevention programs in the schools.

The Board asked him some questions about flow restrictions. Mr. Buel added that the proposed emergency water shortage ordinance is on the District website on Item E-2 for further information about the ordinance. The Board thanked Battalion Chief Fisher for his presentation.

Nipomo Community Services District
REGULAR MEETING
MINUTES

C-3) DIRECTORS' ANNOUNCEMENTS OF DISTRICT & COMMUNITY INTEREST
Receive Announcements from Directors Items of District & Community Interest

Director Harrison

Chamber of Commerce Day in the Park (October Festival) will occur on October 13, 2007. The Rotary Club will be barbequing tri tips.

Nipomo Incorporation Committee for Education (NICE) will have a booth at the festival. There will be a workshop for NICE October 20th 9:00 a.m. to 12:00 p.m. at Blacklake.

Director Vierheilig

Nipomo Dunes Collaborative – October 11, 2007, 9:00 a.m. - strategy meeting to be held at the Dunes Center in preparation of Friday meeting with the Regional Water Quality Control Board and staff regarding fate of \$7,000,000 from the Guadalupe oil spill.

Director Winn

County Staff will discuss new septic changes in workshop to be held October 19, 2007, 1:00 to 3:00 p.m. in the new chambers.

Chamber of Commerce luncheon, will occur on Wednesday, Oct. 31, 2007 at Blacklake

C-4) PUBLIC COMMENT ON ITEMS NOT ON AGENDA

The following members of the public spoke:

Pat Eby, NCS D resident (Blacklake) thanked the staff and directors for work on the proposed merger. She asked the Board for more time for the committee to investigate the information further.

President Winn asked Ms. Eby to submit her proposal by October 24, 2007.

Ms. Eby also stated that there was an editorial in the newspaper today (Oct. 10, 2007) concerning local entities from Oceano, Arroyo Grande, and Grover Beach working together to build a desalination plant. Perhaps Nipomo could participate.

Bruce Buel, General Manager, answered that there have been meetings concerning this subject and there are more to come. Item E-1 in today's agenda will discuss this also.

00:21:02

CONSENT AGENDA

D-1) APPROVE WARRANTS

D-2) APPROVE BOARD MEETING MINUTES

Approve Minutes of September 26, 2007 Meeting

D-3) REVISE GENERAL MANAGER'S EMPLOYMENT AGREEMENT TO INCREASE COMPENSATION

D-4) BOARD MEETING AND OFFICE SCHEDULE – NOVEMBER AND DECEMBER

D-5) ACCEPT BLACKLAKE POND #3 LINER REPLACEMENT PROJECT AND ISSUE NOTICE OF COMPLETION

The Board asked some questions about the Warrants.

There was no public comment. Upon motion by Director Eby, and seconded by Director Vierheilig, the Board unanimously approved the Consent Agenda. Vote 5-0.

YES VOTES	NO VOTES	ABSENT
Directors Eby, Vierheilig, Trotter, Harrison, and Winn	None	None

E. ADMINISTRATIVE ITEMS

00:24:47

E-1) RECEIVE BOYLE TECHNICAL MEMORANDUM REGARDING DEVELOPMENT OF A DESALINATION PROJECT FOR SUPPLEMENTAL WATER SUPPLY

Bruce Buel, General Manager, introduced the item. He also introduced Mr. Mike Nunley, Mr. Malcom McEwen, and Ernie Kartinen.

E-1) RECEIVE BOYLE TECHNICAL MEMORANDUM REGARDING DEVELOPMENT OF A DESALINATION PROJECT FOR SUPPLEMENTAL WATER SUPPLY (continued)

Mike Nunley, Boyle Engineering project manager for the desalination project, explained the progress of the development of the research for the report.

Malcolm McEwen, Boyle Engineering, reviewed the slide presentation (copy available for viewing in District office) and answered questions from the Board.

The following member of the public spoke:

Ian Wallace, NCSD resident (Blacklake) – asked that since brackish water is less expensive to treat with reverse osmosis than salt water, has the engineer looked at using the brackish lakes.

Mr. McEwen answered that the supplemental water supply that NCSD must obtain needs to be outside the Nipomo Mesa groundwater area.

The Board discussed the presentation.

Brackish water taken from west of the NMMA must not adversely affect the NMMA users. It was asked where the fresh water/sea water interfaces.

Ernie Kartinen, Boyle Engineering Bakersfield – stated that if you draw aquifer fresh water in then sea water will come in.

Mr. McEwen, when asked about the test plant, stated that the test plant would probably become a part of the final plant.

The energy side of desalination would be large. An energy source could be built sooner than the desalination plant and be utilized.

Mr. Buel suggested that the Board read the text of Assembly Bill 946 (included in the Manager's Report portion of the packet) that enables the District to do off-site mitigation and the CSD law that establishes latent powers.

The Board requested that staff continue talks with South San Luis Obispo Sanitation District for sharing technology.

The Board took a break at 10:10 a.m. and returned at 10:25 a.m.

E-2) RECEIVE DRAFT EMERGENCY WATER SHORTAGE REGULATIONS, EDIT DRAFT AND CREATE STANDING COMMITTEE TO DEVELOP REVISIONS

Bruce Buel, General Manager, explained the premise for creating Emergency Water Shortage Regulations. The District has retained SAIC to look at groundwater levels for participation in the Nipomo Mesa Area Technical Group. SAIC has published potential triggers for the Board to consider related to the severity of the water supply emergency and four conservation programs designed to achieve the desired demand reduction.

Jon Seitz, District Legal Counsel, described how and why the ordinance was developed. The Board discussed the draft and made suggestions for some changes.

The Board took a short break at 11:50 a.m. to have some additional information copied for distribution to the Board and the public. The Board reconvened at 11:55 a.m.

Mr. Seitz presented additional wording in the Water Shortage Conservation Trigger Points for the different stages of water emergency. (A copy is available for viewing in the District office.)

The Board continued to discuss the draft ordinance.

The taping
started over
at 00:00:00

Nipomo Community Services District
REGULAR MEETING
MINUTES

E-2) RECEIVE DRAFT EMERGENCY WATER SHORTAGE REGULATIONS, EDIT DRAFT AND CREATE STANDING COMMITTEE TO DEVELOP REVISIONS (continued)

The following member of the public spoke:

Bill Nelson, NCSD resident – stated that the City of New York puts a lien on the property when the owner is not paying the bills. He asked if the District could do that also. He also suggested that NMMA and NMCA be spelled out in the ordinance. SAIC letter defines groundwater in storage above sea level as GWS.

Upon motion by Director Trotter and seconded by Director Eby, the Board agreed to convert the Ad Hoc Water Conservation Committee to a Standing Committee with Mike Winn and Larry Vierheilig as members. Vote 5-0.

YES VOTES	NO VOTES	ABSENT
Directors Trotter, Eby, Vierheilig, Harrison, and Winn	None	None

02:37:45

I. CLOSED SESSION ANNOUNCEMENTS

Jon Seitz, District Legal Counsel, announced the following items to be discussed in Closed Session. There was no public comment.

1. CONFERENCE WITH LEGAL COUNSEL PENDING LITIGATION GC§54956.9 SMVWCD VS NCSD SANTA CLARA COUNTY CASE NO. CV 770214 AND ALL CONSOLIDATED CASES.
2. CONFERENCE WITH LEGAL COUNSEL PENDING LITIGATION GC§54956.9 MARIA VISTA VS. NCSD CASE NO. CV 040877, MARIA VISTA VS. NCSD CASE NO. CV 061079, AND MARIA VISTA VS. LINDA VISTA FARMS, NCSD ET AL. CASE NO. CV 040150;
3. CONFERENCE WITH LEGAL COUNSEL RE: PENDING LITIGATION PURSUANT TO GOVERNMENT CODE SECTION 54956.9; MARIA VISTA ESTATES V. NCSD ET AL. (CASE NO. ND07-10362RR IN UNITED STATES BANKRUPTCY COURT, CENTRAL DISTRICT, NORTHERN DIVISION
4. CONFERENCE WITH LEGAL COUNSEL RE: PENDING LITIGATION PURSUANT TO GOVERNMENT CODE SECTION 54956.9; NCSD VS. SLO COUNTY (CASE NO. CV 070066)

J. PUBLIC COMMENT ON CLOSED SESSION ITEMS

There was no public comment.

K. ADJOURN TO CLOSED SESSION

The Board adjourned to Closed Session at 1:12 p.m.

00:02:19

L. OPEN SESSION
ANNOUNCEMENT OF ACTIONS, IF ANY, TAKEN IN CLOSED SESSION

The Board came back into Open Session at 2:00 p.m. Director Trotter left the meeting. Jon Seitz, District Legal Counsel, announced out of Closed Session that the Board heard updates on the items listed above. There was no reportable action.

**Nipomo Community Services District
REGULAR MEETING
MINUTES**

3:18

E-3) RECEIVE DRAFT WATER CONSERVATION PROGRAM, EDIT DRAFT AND SET DATE FOR PUBLIC HEARING

Bruce Buel, General Manager introduced Celeste Whitlow to present the draft Water Conservation Program.

Celeste Whitlow, NCS D Water Conservation Specialist, reviewed the slide presentation of the Water Conservation Program. She showed why the District's customers should conserve water and demonstrated ways in which to accomplish this.

The Board reviewed the Water Conservation Programs policy issues.

Jon Seitz, District Legal Counsel, stated that the District needs to set a goal.

The Board considered the questions posed in the October 10th Board letter.

1. Should NCS D implement a Water Conservation Program with a goal of reducing overall consumption by 15% (not each account) within three years?

Upon motion by Director Vierheilg and seconded by Director Harrison, the Board agreed that NCS D should implement a Water Conservation Program with a goal of reducing overall consumption by 15% (not each account) within three years. Vote 3-1 with Director Eby voting no.

YES VOTES	NO VOTES	ABSENT
Directors Vierheilg, Harrison, and Winn	Director Eby	Director Trotter

2. Should NCS D adopt a policy that Water Conservation savings shall be credited only to ratepayers within District Boundaries, not to serve annexations from outside or land use changes inside the District boundaries?

Upon motion by Director Vierheilg and seconded by Director Eby, the Board agreed that NCS D adopt a policy that Water Conservation savings shall be credited only to ratepayers within District Boundaries, not to serve annexations from outside or land use changes inside the District boundaries. Vote 4-0

YES VOTES	NO VOTES	ABSENT
Directors Harrison, Vierheilg, Eby, and Winn	None	Director Trotter

3. Should NCS D take a leadership role in proactively encouraging NMMA Purveyors and Well Users to achieve a 15% use reduction?

Upon motion by Director Harrison and seconded by Director Vierheilg, the Board agreed that NCS D should take a leadership role in proactively encouraging NMMA Purveyors and Well Users to achieve a 15% use reduction

YES VOTES	NO VOTES	ABSENT
Directors Vierheilg, Eby, Harrison, and Winn	None	Director Trotter

4. Should NCS D adopt a three-tier inclining block rate structure for all residential customers (single family and multiple-family) to encourage conservation?

The Board agreed to continue consideration of this question.

5. Should NCS D adopt a rate design that rewards frugal users for continuing to conserve water?

Upon motion by Director Vierheilg and seconded by Director Eby, the Board agreed that NCS D should adopt a rate design that rewards frugal users for continuing to conserve water. Vote 3-1 with Director Harrison voting no.

YES VOTES	NO VOTES	ABSENT
Directors Vierheilg, Eby, and Winn	Director Harrison	Director Trotter

Nipomo Community Services District
REGULAR MEETING
MINUTES

E-3) RECEIVE DRAFT WATER CONSERVATION PROGRAM, EDIT DRAFT AND SET DATE FOR PUBLIC HEARING (continued)

- 6. Which of the Optional Programs should NCSD implement if the CORE WC PROGRAM is implemented?

Upon motion by Director Eby and seconded by Director Harrison, the Board agreed that NCSD should implement the portions of the Non-Core Water Conservation Program that executes a High Efficiency Clothes Washer Rebate program, the Indoor Plumbing (Non-Toilet) Retrofit Program, and the Irrigation Efficiency Equipment Program which offers the best return for funds invested along a series of pilot programs starting with the xeriscape/turf replacement and ET-Controller Rebate Measures. Vote 4-0.

YES VOTES	NO VOTES	ABSENT
Directors Eby, Harrison, Vierheilig, and Winn	None	Director Trotter

- 7. What process should NCSD follow to track the success of the adopted WC Program?

Upon motion by Director Eby and seconded by Director Harrison, the Board agreed that NCSD should evaluate the Program twice per year – once in Spring when the District reviews the April 1 Water Storage Calculation and once in Fall after the peak summer-use period. Each review should evaluate the change in consumption per connection for the prior 12 month period along with details on program implementation. Vote 4-0.

YES VOTES	NO VOTES	ABSENT
Directors Eby, Harrison, Vierheilig, and Winn	None	Director Trotter

The Board set a hearing date of November 14, 2007, for implementation of the Water Conservation Program.

The Board asked Ms. Whitlow to use specific demographics to represent the Nipomo area in multi-tier rate structures.

01:58:04

F. MANAGER'S REPORT

Bruce Buel, General Manager, added the following to the Manager's Report in the packet. An appeal of the Nipomo Community Park Mitigated Negative Declaration has been prepared to be submitted to the County on October 11, 2007. Any suggestions will be appreciated by early Thursday.

The Board asked questions about the report. Mr. Buel explained.

When asked about the Utility Superintendent, Mr. Buel explained that the filing deadline is November 28, 2007. He will be advertising at the American Water Works Association conference Nov. 22nd.

02:06:12

G. COMMITTEE REPORTS

Supplemental Water Design Committee scheduled October 15, 2007.

Director Vierheilig

Finance, Audit, and Personnel Committee meeting was October 9, 2007. Draft audit report looked good. New format takes some getting used to.

H. DIRECTORS' REQUESTS TO STAFF AND SUPPLEMENTAL REPORTS

Director Eby

Asked about the hearing October 24th with Holanda as a result of appeal. Mr. Buel stated that the appeal hearing is yet to be scheduled.

Director Winn

Planning Commission will be meeting October 11, 2007. Some confusion in the agenda and staff report for affordable housing and EIR for inclusionary housing.

Director Harrison

Asked about a possible requirement for a meter for secondary units on a parcel.

ADJOURN

President Winn adjourned the meeting at 4:15 p.m.

➤ THE NEXT REGULAR BOARD MEETING IS OCTOBER 24, 2007.
TENTATIVELY SCHEDULED ITEMS INCLUDE:

- FY06-07 Audit
- Combined Water System Financial Plan

MEMORANDUM

TO: Bruce Buel
 FROM: Celeste Whitlow
 DATE: 11/06/2007
 RE: City of Arroyo Grande's rate structure, water conservation

Pursuant to the request of the District's Board of Directors, information regarding the City of Arroyo Grande's water consumption pre- and post- water rate structure change was undertaken.

WATER USE AND RATE STRUCTURE

The City of Arroyo Grande (AG) encompasses 5.45 miles, with a population of 16,700 people in 2006.

AG bills customers for water and sewer services on a bi-monthly basis. Prior to March 2006, AG billed their water customers on a flat-rate basis. In March 2006 a 4-tiered inclining-block rate structure was implemented. According to Director of Public Works/City Engineer, Don Spagnolo, the rate structure was planned (analyst: Clayton Tuckfield & Associates, 949-760-9454) so that the average median home (~32 units/billing period) would not have a rate change, but that the incentive would be felt by those using the most water. Mr. Spagnolo believes there has been about a 10% decrease in consumption since the 4-tiered rate structure was implemented.

Both the single-family (SFR) and multi-family (MFR) residence categories' are charged a base rate and then a 4-tiered commodity rate. The amount charged at each tier for both categories is the same, and the %increase between tiers is the same: tier 2 is 11% more than tier 1, tier 3 is 13% more than tier 2, tier 4 is 21% more than tier 3. This has remained the same in the years since the 4-tiered rate structure was implemented. The delineation between size of the tiers is different, with the SFR category having larger tiers than the MFR category (translated: it takes more water consumption for the MFR category to reach tier 4 than it does the SFR category).

Commercial customers are not charged by tiers. The commercial category is broken into different sub-categories (i.e., "motel," "church").

AG WATER BIMONTHLY COMMODITY CHARGES, FY 2007-2008			
Residential	SFR (Inside City)	1st 12 CCF	1.09
(Inside City)	SFR (Inside City)	Next 20 CCF	1.21
	SFR (Inside City)	Next 32 CCF	1.37
	SFR (Inside City)	Over 64 CCF	1.66
	MFR	1st 12 CCF	1.09
	MFR	Next 6 CCF	1.21
	MFR	Next 12 CCF	1.37
	MFR	>30 CCF	1.66
Commercial	Business		1.21
	Church		1.21
	School		1.21
	Hospital		1.21
	Irrigation		1.33
	Motel		1.21
	Convalescent		1.21
	Other		1.21
	WaterWheeling		1.20
	Hydrant		8.78

SEWER RATE STRUCTURE

AG's bills its sewer customers by a base rate plus a volumetric rate. The volumetric rate is based on the account's volume of water consumption. The percentage of water consumption used to calculate sewer charges is 50% for SFR, 75% for MFR and 85% for six commercial types. (Translation: If a SFR used 20 units of water, the sewer charges would be based on 10 units.) There are no tiers in the sewer volumetric charges.

WATER CONSUMPTION

Review of the Department of Water Resources Public Water System Statistics for Arroyo Grande, and the monthly precipitation rates from CIMIS, for years 2004, 2005 and 2006 was performed, and analysis accomplished. Refer to the attached Excel spreadsheets for specifics.

VOLUMETRIC SEWER CHARGES ARROYO GRANDE, FY 2007-2008		
CATEGORY	% OF WATER VOLUME CHARGED	CHARGE PER CCF
SFR	50%	\$0.40
MFR	75%	\$0.56
Business	85%	\$0.62
Church	85%	\$0.62
School	85%	\$0.62
Hospital	85%	\$0.62
Motel	85%	\$0.62
Convalescent	85%	\$0.62

Comparing 2004 to 2005:

Average AF/Y %difference for all categories: -10.69%
Average AF/Y %difference for SFR category: -10.74%
(Translated: the average SFR account used 10.74% less in 2005 than in 2004; the average account used 10.69% less in 2005 than in 2004.)

AG delivered 3489.5 AF in 2004, 3204.4 AF in 2005, producing a -8.9% difference.
(Translated: AG's customers used 8.9% less water in 2005 than in 2004).

Comparing 2005 to 2006:

Average AF/Y %difference for all categories: -8.10%
Average AF/Y %difference for SFR category: -8.22%
(Translated: the average SFR used 8.22% less in 2005 than in 2004; the average account used 8.10% less in 2005 than in 2004).

AG delivered 3204.4 AF in 2005, 3037.3 AF in 2006, producing a -5.5% difference.
(Translated: AG's customers used 5.5% less water in 2006 than in 2005).

Comparing March-December 2005 to March-December 2006

From March-December 2005, 2817 AF were used by AG's water customers. From March-December 2006, 2628.5 AF were used. The difference, comparing 2005 to 2006, was -7.20%.
(Translated: during the months March-December, 2005's water use was 7.2% more than the same period in 2006.)

WATER PRODUCTION

PRODUCTION and LOSS FIGURES ARROYO GRANDE, 2004-2006

YEAR	PRODUCED (Acre-Feet)	DELIVERED (Acre-Feet)	%LOSS
2004	35,93.6	3489.5	2.9%
2005	34,14.6	3204.4	6.2%
2006	33,24.3	3037.3	8.6%
TOTALS:	10,332.5	9731.2	(Avg) 5.8%

PLUMBING RETROFIT

The City of Arroyo Grande has undertaken a plumbing retrofit program for its residential accounts.

In February 2005, a mandatory plumbing retrofit program with the change of ownership of a residential property was undertaken, to include installation of toilets that used 1.6 gallons per flush (GPF) or less, and showerheads that used 2.5 gallons per minute (GPM) or less. Before escrow can close, the seller must obtain a certificate of compliance from the City's Public Works Department. The cost for this retrofit is borne by the seller. The seller can use the City's free plumbing retrofit program, or the seller can pay for it.

As of March 2006, the City was offering a free retrofit program for residences built between 1985 and 1992. The program included installation of 1.6-GPF toilets, 2.0-GPM faucet aerators, 2.5-GPM showerheads, and new pressure regulators not to exceed 80 psi.

AG contracts with a company which installs the ultra-low-flow (ULFT) toilets (1.6 GPF), showerheads, aerators, and pressure restrictor at each resident's home. AG pays for and provides the plumbing hardware to be installed. AG targets one area at a time.

The City contracts the installation with plumbers/installers. For three years they contracted with Midstate Plumbing. Last year they solicited bids, and now are with Water Boys (who also provide this service for the City of San Luis Obispo). City staff recently contacted customers who had the plumbing retrofit performed, and there was an overall very positive report of the Water Boys installers.

The program costs include toilets at \$168 each; the cost for the entire program, per home, is around \$400 to \$500.

SUMMARY

Arroyo Grande made available its DWR Public Water Systems Statistics filings for years 2004, 2005 and 2006.

From 2004 to 2006, the City of Arroyo Grande's average consumption per account decreased by 19.65% (comparing average AF/Y per account). Average consumption per single-family-residence account decreased 19.84%, from 2004 to 2006.

During this time period AG embarked on a plumbing-retrofit program and changed the way it billed water and sewer customers.

The billing change occurred in March 2006, when a 4-tier inclining block rate structure was implemented. The rate structure was developed to specifically target the customers who use larger amounts of water. In addition, the City uses volumetric rates for sewer charges. Volume charges for sewer are based on a percentage of the water consumed. For single-family residences, 50% of the water consumption is billed for sewer charges; for multi-family residences are billed at 75%, and commercial accounts are billed at 85%.

Arroyo Grande's water consumption decreased by almost 20%, comparing 2004 to 2006 DWR figures. It would be expected that this reduction was due to a combination of factors, including the institution of the 4-tier rate structure, the plumbing retrofit program, public education and outreach, and weather.

The monthly precipitation levels from California Irrigation Management Information System (CIMIS) for 2004, 2005 and 2006 (Station #52). Both AG and NCS D bill bi-monthly, with a two-month lag between consumption and bill receipt by customer. (Example: A bill mailed at the first of March was for a reading taken at the end of February/first of March, and is for the months February and March.) Allowing for this discrepancy, the water consumption (especially the percent differences between 2004-2005 and 2005-2006) roughly, but not always, follow the precipitation pattern. Please refer to the attached Excel spreadsheets and graphs for specifics.

Arroyo Grande's 4-tier rate structure was instituted in March 2006, and since consumption figures are only available until the end of 2006, there are only nine months following the initiation of the rate structure for which we have consumption figures. However, during that period of time, during November and December, the City's water consumption was actually higher than both 2005 and 2004. This may be attributable to the extremely dry winter California experienced last year. It is noteworthy that, from 2004 through 2006, NCS D's consumption figures also declined, but have steadily increased in 2007.

Therefore, because of the mere nine-month period of figures available since Arroyo Grande implemented its 4-tier inclining block rate structure, I do not believe a conclusion can be made regarding the impact of the multi-tiered rate structure based on the DWR figures available.

Arroyo Grande's Director of Public Works, Don Spagnolo, believes that there has been a ~10% reduction in water use since the initiation of the 4-tiered rate structure. From March 2006 to November 2007 is 20 months, and a 10% decrease in water consumption (during a very dry winter and following year) is a very good result.

Thank you for the opportunity to perform this review and analysis.

T:\DOCUMENTS\STAFF FOLDERS\CELESTE\CONSERVATION PROGRAM FILES\WC-PROGRAM
NCS D\ARROYO GRANDE-MEMO RE 4-TIERED RATES.DOC

**ARROYO GRANDE WATER CONSUMPTION FIGURES
2004-2006, WITH COMPARISON PRE- AND POST- 4-TIER INCLINING BLOCK RATE**

Year	Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL	TOTAL	Meters	Avg.AFY/ % of	
														(AFY)	(Gallons)		Meter	Total
2004	SFR	143.20	146.30	201.00	229.00	242.40	271.10	265.80	257.00	248.00	207.50	156.00	145.10	2,512.40	818,668,052.40	5484	0.46	72.00%
2004	MFR	17.90	18.30	25.10	28.60	30.30	33.90	33.20	32.10	31.00	25.90	19.50	18.10	313.90	102,284,628.90	106	2.96	9.00%
2004	CI	23.90	24.40	33.50	38.20	40.40	45.20	44.30	42.80	41.30	34.60	26.00	24.20	418.80	136,466,398.80	384	1.09	12.00%
2004	Landsc	11.90	12.20	16.80	19.10	20.20	22.60	22.10	21.40	20.70	17.30	13.00	12.10	209.40	68,233,199.40	102	2.05	6.00%
2004	Other	2.00	2.00	2.80	3.20	3.40	3.70	3.70	3.60	3.50	2.90	2.20	2.00	35.00	11,404,785.00	46	0.76	1.00%
2004	AG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	
TOTAL DELIVERED		198.90	203.20	279.20	318.10	336.70	376.50	369.10	356.90	344.50	288.20	216.70	201.50	3489.50	1,137,057,064.50	6122	0.57	

Year	Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL	TOTAL	Meters	Avg.AFY/ % of	
														(AFY)	(Gallons)		Meter	Total
2005	SFR	147.20	131.30	133.30	152.90	204.10	243.70	255.20	250.60	242.40	215.60	175.50	155.50	2,307.30	751,836,012.30	5577	0.41	72.00%
2005	MFR	18.40	16.40	16.70	19.10	25.50	30.50	31.90	31.30	30.30	26.90	21.90	19.40	288.30	93,942,843.30	107	2.69	9.00%
2005	CI	24.50	21.90	22.20	25.50	34.00	40.60	42.50	41.80	40.40	35.90	29.30	25.90	384.50	125,289,709.50	388	0.99	12.00%
2005	Landsc	12.30	10.90	11.10	12.70	17.00	20.30	21.30	20.90	20.20	18.00	14.60	13.00	192.30	62,661,147.30	105	1.83	6.00%
2005	Other	2.00	1.80	1.90	2.10	2.80	3.40	3.50	3.50	3.40	3.00	2.40	2.20	32.00	10,427,232.00	46	0.70	1.00%
2005	AG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	
TOTAL DELIVERED		204.40	182.30	185.20	212.30	283.40	338.50	354.40	348.10	336.70	299.40	243.70	216.00	3204.40	1,044,156,944.40	6223	0.51	
2005	%Dif 04:05	2.69%	-11.46%	-50.76%	-49.84%	-18.81%	-11.23%	-4.15%	-2.53%	-2.32%	3.74%	11.08%	6.71%	-8.90%	-8.90%	1.62%	-10.69%	

Year	Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL	TOTAL	Meters	Avg.AFY/ % of	
														(AFY)	(Gallons)		Meter	Total
2006	SFR	154.90	139.40	115.60	122.70	173.50	213.10	238.30	243.50	225.40	203.30	186.30	170.70	2,186.70	712,538,381.70	5720	0.38	71.99%
2006	MFR	17.20	15.50	12.80	13.60	19.30	23.70	26.50	27.10	25.00	22.60	20.70	19.00	243.00	79,181,793.00	107	2.27	8.00%
2006	CI	25.80	23.20	19.30	20.40	28.90	35.50	39.70	40.60	37.60	33.90	31.10	28.50	364.50	118,772,689.50	395	0.92	12.00%
2006	Landsc	15.20	13.60	11.20	11.90	16.90	20.70	23.20	23.70	21.90	19.80	18.10	16.60	212.80	69,341,092.80	108	1.97	7.01%
2006	Other	2.10	1.90	1.60	1.70	2.40	3.00	3.30	3.40	3.10	2.80	2.60	2.40	30.30	9,873,285.30	46	0.66	1.00%
2006	AG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	
TOTAL DELIVERED		215.20	193.60	160.50	170.30	241.00	296.00	331.00	338.30	313.00	282.40	258.80	237.20	3037.30	989,707,242.30	6376	0.48	
2006	%Dif 05:06	5.02%	5.84%	-15.39%	-24.66%	-17.59%	-14.36%	-7.07%	-2.90%	-7.57%	-6.02%	5.83%	8.94%	-5.50%	-5.50%	2.40%	-8.10%	

Water used since 4-tiered water conservation rate pricing started

% DIFFERENCE, 2004-2005 and 2005-2006, ARROYO GRANDE WATER USE														
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AF/Meter	
2006	%Dif 05:06	5.02%	5.84%	-15.39%	-24.66%	-17.59%	-14.36%	-7.07%	-2.90%	-7.57%	-6.02%	5.83%	8.94%	-10.69%
2005	%Dif 04:05	2.69%	-11.46%	-50.76%	-49.84%	-18.81%	-11.23%	-4.15%	-2.53%	-2.32%	3.74%	11.08%	6.71%	-8.10%

ARROYO GRANDE, COMPARISON OF WATER USAGE, 2004-2006													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2004	198.90	203.20	279.20	318.10	336.70	376.50	369.10	356.90	344.50	288.20	216.70	201.50	
2005	204.40	182.30	185.20	212.30	283.40	338.50	354.40	348.10	336.70	299.40	243.70	216.00	
2006	215.20	193.60	160.50	170.30	241.00	296.00	331.00	338.30	313.00	282.40	258.80	237.20	

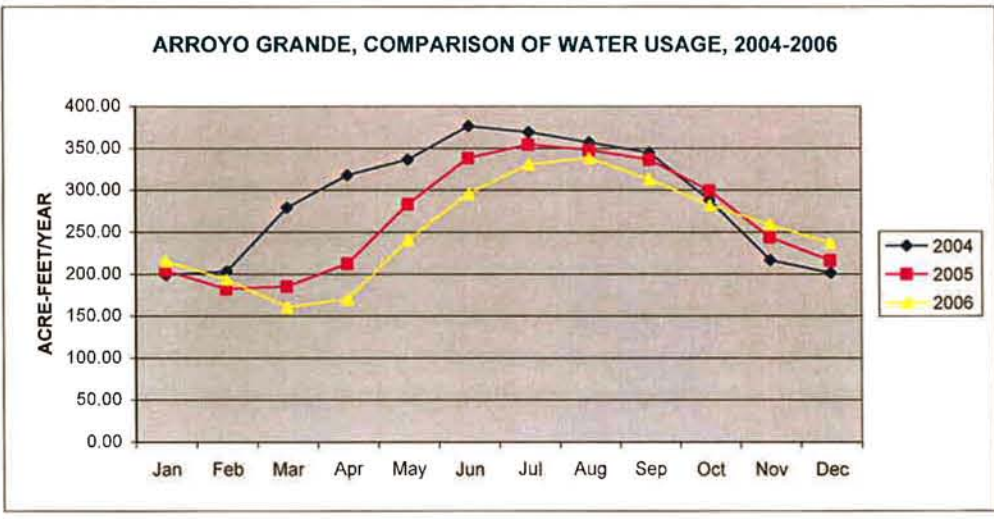
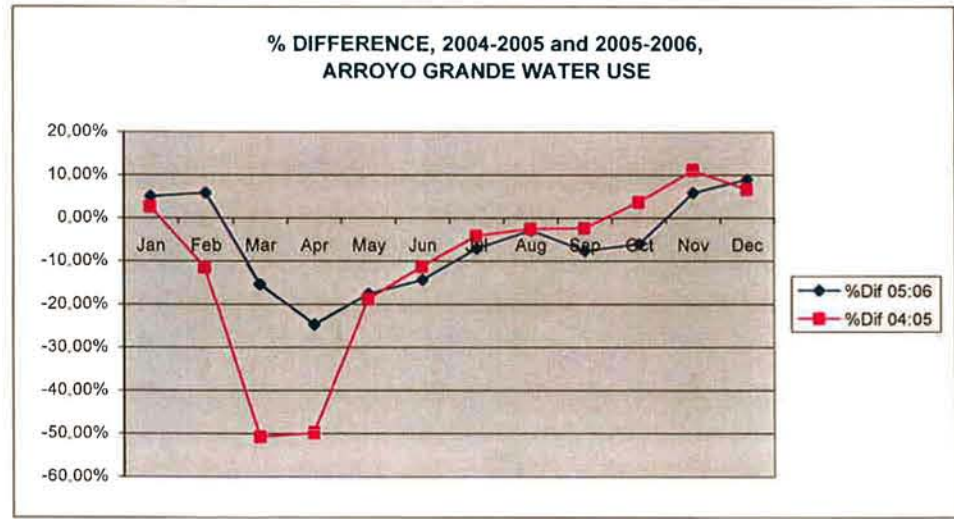
Water used since 4-tiered water conservation rate pricing started

COMPARISON: AG, NCSD, PRECIPITATION (2004, 2005, 2006)													
Year	Var.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2004	AG	198.90	203.20	279.20	318.10	336.70	376.50	369.10	356.90	344.50	288.20	216.70	201.50
2004	NCSD	181.95	98.66	176.57	112.54	267.29	212.36	418.92	244.43	426.23	235.00	330.05	106.24
2004	PRECIP	1.05	5.96	0.57	0.00	0.00	0.00	0.00	0.00	0.00	2.34	2.54	5.27
2005	AG	204.40	182.30	185.20	212.30	283.40	338.50	354.40	348.10	336.70	299.40	243.70	216.00
2005	NCSD	209.51	105.79	143.97	93.14	239.68	163.04	336.21	178.42	436.15	205.06	381.80	145.74
2005	PRECIP	2.69	5.75	4.05	1.76	1.96	0.07	0.00	0.00	0.00	0.00	0.00	0.00
2006	AG	215.20	193.60	160.50	170.30	241.00	296.00	331.00	338.30	313.00	282.40	258.80	237.20
2006	NCSD	237.59	89.73	196.18	125.03	140.61	130.42	362.86	187.28	442.97	197.17	353.23	144.92
2006	PRECIP	0.90	1.48	5.17	2.39	1.58	0.00	0.03	0.00	0.00	0.10	0.42	2.85

17.73

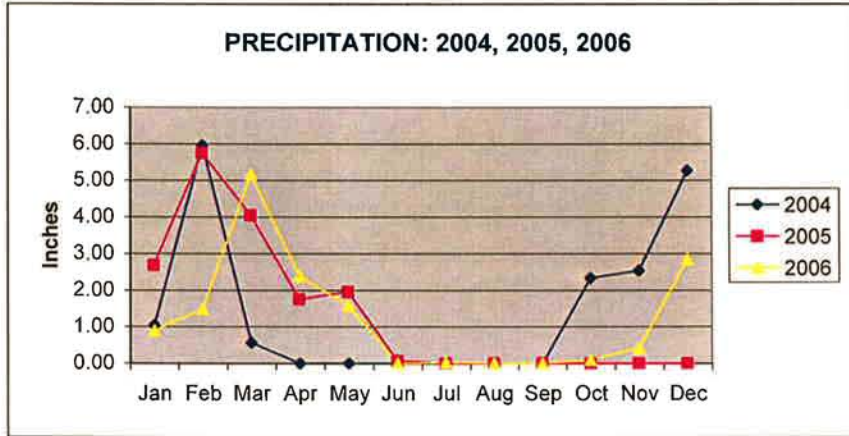
16.28

14.92



PRECIPITATION: 2004, 2005, 2006 (CIMIS, Station #52)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
2004	1.05	5.96	0.57	0.00	0.00	0.00	0.00	0.00	0.00	2.34	2.54	5.27	17.73
2005	2.69	5.75	4.05	1.76	1.96	0.07	0.00	0.00	0.00	0.00	0.00	0.01	16.29
2006	0.90	1.48	5.17	2.39	1.58	0.00	0.03	0.00	0.00	0.10	0.42	2.85	14.92



Bruce Buel

From: Bob Reed [Bob@TheReedGroup.org]
Sent: Tuesday, October 17, 2006 3:35 PM
To: Madonna Dunbar
Cc: Bruce Buel
Subject: RE: question on Nipomo water use study
Attachments: Revised Analysis Table.pdf; Data Analysis.XLS

Madonna and Bruce,

In reviewing the analysis to address your questions I discovered two errors in cell formulas. These occurred when I changed the winter/summer seasons to the low and high usage bill cycles (I won't bore you with the details). The attached files include the corrected analyses. However, the correction does not change the questions that you posed. Here are my answers:

1. The "mean + 1 std. dev." differs for each time period. It is 118 in summer, 60 in winter, and 94 annually. In the annual calculation, the usage > M+1SD captures more of the summer usage than it does in the summer-only calculation (because 94 is less than 118). The reverse happens for winter. That is, in the annual calculation, the usage > M+1SD captures less of the winter usage than it does in the winter-only calculation (because 94 is more than 60). The increase in the summer is greater than the decrease in the winter. Therefore, the annual calculation yields a value that is greater than the sum of the 2 seasons analyzed by themselves.
2. The same relationship applies to the % of customers calculations. That is, the value of M+1SD differs for each time period. That alone could explain the results. However, in addition, in the annual calculation each customer has twice as many opportunities to exceed the threshold at least once. For example, customer A could exceed the threshold in Dec-Jan but not other bill cycles. That customer would be captured in the winter calculation (but not the summer). Customer B could exceed the threshold in Jun-Jul but not other cycles. That customer would be captured in the summer calculation (but not the winter). Customer customers would be captured in the annual calculation.

Statistics can be very confusing (as well as misleading). Hope this explanation helps. Sorry for the errors.

--Bob

The Reed Group, Inc.

From: Madonna Dunbar [mailto:mdunbar@ncsd.ca.gov]
Sent: Tuesday, October 17, 2006 12:09 PM
To: Bob Reed
Cc: Bruce Buel
Subject: question on Nipomo water use study

Dear Mr. Reed,

Thank you for accommodating our request, and producing the data analysis on such short notice. We did have one question regarding the results.

In the bottom of the summary, there are 5 lines, listing the:

	Annual Total	Winter (Dec-May)	Summer (Jun-Nov)
Usage > Mean + 1 Std. Dev. *	1 03,484	1 9,269	5 4,110
% Usage > Mean + 1 Std. Dev.	13%	7%	11%
No. of Bills > Mean + 1 Std. Dev.	1,708	3 85	1,416
No. of Cust. w/ at least 1 Bill > Mn + 1 SD	7 28	5 04	4 76
% of Cust. w/ at least 1 Bill > Mn + 1 SD	25%	17%	16%

The question came up as to: how the annual percentages (highlighted above) are greater than either of the separate categories?

We would appreciate your feedback. Thank you again!

Madonna Dunbar
Conservation and Compliance Specialist
Nipomo Community Services District
PO Box 326 / 148 S. Wilson Street
Nipomo, CA 93444-0326
phone: 805-929-1133
fax: 805-929-1932
mdunbar@nipomocsd.com

"Only what is rare is valuable, and water, which is the best of all things... is also the cheapest." - Plato

**NIPOMO COMMUNITY SERVICES DISTRICT
Water Use Statistics**

	Annual Total	Winter (Dec-May)	Summer (Jun-Nov)
No. of Customers (in data sample)	2,942	2,942	2,942
No. of Bi-Monthly Bills	17,232	8,598	8,634
Total Water Usage	773,952	261,471	512,481
Median Usage	31	23	44
Mean Usage	45	30	59
75th Percentile	54	36	72
90th Percentile	93	58	99
Maximum	1,520	1,173	1,520
Standard Deviation	49	30	59
Mean + 1 Std. Dev.	94	60	118
Usage > Mean + 1 Std. Dev. *	103,480	31,149	60,999
% Usage > Mean + 1 Std. Dev.	13%	12%	12%
No. of Bills > Mean + 1 Std. Dev.	1,667	786	912
No. of Cust. w/ at least 1 Bill > Mn + 1 SD	728	504	476
% of Cust. w/ at least 1 Bill > Mn + 1 SD	25%	17%	16%

* Includes only the usage in excess of the mean + 1 std. dev., not all water used by those bills that include usage in excess of this amount.

**NIPOMO COMMUNITY SERVICES DISTRICT
Water Use Statistics**

	Annual Total	Winter (Dec-May)	Summer (Jun-Nov)
No. of Customers (in data sample)	2,942	2,942	2,942
No. of Bi-Monthly Bills	17,232	8,598	8,634
Total Water Usage	773,952	261,471	512,481
Median Usage	31	23	44
Mean Usage	45	30	59
75th Percentile	54	36	72
90th Percentile	93	58	99
Maximum	1,520	1,173	1,520
Standard Deviation	49	30	59
Mean + 1 Std. Dev.	94	60	118
Usage > Mean + 1 Std. Dev. *	103,480	31,149	60,999
% Usage > Mean + 1 Std. Dev.	13%	12%	12%
No. of Bills > Mean + 1 Std. Dev.	1,667	786	912
No. of Cust. w/ at least 1 Bill > Mn + 1 SD	728	504	476
% of Cust. w/ at least 1 Bill > Mn + 1 SD	25%	17%	16%

* Includes only the usage in excess of the mean + 1 std. dev., not all water used by those bills that include usage in excess of this amount.